ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED CONSTRUCTION OF GEITA GIRLS SECONDARY SCHOOL LOCATED ON PLOT NO. 248/1, BLOCK "F" AT UPENDO MTAA, BOMBAMBILI WARD, GEITA TOWN COUNCIL IN GEITA REGION

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EXECUTIVE SUMMARY

Introduction

The Government of United Republic of Tanzania (URT) in collaboration with the World Bank has prepared the Secondary Education Quality Improvement Project (SEQUIP). The objectives of SEQUIP are to increase access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys. In summary, activities under SEQUIP will be structured into four main components:

Component 1: Empowering Girls through Secondary Education and Life Skills
1.1 Creating Safe Schools: Implementation of the Safe Schools Program including:

i. Trained school guidance and counselling teachers;
ii. Students' life skills training through girls' and boys' clubs by the guidance and counselling teachers; In-service training of secondary school teachers on the teacher code of conduct and gender sensitive pedagogical approaches;
iii. Training of school heads and School Boards on GBV, safe school issues etc.;
iv. School and classroom monitoring system for early identification of and intervention on girls at risk of drop out; and
v. Community-based mechanism for safe passage to school.

1.2 Promoting Girls' Completion of Secondary Education through Quality Alternative Education Pathways including:

i. Setting up an ICT-enabled system for tracking girls dropping out at national and district level to provide key information for AEP planning and implementation.
ii. Alternative Education Centers and LGAs undertaking local outreach activities to out-of-school girls in the community, which will include activities such as AEP center-organized community meetings, information via local radio, flyers and brochures.
iii. Enhancing access to Alternative Education Pathways through (i) expansion of the network of AEP centers; and (ii) tuition fee subsidies for vulnerable girls.
iv. A quality package for strengthening student learning in Alternative Education Pathways will also be implemented
v. Environmental and Social Management Framework –Tanzania - Secondary Education Quality Improvement Project (SEQUIP)

Component 2: Digitally Enabled Effective Teaching and Learning
2.1 Effective Teaching and Learning

i. Minimum package of critical teaching and learning resources for all schools: This package consists of an adequate number of textbooks and teacher guides in core subjects (English, Math and Sciences).
ii. Equitable, gender-balanced teacher deployment to schools
iii. In-service teacher training/continuous professional development (CPD) to improve classroom teaching practice for secondary English, Mathematics and Science teachers
iv. Evaluate student learning in lower secondary to provide opportunities for remedial use: to allow for targeted early intervention to prevent girl dropout due to learning difficulties

2.2 Digitally-enabled Teaching of Math Sciences and English:

i. Development of an ICT in Education Strategy and plan for secondary education.
ii. Digital content and connectivity package to facilitate the teaching of English, Mathematics and Science in phases.

Component 3: Reducing Barriers to Girls' Education through Facilitating Access to Secondary Schools

Expansion of the secondary school network to substantially reduce the distance to secondary schools through an expansion of the secondary school network, especially in rural areas. SEQUIP will disburse project funding on the basis of the number of schools in each LGA meeting minimum infrastructure standards

Support upgrading existing secondary schools with the minimum infrastructure package (number of classrooms/students, adequate WASH facilities; multi-purpose science labs, electricity, etc.) with the objective is that at least 50 percent of all existing schools in all LGAs will meet the minimum standards set.

Component 4: Technical Assistance, Impact Evaluation and Project Coordination Environmental and Social Management Framework –Tanzania - Secondary Education Quality Improvement Project (SEQUIP). SEQUIP will be jointly implemented by the Ministry of Education, Science and Technology (MoEST) and the President's Office, Regional Administration and Local Government (PO-RALG).

Tansheq Limited, a NEMC registered environmental consulting firm with offices at House No. 83 Wakulima/Ngano Rd, Hananasif Estate and P.O. Box 31517 Dar es Salaam, has been contracted by Po-RALG as Implementing Supporting Team (IST).

Project Location and Accessibility

The proposed project site is administratively located at Upendo mtaa, Bombambili ward in Geita Town Council- Geita Region and is surrounded by human settlement about 50 meters on both sides of the project site, neighbors of the school will be; Hamisi Rajabu (Resident), Waja specialized hospital and Geita Adventist dispensary.

The proposed site is accessible through Geita-Mwanza road whereas the road is tarmac and in good condition. The proposed project site is about 5km from the Regional office headquarter and 2km from Waja hospital.

Project Description

The school construction and design will consist of a required infrastructure package based on the school construction and maintenance strategy (e.g. number of classrooms/students, adequate WASH facilities, especially important for girls; multi-purpose science labs, electricity, etc.). The construction package will involve the following buildings;

Classrooms

The classrooms are designed following Education Bulletin number 1 of 2007 that directs capacity of each classroom level, 30 students for advance and 40 students for ordinary level. However, schedule of materials indicates each classroom will be having capacity of 40 students.

Construction will be undertaken in two phases. The first phase will involve construction of 12 classrooms within six blocks followed by the second phase that will involve the construction of 6 classrooms which will be of 3 different designs (2 classrooms with office, 2 classrooms with toilet and a 2 classrooms block).The proposed project development will adhere to the fire and rescue force directives for public premises.

The Education Global Practice Africa Region report prepared by World Bank provides the following directives; Student classroom ratios of 50:1 or less, student to functioning latrine ratio of 25:1 for girls and 30:1 for boys, at least one multipurpose science laboratory, student textbook ratios in mathematics and science subjects of 1:1, teacher: teacher guide availability of 2:1.

Laboratories

Education Bulletin number 1 of 2007 explain the capacity and set up of laboratory building for each level is 40 students, The scheduling of materials will adhere the bulletin as the following laboratory rooms will be constructed;

- Physics and geography lab
- Chemistry and biology lab,
- ICT room which is to be constructed in the second phase, and
- Domestic science

Administration block

The bulletin indicate for the school having capacity of 1000 student plus need to have not less than 40 teachers excluding other staffs such as school bursar, secretary etc. The administrative building will be constructed as an elevated building whereas only one (1) building will be constructed.

Toilets

The proposed toilet facility will comprise of one block with 16 holes to be constructed standalone as scheduling shows with estimates of one (1) hole for twenty (20) people, nevertheless, some of classrooms will be having sanitary rooms as designed, dormitory, and dining hall will also be having sanitary rooms.

The development of sanitary facilities is necessary to ensure the surrounding environment is well-managed and ensuring social well-being and practical operation of the school since human dignity is directly linked to access of safety and hygienic sanitation.

Dining hall

The Dining Hall is a pivotal gathering space on School's campus and is emblematic of The Family Boarding School ideal. The school will be having enough dinning space to all students since it is a boarding school thus meal will be served. According to the designs of the dining hall, it has the capacity of 2000 students.

Staff houses

The teachers' houses are designed to attract teachers out to the countryside, as well as to increase teachers morally to perform their duties unlike if they are coming far from the school. The design considers the staff house to have one (1) master bedroom, two (2) bedrooms/ one (1) master bedroom, three (3) bedrooms with Public toilet, Sitting room/dining, Kitchen and Store. Four (4) of the staff houses will be constructed.

Dormitories

Dormitories are places where students stay. The student housing must also aim to provide healthy and acoustically pleasant environments for the protection, comfort, and productivity of the students. The dormitories are designed as per provided to meet the SEQUIP objectives having a capacity to accommodate 120 students. For phase one five (5) buildings will be constructed while for phase two four (4) buildings.

Library

The library is important because it affects cultures, it affects innovation, and it affects individuals. Because of all this, library architecture has the responsibility to enhance these effects by providing a knowledge center that is inspirational and conducive to good communication and teaching interactions.

According to designs, the library to be constructed will accommodate 52 students for readings and the computer learning room will accommodate 8 students.

Sick bay

A sick bay provides a dedicated space for students who may feel unwell or require immediate medical attention. It will serve as a primary point of care within the school premises, allowing for timely assessment and treatment of minor illness or injuries.

Incinerator

This will provide a safe and efficient men of disposing waste specifically biomedical waste such as used sanitary pads, medical supplies and other potentially hazardous materials.

Other components that will be constructed within school compounds area are Playgrounds, Water tunnel, Water tank (hippo) and its pillars), Manhole and gully trap, Walkway & Paving.

Project activities

Main activities of the project include preconstruction, Construction, Operations, and decommissioning.

Mobilization phase/Pre-Construction Activities

The mobilization phase of the project, which is estimated to take average of maximum three months, will entail the following activities:

- Establishment of construction of camps, material and equipment storage areas, materials processing yards, including sanitation facilities. The following activities will be involved during establishment of the camp.
    - Bush clearing.
    - Construction of Material and equipment storage areas
    - Construction of sanitation facilities
    - Installation of electrical infrastructure
    - Installation of water and wastewater infrastructure
- Identification of naturally-occurring material borrow sites (sand, fill, gravel borrow and quarry sites),
- Identification of sources of water for domestic and construction works

Construction Phase

The construction phase of the project, which is estimates to take 12 month for each of the phase one and will encompass following major activities:

- Earth works to facilitate widening and re-alignment of the road. Earth works will entail the following activities:
    a) Clearing and grubbing (clearing of vegetation, including trees).
- Extraction of naturally occurring construction materials. This will include:
    b) Excavation and transport of natural sand, gravel, and sub-base materials to construction sites
    c) Stone quarrying (including blasting), crushing and transport of crushed aggregates to construction sites
    d) Transport and handling of fuel, lubricants etc. from their sources to the project site
- Transport of construction materials from source to site such as roof, steel, woods, nails, rope

Operation phase

The maintenance activities of the Overall, SEQUIP will contribute to increasing total enrolment in secondary school by 1.8 million students and increase the number of girls graduating from both secondary schools and alternative secondary education pathways.

Decommissioning Phase

After completion of construction, all the utilities which were used shall be reverted to the Municipal Director who will decide on their future use. The main activities during demobilization phase, will engross the following:

- Collection and disposal of storage facilities such as pallets, packing, boxes
- Collection and disposal of construction materials and waste such as waste oil, sewage, solid waste (plastics, wood, metal, papers, etc.) at the workshop, site office etc. to authorized dumpsite
- Restoration of material borrows areas to safer condition

Project Cost

Total Project Cost is four billion Tanzanian shillings

Legal Framework

Relevant sectorial and cross–sectorial policies that provide directives on how projects should be operated.

In/on concerned natural resources and sensitive ecosystems are:

i. The National Energy Policy,2015
ii. Education and training policy,2014
iii. The National Environmental Policy, 2021
iv. The Occupational Health And Safety Policy 2009
v. The National Employment Policy, 2008
vi. The National Research And Development Policy, 2010
vii. The National Biotechnology Policy,201

Key legislation, which PO-RALG must adhere to during implementation of this project, includes:

I. The Education Act, Cap.353.
II. The Law Of The Child Act, Cap. 13 R.E 2019
III. The Engineers Registration Act, Cap 63
IV. The Architects And Quantity Surveyors Act, Cap 267
V. The Workers Compensation Act, Cap 263
VI. The Persons With Disabilities Act, Cap 183
VII. The Occupier Liability Act, Cap 64
VIII. The standard Act, Cap. 130
IX. The Environmental Management Act, Cap 191
X. The Water Resources Management Act, Cap 331
XI. The Forest Act, Cap 323 R.E 2022
XII. The Electricity Act, Cap 131
XIII. The Local Government (District Authorities) Act, Cap,287
XIV. The Local Government (Urban Authorities) Act, Cap,288
XV. The Fire And Rescue Force (Safety Inspection And Certificates) Regulations, 2008 As Amended In 2017
XVI. The Fire And Rescue Force (Fire Precautions In Buildings) Regulations, 2015
XVII. The Environmental Management (Control And Management Of Electrical And Electronic Equipment Waste) Regulations, 2021

Stakeholder Involvement and Participation

The Consultants identified organizations, groups, and individuals considered to be key stakeholders that
Might be impacted by the project components or have influence on the project.

- Region Academic Officer, (RAO), Regional Community Development Officer (RCDO).
- Town Council Executive Director in Geita Town Council, Town Environmental Officer (TEO) and Town Secondary Education Officer (TSEO)
- Ward Exevutive Officer (WEO)
- Upendo street chairperson
- Local Fundi

Stakeholders Opinions and Concerns

The stakeholder consultations identified both positive opinions and negative concerns. Stakeholders had positive opinions of the project in terms of:

- Education opportunities to the specific project area and surrounding communities
- Rising of Chemchem Ward's economy as a result of population increase

Stakeholders were concerned about:

- Their concerns was that; man power should be recruited from their specific street and ward during project implementation.

ENVIRONMENTAL AND SOCIAL IMPACTS

The following impacts were identified in the various project development stages such as mobilization and construction, operational as well as decommissioning stage. These impacts were as follows:
Mobilization/Construction Stage:

- Loss/disturbance of biodiversity and threatened species
- Atmospheric emissions from engines of vehicles
- Dust and noise pollution from mobilization vehicles.
- Public health hazards and safety from construction of supportive infrastructure.
- Land disturbance.
- Roads accidents of the moving vehicles

Operation Stage:

- Disruption of air quality from emissions of exhaust and fugitive gases
- Disturbance to surrounding communities due to increased noise levels
- Aesthetic degradation, environmental pollution and outbreak of diseases and injuries due to improper management of surrounding hazardous and non-hazardous solid waste materials
- General health and safety impacts
- Increased population density

Socio – Economic Aspects:

- A more educated workforce in the country
- Decrease in unemployment rates
- Increase in income levels resulting to benefit to the government from taxes provided
- Women empowerment
- A more balanced and diverse demographic landscape with improved gender representation and opportunities for women in the respective regions and country

Decommissioning Stage:

- Abandoned infrastructure.
- Unemployment.
- Loss of revenue to the government

Enhancement of Positive Socio-Economic Impacts:

- Employment and training especially during construction
- Increased income/revenue/induced development.
- Increased income by utilization of local resources.
- Support to local social services and livelihood.

PROJECT ALTERNATIVES ANALYSIS

Different options were considered for the project. Analysis of alternatives compares reasonable alternatives to the proposed project site, technology, design, and operation in terms of their potential environmental and social impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements.

It also states the basis for selecting the particular project designs proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

Alternatives considered for this project were the following

a) No-Go alternative,
b) Design and technological considerations
c) Location alternative
d) Energy alternative
e) Water alternative

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental Impact Assessment for the proposed construction of Regional Girls Secondary School, has identified a number of impacts that are likely to arise during construction and operation stage of the proposed project.

The EIA has examined bio-physical, socio-economic and cultural effects of the proposed activity from site clearance, school construction and the school operation.

The real benefits of the proposed project can result only if the risks of the identified adverse impacts are minimized. This can be accomplished through implementation of adequate preventive and mitigation measures by formulating policies to cover them accordingly.

Environmental Management Policy

This will ensure that Project management and staffs are carrying out their activities with the highest regard to the natural environment and sustainable utilization of environmental resources therein. The policy should therefore cover the following, among other issues:

- Ensure that all Project activities operate within legal requirements of all relevant national legislation
- That there are continuous environmental improvement and performance through monitoring of Project activities;
- Ensure that utilization of natural resources is optimal with measures in place to ensure resource availability for future generation;
- Awareness creation to the surrounding community regarding sustainable utilization of natural resources, protection of sensitive ecosystems and bio-diversity maintenance for communal livelihood; and
- Balancing between natural resource use, environmental conservation and economic development.

Occupational Health and Safety Policy

It is developed for this project so as enable establishment of appropriate measures that ensure that the health, safety and welfare of all users is cared for as well as the health requirements of the local community in which the project is located. The policy should highlight on the following, among others:

- Medical examination of workers;
- Sanitation in the Project area;
- Proper liquid and solid waste management and disposal;
- Emergency preparedness;
- Fire safety;
- Necessity and availability of personal protective equipment
- Risk minimization of accidental damage to the community and environment

Community Relations Policy

The Local Community Policy are developed by management of the Project to ensure that the management of the project develops and maintains sound relations with all stakeholders on mutual respect and active partnership. The policy should highlight on ways the management should:

- Work with the local community and relevant government departments and agencies to achieve sustainability of the project;
- Come up with ways of enhancing information flow from management to the community and Project stakeholders, and vice versa;
- Community capacity building; and
- Active engagement of the local community in all Project activities that impact on the local community.

With regard to environmental management during the pre-construction, construction, operation and decommissioning phase of the project, the principal responsibilities of each party as described below. For certain aspects of the programme, assistance will be needed from the Local Government Authorities and the NEMC (mainly in the form of guidance and advice and in project monitoring).

ENVIRONMENTAL MONITORING PLAN

This report contains a detailed plan to monitor the implementation of mitigation measures and the impacts of the project during its execution. This plan includes a cost estimate for carrying out the proposed monitoring plan.

COST BENEFIT ANALYSIS AND RESOURCES EVALUATION

Environmental cost benefit analysis is assessed in terms of the negative and positive impacts. Furthermore, the analysis is considering whether the impacts are mitigatable and the costs of mitigating the impacts are reasonable. As it has been mentioned in Chapters 7 and 8, the potential benefits of the project, in terms of economic advancement and social benefit are substantial.

The environmental impacts are reasonably mitigatable. So to mitigate negative impacts, when compared to the required data are relatively small.

Social Cost Benefit Analysis

The benefits from project development can be judged in terms of employment, social welfare, education development, infrastructure development and the local economy (wages, goods and services). Thus, there will be a substantial spread of the benefit within the community through the provision of food, accommodation and other regular services to the employees and students.

Furthermore, the upgrading, development and maintenance of local infrastructure are benefits that will extend far beyond the project's scope and lifetime.

DECOMMISSIONING

Decommissioning is the last phase of project life. It involves terminating project activities and operations and rehabilitating site to or close to its original state. It is anticipated that the project shall continue as long as there is a demand for a project, however, individual components of the project shall be decommissioned as need be.

CONCLUSION

The project will have both positive and negative impact to the environment and the local communities along it. Measures have been proposed to enhance impacts which are positive to the environment and the local people.

For those impacts that are negative, mitigation measures have been proposed to avoid or abate them to the extent possible for the purpose of maximizing benefits of the school project and minimizing detriments of the project intervention to the communities.

Overall, the project shall act as a catalyst for positive change in the surrounding communities by improving education, infrastructure and social well-being, and by involving and engaging the local residents, the project can have a lasting impact and contribute to the overall development of the region.

ACKNOWLEDGEMENT

PO-RALG extends its heartfelt appreciation to the World Bank group for their positive support in creating an enabling environment for young girls to pursue their education in every possible way.

Additionally, we would like to thank and express our gratitude to the officials of Geita Region, Geita Town Council, and the Ward Executive Officer for Bombambili Ward, the Street Chairperson for Upendo Street, and all community members for their significant opinions and contributions during the preparation of this study.

Lastly, we would like to acknowledge and sincerely appreciate the hard work and dedication of the staff at Tansheq Limited, without whom this project would not have been possible.

ACRONYMS AND ABBREVIATIONS

ADB	African Development Bank
AEP	Alternative Education Program
AIDS	Acquired Immune Deficiency Syndrome
ARAP	Abbreviated Resettlement Action Plan
CBOs	Community Based Organisations
CDP	Community Development Program
CO	Carbon Monoxide
CO_2	Carbon Dioxide
dB	Decibels
DC	District Commissioner
DOE	Director Of Environment
DP	Development Partner
DRC	Democratic Republic of Congo
EBRD	European Bank for Reconstruction and Development
EIA	Environment Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPFIs	Equator Principle Financial Institutions
ESCP	Environmental and Social Commitment Plan
ESDP	Education Sector Development Plan
ESF	Environment and Social Framework
ESIA	Environment and Social Impact Assessment
ESMP	Environment and Social Management Plant
ESS	Environment and Social Standards
FI	Financial Intermediaries
FYDP	Five Year Development Plan
GBV	Gender Based Violence
GCA	Game Controlled Areas
GCLA	Government Chemistry Laboratory Authority
GCS	Geographic Coordinate System
GDP	Gross Domestic Product

GIIP	Good International Industry Practices
GS Pipe	Galvanized steel
HIPC	Heavily Indebted Poor Country
HIV	Human Immunodeficiency Virus
ICT	Information and Communications Technology
IFC	International Finance Institution
IPF	Investment Project Financing
ISO	International Organization for Standardization
IST	Implementing Supporting Team
IUCN	International Union for Conservation of Nature
LGAs	Local Government Authorities
LPG	Liquefied Petroleum Gas
MoEST	Ministry of Education, Science and Technology
NAPA	National Adaptation Programme Of Action
NEMC	National Environment Management Council
NEP	National Environment Policy
NGOs	Non-Governmental Organisations
NOx	Oxides of Nitrogen
NSGRP	National Strategy for Growth and Reduction of Poverty
O	Oxygen
OHS	Occupational Health and Safety
OIP	Other Interested Parties
OP	Operational Policy
OPC	Ordinary Portland Cement
OSHA	Occupational Safety and Health Authority
OSPAR	Oil Spill Prevention Administration And Response
PAP	Project Affected People
PDO	Project Development Objectives
pH	Potential of Hydrogen
PLONOR	Pose Little Or No Risk
PM	Particulate Matters
PoRALG	President office, Regional Administration and Local Government
PPE	Personal Protective Equipment

PVC	Polyvinyl Chloride
RAO	Region Academic Officer
RAP	Resettlement Action Plan
RAS	Region Administrative Secretary
RC	Region Commissioner
REMO	Region Management Officer
REO	Region Education Officer
RTANESCO	Tanzania Electric Supply Company
RUWASA	Rural Water Supply & Sewerage Authority
SEP	Stakeholder Engagement Plan
SEQUIP	Secondary Education Quality Improvement Project
SO_2	Sulfur dioxide
TD	Town Director
TDV	Tanzania Development Vision
TEO	Town Environment Officer
ToR	Terms of Reference
TSEO	Town Secondary Education Officer
URT	United Republic of Tanzania
VEC	Valued Environmental Component
VOCs	Volatile Organic Compounds
WB	World Bank
WBMS	World Bureau of Metal Statistics
WEO	Ward Executive Officer
WHO	World Health Organization

LIST OF EIA EXPERTS WHO CONDUCTED THE STUDY

S/N	Experts	Specialty	Signatures
1.	Gwakisa Mwakyusa	Team Leader	
2.	Lusako Raphael	Senior Environment expert	
3.	Anamary Philemon	Monitoring and Waste Management Expert	
4.	Erick Gagalla	Environmental expert	
Other Experts Involved in the Study			
1.	Nyasaila Nyakia	Sociologist	
2.	Veronica Msolla	Environmental Officer	
3.	Asia Abibu	Environmental Officer	
4.	Yerusalem Mwaipopo	Environmental Engineer	
5.	Joachim MarawitI	Environmentalist and GIS Expert	

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CHAPTER ONE

1 INTRODUCTION

1.1 Background

The Government of the United Republic of Tanzania (URT) in co-operation with the World Bank developed the Secondary Education Quality Improvement Project (SEQUIP). The objectives of SEQUIP are to increase access to secondary education, provide responsive learning environments for girls and in result, improve completion of quality secondary education for girls and boys.

Although access to and completion of primary education has improved over the last decade and substantial progress has been made in secondary education, secondary student enrolment rates of girls and boys are still very low in Tanzania compared to other East African countries. The share of secondary students of the relevant school age population enrolled was only 28 percent in 2018, compared to 68 percent in Kenya, despite the recent enrolment surge. Secondary school attendance was 28 percent for girls and 27 percent for boys.

The three main challenges in secondary education are:

(i) Access to and completion of quality secondary education for girls and boys;
(ii) A safe, supportive learning environment to keep girls in school longer and delay early marriage; and
(iii) Effective and clear Alternative Education Pathways (AEP) to enable girls and boys who drop out of lower secondary school, for various reasons including early pregnancy, to finish the lower secondary education cycle and enter upper secondary schools

The proposed project intends at enhancing the secondary education through delivery point's improvement by increasing access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys

The implementing Government Agencies are Ministry of Education, Science and Technology (MoEST) and the President's Office – Regional Administration and Local Government (PO-RALG). Both Ministries are responsible for implementation of school-level education activities through the Local Government Authority (LGA).

One of the key components to be implemented through SEQUIP is facilitating access to secondary schools and bringing schools closer to communities. The project plans to support construction of 1000 new schools and rehabilitation of additional facilities at existing secondary schools.

The project will specifically have the following components.

- Component 1: Empowering Girls Through Secondary Education and Life Skills
- Component 2: Digitally-Enabled Effective Teaching and Learning
- Component 3: Reducing Barriers to Girls' Education through Facilitating Access to Secondary Schools
- Component 4: Project Coordination, Monitoring and Evaluation

The Secondary Education Quality Improvement Project (SEQUIP) will focus on enabling young girls to continue their secondary education despite social and economic barriers. More generally, SEQUIP will improve the completion of quality, learner-friendly secondary education for girls and boys. In 2018, 1,025,629 girls and 965,242 boys attended lower secondary school.

However, in the same year, a further 134,000 children, half of whom were girls, qualified to continue their schooling but were unable to because of lack of spaces in government secondary schools. Drop-out rates are high for both boys and girls with a quarter of students leaving before they complete their lower secondary

schooling. In 2017, about 5,500 girls were not able to continue with their secondary education due to adolescent pregnancy and early motherhood. SEQUIP will contribute to addressing these key challenges by:

(i) Creating a gender sensitive, learner-friendly school environment through investing in supportive structures in the school and community including trained school guidance counsellors, stronger links with the community through Parent Teacher Associations and life skills training.
(ii) Supporting female students to avoid dropping out of secondary school due to pregnancy through measures that include:
    (a) Encouraging community awareness of risks for girls;
    (b) Supporting safe passage and reducing the distance to schools to lower the risks of gender-based violence on the way to and from school; and supporting girls who become pregnant to access recognized, quality Alternative Education Pathways (AEPs) to obtain lower secondary certification and continue with upper secondary education or post-secondary education.
    (c) Improving the quality of secondary school teaching and learning environments through the hiring of additional qualified teachers in core subjects and providing textbooks in core subjects.
    (d) Increasing the number of secondary school spaces through the construction of new classrooms that meet minimum infrastructure standards and supporting the expansion of the school network to bring schools closer to communities.
    (e) Using innovative digital technology to facilitate mathematics and science teaching and improve learning.

These SEQUIP interventions are aligned with the Government's Education Sector Development Plan (ESDP) (2016/17–2020/21) and related strategies. SEQUIP design also draws on lessons learned from previous and ongoing World Bank and Development Partner (DP) support to education in Tanzania. Overall, SEQUIP will contribute to increasing total enrolment in secondary school by 1.8 million students and increase the number of girls graduating from both secondary schools and alternative secondary education pathways.

Over its lifetime, the Project will directly benefit about 6.5 million new and existing secondary school students, including 3.2 million girls. SEQUIP will help more girls' transition from lower to upper secondary education, including girls who had to leave lower secondary government schools due to pregnancy

1.2 Project Objectives

The Program's objective is to increase access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys. The project interventions will:

(i) Create a safe, gender sensitive and learner-friendly school environment,
(ii) Provide good quality alternative education opportunities for secondary school drop-outs including young mothers;
(iii) Improve the quality of secondary education by improving teacher skills, reducing class sizes and providing adequate teaching and learning materials;
(iv) Use innovative digital technology to improve mathematics and science teaching and;
(v) Increase access to secondary education by providing more schools closer to the homes of children. Over the project's lifetime, 6.5 million children (3.1 million girls) will benefit from project interventions and an additional 900,000 children are expected to successfully complete their secondary education.

A need and evidence-based approach will be used in identification and selecting locations and schools that will benefit

1.3 Land requirement for the project

Land is a public property and rights to the land are issued in the form of residential leases and certificates of rights to occupancy. The construction of new schools in Geita Town Council will require enough land. Site selection will be important in minimizing the extent of resettlement including of informal land owners and or users who were present in an area prior to the selection of a site for a school.

The proposed land site which is located at Upendo Street, Bombambili ward is an area owned by Geita Town council which was once an area allocated for burial purposes but later on it was found out that at the area there presence of hard rocks thus not fitting the allocated purpose and hence left to be an open space. When the council received the proposal for the construction of school from the Regional office, then they advised the project to be implemented on the land that was left open with a size of 50 acres. However, as per construction directives from PO-RALG, specific land size requirement is 25 acres.

1.4 Scope of the Study

According to Environment Management Act of 2004, and its Environmental Impact Assessment and Audit Regulation of 2005 objectives for carrying out EIA include:

- To ensure that environmental considerations are explicitly addressed and incorporated into the decision-making process, with the aim to anticipate and avoid, minimize, or offset the adverse significant biophysical and social effects of the proposed project; and to protect the capacity of natural systems and ecological processes to maintain their functions.
- To promote development that is sustainable and optimizes resources use and management opportunities.

1.5 Study Approach and Methodology

The approach to this exercise was structured such as to cover the requirements under the Environment Impact Assessment and Audit Regulations, 2005. It involved largely an understanding of the project background, the preliminary designs and the implementation plan as well as commissioning.
In addition, baseline information was obtained through physical investigation of the project site areas, desktop studies, and public consultations with members of the community in the project areas, survey, photography, and discussions with the project Proponent.

The methodology used in this study follows specific procedures and guidelines set by the EIA & Audit Regulations of 2005. The study adopted the following approach: The process for conducting the Impact Assessment is closely related to the flowchart in Figure 1-1.

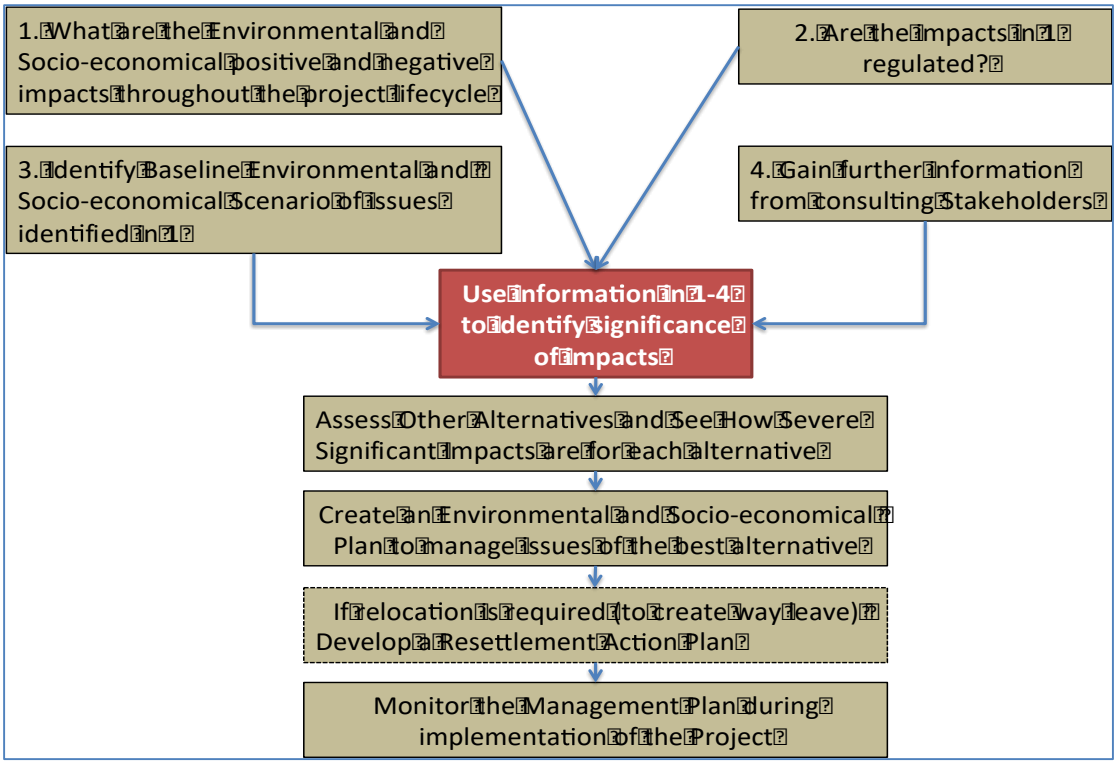


Figure 1-1: Impact Assessment Process

1.5.1 Issues Associated with the Proposed Project

Environmental and Social Issues associated with school construction activities were identified based on previous history and detailed project activities. These are detailed in CHAPTER TWO.

1.5.2 Regulatory Framework with Associated Issues

Description the relevant regulations and standards governing environmental quality, health and safety, protection of sensitive areas, sitting, land use control as detailed in CHAPTER THREE .

1.5.3 How the Situation is Currently (Baseline Situation)

In order to gauge the extent of impact, it is crucial to establish the status quo (Chapter 4). The consulting team conducted the baseline study of the current level of impacts. This involved a specialized study on flora and fauna, air, soil and water.

It also covered socioeconomic issues, noise, vibration, air quality, etc. The aim of ascertaining the baseline it to appreciate to what extent the proposed project can alleviate or exacerbate the current situation.

1.5.4 Issues from Key Stakeholders

This EISA also reports on the following:

- A list of stakeholders consulted together with a stakeholder analysis.
- The method used to get their views and issues of concern raised.
- Issues raised by the stakeholders and the way they were addressed.
- Records of stakeholder meetings, communications, and comments.

1.5.5 Assessment of Impacts (Both Good and Negative)

This critically reviews and analyses interaction between the proposed project and the existing environment. In this analysis, the consultant distinguished between significant positive and negative impacts, direct and indirect impacts, and immediate and long-term impacts. Impacts, which are unavoidable or irreversible, are also identified. Wherever possible, impacts are described quantitatively in terms of environmental costs and benefits.

1.5.6 Consideration of Alternatives

This environmental assessment also involved an analysis of reasonable alternatives to meet the ultimate project objective. This analysis included any alternatives examined while developing the proposed project and that from an environmental, socio-cultural or economic point of view may be sounder than the proposed project.

This also includes the 'no action' alternative, which assesses environmental conditions without project. It is described how the alternatives compare in terms of potential impacts, costs, suitability under local conditions, as well as institutional, training, and monitoring requirements. To the extent possible, costs and benefits of each alternative are quantified, incorporating the estimated costs of any associated mitigating measures. Finally, this report described the reasons for selecting the proposed project over the other alternatives.

1.5.7 Developing an Environmental Management Plan

This report recommends feasible and cost-effective measures to prevent or reduce any significant negative impacts to levels that are acceptable. This involves:

- Estimating the impacts and costs of those measures, and of the institutional and training requirements to implement them.
- Preparing a management plan including proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigating measures.
- A management plan also covering the decommissioning phase of the project.

1.5.8 Developing an Environmental Monitoring Plan

This report contains a detailed plan to monitor the implementation of mitigation measures and the impacts of the project during its execution. This plan includes a cost estimate for carrying out the proposed monitoring plan.

1.6 Content of the Report

This report is designed to meet the requirements of Regulation 18 of Environmental Impact Assessment and Audit Regulations (United Republic of Tanzania, 2005) and as per the process of conducting ESIA. Table 1-1 provided the list of chapters within the study as the law requires.

Table 1-1: Content of the Report

Chapter	Description
1. Introduction	Overview and objective of the study, methodology and outline of the report
2. Project Background and Description;	This chapter describes: • The executing entities of the project and their respective roles in the project • The project's geographic location, preferably illustrated with appropriate maps

Chapter	Description
	• Summary of the project (project objective(s), expected results/outcomes, outputs and main activities • Implementation arrangements.
3. Policy, Administrative and Legal Framework;	Describe the policy, legal and administrative framework within which the project takes place and identify any laws and regulations that pertain to environmental and social matters relevant to the project. This includes regulations about environmental and/or social impact assessments to which the project must adhere as well as laws implementing host country obligations under international law. If applicable. Where pertinent, consider legal frameworks for promoting gender equality. Flag any areas where the project might fall short on compliance.
4. Baseline or Existing Conditions;	The main purpose of this section of the ESIA report is to provide an understanding of current environmental and social conditions that form the baseline against which project impacts can be predicted and measured during project implementation. For moderate-risk projects that require only a partial ESIA and no scoping study, this section also provides an opportunity to substantiate the results of the ESMS screening by confirming potential impacts and/or identifying other potential impacts.
5. Stakeholder Identification and Analysis	The purpose of the stakeholder identification and analysis is to understand potential impacts on stakeholders and to clarify who should be involved in the ESIA process and how. This should be able to elaborate: • stakeholders' interests in and expectations from the project; • how they might influence the project (positively or negatively; • a first appraisal or estimation of how their livelihoods could be impacted by the project (positively or negatively); and • How they should be involved in the ESIA based on the information in the three items above.
6. Assessment of Impacts and Identification of Alternatives	This step is the heart of the ESIA; it itemizes and describes the identified impacts, makes predictions in terms of their probability, and assesses their significance. When analyzing the risks not only direct impacts should be taken into consideration but also indirect impacts such as inadvertent knock-on effects or cumulative effects that materialize through interaction with other developments, impacts occurring at the project site or within the project's wider area of influence and impacts triggered over time The purpose of the analysis of alternatives is to identify other options, including not implementing the project, to achieve the project objectives and compare their impacts with the original proposal. This step is required only for high-risk projects where the identified impacts are very significant.
7. Impacts Management or Environmental Mitigation Measures	A main output of the ESIA process is a strategy for managing risks and mitigating impacts. The identification of mitigation measures is done in consultation with affected groups and is guided by the mitigation hierarchy. The mitigation hierarchy implies that all reasonable attempts must first be made to avoid negative social or environmental impacts. If avoidance is not possible without challenging the conservation objective of the project, measures should be taken to minimize the impacts to acceptable levels and address remaining residual impacts with adequate and fair compensation measures.
8. Environmental and Social Management Plan	This is a risk management strategy is documented in an Environmental and Social Management Plan (ESMP) that describes: the mitigation measures developed during the ESIA, an implementation schedule and required resources and responsibilities. The technical and operational feasibility, cultural adequacy and sustainability of proposed measures must be demonstrated as well as requirements for capacity building and institutional strengthening, where relevant.

Chapter	Description
9. Environmental and Social Monitoring Plan	The ESMP should also indicate how the measures designed to avoid impacts will be monitored for effectiveness.
10. Resource Evaluation or Cost Benefit Analysis	This chapters intends to internalize all costs associated with management of environmental and social impacts while comparing with the benefits which could be derived from implementation of the project
11. Decommissioning;	How decommissioning of the project shall be affected and restoration of the site
12. Summary and Conclusions	An overview of the study as well as conclusion from experts regarding the findings
13. References	List of all sources of information used in the report
14. Appendices	Detailed descriptions which are important for the study but cannot be included in the main body

CHAPTER TWO

2 PROJECT BACKGROUND DESCRIPTION

2.1 Overview

The Project Development Objectives (PDOs) to increase access to secondary education provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys. SEQUIP will contribute to addressing key challenges to girls and boys accessing education and this school will definitely target girls for their studying excel. The project aims to reduce distance to government target: 3km (or 45 minutes)

The project will contribute to increasing the total number of students in secondary education including Alternative Education Pathways (AEP) by 250,000. It will directly benefit about 1.8 million secondary school students, including 920,000 girls, 95% of whom are enrolled in lower secondary. SEQUIP will help more girls' transition from lower to upper secondary education, as girls are underrepresented at this level

2.2 Project Location and Accessibility

The proposed project site is administratively located at Upendo Street, Bombambili ward in Geita Town Council- Geita Region and is surrounded by human settlement about 50 meters on both sides of the project site, neighbors of the school will be; Hamisi Rajabu (Resident), Waja specializd hospital and Geita Adventist dispensary. Figure 2-1 displays the location map of the proposed project area in Geita Town Council, Geita Region.

The proposed site is accessible through Geita-Mwanza road whereas the road is tarmac and in good condition. The proposed project site is about 5km from the Regional office headquarter and 2km from Waja hospital.

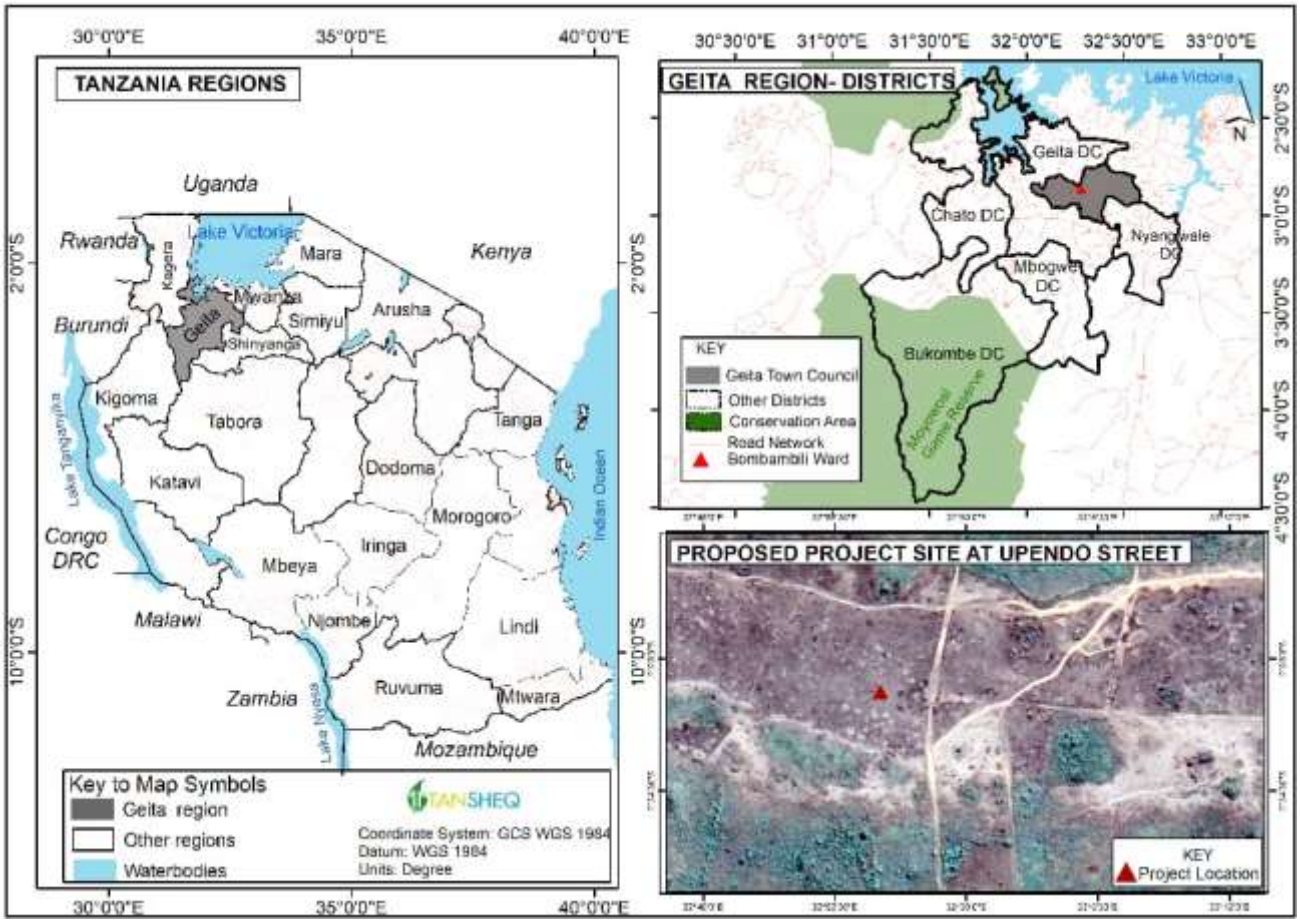


Figure 2-1: Proposed project site (Source: Tansheq, 2022)

2.3 Current Situation in vicinity proposed site.

2.3.1 Proposed project site

The proposed site is within the settlement along Upendo Street as it is surrounded by residential houses at the distance of 50m and at a distance of about 224m there is a protected forest uphill as shown in Figure 2-2.

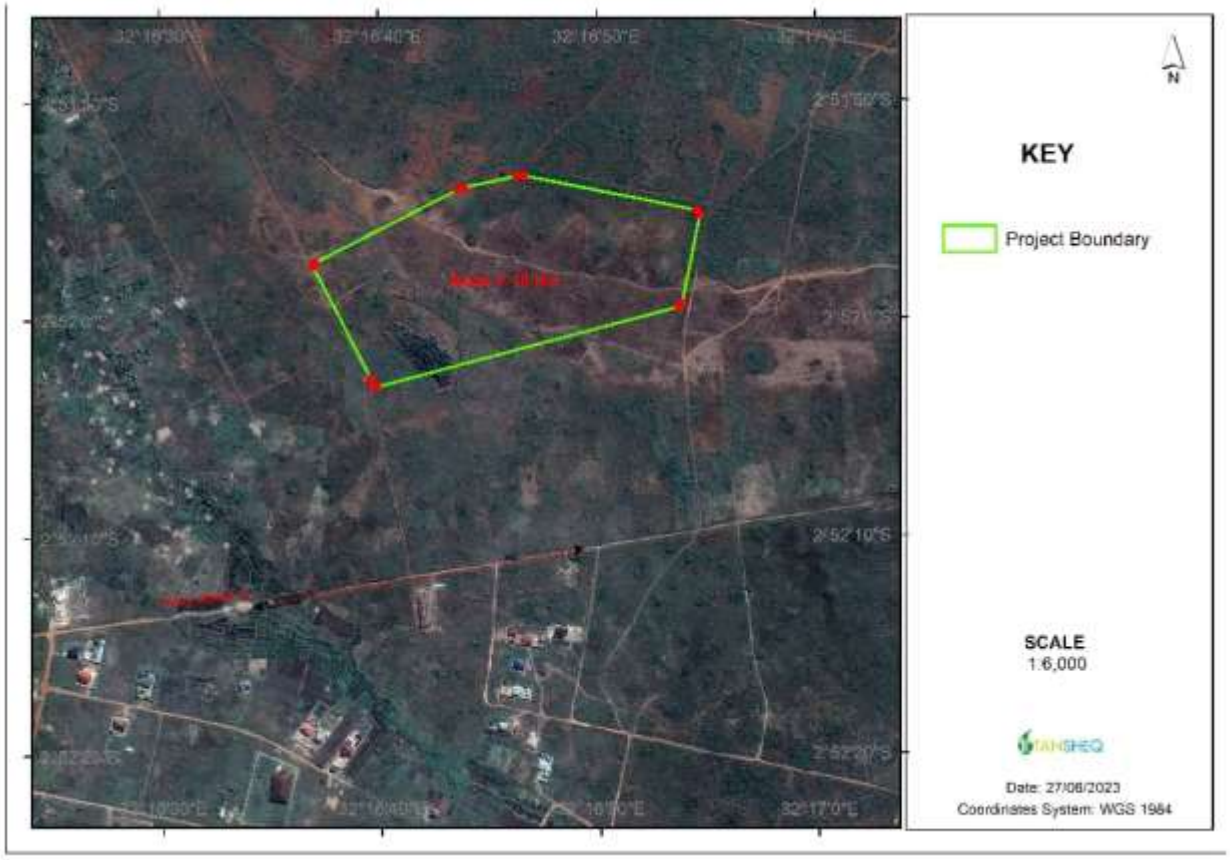


Figure 2-2: Description of the project site

2.3.2 Surroundings

The proposed site is within the settlement along Bombambili ward and is surrounded by residents as shown in Figure 2-3.

Figure 2-3: Surrounding Environment at the project site

2.4 Project Planning and Design

2.4.1 Overview

Project planning and all designs are prepared as per SEQUIP design and the overall objectives for the development was specified in the Environmental and Social Management Framework (ESMF). The design of the Girls' Regional School consists of required infrastructure package based on the school construction and maintenance strategy (e.g. number of classrooms/students, adequate WASH facilities, multi-purpose science labs, electricity, etc.).

The proposed construction of the school will be having both ordinary and advanced level with capacity of accommodating students between 1000 and 1100 students. The construction package will involve two phases which will both take 12 months. The construction package will involve various facilities as detailed in subsequent sections while the drawings and layout for the proposed facilities can be accessed in the Appendix.

2.4.1.1 Classrooms

The classrooms are designed following Education Bulletin number 1 of 2007 that directs capacity of each classroom level, 30 students for advance and 40 students for ordinary level. However, schedule of materials indicates each classroom will be having capacity of 40 students.

Construction will be undertaken in two phases. The first phase will involve construction of 12 classrooms within six blocks followed by the second phase that will involve the construction of 6 classrooms which will be of 3 different designs (2 classrooms with office, 2 classrooms with toilet and a 2 classrooms block) (Appendix VII). The proposed project development will adhere to the fire and rescue force directives for public premises.

The Education Global Practice Africa Region report prepared by World Bank provides the following directives; Student classroom ratios of 50:1 or less, student to functioning latrine ratio of 25:1 for girls and 30:1 for boys, at least one multipurpose science laboratory, student textbook ratios in mathematics and science subjects of 1:1, teacher: teacher guide availability of 2:1.

2.4.1.2 Laboratories

Education Bulletin number 1 of 2007 explain the capacity and set up of laboratory building for each level is 40 students, The scheduling of materials will adhere the bulletin as the following laboratory rooms will be constructed;

- Physics and geography lab
- Chemistry and biology lab,
- ICT room which is to be constructed in the second phase, and
- Domestic science

Drawings of the following are shown in Appendix VII.

2.4.1.3 Administration blocks

The bulletin indicate for the school having capacity of 1000 student plus need to have not less than 40 teachers excluding other staffs such as school bursar, secretary etc. The administrative building will be constructed as an elevated building and its drawings are obtained in Appendix VII.

2.4.1.4 Toilets

The proposed toilet facility will comprise of one block with 16 holes to be constructed standalone as scheduling shows with estimates of one (1) hole for twenty (20) people, nevertheless, some of classrooms will be having sanitary rooms as designed, dormitory, and dining hall will also be having sanitary rooms. Drawings are obtained in Appendix VII.

The development of sanitary facilities is necessary to ensure the surrounding environment is well-managed and ensuring social well-being and practical operation of the school since human dignity is directly linked to access of safety and hygienic sanitation.

2.4.1.5 Dining hall

The Dining Hall is a pivotal gathering space on School's campus and is emblematic of The Family Boarding School ideal. The school will be having enough dinning space to all students since it is a boarding school thus meal will be served. According to the drawings and materials to be used of the dining hall, it has the capacity of 2000 students and they are obtained in Appendix VII.

2.4.1.6 Staff houses

The teachers' houses are designed to attract teachers out to the countryside, as well as to increase teachers morally to perform their duties unlike if they are coming far from the school. The design and materials to be used consider the staff house to have one (1) master bedroom, two (2) bedrooms/ one (1) master bedroom, three (3) bedrooms with Public toilet, Sitting room/dining, Kitchen and Store as shown in Figure 2-4. Four (4) buildings of the staff houses will be constructed.

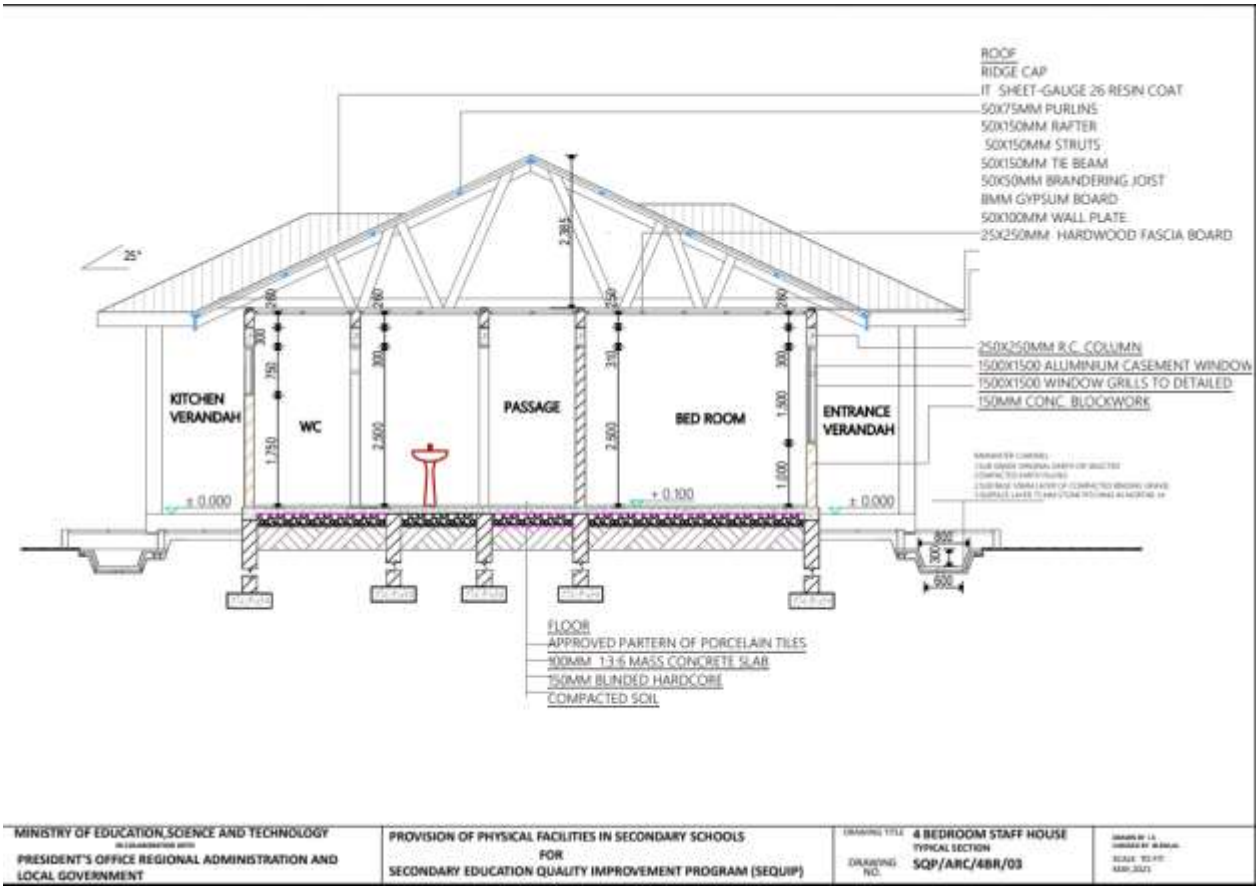


Figure 2-4: Staff-house structure

2.4.1.7 Dormitories

Dormitories are places where students stay. The student housings aim to provide healthy and acoustically pleasant environments for the protection, comfort, and productivity of the students. The dormitories will be designed as per provided to meet the SEQUIP objectives whereas they will consist of 4 buildings having the capacity to accommodate 120 students. The drawings are attained in Appendix VII.

2.4.1.8 Library

The library is important because it affects cultures, it affects innovation, and it affects individuals. Because of all this, library architecture has the responsibility to enhance these effects by providing a knowledge center that is inspirational and conducive to good communication and teaching interactions.

According to drawings, the library to be constructed will accommodate 52 students for readings and the computer learning room will accommodate 8 students as illustrated in Appendix VII.

2.4.1.9 Sick bay

A sick bay provides a dedicated space for students who may feel unwell or require immediate medical attention. It will serve as a primary point of care within the school premises, allowing for timely assessment and treatment of minor illness or injuries. Drawings are attained in Appendix VII.

2.4.1.10 Incinerator

This will provide a safe and efficient mean of disposing waste specifically biomedical waste such as used sanitary pads, medical supplies and other potentially hazardous materials. Drawings attained in Appendix VII.

The proposed project will have two incinerators which will be located far from residential houses and all school facilities. However they will be nearby dormitories as well as toilets.

As per Tanzania Bureau Standards and WB EHS Guidelines, the incinerator shall have two chambers: Primary and secondary chambers. It will meet the following design criteria:

- It shall be capable of destructing waste into ashes by 95%.
- Fuel burners shall be used.
- Emission shall conform to national and international standards
- Design, selection and efficiency of incinerators shall conform to TZS1681, TZS 1682, and TZS 1683 respectively

The incinerator is built on site will use locally available materials (aggregate, sand, cement, Blocks, morram, Refractory fire cement, steel, Fuel pipe Stainless, fuel tape etc.). It has a secondary combustion chamber to reduce harmful emissions.

When residual combustible gases reach the secondary combustion chamber they meet a further supply of air and undergo secondary combustion, raising the temperature even higher, and reducing the gases to stable compounds such as carbon dioxide. The incinerator is loaded at start-up and may then be re-loaded from time to time while in operation.

The incinerator will operate with natural draught, requires fuel to start and takes time to reach operating temperature from cold. It is therefore best operated for long periods, not less than four hours at a time. It is not suitable for operation in a closed room. Smoke will be emitted whenever the loading door is opened. A roof may be fitted to protect the operator from rain, but only minimum walls.

The walls of the incinerator will never become dangerously hot to touch, even during operation, because of the double walls and sand infill between the walls.

Generally, waste incineration at schools focuses on the disposal of non-recyclable and non-compostable waste, such as certain types of plastics, papers, and other materials that cannot be effectively recycled or composted.

It is recommended to install a controlled air incinerator, also known as a controlled air combustion incinerator. This type of incinerator ensures efficient and controlled combustion of waste materials.

The incinerator should have an appropriate capacity to handle the waste generated by 1000 students. A recommended capacity for this school would be a small-scale incinerator with a capacity of approximately 50-100 kilograms per hour.

The quantity of waste to be incinerated will depend on the waste generation rate of the school. Based on an average waste generation rate per student, an estimate of 0.5 kilograms of waste per student per day

can be used. Therefore, the incinerator should have the capacity to handle approximately 500 kilograms to 1000 kilograms of waste per day.

To ensure the safety of the school and nearby residential areas, it is recommended to place the waste incinerator at a sufficient distance from both the school and residential areas.

2.4.1.11 Playgrounds

These hold significant importance for the holistic development of students. They provide a dynamic and interactive space where students can engage in various, physical, cognitive and emotional activities. These will involve football ground, global goal, handball, netball, volleyball, basketball and a running track pitch.

2.4.1.12 Water tanks along with a water tunnel

Additionally, the proposed project intend to construct the two water storage tanks as the separate structures which will be ground tanks and elevated water tanks. For ground water tank, the project will use the reinforced concrete of grade 20 with fcu=20N/mm² at 28 days of age while reinforcements shall be high tensile steel with fy =460N/mm² and the nominal cover to the reinforcements.

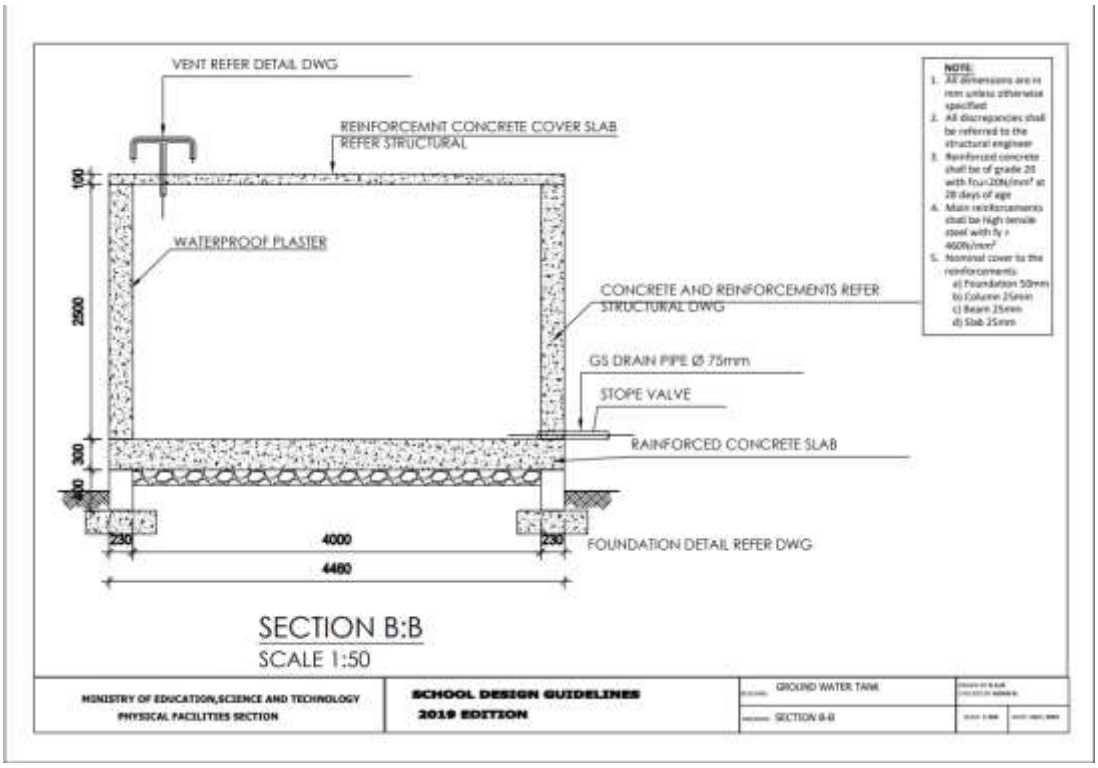
- Foundation 50mm
- Column 25mm
- Beam 25mm
- Slab 25mm

The proposed project opted for overhead (-elevated) tank to allow the natural flow of water by gravity within the entire area of the school. Not only flow but also will be used in fire protection. In designing this elevated tank, the following were observed:

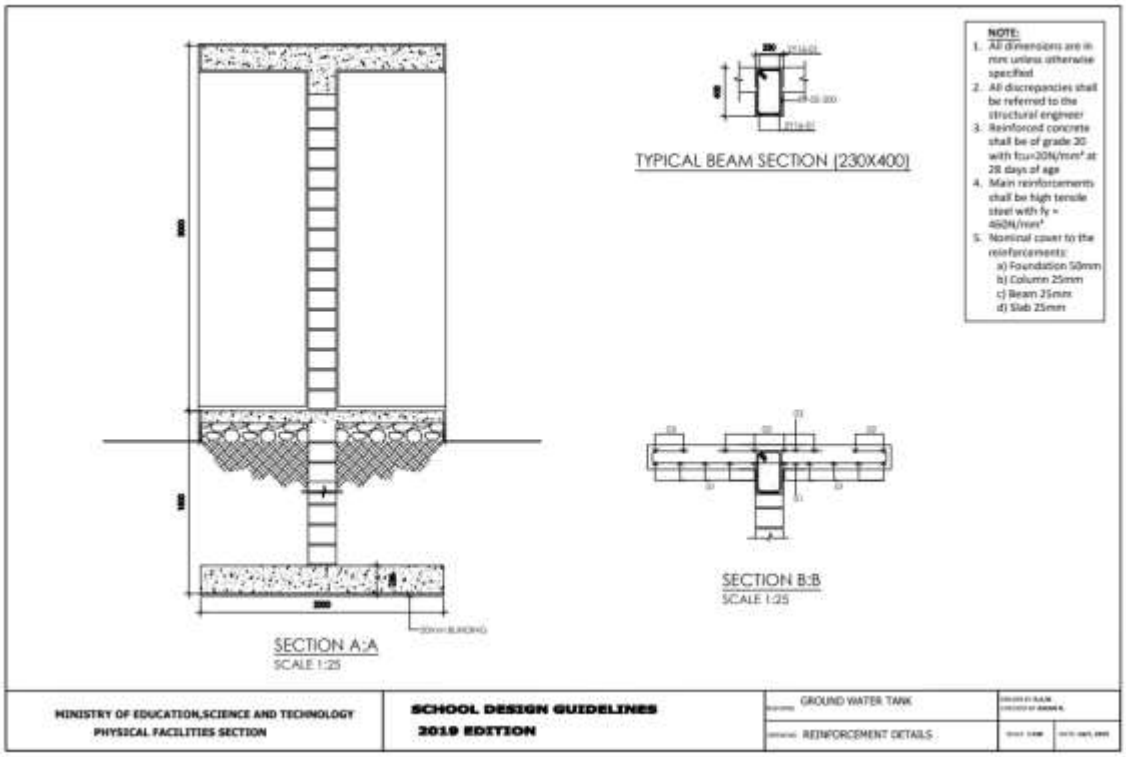
- Thickness of wall
- Free board 0.3m
- Lower slab thickness
- Bottom ring beam
- Size of braces
- Column size
- Number of column
- Staging height
- Height of tank
- Zone factor

Water tunnels of 1050m which are essential components of water supply systems used to connect either elevated water storage tanks or ground-level water storage tanks will be installed. These will serve a crucial function in ensuring a consistent and reliable flow of water to meet the needs of the school.

Figure 2-5, shows the structure for ground tank and elevated tank to be constructed for water supply within the proposed school accordingly, the elevated tank discourage the use of pump in distributing water within the school.



a) Ground water tank structure



b) Elevated water tank structure

Figure 2-5: Water storage tanks designed for the project

Other components that will be constructed within school compounds area are, Manhole and gully trap, Walkway & Paving. Table 2-1 shows the summary of buildings will be constructed.

Table 2-1: Summary of buildings to be constructed

	CONSTRUCTION		
No	**buildings**	**No. of Buildings**	**No. of rooms**
	First construction phase		
1	Building with 2 classrooms	2	4
2	Building with 2 classrooms and one office	3	6
3	Building with 2 classrooms and 2 toilets	1	2
4	Building with Physics laboratory and Geography room	1	2
5	Building with Chemistry and Biology laboratory	1	2
6	Administration Building	1	1
7	Toilet building for students (girls)	1	16
8	Generator Room	1	1
9	Dining Hall	1	1
10	Teacher's house (3 rooms)	1	5
11	Teacher's house (2 in 1)	1	4
12	Dormitories @ 120	5	Cubicle 15
	surrounding activities		
1	Water Tunnel (1050m)	1	1
2	Waste incinerators	1	1
3	Waste incinerators	2	2
4	Underground water storage tanks (32,000 liters)	2	2
5	Water tank (hippo) and its pillars)	2	2
6	Manhole and gully trap	1	
7	Walkway & Paving		
	second construction phase		
1	building with 2 classrooms	2	4
2	Building with 2 classrooms and 1 office,	3	6
3	ICT Room	1	1
4	Library	1	1
5	Master's Houses (3 Rooms)	4	
6	Dormitories @ 120 Students	4	Cubicle 15

Figure 2-6: Various Facilities to be constructed with the General layout in 3D

2.5 Project Activities

The envisaged project activities can be broadly categorized in three phases as listed in Table 2-2.

- Mobilization and Construction
- Operational phase
- Decommissioning phase

Table 2-2: Project activities

Project Phase	Activities
Mobilization Phase	• Bush clearing. • Site levelling • Site marking • Temporary camp/shed for office
Construction phase	• Excavation of trenches for foundation • Alignment of blocks for Foundation • Concrete mixing • Setting up main door frame and other room door frames • Wall construction until window frame base

Project Phase	Activities
	• Setup ventilators for exhaust fans, bathroom ventilators if needed • Slabs formworks for Floors • Bar bending work for beams and roof • Electric pipes setup inside roof • Clear any blockage in the roof pipes • Laying electric pipes in the walls and setup electric boxes • Tiles laying on the floors and bathroom walls • Plastering of roof and walls indoors and outdoors • Finishing outside and plumbing work and tank • Painting • Electric wiring and switches setup • Compound wall/fence • Firefighting system installation • Water drainage system • Air cooling system installation
Operation phase	• Teaching services • Movement within dormitories, classrooms, dinning, laboratory, offices and washrooms • Meeting and Conferences • Health. Safety and security as well as social issues.
Decommissioning phase	• Expansion and maintenance

2.5.1 Mobilization/pre-construction Activities

The mobilization phase of the project entails the following activities:

- Establishment of construction of camps, material and equipment storage areas, materials processing yards, including sanitation facilities. The following activities will be involved during establishment of the camp.
    - Bush clearing.
    - Construction of Material and equipment storage areas
    - Construction of sanitation facilities
    - Installation of electrical infrastructure
    - Installation of water and wastewater infrastructure
- Identification of sources of construction materials (borrow pits and quarry sites),
- Identification of sources of water for domestic and construction works
- Acquisition of building permit from Geita Town Council

2.5.1.1 Materials required during Mobilization Phase

The following materials will be required during mobilization phase of the project:

- Cement, sand, and aggregates for block and concrete works
- Water for general construction works and dust abatement
- Timber, galvanized iron sheets, paints, nails, etc. for roofing.
- Electrical works: conduits, cables, fittings
- Cement, galvanized iron sheets, nails, fence wire, electrical and plumbing utilities will mainly be obtained from either Geita, while sand, aggregates, and timber will be obtained locally.

2.5.1.2 Equipment Required During Mobilization Phase

The major equipment that will be required during mobilization phase of the project include:

- Bull dozers/motor graders, excavators for site clearing, excavation, and grading of the storage facilities construction at site
- Light duty vehicles and trucks for the transport of construction materials, small machines and staff
- Water pumps, block making machines, stationery concrete mixers and trans mixers, etc. for making of blocks and concrete mixes for concrete works
- Electric power generator(s)

2.5.1.3 Waste Generated During Mobilization Phase

Mobilization phase of the project generated waste as shown in Table 2-3.

Table 2-3: Waste likely to be generated During Mobilization Phase

Aspect	Solid Waste	Liquid Waste	Gaseous Waste
Site clearing and excavation	Earth, green cutting	None	Generation of air pollutants (dust)
Construction of foundation(s): block/concrete works	Concrete, blocks, hessian cement bags	Water slurry, wash-down water	None
Construction of the main Storage room	Cement bags, mortar, steel reinforcements, nails, timber, iron sheet waste, etc.	Concrete slurry	Paint
Installation of electrical infrastructure	conduit pipes, cables	None	None
Installation of water infrastructure	PVC and GS pipes	None	None
Labour force	Plastic bottles/ bags, food waste	Sanitary waste	None
Servicing of construction equipment	Used batteries, used tyres, used metals parts, used oil and fuel filters, empty oil drums	Waste oil	None

2.5.1.4 Treatment and Disposal of Waste Generated During Mobilization Phase

The treatment methods for the waste generated during mobilization phase shall be based on re- using, re-cycling, burying, or burning, and on-site treatment.

- During site clearing, top soil and green cutting were disposed of in old borrow pits or other areas approved by the Engineer
- Concrete and cement blocks waste were disposed of in borrow pits during their reinstatement as approved by the Engineer.
- Metal waste such as GS pipes, nails, reinforcement bars, and used equipment parts were disposed of by recycling. They were collected and stored; until enough quantities were obtained before being disposed of by the Contractor. The Engineer approved the metal scraps disposing companies.
- Degradable materials such as paper cement bags and paper boxes were treated on site by

controlled burning.

- Non degradable waste such as plastic, PVC pipes, and plastic bottles were collected and transported and given freely to plastic factories where they will be recycled.
- Used batteries, empty metals drums, used oil filters were disposed of through approved disposing companies.
- Temporary pit latrines were constructed at active mobilization sites (campsites) for the disposal of sanitary waste.

2.5.2 Construction phase

Several physical activities will be involved in this phase. These include site clearing, fencing, excavation, leveling, and construction of the staff houses, classroom, administration blocks, and laboratories, toilets, dining hall, dormitory and other related facilities. During the construction, there will be regular inspections to ensure that the implementation of the project abides by the set regulations as well as conforming to the approved schemes.

The Project Architect and Engineer, the Town Council officials of Geita as well as PO-RALG will undertake the inspections. The development will thus undergo several certifications during the construction process. The construction activities of the proposed project will entail the following:

2.5.2.1 Site preparation

The site is to be secured by screening before starting construction activities; such hoardings will contain construction activities to minimize any spread of dust to the surrounding. Same for removal of vegetation, site clearance will not entail significant works as the exact site for construction does not feature any obstacles.

The site will then be laid out to identify the exact locations of the proposed units. The corner points and edges of the houses will be established accordingly. The marking out will use stakes and strings as well as chalk lines.

2.5.2.2 Excavation and earth works

The main method of excavation to be used is trenching in order to accommodate the buildings' foundations/footing. The excavated soil material will be disposed off-site at designated sites. No major rock obstruction is registered on site to warrant use of explosives.

Going by existing developments in the area, the load bearing capacity of the underlying soil is adequate and safe to support the building foundation without additional stabilization.

2.5.2.3 Construction of foundation

The proposed development has detached footing, reinforced concrete, designed to structural engineer's details. The depth of the foundation will be established to structural engineers specification based on the test pit results. The foundation walling is made of load bearing stone 200 mm wide. The footings will be molded using customer built timber formwork fabricated on site. The steel reinforcement for strip foundations will be cut and fabricated on site.

The concrete is also to be mixed on site. All the foundation works are to be constructed to structural engineers detail and approval. Minimal amount of ground water is expected to accumulate below the ground surface thus installation of sub-surface drainage system will not be required. However, damp proof canvass and dump proof membrane are recommended. The area enclosed by the foundation walls is to be backfilled with compacted hardcore. Termite treatment is also to be given to the foundation.

2.5.2.4 Construction of super structure

2.5.2.4.1 Ground Floor Slab

The ground floor reinforced concrete slab, 150mm thick, shall be cast overlying compacted hardcore and ground. The concrete is to be poured and finished as necessary through screening to level to top surface and remove excess concrete. A vibrator will also be used during the casting of the slab.

2.5.2.4.2 Walls

The buildings will utilize load bearing masonry walls. All external and other load bearing walls measure 200 mm thick. The masonry for the external walls is to be dressed to provide a pleasant view from the outside.

2.5.2.4.3 Roofing

A trussed conventional timber structure frame shall be used to erect the roof based on a combination of hip and gable roof structure. The roof cover shall be made of DECRA metal tiles, or its equivalent, laid on timber structure.

2.5.2.4.4 Internal Finishes

- Floors – The floor to the main spaces shall be finished in tiles and patches of granoin wet areas.
- Walls – All walls will be finished in plaster and paint.
- Ceilings –The ceiling will be finished in plaster and paint with timber molding in selected areas to design specifications.

2.5.2.4.5 External Finishes

External walls shall be of dressed masonry stone with any rendered surfaces painted or applied with brick facing. All exposed steel or timber shall be painted

2.5.2.5 Installation of internal / utility services

2.5.2.5.1 Plumbing System

- Water Supply

The proposed buildings will be supplied with water from GEUWASA and any other reliable source. Cold water supply system will be installed in the project.

- Waste Water Drainage

The wastewater drainage system consists of drain pipes. These pipes also incorporate gully traps, inspection chambers, and other assorted fittings. Except for cooling fans, the development does not provide for air conditioning installations. The drain pipes will be directed to the septic tank, soak away pit and manholes that will be constructed by the council.

2.5.2.5.2 Electrical System

The installation of electrical wiring and fittings will mainly cater for lighting and appliances. The installation will cater the computerized system is the computers room. All installations shall be to TANESCO-Geita Regional Office approval. There is need for consideration for solar energy.

2.5.2.6 Development of external works

2.5.2.6.1 Driveway, Walkway and Parking

Paved driveways and walkways will be constructed to give motor vehicle and pedestrian traffic proper surface on which to move. Any paving will be made of 50 mm thick standard paving blocks.

2.5.2.6.2 Water Connection

The development will be connected to the water supply networks by GEUWASA. At the same time, during the operation phase, it is recommended that roof catchments be installed to harvest rainwater to complement to the existent water supplies to deal with potential cases of water shortage, if they occur

2.5.2.6.3 Sewerage and Foul Water Drainage

The area has no sewer system. A properly reticulated sewer system (septic tank) will be laid down covering the entire development to the recommended capacity and standards as the designs can be accessed from the council's officials and the periodic and routine inspection and maintenance of the tank and its environs will be maintained.

2.5.2.6.4 Surface Water Drainage

Most of the rain water will be absorbed into the soil during the construction phase. Appropriate drainage systems will be put in place to handle the run-off/storm water from the site during the operation of the project. During operation phase, run-off/storm water will be directed to the main drainage system

2.5.3 Solid Waste Disposal

The construction waste will be collected for final disposal at Lukirini dumpsite. A private company may be employed to deal with solid waste management.

2.5.4 Landscaping

This will mainly entail small works in paving, flower beds, and lawns. The top soil will be treated with manure if necessary to encourage faster and improved plant growth. The perimeter gardens will be planted with continuous bed of grass lawn and provide aesthetically appealing scene.

2.5.4.1 Perimeter Fence

A concrete block perimeter fence will be built to surround the school and will be complemented with electric fence. The final wall will be finished in key dressing.

2.5.4.2 Clearing of Site

The site will be given a general cleaning, and any left-over material and debris will be carted away to designated District disposal sites. Similarly, any tools and equipment still on site will be removed.

2.5.5 Completion Phase and Final Inspection

During this stage, finalization activities of the project will be undertaken. These include; internal finishes of the school buildings, completion of the statutory inspections and certifications, installation of utility meters and issuance of completion /occupation certificates by the District Council.

Final inspection will be undertaken to ensure that the project has been done properly and according to the terms of the contract. The inspection team will include PO-RALG, the architect, the engineer and the contractor or their representatives. The inspection team shall prepare a punch list indicating any items that will need to be corrected including final verification for environmental and social issues.

The list will be given to the contractor for necessary action within a specified period. If no defects are noted, the job will officially be completed and a certificate of occupancy will subsequently be issued. In issuing the certificate of occupancy, the inspection will take into account health and safety considerations of intended occupants.

It is important to note that the Council shall issue the occupation certificate on completion of the civil works. The certificates are issued after PO-RALG building and health inspectors inspect and certify the buildings to ensure compliance with approved plans. This is done to certify the building fit for school operation and occupancy.

2.5.6 Materials Required During Construction Phase

During the project construction, the following materials (Table 2-4) will be required, these are few of the materials that will be used but other materials and their quantities for each school facility that will be constructed are provided under the website of PO-RALG:

Table 2-4: Materials required During Construction Phase

SN	Material	Usage	Possible Source
1.	Ordinary Portland Cement (OPC) and Pozollana Portland Cement (PPC)	For construction purposes.	Twiga cement (Dar es salaam), Tanga cement (Tanga), and Mbeya cement (Mbeya)
2.	Sand	Production of mortar and general concrete works	Stone crusher dust and sand pits (to be established by contractor)
3.	Crushed aggregate	Concrete works (Structural works) and construction	Locally
4.	Steel reinforcement bars	Reinforced concrete works construction of structures,	Geita /imported
5.	Steel shutters and form works	Concrete works	Geita

SN	Material	Usage	Possible Source
6.	Soft timber	Production of timber formworks and shutters	Locally
7.	Nails	Nails for fixing timber form works	Geita
8	Water	Drinking, concrete works, dust suppression	GEUWASA and surrounding boreholes
9.	Electrical (Single fluorescent fitting Complete, LED Philips, Main switch 4way, Double switch socket, Earth wires, conduit coupling and pipes, Elbow, Junction box etc.	Electrical wiring and installations.	Geita, Mwanza, Dar es Salaam and Dodoma.

2.5.7 Waste Generated During Construction Phase

The waste generated during construction phase of the project resulted from operation of construction and equipment maintenance. The waste that will be generated during construction phase of the project are shown in Table 2-5.

The estimated amount of waste to be generated within a week is 856kg which includes all waste such as Paper, Litter, Paper litter, Plastic bottles/bags, Aluminum cans, Food wastes and Plastic and glass (containers), used tyre, metal (used parts), plastic and cable parts, used lead-acid batteries which will be disposed as per WB EHS Guideline and Tanzanian Regulations.

Table 2-5: Waste generated during cconstruction phase

Aspect	Solid Waste	Liquid Waste	Gaseous Waste	Hazardous Waste
Operations of On-site				
	Paper	Sanitary waste	-	Paint cans
	Litter	-	-	Solvent containers
	Packaging waste	-	-	E-waste
	Paper litter	Sanitary waste	-	-
	Plastic bottles/bags	-	-	-
	Aluminium cans	-	-	-
	Food waste	-		
	Construction debris			Biohazard waste (medical waste)
Machinery and equipment Maintenance				
		Waste oil and grease, battery acid (dilute] sulphur ic acid)	-	Gases that are compressed, liquefied, or dissolved under Pressure may b e hazardous. Flammable liquids including oil, grease and petroleum compounds are also hazardous. Used lead-acid batteries, plastic containers

Aspect	Solid Waste	Liquid Waste	Gaseous Waste	Hazardous Waste
	-	Lubricant, coolants (radiator fluid), hydraulic fluid, waste water)	-	Lubricants, hydraulic fluid

2.5.7.1 Treatment and Disposal of Waste Generated During Construction Phase

All waste generated at the project site which do not require special handling (bio-degradable waste) will be collected by waste trucks and disposed of at Lukirini dumpsite. The other waste which require special handling (non-biodegradable waste) are to be handled by the contractor.

2.5.8 Operation phase

Administrative tasks including students' registration, staffing, infrastructure maintenance and coordination with other education authorities will contribute to increasing total enrolment in secondary school by 1.8 million students and increase the number of girls graduating from both secondary schools and alternative secondary education pathways.

2.5.8.1 Material and equipment required during operation phase

During school operation, various materials and equipment are needed in supporting the educational, administration and residential aspects of the school including but not limited to;

- Classroom supplies such as textbooks, notebooks, writing materials (pens, pencils and erasers), rulers, calculators, blackboards, chalks, education posters and various teaching aids essential for classroom instruction and student learning.
- Laboratory equipment for science subjects such as microscopes, test tubes, beakers, Bunsen burners, lab coats and other essential materials are required to facilitate practical learning.
- Sports Equipment such as balls, nets, goal posts and sports uniform to support physical activities.
- Dormitory furnishings such as beds, mattresses, bed sheets wardrobes, and appropriate lighting fixtures to support students' accommodation.
- Dining hall supplies such as tables, chairs, serving utensils, plates, bowls, cutlery and kitchen appliances will be needed to facilitate meals for the students and staff.
- Library resources such as books, reference materials, educational magazines and comfortable seating is important for students' academic and personal development.
- IT infrastructure such as computers, printers, scanners, projectors, internet connectivity and software applications are necessary for administrative tasks, computer classes and accessing educational resources.
- Maintenance and cleaning supplies such as blooms, mops, cleaning agents, trash cans, gardening tools and maintenance equipment to ensure cleanliness of the school premises.
- Security system, emergency response equipment such as fire extinguishers and alarm systems may be necessary to ensure safety within the school premises.
- Sick bay supplies such as medical supplies, medications, first aid kits, diagnostic equipment, furniture and amenities for the aim of meeting the health and safety needs of the students and staff.

For chemistry and biology laboratories, various chemicals and reagents are used to perform experiments and scientific investigations including;

- Acids such as hydrochloric acid, sulfuric acid, nitric acid and acetic acid used for pH adjustments, titrations and chemical reactions.

- Bases such as sodium hydroxide, potassium hydroxide, and ammonium hydroxide used for pH adjustments, neutralizations and precipitation reactions.
- Solvents such as water, ethanol, acetone and methanol used for dissolving substances, cleaning equipment and preparing solutions.
- Indicators such as phenolphthalein, bromothymol blue, and litmus paper used in determining acidity or alkalinity of a solution.
- Enzymes such as amylase, lipase and catalase used in biology laboratories for studying enzymatic reactions and biochemical processes.
- Stains and dyes such as methylene blue, iodine and eosin used to visualize cells, tissues and specific structures in biological samples.
- Various salts such as sodium chloride, potassium nitrate and calcium carbonate used in experiments and preparation of solutions.
- Oxidizing and reducing agents such as hydrogen peroxide, potassium permanganate and sodium metabisulfite used in chemical reactions.
- Preservatives, chemicals such as formaldehyde and ethanol used for biological specimen to prevent decay and microbial growth.
- Culture Media Components like agar, peptone, and nutrient broth used for preparing culture media for micro-organisms growth.

2.5.8.2 Wastes generated during operation phase

The waste generated during the operation phase of the project is a result of different activities taking place during the operational phase of the project. The waste generated during the project's operation phase are;

- Solid waste from the dining hall, kitchen, laboratories, classroom, office, dormitories etc.
- liquid waste from sanitary facilities, laboratories, canteens, and kitchens
- Hazardous waste such as used sanitary pads, bio-medical waste, damaged computers, expired chemicals along with used chemical containers

The dormitories, office, classroom, dining hall, laboratories and resting areas will be supplied with dustbins, complete with waste separation option. The storage capacity will be one week and waste will then be collected for final disposal at Lukirini dumpsite. A private company may be employed to deal with solid waste management.

2.5.8.3 Labour requirement during operation phase

Both skilled and unskilled labor are required in the operation phase of the project, which will include:

- Teachers
- Librarians
- Laboratory technician
- Security officer

2.5.8.4 Treatment and Disposal of Waste Generated During Operation Phase

Solid waste management;

For solid waste management, the school can adopt use of the incinerator for management of waste like papers, packaging materials from offices, classrooms, school compounds, and dormitories apart from using it only for biomedical waste from the sick bay and used sanitary pads. Food waste from kitchen and dining halls can be used as manure for variety of plantations that will be present during school operation. For waste

from laboratories such as expired chemicals, chemical containers, damaged computer parts, the school heads will segregate the waste from other non-hazardous waste and contact authorized waste management authorities for collection and proper disposal.

Liquid waste management

Waste water drainage systems from all facilities within the school premises will be connected directly to the septic tanks though waste water drainage systems from laboratories specifically the chemistry and biology laboratories should be installed separately to allow treatment before being connected to the septic tanks. These septic tanks will be designed by the Geita Town Council officials whereas the designs are and the construction costs will also be handled by the council itself.

2.5.9 Decommissioning Phase

After completion of construction, all the utilities that were used shall be reverted to the Municipal Director who will decide on their future use. The main activities during demobilization phase will engross the following:

- Collection and disposal of storage facilities such as pallets, packing, boxes
- Collection and disposal of construction materials and waste such as waste oil, sewage, solid waste (plastics, wood, metal, papers, etc.) at the workshop, site office etc. to authorized dumpsite
- Restoration of material borrows areas to safer condition.

2.5.9.1 Materials required During Demobilization Phase

Materials required during demobilization phase will include fuel for the operation of equipment, soils and tree seedlings for reinstatement of borrow pits. During this phase, labor, water, and energy will also be required.

2.5.9.2 Equipment Required During Demobilization Phase

The equipment required during demobilization phase will include vehicles and trucks for transport of waste.

2.5.9.3 Waste Generated During Demobilization *Phase*

The following waste will be generated during demobilization phase of the project:

- Hazardous waste such as used lubricants (oil and grease), empty plastic bottles, etc.
- Plastic and paper packing
- Used equipment parts

2.5.9.4 Treatment and Disposal of Waste Generated During Demobilization Phase

The treatment methods for the waste generated during construction phase will depend on whether they are degradable, non-degradable, hazardous, or non-hazardous. Depending on the nature of the waste, the waste will either be re-used, re-cycled, buried, or burnt**.**

2.5.9.5 Lifespan of the project

The Project Lifecycle is the sequence of phases through which a project progresses. It includes initiation, planning, execution, and closure therefore this project will take 12 months for both the first and second phase. Nevertheless, with reference to construction schedule and material life span such as steel bricks the project life time will be 50 years followed by maintenance.

2.5.9.6 Decommissioning of Individual Components of the Project

Individual components of the project may be rendered redundant due to wear and tear or become obsolete due to technological advancement.

These shall be removed after an environmental audit is conducted and a device appropriate environmentally friendly way (Environmental Management Plan, EMP) to deal with them. Emphasis shall be on repairing so that parts can be reused or recycled of materials from defunct components to salvage important metals.

2.6 Environmental and Social Management Framework

The ESF instruments that have been prepared for SEQUIP incorporate measures for project site Selection and to ensure designs and school construction align with the ESF requirements.

It has been agreed that civil works will follow building standards acceptable to the World Bank and required under the ESF; taking into account structural safety, universal access, changes in the standard drawings, water source availability and quality, efficient use of materials (wood) to reduce pressure on natural resources, Water and Sanitation for Health (WASH) and solid waste management at the schools, among other risks identified as part of the due diligence process.

The building standards acceptable to the World Bank typically include internationally recognized codes and standards such as:

- International Building Code (IBC): A comprehensive set of building regulations that covers various aspects of construction, including structural safety, fire protection, accessibility, and energy efficiency.
- International Fire Code (IFC): Provides requirements for fire prevention, fire protection systems, and emergency planning to ensure the safety of occupants in buildings.
- International Plumbing Code (IPC): Sets standards for plumbing systems, including water supply, drainage, and sanitation, to ensure safe and efficient water management.
- International Energy Conservation Code (IECC): Establishes energy efficiency requirements for buildings, promoting sustainable construction practices and reducing energy consumption.
- Universal Design Standards: Guidelines that promote accessibility and inclusivity in buildings, ensuring that people of all abilities can access and use the facilities comfortably.

Site selection for school construction is very important to avoid possible direct and indirect environmental and social impacts and lack of water sources for construction and during operation.

2.6.1 Health and Safety

As the ESMF directives, the campaign has been conducted with the utmost regards for occupational health and safety requirements of local authorities, management system, and of recognized industry standards. As a rule, all activities that present a risk to employees, contractors, and or neighboring communities are planned, and controls are implemented to limit exposure.

In addition, a Permit to Work system is in effect for risk-specific activities that is working at height. All EHS incidents, observations, near misses, etc. will be reported and investigated to prevent recurrence during construction phase and the proper way of reporting and registration during the operation phase will be employed as well. Regular emergency evacuation drills will be connected to test the training and response capacity of the workforce at the site during all phases of the project.

Occupational health and safety issues for further consideration in multi-storey office building construction and operation phases includes Fire and collapse and Slippery

2.6.1.1 Fire

The project shall be designed, constructed, and operated according to standards for the prevention and control of fire hazards.

The most effective way of preventing fires is to avoid any source of fires inside the building, store reasonable weight of equipment and instruments at the top floor of the building such as water storage tanks should be designed according to the construction standards and considering building materials such as fire detector alarms should be placed in all buildings.

2.6.1.2 Collapse.

The result analysis showed that the major factors responsible for building collapse are usage of substandard building materials, non-involvement of relevant and qualified professionals, defective design, and poor maintenance culture Poor Workmanship/Supervision Natural Occurrences.

The remedies to mitigate the problems are but not limited to The professional bodies which through their government regulatory bodies, need to ensure effective monitoring to control quackery and ensure violators are punished, building and construction permit should also be adhered and lastly ensuring the use of professional people during construction etc.

2.7 Project Associated Facilities

ESIA studies vary in scope and type of analysis, depending on the characteristics of the proposed project. In doing so, each element of a project should be analyzed for its potential to affect the environment and/or society during each phase of the project (including construction, operation, and decommissioning).

ESIAs address a project's environmental and social costs and benefits, including an appraisal of the economic implications of the proposed project. The ESIA should consider the project as designed, in addition to potential alternative options (including that of no action).

In addition to the direct effects outlined above, the possible interactions between different environmental components (indirect effects) should also be considered, together with the impacts that could occur in conjunction with other activities taking place in the near vicinity at the same time (cumulative effects). The construction of school in Geita region-Geita Town Council has identified the following activities in the category of associated facilities.

- Utilities (water and electricity)
- Access roads
- Water channels for storm water
- Car parking

2.7.1 Access Roads

The development of access roads is necessary providing access to staff and students within the school during operation. Access route design must consider several factors, including existing ground strength, expected weather condition.

2.7.2 Utilities Systems (Water and Energy)

2.7.2.1 Power Supply

The proposed project will use electricity from the National Grid (TANESCO), whereas the town council is responsible for pulling the electrical wires to the respective project site and installation within the school premises. The power consumption will vary depending on the school operational hours, type of lighting and equipment uses, and energy efficient practices implemented thus its challenging to provide an estimate of power to be used during the construction and operation phase of the project.

2.7.2.2 Water Supply

Water will be required for construction activities such as concrete works, earthworks, lying of some of the pavement layers, dust suppression, as well as for domestic purposes at the camps. Water for construction works will be obtained from GEUWASA and available boreholes like the one at Waja School.

The amount of water required during construction of the project is estimated to be 5500litres per day and during operation is yet to be established though according to the World Health Organization (WHO), water requirement for a person for domestic purposes including drinking, cooking, personal hygiene and cleaning is about 50-100 liters per day. Thus, the actual water usage quantity will vary based on school specific needs and practices.

2.7.3 Water channels for storm water

The development of water channels for storm water is necessary preventing water accumulation within the school compounds and easier movement and prevent water accumulation within the school premises.

2.7.4 Parking area

The development of parking areas is necessary for the project implementation to avoid congestion problems for inhabitants of neighboring properties and ensure safety issues for visitors and staff.

2.8 Project Cost

Total Project Cost is four billion Tanzanian shillings.

2.9 Manpower

Both skilled and unskilled labor are required in the mobilization and construction phase of the project, which will include: Civil Engineers for construction activities and Manual workers are needed for caring sand, gravels, cement, bricks and other related activities at the project site.

During operation phase of the proposed school the following will be recruited for daily activities in order to run the school smoothly; teachers, librarians, laboratory technicians, Cooks, Matrons, Security officers and; other staff for various activities required for operation of a boarding school.

CHAPTER THREE

3 POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

3.1 Introduction

The objective of this chapter is to describe the policy, legal and administrative framework within which the project takes place and identify any laws and regulations that pertain to environmental and social matters relevant to the project.

This includes regulations about environmental and/or social impact assessments to which the project must adhere as well as laws implementing host country obligations under international law. Explain the requirements of any co-financing partners, if applicable. Where pertinent, take into account legal frameworks for promoting gender equality. Flag any areas where the project might fall short on compliance.

3.2 The Constitution of Tanzania, 1977-1995 (as revised)

The Constitution of the United Republic of Tanzania 1977 - 1995 (revised 1997) recognizes the basic rights and equality entitled, without any discrimination, protection, and equality of all persons before the law. The United Republic of Tanzania is committed to the conservation of the country's natural environment as is evident through the Constitution and various Mission Statements.

Article 21 of the Constitution reads:

- "Take part in matters related to governance of the country, every citizen of the United Republic is entitled to take part in matters pertaining to the governance of the country, either directly or through representatives freely elected by the people, in conformity with the procedures laid down by, or in accordance with, the law.
- "Every citizen has the right and the freedom to participate fully in the process leading to the decision on matters affecting him, his well-being or the nation."
- Article 24 of the Constitution reads:
- "Subject to the provisions of the relevant laws of the land, every person is entitled to own property, and has a right to the protection of his property held in accordance with law."
- Article 27 of the Constitution reads:
- "Every person has the duty to protect the natural resources of the United Republic, the property of the state authority, all property collectively owned by the people, and also to respect another person's property."
- "All persons shall be required by law to safeguard the property of the state authority and all property collectively owned by the people, to combat all forms of waste and squander, and to manage the national economy assiduously with the attitude of people who are masters of the destiny of their nation."

3.3 National Development Vision 2025 and National Five-Year Development Plan 2021/22–2025/26

The Tanzania National Development Vision of 2025 outlines the long-term development goals and aspirations of the country. While the specific details of the Vision may vary, as the Vision evolves over time, we can explore how a project of girl's school construction in whole of Tanzania aligns with the broader principles and objectives outlined in the Vision. Here are some key points to consider:

1. Quality Education: The National Development Vision of 2025 emphasizes the importance of quality education for all Tanzanians. Constructing a girls' school aligns with this objective by providing access to quality education specifically for girls. The project contributes to the overall goal of

ensuring inclusive and equitable education, fostering human capital development, and equipping girls with the knowledge and skills necessary to contribute to Tanzania's development.

2. Gender Equality and Empowerment: The National Development Vision recognizes the importance of gender equality and women's empowerment as crucial components of development. A project of constructing a girls' school directly aligns with this objective by promoting gender equality in education and providing opportunities for girls to access quality education. The project helps to bridge gender gaps, empowers girls with knowledge and skills, and contributes to their social and economic empowerment.
3. Human Capital Development: The National Development Vision emphasizes the development of human capital as a key driver of sustainable development. Constructing a girls' school contributes to this objective by investing in the education and development of girls. By providing them with quality education, the project enhances their knowledge, skills, and capabilities, thereby contributing to the development of a skilled and productive workforce that can drive Tanzania's socio-economic growth.
4. Inclusive Development: The National Development Vision emphasizes the importance of inclusive development that leaves no one behind. A project of constructing a girls' school aligns with this objective by ensuring that girls, who may face social and economic barriers to education, are included and provided with equal opportunities. By promoting access to education for all, the project contributes to reducing inequalities and fostering inclusive development in Tanzania.
5. Sustainable Development: The National Development Vision underscores the need for sustainable development practices to ensure long-term socio-economic and environmental sustainability. A project of constructing a girls' school can incorporate sustainable design principles, such as energy-efficient infrastructure, renewable energy sources, and environmentally friendly construction materials. Additionally, the project can integrate sustainability concepts into the school curriculum, promoting environmental awareness and stewardship among students.

3.4 Relevant Policies

3.4.1 National Environmental Policy (2021)

The overarching governing Tanzania's environmental management are the National Environmental Policy (NEP) of 2021 and the Environmental Management Act (EMA) of 2004.

This Policy is a supreme national framework for environmental management in the country. It recognizes the role of sectoral policies in pursuit of effective environmental conservation and sustainable socio-economic development. In view of that, the envisioned achievements of this Policy depend on mainstreaming and implementation of relevant environmental measures in the respective sectoral policies.

The Overall Objective of this policy is to provide a national framework for guiding harmonized and coordinated environmental management for the improvement of the welfare of present and future generations. The project will adhere to this policy as the policy will provide insights through all project phases regarding environmental considerations.

3.4.2 Education and Training Policy 2014

This Education and Training Policy of 2014 is the result of the revitalization and finally the cancellation of the Education and Training Policy (1995), Policy on Vocational Education and Training (1996), Policy on National Higher Education (1999) and Information Technology Policy and Communication for Primary Education (2007). The vision of this policy is having an educated Tanzanian with knowledge, skills, competencies, abilities and positive attitudes to be able to contribute in bringing about the development of the Nation. The policy focuses on various aspects of education, including access, equity, quality, and

relevance whereas implementation of this project will assist in supporting the policy's goals. Here are some points to consider;

1. Access and Equity: The policy emphasizes the need to ensure access to education for all, regardless of gender or socio-economic background. By constructing a girls' school, the project aims to address the gender disparity in education and provide increased access to quality education specifically for girls. This aligns with the policy's goal of promoting equity and inclusivity.

2. Gender Equality: The policy highlights the importance of promoting gender equality in education. The project's focus on constructing a girls' school directly addresses this aspect by providing girls with an environment that encourages their participation and supports their educational needs. It contributes to creating equal opportunities for girls in accessing education.

3. Quality Education: The policy emphasizes the provision of quality education that meets national and international standards. The project should ensure that the girls' school meets the required infrastructure standards, including classrooms, libraries, laboratories, and other facilities, to deliver quality education. Adequate teaching and learning resources, trained teachers, and an appropriate curriculum should be considered to conform to the policy's objective of quality education.

4. Inclusive Education: While the project focuses on girls' education, it should also consider the broader objective of inclusive education. This means ensuring that girls with disabilities, girls from marginalized communities, and other vulnerable groups have equal opportunities to access education in the school. Creating an inclusive environment that accommodates diverse needs conforms to the policy's commitment to inclusivity.

5. Community Engagement: The policy emphasizes the importance of involving the community in education. The project will engage relevant stakeholders, such as parents, local leaders, and community members, to ensure their participation and support. Collaboration with the community can help address cultural, social, and economic factors that may affect girls' education and contribute to the sustainability of the project.

3.4.3 The National Research and Development Policy, 2010

The Tanzania National Research and Development Policy of 2010 primarily focuses on promoting research and development activities to drive socio-economic development in the country. We can analyze how such a project aligns with the broader objectives and principles outlined in the policy. Here are some key points to consider:

1. Human Capital Development: The policy emphasizes the importance of human capital development through research and education. By constructing a girls' school, the project contributes to enhancing human capital by providing girls with access to quality education and empowering them with knowledge and skills. This aligns with the policy's objective of investing in education and human resource development.

2. Gender Equality and Empowerment: The policy highlights the need for gender equality and women's empowerment. The construction of a girls' school directly supports these objectives by providing a conducive learning environment that addresses gender disparities in education. It empowers girls by giving those equal opportunities to access education, develop their potential, and contribute to the country's development.

3. Research and Innovation: The policy encourages research and innovation to drive development in various sectors. While the construction of a girls' school may not directly involve research activities, the project can support research indirectly. For example, it can serve as a platform for educational

research and pilot innovative approaches to improve girls' education, which can contribute to the overall research and development agenda of the country.

4. Socio-economic Development: The policy aims to foster socio-economic development through research, innovation, and technology transfer. By constructing a girls' school, the project contributes to long-term socio-economic development by investing in human capital and promoting gender equality. Educated girls are more likely to become active participants in the workforce, which can lead to economic growth and poverty reduction.

3.4.4 ICT Policy for Basic Education 2007

The achievement of the objectives of Tanzania's education policies and education development programs. As stated in the education policy of 1995, the overall aims of education in Tanzania are, among other things:

"*To promote the acquisition and appropriate use of literary, social, scientific, vocational, technological, professional and other forms of knowledge, skills and understanding for the development and improvement of man and society*."

In 2001, the education sector development programme (ESDP) was launched, to realize the objectives of education policies by addressing critical issues, including ICT. The main objectives of this programme include: to decentralize management of educational institutions; to improve the quality of education, both formal and non-formal; to promote access and equity to basic education; and to promote science and technology. Special mention is made of the need to improve and expand girls' education, to ensure access to education by special social and cultural groups, to give appropriate education to children with disabilities, and to provide education facilities to disadvantaged areas.

3.4.5 National Biotechnology Policy, 2020

The Tanzania National Biotechnology Policy of 2010 primarily focuses on regulating and promoting the safe and responsible use of biotechnology for the country's socio-economic development. We can explore how such a project aligns with the broader principles and objectives outlined in the policy. Here are some key points to consider:

- Capacity Building: The biotechnology policy emphasizes the importance of building capacity in biotechnology research and development. The project will contribute to capacity building indirectly by providing a conducive educational environment by investing in the education of girls, including subjects related to science, technology, and biology, thus fostering interest and potential in biotechnology and related fields.
- Sustainable Development: The biotechnology policy underscores the need for sustainable development through the responsible use of biotechnology. The project will adopt environmentally conscious practices during the construction phase by including use of sustainable building materials, implementing energy-efficient infrastructure, and considering waste management practices. By incorporating sustainable practices, the project will align with the broader principles of sustainable development advocated in the policy.

3.4.6 National Gender Policy, 2000

The Tanzania National Gender Policy of 2000 aims to promote gender equality and women's empowerment in all aspects of society, including education. A project of constructing a girls' school in Tanzania aligns with the key principles and objectives of this policy in the following ways:

1. Access to Education: The Gender Policy emphasizes the importance of providing equal access to education for girls. By constructing a girls' school, the project directly addresses the need for inclusive education by creating a safe and supportive learning environment specifically tailored to the needs of girls. This promotes equal access to quality education and supports the policy's objective of gender equality in education.

2. Empowering Girls: The Gender Policy highlights the importance of empowering girls through education. By constructing a girls' school, the project provides an environment that promotes the empowerment of girls by fostering their self-esteem, confidence, leadership skills, and educational attainment. This aligns with the policy's goal of empowering girls to become active participants in society and decision-making processes.

3. Elimination of Gender-Based Violence: The Gender Policy emphasizes the need to eliminate gender-based violence, including violence against girls in educational institutions. By constructing a girls' school, the project can prioritize creating a safe and secure environment that protects girls from any form of violence, harassment, or discrimination. This aligns with the policy's objective of ensuring the safety and well-being of girls.

4. Community Engagement and Awareness: The Gender Policy encourages community engagement and awareness on gender issues. The project will involve engaging community stakeholders, parents, and local leaders to promote the importance of girls' education and gender equality. By fostering community support and raising awareness about gender-related challenges and opportunities, the project aligns with the policy's goal of promoting gender equity in society.

3.4.7 Cultural Policy, 1997

The Tanzania National Cultural Policy of 1997 aims to preserve, promote, and develop Tanzanian culture while ensuring that cultural diversity is respected and protected. We can analyze how such a project aligns with the broader principles and objectives outlined in the cultural policy by considering the following:

- Community Engagement: The cultural policy encourages community participation and engagement in cultural activities. The project will involve the local community, cultural experts, and traditional leaders in the planning and implementation process. This collaboration will ensure that the school's activities and programs respect and incorporate local cultural practices and knowledge fostering community ownership and promoting the transmission of cultural values and traditions.

3.4.8 The Wildlife Policy of Tanzania, 2007

The Tanzania National Wildlife Policy of 2007 primarily focuses on the conservation, management, and sustainable use of wildlife and their habitats. The policy puts emphasis on environmental conservation, including protection of habitats and biodiversity. When constructing a girls' school, it will be essential to consider the environmental impact and adopt sustainable practices such as including site selection that minimizes disruption to wildlife habitats, implementing erosion control measures, and incorporating green building techniques to reduce the ecological footprint of the project.

3.4.9 Antiquities Policy of 2008

The Tanzania National Antiquities Policy of 2008 focuses on the preservation, protection, and management of the country's archaeological and historical heritage. The policy points out cultural heritage protection where during project implementation, it is important to ensure that the project does not encroach upon or

disturb any known or potential archaeological sites or cultural heritage locations. Prior site surveys and assessments will be conducted to identify and avoid any potential impacts on cultural heritage resources.

3.4.10 National Forest Policy, 1998

The overall goal of the National Forest Policy (1998) is to enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her natural resources for the benefit of present and future generations. We can explore how such a project aligns with the broader principles and objectives outlined in the forest policy. Here are some key points to consider:

- The forest policy emphasizes the importance of environmental conservation, including the protection and sustainable use of forest resources. When constructing a girls' school, it will be crucial to consider the environmental impact of the project by adopting sustainable construction practices, such as using certified sustainable building materials, minimizing deforestation or habitat destruction, and incorporating energy-efficient and environmentally friendly.
- The forest policy highlights the need for reforestation and afforestation efforts to increase forest cover and restore degraded areas. The project can align with this objective by incorporating tree planting programs within the school compound or surrounding areas. This will contribute to restoring the local ecosystem, enhancing biodiversity, and promoting a culture of environmental stewardship among the students.
- The forest policy aims to ensure that forest resources contribute to sustainable development. The project of constructing a girls' school can indirectly contribute to this goal by empowering girls through education. Educated girls are more likely to become environmentally conscious citizens who can contribute to sustainable practices, promote environmental conservation in their communities, and make informed decisions related to the sustainable use of forest resources.

3.4.11 National Water Policy, 2002

The main objective of the Policy is to develop a comprehensive framework for sustainable development and management of the nation’s water resources. Specifically, on the environment the objective is to have a water management system that protects the environment, ecological system, and biodiversity. The policy emphasizes that water related activities will have to be planned to enhance or to cause least detrimental effects on the environment. Here are some key points showing how the project aligns with the broader principles and objectives outlined in the water policy;

- The water policy emphasizes the importance of providing safe and reliable water supply to all individuals. When implementing the project, it is essential to ensure access to clean water for drinking, sanitation, and hygiene facilities. The project should incorporate adequate water infrastructure, such as boreholes, wells, or connections to water supply systems, to provide a sustainable and sufficient water source for the school.
- The water policy emphasizes the importance of maintaining water quality and improving sanitation. The project should include appropriate sanitation facilities, such as gender-segregated toilets, handwashing stations, and proper wastewater management systems. It should also ensure that water sources and storage facilities are clean and free from contamination, aligning with the policy's objective of providing safe water for all.

3.4.12 Sustainable Industrial Development Policy, 1996 (SIDP)

The Tanzania National Sustainable Industry Development Policy of 1996 focuses on promoting sustainable industrial development, including economic growth, environmental protection, and social development. Here

are some key points showing how the project aligns with the broader principles and objectives outlined in the sustainable industry development policy;

- The project of constructing a girls' school can indirectly contribute to economic development by providing employment opportunities during the construction phase and generating long-term benefits through improved education and empowerment of girls. Educated girls can positively impact economic growth and development through their participation in the workforce and contribution to the country's human capital.
- The sustainable industry development policy recognizes the importance of social development and inclusive growth. The project of constructing a girls' school aligns with this objective by providing access to education for girls, promoting gender equality, and empowering young women. Education is a crucial component of social development, as it helps break the cycle of poverty, improves health outcomes, and enables individuals to participate fully in society.
- The sustainable industry development policy emphasizes the importance of building human capacity and skills development. The project can contribute to capacity building by providing educational opportunities for girls, enhancing their knowledge, skills, and capabilities. By investing in education, the project promotes human capital development, which is crucial for sustainable industrial growth and social progress.

3.4.13 National Energy Policy, 2015

The Policy, among others, focuses on utilization of various energy resources in a sustainable and environmentally friendly manner. The Policy recognizes that energy is a prerequisite for the proper functioning of all sub-sectors of the economy. . Here are some key points showing how the project aligns with the broader principles and objectives outlined in the energy policy;

- The energy policy emphasizes the importance of providing access to modern and affordable energy services for all. When constructing a girls' school, it is crucial to ensure access to reliable and sustainable energy sources. The project can incorporate energy-efficient design principles, utilize renewable energy technologies such as solar panels or biogas systems, and prioritize energy access for lighting, cooking, and other energy needs within the school premises.
- The energy policy promotes energy efficiency measures to minimize energy waste and improve energy productivity. The project can adopt energy-efficient building practices and technologies, such as insulation, efficient lighting systems, and energy-efficient appliances. By incorporating energy-efficient features, the project can reduce energy consumption, lower operating costs, and contribute to the policy's objective of promoting energy efficiency.
- The energy policy encourages the utilization of renewable energy sources to diversify the energy mix and reduce dependence on fossil fuels. The project can incorporate renewable energy technologies, such as solar panels or wind turbines, to generate clean and sustainable energy for the school. This aligns with the policy's objective of promoting renewable energy development and reducing greenhouse gas emissions.

3.4.14 National Transport Policy, 2003

The Tanzania National Transport Policy of 2003 aims to develop a safe, efficient, and sustainable transport system that supports economic growth and social development. We can explore how such a project aligns with the broader principles and objectives outlined in the transport policy. Here are some key points to consider:

- The transport policy emphasizes improving accessibility to education and social services. When constructing a girls' school, it is important to consider the location and accessibility of the school site. The project should be situated in an area with good transportation links, such as roads or public

transportation, to ensure that students can easily access the school and that it is accessible to the surrounding communities.

- The transport policy prioritizes safety in all modes of transport. When planning the project, safety considerations should be taken into account, such as road design and traffic management around the school. Adequate measures should be put in place to ensure the safety of students, including safe pedestrian pathways, and road crossings.
- The transport policy encourages the integration and intermodal connectivity of different transport modes. Although not directly related to the construction phase, the project can consider the connectivity of the school with other modes of transportation, such as public transportation terminals or cycling infrastructure. This can facilitate easy access to the school for students and staff using various transport modes.

3.4.15 Construction Industry Policy, 2003

The Tanzania Construction Industry Policy of 2003 aims to promote sustainable and efficient construction practices, enhance industry standards, and stimulate economic growth within the construction sector. We can see how such a project aligns with the broader principles and objectives outlined in the construction industry policy. Here are some key points to consider:

- The construction industry policy emphasizes the importance of quality construction standards and practices. When implementing the project during construction phase, it is essential to adhere to recognized building codes and regulations, ensuring that the school meets safety, durability, and functionality requirements. The project should employ qualified professionals and contractors with relevant expertise and experience in constructing educational facilities.
- The construction industry policy encourages the use of local resources, materials, and labor to promote local economic development and employment opportunities. The project can prioritize the engagement of local suppliers, contractors, and labor, where feasible, to contribute to local job creation and skills development. This can also foster a sense of ownership and community involvement in the project.
- The construction industry policy emphasizes compliance with relevant laws, regulations, and standards. The project should ensure that all construction activities adhere to applicable building codes, health and safety regulations, and environmental guidelines. Regular inspections and quality control measures should be implemented to ensure compliance throughout the construction process.

3.4.16 National Health Policy, 2007

The health policy emphasizes the need for adequate infrastructure and facilities to support quality healthcare services. When constructing a girls' school, attention should be given to creating a healthy and conducive environment. This includes ensuring proper ventilation, clean water supply, sanitation facilities, and hygiene practices within the school premises. Creating a safe and healthy physical environment contributes to the overall well-being of students and staff.

3.4.17 Occupational Health and Safety Policy 2008

The main objectives of OHS Policy are to reduce the number of work-related accidents and diseases in Tanzania. This required the adoption and implementation of a culture to prevent OHS hazards by Government, Employers and Employees. The effective prevention of work - related accidents and ill- health will have enormous social and economic benefits. These include improvements in productivity and competitiveness and the quality of life of the working population.

During the construction phase of the project, it is crucial to prioritize the safety of workers, contractors, and visitors. The project should comply with safety regulations and best practices, such as providing appropriate personal protective equipment (PPE), implementing safety protocols, conducting regular safety inspections, and promoting awareness and training programs for all construction personnel.

3.4.18 National Land Policy, 1995

The National Land Policy of 1995 aims at developing a coherent and comprehensive framework that defines land tenure and enables proper management and allocation of land in urban and rural areas.

Among other things, the Policy advocates the protection of land resources from degradation, for sustainable development. The policy addresses several environmental issues such as land use planning, which take into consideration the land capability, ensures proper management of land resources, promotes resource sharing and multiple land use techniques in areas of conflicting land use, and involve community in resource management, land use and conflict resolution. The land policy also emphasizes the conservation and sustainable management of natural resources. When constructing a girls' school, the project can consider environmental conservation measures, such as preserving existing vegetation, minimizing deforestation, and implementing erosion control measures.

3.4.19 National Human Settlements Development Policy, 2000

The Policy stresses on the need for ensuring that human settlements are kept clean and pollution effects of solid and liquid waste do not endanger the health of residents. The policy advocates for a set of environmental quality standards of gaseous emissions from industries and vehicles. This has to be ensured during the construction phase so as to ensure no environmental pollution to the surrounding community.

The policy also focuses on the development of necessary infrastructure in human settlements. When constructing a girls' school, the project can contribute to infrastructure development by providing the necessary facilities such as classrooms, libraries, laboratories, and sanitary facilities. The project can also consider the availability of basic amenities such as water supply, electricity, and sanitation services in the school premises.

3.4.20 National HIV/AIDS Policy (2001)

The overall goal of this policy is to provide for a framework for leadership and coordination of the national multi-sectoral response to the HIV/AIDS pandemic. This includes the formulation by all sectors of appropriate interventions which will be effective in preventing transmission of HIV/AIDS and other sexually transmitted infections, protecting and supporting vulnerable groups, and mitigating the social and economic impacts of HIV/AIDS.

The policy also recognizes gender inequality as a key driver of the epidemic and emphasizes the importance of gender equality and empowerment in HIV/AIDS prevention and care. A project of constructing a girls' school aligns with this objective by providing a supportive and empowering environment for girls to thrive. This includes promoting gender equality in education, addressing gender-based violence, and empowering girls with knowledge and skills to protect themselves from HIV infection. For project sustainability PO-RALG will have to closely observe the above policy.

3.4.21 National Economic Empowerment Policy (2004)

The Tanzania National Economic Empowerment Policy of 2004 aims to promote economic growth, reduce poverty, and enhance the economic participation of all citizens, particularly marginalized groups. We can assess how such a project meets the broader principles and objectives outlined in the economic empowerment policy. Here are some key points to consider:

- The economic empowerment policy recognizes the importance of education and skills development in empowering individuals to participate in the economy. Constructing a girls' school aligns with this objective by providing access to quality education for girls, which can enhance their knowledge, skills, and capabilities. By investing in girls' education, the project contributes to their economic empowerment, as education is a key factor in reducing poverty and improving economic opportunities.
- The economic empowerment policy emphasizes the need to generate employment opportunities for all citizens, including women and youth. When constructing a girls' school, the project can contribute to employment generation by engaging local labor and contractors. This creates job opportunities for the local community, stimulates economic activity, and promotes income generation.
- The economic empowerment policy highlights the importance of gender equality and social inclusion in economic development. A project of constructing a girls' school aligns with this objective by promoting gender equality in education and empowering girls to participate actively in the economy. The project can ensure equal access to resources, opportunities, and support for girls, creating an environment that is inclusive and supportive of their economic empowerment.
- The economic empowerment policy emphasizes community development as a means of reducing poverty and improving livelihoods. The project can contribute to community development by engaging with local communities, fostering partnerships, and considering community needs in the planning and implementation of the school construction. This can include involving local stakeholders in decision-making processes, utilizing local resources, and supporting community initiatives for economic development.

3.4.22 National Employment Policy (2008)

The major aim of this policy is to stimulate national productivity, to attain full, gainful and freely chosen productive employment, in order to reduce unemployment, underemployment rates and enhance labour productivity. Relevant sections of this policy are (i) accelerating and making the pattern of economic growth more employment intensive ii) Balancing the number of new entrants and the proportion that can get paid employment iii) Improvement and Transformation of the Informal Sector for creating decent jobs iv) Enhancing the promotion of youth employment v) Reducing rural unemployment and underemployment and rural to urban migration. This project implementation will enable to meet the objective in various sections of the policy as in all phases of the project implementation recruitment of labour force is required.

3.5 Legal Framework

3.5.1 Environmental Management Act (2004), Cap. 191

The Environmental Management Act No. 20 of 2004 is the principal legislation governing environmental management in the country. The Environmental Management Act (EMA) recognizes "…the right of every citizen to a clean, safe and healthy environment, and the right of access to environmental resources for recreational, educational, health, spiritual, cultural and economic purposes."

Thus, the EMA "provides a legal framework for coordinating harmonious and conflicting activities by integrating those activities into overall sustainable environmental management systems by providing key technical support to Sector Ministries."
Section 81, subsection 1 in Part VI of the EMA requires a project proponent or developer to undertake an Environmental Impact Assessment (EIA) at his/her own cost prior to commencement or financing of a project or undertaking. The EMA prohibits any development to be initiated without an Environmental Impact Assessment (EIA) Certificate. PO-RALG through undertaking this study complies with the requirement of the law.

3.5.2 The Education Act, Cap. 353 of 1978

The act aims to provide a legal framework for the development, management, and regulation of education in Tanzania, with a focus on promoting quality education, inclusivity and equitable access for all.

The project complies with the act as it has ensured the designs and construction of the school facilities meet the standards and requirements specified for educational institutions such as providing adequate classrooms, laboratories, libraries and other necessary infrastructure to support the educational needs of the students.

Furthermore, the project aligns with the objectives of the act of "promoting gender equality" by constructing a girls secondary school thereby addressing gender differences in access to education and creating supportive and inclusive environment for girls to pursue their education.

3.5.3 Person with Disability Act, Cap.183 of 2010

The act aims to protect the rights and interests of persons with disabilities and ensure their full participation in all aspects of life, including education.

The project complies with the act as it has ensured that the school's infrastructures and facilities are designed and constructed in a manner that easier accessibility and mobility.

3.5.4 Water Resource Management Act, Cap. 331 of 2009

The Water Resource Management Act emphasizes the sustainable use and allocation of water resources. When constructing a girls' school, it is important to consider the water needs of the project and ensure efficient water use practices. The project should obtain the necessary permits or water rights for water abstraction and comply with regulations related to water allocation and management. It should also prioritize water conservation measures, such as using water-efficient fixtures and promoting water-saving practices within the school premises.

3.5.5 The Land Act, [Cap. 113 R. E. 2019]

The Land Act emphasizes land use planning as a means to ensure sustainable and orderly development. When constructing a girls' school, it is important to consider land use planning regulations and obtain the necessary approvals or permits for the project. The project should align with the designated land use plans and conform to zoning regulations to ensure appropriate land use within the designated area.

Also, the Act addresses land tenure and ownership, recognizing various forms of land rights, including customary, statutory, and public land. When undertaking a construction project, it is essential to clarify land ownership and obtain the necessary legal documentation and consent from the relevant landowners or

authorities. The project should comply with regulations related to land acquisition, ownership, and transfer to ensure that the land for the girls' school construction is acquired lawfully and in accordance with the Act.

Furthermore, the Land Act emphasizes the need to consider environmental factors in land management. When constructing a girls' school, it is crucial to assess and minimize potential environmental impacts. The project should avoid environmentally sensitive areas, such as wetlands or protected areas, and implement measures to mitigate soil erosion, deforestation, or other adverse environmental effects.

3.5.6 The Village Land Act, [Cap 114 R. E. 2019]

The Act highlights the need for community involvement and consent in matters related to village land. When undertaking a construction project, it is crucial to engage with the relevant village authorities and consult with the local community. This engagement ensures that the project aligns with the aspirations and needs of the community, and any necessary permissions or consents are obtained in accordance with the Act.

Furthermore, the Village Land Act promotes infrastructure development for the benefit of the community. Constructing a girls' school contributes to infrastructure development in the village, providing educational facilities for girls and promoting equal access to education. The project should align with the broader development objectives of the village and contribute to the overall socio-economic well-being of the community.

3.5.7 The Land Acquisition Act [Cap 118 R. E.2019]

The Land Acquisition Act allows for land acquisition for public purposes, which can include the construction of educational facilities such as girls' schools. PO-RALG conforms to the Act since the project clearly demonstrate its public purpose and contribution to the public welfare by providing education opportunities to girls within respective region.

3.5.8 Forest Act, (Cap. 323 R.E) of 2022

The Forest Act emphasizes the conservation and restoration of forest resources. When undertaking a construction project, it is important to minimize the impact on forested areas. Implement measures to prevent soil erosion, protect existing trees, and promote reforestation and afforestation efforts within the project site or in nearby areas. The project should also consider using sustainable construction practices that minimize the use of forest resources and promote environmental conservation.

3.5.9 The Local Government (district Authorities) Act, [Cap 287 R. E. 2002] and 'The Local Government (Urban Authorities) Act, [Cap 288 R. E 2002].

The Local Government Acts of 2002 form an important legal basis for rural councils and rural authorities, which were reintroduced in the early 1980 and consist of Act No. 7 relating to District Authorities and Act No.8 relating to Urban Authorities. These Acts establish and regulate district councils, township authorities and village authorities. Important provisions are the subdivision of districts into divisions and wards and the establishment of ward development committees along with procedures for implementation of schemes and programs at ward level.

Section 118 deals with protection and management of the environment in addition to the First Schedule (Section 118 (4)) of Act No. 7. The District Councils are hereby required to take necessary measures to control soil erosion and desertification; to regulate the use of poisonous and noxious plants, drugs or

poisons, regulate and control the number of livestock; maintain forests, manage wildlife, ensure public health, and provide effective solid and liquid refuse management.

If construction commences it will be the Developers responsibility to obtain permission from the District Councils for the disposal of solid and liquid waste. In addition, District council will also oversee and regulate the use and prevent the misuse or waste of, or any interference with, water.

3.5.10 Occupational Health and Safety Act, 2003

The Occupational Health and Safety Act of 2003 deals with the regulation of health, safety, and welfare of workers. Some of the provisions of this Act are relevant to the project. The Act covers economic activities in constructions, agriculture, commerce, and offices. In case of occupational accidents/illness, it is the responsibility of the labor department in the ministry to ensure the victim get compensated by the insurer of the employer. Moreover, the victim may also claim for work-injury benefit should he/she be a member of a social security scheme.

The OSHA is of particular importance for contractors that construct the proposed facility, and they should be aware of their obligations regarding the workforce health and safety measures stipulated in this Act. There are specific Safety procedures and guidelines to be followed by both workers and their respective employers to ensure a Safe and conducive working environment.

3.5.11 Public Health Act No. 1 of 2009

The Act addresses environmental health concerns, including the control of pollution and environmental hazards. When undertaking a construction project, it is important to assess and mitigate potential environmental health risks. This includes managing construction waste properly, preventing contamination of water sources, and controlling air and noise pollution. Compliance with environmental regulations and standards is crucial to align with the Act's provisions.

3.5.12 Wildlife Conservation Act No 5 of 2009

The Act focuses on the conservation of biodiversity and the sustainable use of wildlife resources. When undertaking a construction project, it is important to assess and mitigate potential impacts on biodiversity. This includes avoiding the destruction of natural habitats, minimizing disturbance to wildlife, and adopting sustainable construction practices that minimize environmental impacts.

3.5.13 The HIV and AIDS (Prevention and Control) Act, Cap 431 of 2008

The Act prohibits discrimination against individuals living with HIV/AIDS and promotes efforts to reduce stigma. When constructing a girls' school, it is essential to create an inclusive and non-discriminatory environment. This includes developing policies that protect the rights of students and staff living with HIV/AIDS and fostering an atmosphere of acceptance, understanding, and support.

3.5.14 Industrial and Consumer Chemicals (Management and Control) Act, Cap. 182, 2003

The Act provides guidelines for the management and disposal of hazardous substances and waste. During the construction process, it is important to identify and manage any hazardous substances used, ensuring

compliance with the Act's requirements for safe handling, storage, and disposal. This includes implementing proper waste management practices to minimize environmental pollution and health risks.

3.5.15 The Employment and Labor Relation Act, Cap. 366 of 2019

The Act promotes occupational safety and health in the workplace. When implementing the project, it is important to prioritize the safety and well-being of the workers involved in the construction process. This includes providing a safe working environment, adhering to occupational health and safety standards, and implementing appropriate safety measures to prevent workplace accidents and injuries.

Nevertheless, the Act prohibits discrimination in employment based on various grounds, including gender. When undertaking a project in all phases, it is crucial to ensure equal employment opportunities for all workers, regardless of their gender. This includes promoting gender equality in hiring practices, providing equal pay for equal work, and fostering a work environment that is free from gender-based discrimination.

3.5.16 The Fire and Rescue Force Act, Cap 427 of 2007

The Act requires compliance with building codes and regulations related to fire safety. When undertaking a construction project, it is crucial to follow the approved building plans and ensure that the design and construction of the girls' school comply with fire safety standards. This includes proper compartmentalization, sufficient evacuation routes, and adequate fire-resistant materials.

Also, the Act promotes the development of emergency response plans. When constructing a girls' school, it is important to develop an emergency response plan that outlines procedures for handling fire incidents, evacuation plans, and communication protocols. This plan should be shared with staff, students, and relevant authorities to ensure a coordinated and efficient response in case of a fire emergency.

Furthermore, the Act establishes the Fire and Rescue Force as the responsible authority for fire prevention and control. When undertaking a construction project, it is essential to collaborate with the Fire and Rescue Force and seek their guidance and support. Engaging with fire authorities during the planning and construction phases can help ensure compliance with fire safety standards and regulations.

3.5.17 The Contractors Registration Act, Cap. 235, 1999

The Act requires contractors registered with the Contractors Registration Board (CRB) to engage in construction activities. When undertaking a project of girl's school construction, it is important to ensure that the contractor involved in the project is registered with the CRB so as to meet the necessary qualifications, standards, and requirements set by the Act.

The Act also emphasizes the importance of quality assurance and adherence to construction standards. When constructing a girls' school, it is important to ensure that the contractor follows the relevant building codes, regulations, and standards. This includes using appropriate construction materials, employing skilled workers, and implementing quality control measures throughout the construction process.

Nevertheless, the Act also encourages compliance with labor laws and regulations related to employment, wages, and working conditions. When engaging contractors and subcontractors, it is important to ensure that they comply with labor laws, provide fair wages, adhere to safety regulations, and follow proper employment practices.

3.5.18 Standard Act Cap. 130 of 2009

The Tanzania National Standards Act of 2009 establishes the legal framework for standardization activities in Tanzania. We can explore how such a project aligns with the broader principles and objectives outlined in the Act. Here are some key points to consider:

1. Adherence to Construction Standards: The Act emphasizes the importance of adherence to standards in various sectors, including construction. When undertaking a project of girl's school construction, it is important to ensure that the construction process follows relevant construction standards and codes. This includes using appropriate building materials, following structural design guidelines, and implementing quality control measures to ensure compliance with established standards.

2. Relevant National Standards: The Act establishes the Tanzania Bureau of Standards (TBS) as the national standards body responsible for setting and enforcing standards in various sectors. When constructing a girls' school, it is important to consult relevant national standards that apply to the construction industry. This includes standards for building materials, structural design, fire safety, electrical systems, plumbing, and other relevant aspects of the construction project.

3. Certification and Conformity Assessment: The Act promotes certification and conformity assessment of products and processes to ensure quality and safety. When undertaking the construction project, it may be necessary to obtain certification for certain materials or components used in the construction process. This includes verifying that the materials meet established standards and have undergone appropriate testing and evaluation.

4. Stakeholder Engagement: The Act encourages stakeholder engagement in the standardization process. When undertaking the project, it is important to engage with relevant stakeholders, such as the Tanzania Bureau of Standards, architects, engineers, and other professionals involved in the construction industry. This promotes collaboration, knowledge sharing, and adherence to established standards throughout the project.

5. Compliance with Occupational Health and Safety Standards: The Act also emphasizes the importance of occupational health and safety standards. When constructing a girls' school, it is important to comply with relevant occupational health and safety standards to ensure a safe working environment for the construction workers and future occupants of the school.

6. Quality of Education: The Act promotes the use of standards to ensure the quality of products and services. In the context of a girls' school, the Act can be interpreted as encouraging adherence to educational standards to ensure a high-quality education for students. This includes complying with curriculum standards, teacher qualifications, teaching methodologies, and assessment practices as prescribed by the relevant educational authorities.
7. Health and Safety Standards: The Act emphasizes the importance of health and safety standards in various sectors. When operating a girls' school, it is crucial to comply with relevant health and safety standards to provide a safe and secure learning environment for students and staff. This includes ensuring proper sanitation facilities, fire safety measures, first aid provisions, and appropriate security arrangements.
8. Compliance with Education Regulations: The Act indirectly aligns with education regulations set by the Ministry of Education or relevant authorities. When operating a girls' school, it is important to comply with the applicable regulations related to school operations, student welfare, teacher-student ratios, class sizes, and other aspects of educational administration.

3.6 National Regulations

3.6.1 Environmental Impact Assessment and Audit Regulations, 2005 amended in 2018

The EIA process is described under the Environmental Impact Assessment and Audit Regulations No. 349 of 2005 ('the EIA Regulations') promulgated in terms of the EMA Sections 82(1) and 230(2) (h) and (q). The objectives of the NEMC are to undertake the enforcement, compliance, review and monitoring of EIA in terms of the EMA, including the facilitation of the public participation process in environmental decision-making.

The regulations provide the basis for undertaking EIAs and Environmental Audits for various activities, which require mandatory EIAs, but also activities that require registration and may or may not require EIA. Part three of the EIA and Audit Regulation, deals with project registration and screening procedures, part four deals with the EIA and part five deals with the Environmental Impacts Statement. If the EIA is found to be satisfactory and the residual environmental impacts of the proposed project acceptable according to part six of the EIA and Audit regulations, NEMC recommends the Minister for Environment to issue an Environmental Certificate for the Project as annotated in part 7 of the EIA and Audit regulations.

Referring to Environmental Management Act (EMA) 2004, and the first schedule of The Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations (United Republic of Tanzania, 2018) which details types of projects requiring and not requiring EIA, this project falls in Type A which are requiring a mandatory EIA.

Type A Projects are likely to have significant adverse environmental impacts and that in-depth study is required to determine the scale, extent and significance of the impacts and to identify appropriate mitigation. In the list of Type, A Projects.

It should be noted that this assessment will also include a substantial social component and therefore is termed as an Environmental and Social Impact Assessment (ESIA). The EMA guides environmental management and is administrated by the National Environmental Advisory Committee, the Directorate of Environment and the NEMC. At the end of the ESIA process an environmental impact statement (EIS) is produced in accordance with the requirements of section 86 of the EMA and Part IV of the EIA Regulations. The Minister's decision regarding the project will be informed by NEMC's recommendations based on the information emerging from this Environmental and Social Impact Assessment (ESIA) process and EIS provided in the final ESIA report

3.6.2 The Land (Compensation Claims) Regulations 2001

The Land Regulations 2001 were promulgated in terms of the Land Act, Act No. 4 of 1999 sections 12 & 179. The form of compensation is stipulated in Section 10 (1) of the Land Regulations 2001. Furthermore, the Regulations list the entities that are eligible for compensation and/or resettlement.

If the person does not agree with the amount or method of payment or is dissatisfied with the time taken to pay compensation, he /she may apply to the High Court. The High Court shall determine the amount and method of payment and determine any additional costs for inconveniences incurred.

3.6.3 Environmental Management (Water Quality Standards) Regulations, 2007

Tanzania National Environmental Management (Water Quality Standards) Regulations of 2007 aims to ensure the protection of water resources and promote a healthy environment. These regulations establish standards for the quality of water resources and aim to prevent water pollution and degradation. In the

context of the project, compliance with these regulations would involve implementing measures to safeguard water quality within the school premises and surrounding areas.

This includes proper management of wastewater and sewage, ensuring adequate sanitation facilities, and implementing measures to prevent contamination of water sources. Additionally, the project would need to adhere to guidelines for rainwater harvesting, water conservation, and sustainable water use practices. By adhering to the regulations, the project can contribute to the preservation of water resources, promote environmental sustainability, and provide a safe and healthy learning environment for the students attending the girls' school.

3.6.4 Environmental Management (Soil Quality Standards) Regulations, 2007

These regulations establish standards for soil quality and aim to prevent soil degradation and contamination. In the context of the project, compliance with these regulations would involve implementing measures to protect the soil during construction activities, such as erosion control and sedimentation management. It would also require proper waste management to prevent soil pollution and adopting sustainable practices for landscaping and gardening.

Additionally, the project would need to ensure proper soil management within the school premises, including the use of appropriate fertilizers, soil conservation techniques, and responsible land use practices. By adhering to the regulations, the project can contribute to the preservation of soil quality, promote environmental sustainability, and provide a conducive learning environment for the students attending the girls' school.

3.6.5 Environmental Management (Quality Standards for Controlling Noise and Vibrations Pollution)) Regulations, 2015

These regulations establish standards for controlling and managing noise and vibrations to protect human health and well-being. To comply with these regulations, the project would need to implement measures to minimize noise and vibrations during the construction phase, such as using appropriate construction techniques, employing noise barriers, and scheduling noisy activities during non-school hours.

Once operational, the project would need to ensure that noise levels within the school premises comply with the established standards, including the use of soundproofing materials, maintaining equipment and machinery in good condition, and implementing noise control strategies where necessary. By adhering to these regulations, the project can create a peaceful and suitable environment for learning, promoting the well-being and academic performance of the students attending the girls' school.

3.6.6 The Education Fund Act, 2001

A project involving the construction of a girls' school in Tanzania aligns with the Tanzania National Education Fund Act of 2001 by contributing to the Act's overarching objectives and principles. The Act emphasizes the importance of equitable access to quality education, promoting gender equality, and enhancing the educational infrastructure in Tanzania.

By constructing a dedicated girls' school, this project actively supports the Act's goal of providing equal opportunities for girls in education, ensuring that they receive quality secondary education. The Act also advocates for the improvement of educational facilities, which this project directly addresses by constructing a new school with modern infrastructure.

Additionally, the Act encourages partnerships and cooperation in the field of education, and this project, developed in collaboration with the government and international organizations, reflects such collaborative

efforts. Overall, the construction of a girls' school aligns with the Tanzania National Education Fund Act of 2001, contributing to the nation's commitment to enhancing educational opportunities, gender equality, and educational infrastructure.

3.6.7 Environmental Management (Air Quality Standards)) Regulations, 2007

These regulations establish standards for air pollutants and aim to prevent and mitigate air pollution. To comply with these regulations, the project would need to implement measures during the construction phase to minimize dust, emissions, and other air pollutants generated from construction activities.

Once operational, the project would need to ensure that the school premises maintain air quality within the prescribed standards. This includes adequate ventilation, proper maintenance of heating and cooling systems, and the use of eco-friendly practices such as minimizing indoor air pollutants and promoting energy efficiency.

By adhering to the regulations, the project can contribute to a healthier learning environment, reducing respiratory health risks and fostering a conducive atmosphere for the students attending the girls' school.

3.6.8 Environmental Management (Hazardous Waste Control and Management)) Regulations, 2021

These regulations establish standards for hazardous waste control and management and aim to provide safe handling, storage, and disposal methods. Once operational, the project would need to ensure that the management of laboratory chemicals are conducted at designated sites or plants in accordance with the Industrial and Consumer Chemicals (Management and Control) Act. This includes disposal of chemical waste in an environmental sound manner and ensuring that the waste are collected by personnel with collection and transportation permits issued under these regulations.

3.6.9 Environmental Management (Control and Management of Electrical and Electronic Equipment Waste)) Regulations, 2021

The main objective of these regulations is to provide for and promote proper management of e-waste to protect human health and environment while ensuring sustainable development. In all phases of the project, the following shall be observed with regard to the regulations;

- Ensuring that the e-waste are separated at the source from other categories of the waste
- Ensuring safe custody of such e-waste in a way that may not endanger human health and environment

3.6.10 Environmental Management (Control of Ozone Depleting Substances) Regulations, 2007

These regulations aim to protect the ozone layer and prevent the release of ozone-depleting substances (ODS) into the environment. To conform to these regulations, the project must adhere to specific requirements. First, it should ensure that the construction materials used, such as insulation materials and cooling systems, do not contain or use ozone-depleting substances.

Additionally, the project should prioritize energy efficiency and environmentally friendly practices to reduce the need for cooling systems that rely on ODS. This can be achieved through the use of energy-efficient building designs, insulation, and renewable energy sources.

3.6.11 Environmental Management (Biosafety) Regulations, 2009

These regulations aim to ensure the safe handling, use, and transfer of genetically modified organisms (GMOs) and other biotechnology products to protect human health and the environment. To conform to these regulations, the project must adhere to several requirements. Ensure that any potential use or handling of GMOs or biotechnology products within the school premises complies with the regulations. This includes obtaining the necessary permits and approvals from the competent authorities, such as the National Environment Management Council (NEMC), before introducing GMOs or biotechnology products into the school environment.

3.7 The World Bank Environmental and Social Framework (ESF)

3.7.1 World Bank Environmental and Social Standards

The World Bank's Environmental and Social Framework sets out the Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social standards that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity. The E&S Framework comprises of: (1) Vision for Sustainable Development, which sets out the Bank's aspirations regarding environmental and social sustainability; (2) The World Bank Environmental and Social Policy for Investment Project Financing, which sets out the mandatory requirements that apply to the Bank; and (3) The Environmental and Social Standards, together with their Annexes, which set out the mandatory requirements that apply to the Borrower and projects.

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 relating to 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 E&S standards are expected to: (a) support Borrowers in achieving good international practice relating to environmental and social sustainability, (b) assist Borrowers in fulfilling their national and international environmental and social obligations; (c) enhance non-discrimination, transparency, participation, accountability and governance; and (d) enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.

The ten ESSs as per the WB ESF are: ESS 1: Assessment and Management of Environmental and Social Risks and Impacts; ESS 2: Labor and Working Conditions; ESS 3: Resource Efficiency and Pollution Prevention and Management; ESS 4: Community Health and Safety; ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement; ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; ESS 8: Cultural Heritage; ESS 9: Financial Intermediaries; and ESS 10: Stakeholder Engagement and Information Disclosure. Given the nature of activities of this project, with the exception of ESS 9: Financial Intermediaries almost all the ESSs will be relevant. Table 3-1 summarizes the Environmental and Social Standards (ESSs) that project entities responsible for the project implementation will apply during entire project cycle.

Table 3-1: The World Bank Environmental and Social Standards (ESS) Applicable to Project and Associated Instruments

SN	Instrument for project implementation	The Environmental and Social Standards (ESS)	Purpose/Objectives	Reason for its Application in the Project
1.	**Environmental and Social Management Framework (ESMF)**	**ESS1**: Assessment and Management of Environmental and Social Risks and Impacts	Identification of adverse impacts and respective mitigation measures Enable screen and follow-up of remedies achieved through application of prevention, mitigation and compensation measures Enable allocation of responsibilities and resources to implement required mitigation measures	Sets out the Region's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing (IPF), in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs).
2		**ESS2:** Labour and Working Conditions	Ensure the healthy and safe working environment during projects implementation. Ensure the provision of fair working conditions.	Recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Developer can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.
3	Resources Management	**ESS3:** Resource Efficiency and Pollution Prevention and Management	To promote the sustainable use of resources including energy, water and raw materials. To avoid or minimize generation of hazardous and non-hazardous waste.	Recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle.
4		**ESS4:** Community Health and Safety	To manage potential risks to the community during construction and operation of school infrastructures.	Addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of the developer to avoid or minimize such risks and impacts, with particular attention to people who, because of their circumstances, may be vulnerable

SN	Instrument for project implementation	The Environmental and Social Standards (ESS)	Purpose/Objectives	Reason for its Application in the Project
5	**Resettlement Policy Framework (RPF)**	**ESS5:** Land Acquisition, Restriction on Land Use and Involuntary Resettlement	To avoid or minimize involuntary resettlement and to avoid forced eviction To mitigate unavoidable adverse impacts from land acquisition and restrictions on land use.	Involuntary resettlement should be avoided. Where involuntary resettlement is unavoidable, it was minimized and appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) was carefully planned and implemented.
6	Conservation	**ESS6:** Biodiversity Conservation and Sustainable Management of Living Resources	The SEQUIP project will avoid adverse impacts on biodiversity, habitats and ecosystem services. When avoidance of adverse impacts is not possible, the Borrower will implement measures to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchy provided in ESS1 and with the requirements of the ESS6.	Recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS6 also addresses sustainable management of primary production and harvesting of living natural resources and recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, who's access to, or use of, biodiversity or living natural resources may be affected by implementation of the project.
7	Local Communities	**ESS 7:** Sub-Saharan Historically Underserved Traditional Local Communities	To enable VGs to participate in project activities while taking care of their sociocultural interests and hindrances	Ensures that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities. ESS7 is also meant to avoid adverse impacts of projects on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.
8		**ESS8**: Cultural Heritage	To enhance conservation of cultural heritage in both forms; tangible and intangible cultural heritage. To conserve ecological and socially sensitive places from possible impacts of project implementation.	Recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. ESS8 sets out measures designed to protect cultural heritage throughout the project life cycle.
9	Financial Management	**ESS9**:	To set out how the FI will assess and manage environmental and social	Recognizes that strong domestic capital and financial markets and access to finance are important for economic

SN	Instrument for project implementation	The Environmental and Social Standards (ESS)	Purpose/Objectives	Reason for its Application in the Project
		Financial Intermediaries	risks and impacts associated with the subprojects it finances To promote good environmental and social management practices in the subprojects the FI finances.	development, growth and poverty reduction. FIs are required to monitor and manage the environmental and social risks and impacts of their portfolio and FI subprojects, and monitor portfolio risk, as appropriate to the nature of intermediated financing. The way in which the FI will manage its portfolio will take various forms, depending on a number of considerations, including the capacity of the FI and the nature and scope of the funding to be provided by the FI.
10	**Stakeholder Engagement Plan**	**ESS10:** Stakeholder Engagement and Information Disclosure	To develop a systematic approach to stakeholder engagement to develop good relationships and gather their views on issues that could affect them. To provide stakeholders with a mechanisms through which to raise grievances.	Recognizes the importance of open and transparent engagement between developer and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

3.7.2 Project Classification According to the World Bank ESF

According to the WB ESF, The Bank will classify all projects (including projects involving Financial Intermediaries (FIs)) into one of four classifications: **High Risk, Substantial Risk, Moderate Risk or Low Risk.** In determining the appropriate risk classification, the Bank takes into account relevant issues, such as the type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; and the capacity and commitment of the Borrower (including any other entity responsible for the implementation of the project) to manage the environmental and social risks and impacts in a manner consistent with the ESSs. Other areas of risk may also be relevant to the delivery of environmental and social mitigation measures and outcomes, depending on the specific project and the context in which it is being developed.

These could include legal and institutional considerations; the nature of the mitigation and technology being proposed; governance structures and legislation; and considerations relating to stability, conflict or security. The Bank will disclose the project's classification and the basis for that classification on the Bank's website and in project documents. The Bank will review the risk classification assigned to the project on a regular basis, including during implementation, and will change the classification where necessary, to ensure that it continues to be appropriate. Any change to the classification will be disclosed on the Bank's website.

3.8 Other World Bank Instruments Applicable for SEQUIP

Environmental and Social Framework - Guidance Notes for Borrowers11; The World Bank has developed several Guidance Notes to ensure the governments (borrowers) comply with the World Bank Environmental and Social Standards. These guidance are public documents that be accessed in the World Bank website12. Among the applicable guidance notes for SEQUIP are:

3.9 International Agreements, Conventions and Treaties

Tanzania has ratified or acceded to a large number of international treaties and conventions. Among those the following are relevant to the project.

3.9.1 The 1991 Bamako Convention

On the ban of the Import in Africa and Control of Trans boundary Movement and Management of Hazardous waste within Africa was ratified in 1993.

3.9.2 The 1989 Basel Convention

On Control of Trans-Boundary Movements of Hazardous Waste and their Disposal. The project shall adhere to both Bamako and Basel conventions to ensure that the ships do not bring into the country hazardous waste by strictly abiding to the cargo declaration formalities.

3.9.3 1996 Convention on Biological Diversity,

Developer must cooperate with other related contracting parties for the conservation and sustainable use of biological diversity. Article 14 of the Convention concerns impact assessments and minimizing adverse impacts.

3.9.4 ILO Minimum Age Convention (C138), 1973,

The Convention is concerned with minimum age for admission to employment. The minimum age stated in Article 2 (3) of the Convention is not less than 15 years or 18 years' dependent on the nature of the work. The Convention prohibits child labor with a view to achieving the total abolition of child labour worldwide. Members of the Convention are committed to pursuing national policies that have been designed to ensure effective abolition of child labour and to increase progressively the minimum age for admission to employment or work to a level consistent with the fullest physical and mental

development of young persons. During construction and implementation of SEQUIP project the Contractor will abide by the provisions of this Convention.

3.9.5 Labour and Working Conditions

- To establish, maintain and improve the worker-management relationship.
- To promote the fair treatment, nondiscrimination and equal opportunity of workers, and compliance with national labour and employment laws.
- To protect the workforce by addressing child labour and forced labour.
- To promote safe and healthy working conditions, and to protect and promote the health of workers.

3.9.6 Resource Efficiency and Pollution Prevention

- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities
- To promote more sustainable use of resources, including energy and water
- To reduce project-related GHG emissions

3.9.7 Community, Health, Safety and Security

- To anticipate and avoid adverse impacts on the health and safety of the affected community during the project life from both routine and no routine circumstances
- To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the affected communities

3.9.8 Land Acquisition and Involuntary Resettlement

- To avoid or, when avoidance is not possible, minimize displacement by exploring alternative project designs
- To avoid forced eviction
- To anticipate and avoid or, where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected
- To improve, or restore, the livelihoods and standards of living of displaced persons
- To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites

3.9.9 Biodiversity Conservation and Sustainable Management of Living Natural Resources

- To protect and conserve biodiversity
- To maintain the benefits from ecosystem services
- To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities

3.9.10 Indigenous Peoples

- Indigenous people must be identified and treated in the manner that their well-being is not affected by the project.

3.9.11 Cultural Heritage

- To protect cultural heritage from the adverse impacts of project activities and support its preservation
- To promote the equitable sharing of benefits from the use of cultural heritage

3.10 International Convention

3.10.1 Convention against Discrimination in Education (1960) ratified by United Republic of Tanzania in 1978-12-08

Article 2 (a) of convention stated the establishment or maintenance of separate educational systems or institutions for pupils of the two sexes, if these systems or institutions offer equivalent access to education, provide a teaching staff with qualifications of the same standard as well as school premises and equipment of the same quality, and afford the opportunity to take the same or equivalent courses of study.

3.10.2 International Covenant on Economic, Social and Cultural Rights, 1966

Article 13 (2)(a) of this convention emphasizes that ”Primary education shall be compulsory and available free to all; and (2)(b) Secondary education in its different forms, including technical and vocational secondary education, shall be made generally available and accessible to all by every appropriate means, and in particular by the progressive introduction of free education”.

3.10.3 Universal Declaration of Human Rights, 1948

Article 26 of this declaration states that “Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all based on merit”.

3.10.4 Convention on the Rights of the Child, 1989

The Convention recognize the right of the child to education and with a view to achieving this right progressively and on the basis of equal opportunity. Where in Article 28(1) (a) of the convention stated that “Make primary education compulsory and available free to all”. Also this convention emphasizes in international cooperation in education sector stated in Article 28 (3) promote and encourage international cooperation in matters relating to education, in particular with a view to contributing to the elimination of ignorance and illiteracy throughout the world and facilitating access to scientific and technical knowledge and modern teaching methods.

3.10.5 Convention on the Rights of Persons with Disabilities, 2006

Article 28 (2) (a) of the convention emphasizes the right of persons with disabilities to education which stated “Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability”.

3.11 Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) are a set of global goals for fair and sustainable health at every level from planetary biosphere to local community. The aim is to end poverty, protect the planet and ensure that all people enjoy peace and prosperity, now and in the future. Table 3-2 below shows the Sustainable development goals which are relevant to this project.

Table 3-2: Sustainable Development Goals (MDGs)

Goal	Target
Goal 1: End poverty in all its form everywhere	Target 1.1 By 2030, eradicate extremely poverty to all people everywhere, currently measured as people living on less than $ 1.25 a day Target 1.4 By 2030, ensure that all women and men, in a particular the poor and the vulnerable have equal rights to economic resources, as well as access to basic services, ownership and control over land and other form of property,

Goal	Target
	inheritance natural resources, appropriate new technology and financial services include microfinance
Goal 3: Ensure health lives and promote for all at all stage	Target 3.5. Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunity for all	Target 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and Goal-4 effective learning outcomes Target 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
Goal 5 : Achieve gender equality and empower all women and girls	Target 5.1 End all forms of discrimination against all women and girls everywhere Target 5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
Goal 6: Ensure access to water and sanitation to all	Target 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all Target 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all.	Target 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
Goal 13: Take urgent to combat climate change and its impact	Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries Target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Goal 14: Conserve and sustainably use of oceans, seas and marine resources	Target 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
Goal 15: Sustainable manage forest, combat, desertification, halt reserve land degradation, halt biodiversity loss	Target 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally Target 15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

3.12 Institutional Framework

Authorities, institutions and sectors directly or indirectly related to the project development have been identified geographically by political boundaries as well as through regulations, institutional mandates and structures.

These entities are adequately consulted in the ESIA process as prescribed through the institutional framework for environmental management. The relevant institution for handling EIA requirements is the

NEMC with input from the District Environment Management Committees; Ward Committees and Street Committees.

According to the EMA of 2004 the institutional set-up for environmental management from a national level to village level includes:

- Minister Responsible for Environment;
- Director of Environment (DOE);
- National Environmental Management Council (NEMC);
- Sector Ministries;
- Regional Secretariats;
- Local Government Authorities, District, and Town Councils;
- Township, Village, Ward; Neighborhood (Kitongoji); and
- Street (Mtaa).

The DOE and NEMC are the main regulatory bodies for environmental management in Tanzania whilst the other sector ministries and agencies, play an important role in implementing and enforcing environmental decree. The environmental management functions of each institution are outlined in the Environmental Management Act.

3.12.1 Minister Responsible for Environment

The Minister is overall responsible for matters relating to environment and in that respect be responsible for articulation of policy guidelines necessary for the promotion, protection and sustainable management of environment in Tanzania.

The Minister may issue general guidelines to the Sector Ministries, Government Departments, the Council, National Environment Advisory Committee, City, Municipal or District Environmental Management Committee, agency or any other public or private institution necessary for the purposes of implementation of or giving effect to the provisions of EMA.

The Minister may designate and shall, where appropriate, direct any of the before mentioned institutions and within specified time, to perform any function or do any activity or desist from performing any function or doing any activity as a result of which the environment or part of it is or may be seriously endangered or detrimentally affected.

3.12.2 Director of Environment (DOE)

The DOE heads the Office of the Division (Directorate) of Environment under the Office of the Vice President and is responsible for coordination, monitoring and assessment of various environmental activities.

The DOE is responsible to coordinate various environment management activities being undertaken by other agencies and promote the integration of environment considerations into development policies, plans, programs, strategies, projects and undertake strategic environmental assessment with a view to ensuring the proper management and rational utilization of environmental resources on a sustainable basis for the improvement of the quality of human life in Tanzania.

3.12.3 National Environment Management Council (NEMC)

The object and purpose for which the Council is established is to undertake enforcement, compliance, review and monitoring of environmental impact assessment and in that regard, shall facilitate public participation in environmental decision making, exercise general supervision and coordination over all matters relating to the environment assigned to the Council, under the EMA or any other written law.

The President appoints the Director General of NEMC. The Council and the Board of Directors consist of:

- A Chairperson appointed by the President;
- The Director of Environment;

- Seven members appointed by the Minister; and
- The Secretary to the Council (Director General).

3.12.4 Sector Ministries

An environmental sector sits within each Ministry. The duties of the sector include:

- Responsibility for ensuring compliance by the sector Ministry with the requirements of this Act;
- Responsibility for ensuring all environmental matters contained in other written law falling under sector ministry are implemented and report of their implementation is submitted to the Director of Environment; and
- Liaising with the Director of Environment and the Council on matters involving environment and all matters with respect to which cooperation or shared responsibility is desirable or required under this Act.

3.12.5 Regional Secretariats

The Regional Secretariat is responsible for co-ordination of all advice on environmental management in their respective regions and liaison with the Director of Environment and the Director- General on the implementation and enforcement of this Act.

The Regional Secretariats are headed by a Regional Environment Management Expert. The expert is responsible for advising the local authorities on matters related to the implementation and enforcement of the EMA. Furthermore, the expert links the region with the Director of Environment and Director General of NEMC.

3.12.6 Local Government Authorities

A local government Environmental Management Officers are designated or appointed at each City, Municipal, District and Town Council. The responsibilities of the Environmental Management Officers among others, include:

- Ensuring enforcement of EMA;
- Advising the Environment Management Committee on all matters relating to environment;
- Promoting environmental awareness relating to protection of the environment and the conservation of natural resources;
- Gathering and managing information on the environment and the utilization of natural resources;
- Preparing periodic reports on the state of the environment;
- The preparation, review and approval of environmental impact assessments for local investment by-laws on environmental management and on sector specific activities related to environment; and reporting to the Director of Environment and the Director General on the implementation of the EMA.
- The Environment Management Committee is responsible for functions set out under the Local Government Act. In addition, they perform functions as prescribed by the EMA and they may be assigned by the Minister to carry out directives related to the promotion and enhancement of sustainable management of the environment.

The Township Environment Management Committees are responsible for:

The proper management of the environment in respect of the area in which they are established;

- Performing duties as assigned under EMA or by the Minister or Council;
- Carrying out directives given by the Minister to promote and enhance sustainable management of the environment; and
- Performing any functions as set out under the Local Government (District) Authorities Act.

3.12.7 Ward/Mtaa/Kitongoji Level

The District Council designates an Environment Management Officer for each administrative area of a township, ward, village, Kitongoji (neighborhood/hamlet) and Mtaa (street).

The Environmental Management Officers are responsible for coordinating all functions and activities related to the protection of environment within their designated areas.

CHAPTER FOUR

4 BASELINE CONDITIONS

4.1 Introduction

The purpose of this Chapter is to provide a brief description of the environment in the project site which could potentially be affected by positive and negative impacts of the project discussed in Chapter 2. Impacts of lesser importance were screened out during scoping phase to ensure that the ESIA is focused on the potentially significant impacts.

The process of environmental baseline investigations included the combination of some/all the following tasks:

- An appropriate combination and balance of desktop studies, field surveys, site information collection and technical consultation.
- Consideration of all available documentary records, research papers and other relevant information.
- Use of recognized survey and analysis techniques.
- Identification and provision of appropriate (preferably quantitative) descriptions of the baseline environmental conditions.
- Identification of key environmental features that may enhance, constrain, or limit the direction and rate of environmental change.
- Explanation of links, interactions, and dependencies between environmental components.
- Verification of desktop and other information by systematic field surveys.
- Acknowledgement of the implications of gaps and limitations in information and data.

4.2 Project Core Area

This project will be implemented in Geita region, Geita Town Council in Bombambili ward, Upendo Street. Geita is among the administrative regions in Tanzania, which resides in the northwestern corner of Tanzania. The region is 1,100 to 1,300 meters above sea level and shares borders with five regions, namely Kagera Region to the west and north west; Tabora and Shinyanga regions to the south; Shinyanga Region to the south east; Kigoma Region to the south and south west; and Mwanza Region to the north and north east. The region is also bound by Lake Victoria waters in the north.

Geita Town Council is one among the six (6) councils in Geita Region and has a total area of 7,825km^2 where 6,775km^2 covered by land and 1,050km^2 covered by water. The Council is bordered by Sengerema district to the North East, Geita district to the North West, Nyang'hwale district to the South East, Shinyanga region to the South and Chato district to the West.

4.3 General Conditions

4.3.1 Current Land Uses and Activities at the Proposed Project Site

The proposed land site which is located in Upendo mtaa, Bombambili ward, Geita Town Council was once an area allocated for grave yards but the land was left bare after identification of hard rocks, thus when the council received a request of school construction from the Regional office, they allocated the area for project implementation.

Currently, the land is being used for temporary farming till when the project will begin implementation as shown in Figure 4-1.

Figure 4-1: Existing situation of the project site

4.3.2 Displacement and Relocation

No people relocation is envisaged for this location.

4.3.3 Neighboring Residences (Location and Distance from the Proposed Project)

The location is surrounded by human settlement about 50 meters on both sides of the project site, neighbors of the school will be; Hamisi Rajabu (Resident), Waja specializd hospital which is 2km from the project site and Geita Adventist dispensary.

4.4 Socio-economic Baseline

4.4.1 Background

A development envelope (Area of Interest - AOI) is situated at Upendo Street, Bombambili Ward, Geita Town Council, and Geita Region. Details of the study area for the Social Impact Assessment (SIA) is in Table 4-1.

Table 4-1**:** Study Areas for the SIA

Study Area	Definition	Areas included for this project
Site-specific study area	Area likely to experience impacts associated with project infrastructure and activities	The project footprint, excluding the access roads, etc. (to be defined at the conclusion of the scoping phase)
Local study area	Areas likely to experience impacts related to population influx, etc.	The neighboring settlements in Bombambili ward and Upendo Street
Regional study area	Area likely to experience economic impacts of the project	Geita Town Council (since most of the development envelope falls within this district). This is set against the backdrop of Geita Region and Tanzania as a whole

4.4.2 Administrative Set up

The district Council is divided into two divisions, 13 wards and 13 villages.

4.4.3 Demographic Condition

Geita region is divided into six administrative councils, Geita Town Council, Geita District Council, Chato District Council, Nyang'hwale District Council, Bukombe District Council and Mbogwe District Council affiliated with 122 wards with a population of 2,977,608 (1,513,844 females and 1,463,764 males).

Considering the project will be implemented in Geita region and Geita Town Council among all the councils, thus population development in Geita Town Council as well as related information and services will be provided.

Geita Town Council
361,671 (Male: 177,271 ; Female: 184,400) Population Census, 2022
7,825 **km²** Area
Geita Town Cuncil in Geita Region, Tanzania

The council consists of 13 Wards with 78,531 households as shown in Table 4-2.

Table 4-2: Population of Geita Town Council by Wards

Council/Ward		Population			Sex Ratio	Number of Households	Average Household Size
		Both Sexes	Male	Female			
Geita Town Council		**361,671**	**177,271**	**184,400**	**96**	**78,531**	**4.6**
1.	Nyankumbu	87,367	41,685	45,682	91	19,839	4.4
2.	Bombambili	4,571	2,209	2,362	94	1,041	4.4
3.	Mtakuja	26,676	13,212	13,464	98	6,328	4.2
4.	Mgusu	31,092	17,918	13,174	136	6,428	4.8
5.	Kalangalala	57,881	27,356	30,525	90	15,405	3.8
6.	Buhalahala	62,693	29,853	32,840	91	14,781	4.2
7.	Nyanguku	12,077	6,076	6,001	101	1,797	6.7
8.	Ihanamilo	12,751	6,325	6,426	98	2,021	6.3
9.	Kasamwa	18,751	9,022	9,729	93	3,511	5.3
10.	Bulela	11,439	5,767	5,672	102	1,599	7.2
11.	Shiloleli	7,603	3,770	3,833	98	1,030	7.4
12.	Kanyala	17,815	8,608	9,207	93	3,140	5.7
13.	Bung'wangoko	10,955	5,470	5,485	100	1,611	6.8

Source: NBS, 2022

4.4.4 Ethnic Composition

Sukuma people are the largest ethnic group living in Geita. Other major populations are those of Zinza, Sumbwa and Haya.

4.4.5 Education sector

In Geita Region, primary education is offered at least in every village of the region in line with the existing National Education Policy. In year 2018 the region had 611 primary schools, out of which 576 were Government owned and 35 were private owned. Geita District had the largest number of private primary schools.

In year 2018 the regional requirement for classrooms was 11,843, while the actual number of classrooms in the region was 4,466 (which is equivalent to 37.7 percent of the total classrooms required in the region), leaving a deficit of 7,377 classrooms (which is equivalent to 62.3 percent of total requirement). In 2018 Geita Region had 3 vocational training centres (VTCs) all of which were located in Geita and Chato districts.

Two were Government owned while one was privately owned. Skills produced and supplied by the centres include ICTs, typing, and tailoring, secretarial, masonry, domestic science, cookery, electrical installation, driving, and metal fabrication.

4.4.6 Health sector

Geita is one of the regions in Tanzania with health challenges, and it is struggling to cope with the growing demand for better health care services. The social security fund, for example, provides members with long and short-terms financial security that can be used as a “social safety net,” especially at old age. Hence, households with members in any of social security funds are likely to be more socially secured than those without.

According to the 2018 population and housing census (PHC), more than 6.33 percent of all households in Geita Region had at least one member on a social security scheme. The National Health Insurance Fund (NHIF) and Community Health Fund (CHF) are the most popular social security schemes with 1.8 percent of households reporting to have at least one member of their household registered into those two schemes. District councils with the highest proportion of households registered in social security schemes are Chato (45.3 percent) and Geita (35.4 percent).

4.4.7 Sanitation and water supply

4.4.7.1 Water supply

Water supply in Geita Region is satisfactory due to its availability from Lake Victoria. Other sources of water are rivers, streams, shallow wells, bore holes, rain water harvesting and springs.

The demand for water is driven by human and livestock population; in year 2018 demand for water in Geita Region was 53,149 cubic metres (m^3) against availability of 27,637.5 m^3, which was fifty-three percent (53%) of total demand. At Bombambili ward where the project is being implemented, residents of the ward attain water from bore holes located at Waja Secondary School.

4.4.7.2 Sanitation

The sanitation system being practiced in Geita is **On-site Sanitation System.** Residents in Geita town construct On Site treatment facilities like Septic tanks and Soak away pits to store and treat waste water. The septic tanks that overflow are being emptied by using trucks owned by Geita Urban Water Supply and Sanitation Authority (GEUWASA) or owned by private companies.

The trucks empty the wastewater at a Fecal Sludge Treatment Plant located at Usindakwe in Geita town. The plant is designed to receive 50,000L per day and the average amount emptied per day is 30,000L. There is no offsite treatment system conveyed by Sewers in Geita. At the school, Wastewater treatment system will be onsite where septic tanks and soak away pits will be constructed to receive wastewater produced at site from toilets, kitchens and laundries.

4.4.8 Economic Activities

The district economy growth depends on different economic activities including agriculture, livestock keeping, fishing, mining, beekeeping and small business. District economic analysis enables identification and proposing programs that will enable community to increase income. Figure 4-2 shows farms being prepared for cultivation.

Figure 4-2: Farmland within proposed site

4.4.8.1 Agriculture sector

Geita is dominated by small scale farmers and endowed with about 1,402,000 hectares of arable land, out of which only 661,266.5 hectares (47%) are under crop production annually. The region has about 69,160 hectares of land potential for irrigation farming but only 20,405 hectares of this area has been put into production, leaving 48,755 hectares (equal to 70.5%) of land potential for irrigation unutilized. The unutilized land is therefore available for investment. This sector employs about 77% of the region's population.

4.4.8.2 Livestock sector

The region holds a large proportion of the country's livestock; in year 2012 it was estimated that there were 1,118,470 herds of cattle; 604,960 goats; 16,420 pigs; and 3,493,900 poultry.

4.4.8.3 Fishing

Geita Region has a small water body extending an area of 1,946 square kilometres on which traditional fishing activities are carried out mainly by an estimated 7,744 artisanal fishermen using about 2,083 licensed fishing vessels, most of which are planked boats using a variety of nets and hooks. Fishing on the fresh waters of Lake Victoria is one of the most important undertakings in the region.

Fish farming has also been an upcoming activity in recent times. Geita Region has counted a total of 118 fish ponds, which are all managed by individual farmers. Although Tilapia breeds freely in ponds, it is important for farmers or producers to consider using properly produced fingerlings. Nyamirembe Centre in Chato has developed a hatchery to supply farmers with fingerlings on demand. A well-managed hatchery is certainly a good business given the projection that demand for fingerlings is likely to keep on rising due to the fact that fish farming is a good source of income to farmers and traders.

4.4.8.4 Mining

The mining sector in Geita Region involves both large-scale mining (LSM) and artisanal and small-scale mining (ASM) operations. The former is highly mechanized, with active participation of multinational enterprise, i.e. Geita Gold Mine Ltd (GGML), whilst individuals or groups with limited capital, equipment, and crude technology, often operating informally and without mineral rights undertake the latter. Artisanal and smallscale mining in Geita often involve local miners using basic methods to extract near surface deposits in an informal, low investment and labor-intensive operation, alongside the use of informal marketing channels. Katoro area, which is located on the highway links Mwanza to the neighboring countries of Uganda, Rwanda, Burundi and DRC, becoming a major gold trading centre, attracting small-scale miners from Nyarugusu, Rwamgasa, and beyond. In these artisanal and small-

scale mining sites there are many on-site brokers who buy small collections of gold and sell to big brokers in Geita and Mwanza markets.

4.4.8.5 Tourism

Geita Region is endowed with wide varieties of wildlife. Rubondo Island National Park, found southwest of Lake Victoria at Emin Pasha Gulf, which is famous for photographic tourism and spot fishing. The park covers 457 square kilometers, out of which 237 square kilometers is dry land. Its boasted of native animals including statunga, bushbucks, crocodiles, hippopotamus, various snake species and baboons. Likewise, the park has trans-planted animals including black rhinos, roan antelopes, chimpanzees, giraffes, black and white colobus, suni, elephants and grey parrots. Moyowosi-Kigosi Game Reserve, made up of twin game reserves of Moyowosi and Kigosi, covers part of Tabora, Shinyanga and Kigoma regions with a total area of 21,403 square kilometers where precious animal species including impala, waterbucks, buffalos, elephants, zebras, giraffes, leopards, hippos and crocodiles are found.

4.4.8.6 Bee keeping

Geita Region is a prominent producer of honey in Tanzania. The leading honey producing area in the region is Bukombe District. The district is almost covered by Miombo woodland forests, which greatly favor honey-making bees. Other honey producing districts are Chato (Bwanga and Muganza wards) and Geita. The region has a total of 241,957 beehives out of which 2,480 beehives are modern and 239,477 traditional.

4.4.8.7 Industries

Geita Region has 791 industries constituting 521 small-scale industries, 269 medium-scale industries and 1 large-scale industry. The small-scale industries are mainly for hulling and milling, as well as fruit and sunflower processing. The region has already demarcated some 495.88 hectares of land for industrial development.

4.4.9 Economic infrastructure

4.4.9.1 Road network

About 58.1 percent of road network in the region is passable throughout the year. The road network measures 8,019.57 kilometers, and is graded into four categories, namely trunk roads (7.3%); regional roads (5.8%); district roads (45.1%); and feeder roads (41.8%). The road surface type in the region shows that 4.7 percent is tarmac, 25 percent gravel, and 70.3 percent is earth.

4.4.9.2 Marine transport

Geita Region has four ports: Nkome, Chato, Nyamirembe and Muganza. It also has Nungwe Harbour, constructed by colonialists and recently rehabilitated by the Government of Tanzania. Some fibers and motorized local vessels ferry people and cargo across Lake Victoria. The Nungwe Harbour bay, which is about 40 kilometers from Geita Town, has the ability of docking cargo ships.

4.4.9.3 Air transport

Geita Region has two airports managed by Geita Gold Mine and Rubondo National Park, which serve exclusively the interests of the mine and park. The new Chato Airport will mark a gateway to international tourism attraction sites available in the region, like the Rubondo Island National Park in Chato District and those in the Lake Zone regions. Chato Airport will attract business opportunities across countries of the Great Lake Region. The airport will provide an opportunity to open up the region to international markets, and thousands of people will be travelling through the facility for the purpose of business and leisure.

4.4.10 Communication

The entire investment area in the region has coverage of mobile telephone services from five service providers, namely Vodacom, Halotel, Airtel, Tigo and TTCL. These service providers offer both voice and Internet services. Internet service speed ranges from 2G to 4G. Almost all national newspapers are available in Geita Region, and all local television channels, namely ITV, TBC1, Star TV, EATV, Capital Television, Channel Ten, and Clouds TV, are accessible in the region.

4.4.11 Energy

4.4.11.1 Electric supply

Geita Region is connected to the national electricity grid; the power supply line connects the small town of Kasamwa and Geita Town. The region receives electricity from two ways: from Sengerema (33KV) that serves power for Geita District only) and from Bulyanhulu (33KV), which serves power for Chato, Bukombe, Mbogwe and Nyang'hwale.

4.4.11.2 Fossil fuels

Petroleum products are the most important source of lighting energy not only in rural areas but also in urban areas. Fossil fuels energize transport, industries and various commercial establishments. The region is supplied with petroleum products from private companies; there are 53 petroleum filling stations in the region.

4.4.11.3 Fuel wood

The majority of households in Geita Region use fuel wood in the form of either firewood or charcoal for cooking and heating. Given the regional population, the region requires 3.479 million cubic meters of wood to meet the demand.

4.4.11.4 Solar energy

Solar energy is available to a few individuals who have financial ability to pay the cost of installing the facility. For low-income individuals, the cost of installing solar power is far beyond their ability. Some solar panels have been stationed in five high schools, namely Iparamasa, Mnekezi, Makurugusi, Bwina and Maguli.

4.4.12 Waste Management

For solid waste management, the district handles waste through collection trucks which move around households and haul the waste to Lukirini dumpsite for disposal. The school will adopt the same during operation so as to minimize impacts that arise with poor waste management.

4.5 Physical- Geographical Environment

4.5.1 Topography

Geita Region is divided into four agro-ecological zones based mainly on topographic and geological features as well as climatic conditions prevalent in the region.

4.5.1.1 Western Zone

The western zone of Geita Region includes Chato District (Bwanga and Kachwamba divisions) and some parts of Bukombe District (Siloka Division). This zone is characterized by an average annual rainfall of between 700 mm and 1000 mm, which is conducive for the cultivation of agricultural crops including cotton, cassava, paddy, maize, sweet potatoes and sorghum.

4.5.1.2 The Lake Shore Zone

This zone is located at 1,300 metres above sea level and receives an average rainfall of between 700 mm and 1300 mm. The zone includes parts of Chato District (Buseresere, Bozilayombo and Nyamilembe divisions) and Geita District (Bugando and Butundwe divisions). Farmers in this zone grow various crops, notably cotton, cassava, paddy, maize, sweet potatoes, pineapples, groundnuts, legumes and coffee. Free range and tethering systems are prominently used for cattle, goats and sheep grazing.

4.5.1.3 Eastern Zone

This zone includes Nyang'hwale District and some parts of Geita District (Kasamwa Division). It is characterized by farming of a wide range of crops, namely maize, paddy, sunflower, lentils, cassava, cotton, and chickpeas. It receives an average annual rainfall of between 600 mm and 1000 mm.

4.5.1.4 Southern Zone

This zone includes Mbogwe District and some parts of Bukombe District (Bukombe and Ushirombo divisions) and Geita District (Busanda Division). It receives an average annual rainfall of between 750 mm and 900 mm. The southern zone is famous for production of cotton, paddy, groundnuts, sorghum, and maize. Livestock keeping (cattle) is also predominant in this zone.

4.5.2 Geology and soils

Geita Region has moderate temperatures of between 220 ^{0}C and 300 ^{0}C with an average rainfall ranging from 900 mm to 1200 mm per annum. Rainfall is evenly distributed with short rains from September to December followed by a dry spell from January to February before long and heavy rains set in from March till the end of May. From June to September the region is subjected to dry season. During the hot season humidity is thirty five percent (35%), and rises up to sixty percent during the rainy season.

Geita Region is characterized by undulating land spotted with hills and mountains. The land is also characterized by black cotton soils, loam, sand, sandy loam and clay loam soils, which are suitable for growing varieties of crops including cassava, bananas, finger millet, sisal, sunflower, coffee, tobacco, pyrethrum, macadamia nuts, sorghum, mangoes sweet potatoes, beans, groundnuts, paddy, maize, cotton, millet, simsim, wheat and a range of horticultural products such as tomato, onions, legumes (lentils) and vegetables. Geita also produces plenty of fruits such as passion, pineapples, mangoes, and watermelons.

4.6 Biological environment

4.6.1 Flora

4.6.1.1 Forests

Geita Region's natural forests cover 196,582 hectares, equivalents to 13.6 percent of the region's land area. Forestry, which contributes about 7.4 percent of the regional economy, is among the major contributing sectors through legal timbering, carpentry, charcoal production, firewood, construction materials and beekeeping. Exploitation and clearance of woodland are mainly driven by the dominant farming activities, woodcutting for tobacco curing, fuel, mining and other related activities.

There are a total of 12 forest reserves in the region. These are distributed by districts where by 40.3 percent is in Geita DC followed by Bukombe with 29.8 percent. The rest 29.9% of the forests are found in the other districts of Geita region.

4.6.2 Fauna

Geita region has a high diversity of wildlife including black rhinos, roan antelopes, chimpanzees, giraffes, black and white colobus, suni, elephants and grey parrots.

4.7 Air quality within the project area

4.7.1 Ambient air quality data

The consulting team conducted the actual monitoring of air quality at the project site using an Aeroqual Outdoor Air Quality Test Kit. This is a complete outdoor air monitoring kit for the measurement of criteria air pollutants and VOCs.

Features Aeroqual's proven Series 500 portable monitor with interchangeable sensor heads, measuring particulate matter ($PM_{2.5}$, PM_{10}), four gas pollutant gas sensors (NO_2, O_3, CO, VOCs), and a combined temperature and relative humidity sensor.

Suitable for use during wide area air quality surveys, personal exposure monitoring, and as part of a short-term fixed monitoring network. The equipment and collected data are shown respectively. From the data it's observed for some stations to have data above standards, this may be due to the project site being along the road whereas the road is a gravel road hence releasing dust particles during vehicle movement.

Figure 4-3: Ambient Air Quality Monitoring equipment used at the project site

Table 4-3: Ambient air quality data results trend (Source: Tansheq, 2022)

LOCATION	CO ppm	NO_2 ppm	O3 ppm	VOC ppm	SO_2 ppm	$PM_{2.5}$ ppm	PM_{10} ppm
Project Area	0.00	0.002	0.00	0.00	0	0.001	0.001
Section A	0.00	0.006	0	0.00	0	0.009	0.010
Section B	0.00	0.001	0	0.06	0	0.011	0.001
Section C	0.00	0.009	0	0.00	0	0.000	0.011
Section D	0.00	0.008	0	0.00	0	0.005	0.003
Tanzania Standard [TZS 845:2005]	**20**	**0.1**	**0.0**	**10**	**0.05**	**0.05-0.08**	**0.05-0.116**

All data monitored were below standards with low detectable level so are of no significant. However, the data measured will be used for monitoring project intrusion during project implementation to trace how the project has affected the air quality.

4.8 Noise and Vibration

The noise and vibration survey was conducted in terms of the provisions of International Finance Corporate Guidelines of 2007 (The measurement and rating of environmental noise with respect to annoyance and to speech communication) as well as Environmental Management (Noise and Vibration Standards) Regulations of 2015.

The following instruments were used in the noise and vibration survey as they are displayed in

- Sound Level meter – Lutron SL 4023SD;
- Free field microphone – Electric Condenser Microphone; and
- Sound Calibrator (94/114dB) – SC – 942.
- Vibration meter – VB8206SD

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.

For, noise measurement the meter was held approximately 1.5 m above the ground surface and at least 0.5 m away from hard reflecting surfaces such as walls. A set of four readings were taken per point for averaging. It is also anticipated from the surroundings, the project site won't be sensitive to any noise pollution as the school will be surrounded by human settlement. The equipment used and data collected are shown in Figure 4-4.

Figure 4-4: Noise and vibration level meters used to collect data on the project site

Table 4-4: Noise and Vibration data

LOCATION	Noise [dBA]	Vibration [mm/s]
Project site	35	0.2
Station point 1	48	0.2
Station point 2	45	0.7
Station point 3	39	0.3
Station point 4	41	0.5
Tanzania Standards	60-70	5

The noise and vibration level survey was executed during the day on 6th October 2022 at 1300hrs. In this survey, 12:00 to 14:00 represented the daytime period.

The Noise level was measured over a representative sampling period, exceeding 30 minutes at a point for different location near the proposed site as the result is presented in Table 4-4

CHAPTER FIVE

5 STAKEHOLDERS IDENTIFICATION AND INVOLVEMENT

5.1 Introduction

This chapter describes the main stakeholders that have been identified and contacted to date as well as their main concerns regarding the proposed development.

Stakeholders are identified as “those people and institutions that have an interest in the successful design, implementation and sustainability of the project and will either be negatively, positively or not at all impacted by the proposed development”.

ESS 10 of the Environmental and Social Framework directs borrower to assess the level of stakeholder interest and support for the project and enable stakeholder’s views to be taken into account during project design and environmental and social performance together with ensuring that appropriate project information on environmental and social risks and impacts are disclosed to stakeholder’s in a timely, understandable, accessible and appropriate manner and format.

Also, Section 89 of the Environmental Management Act (EMA, 2004) provides directives on public participation and its importance to ESIA. Furthermore, section 17 of the EIA Regulations provides details and procedures for public participation in the ESIA process.

Stakeholder participation aims to involve processes whereby all those with a stake in the outcome of a project actively participate in decisions on planning and management. Stakeholders may share information and knowledge, and contribute to the project, to enhance the success of the project and hence ultimately their own interest.

5.2 Stakeholder Engagement Process

The Constitution of United Republic of Tanzania recognizes the sovereignty of the people and that people possess the power to guide development within their areas either directly or indirectly. The public should therefore be involved in the evaluation process because the Environment Management Act (2004) demands it to be so.

The main objectives of the stakeholder engagement process are to:

- Inform the stakeholders about the proposed project and provide opportunities for influencing/amending the plans;
- Collect stakeholders’ views on the proposed project including potential positive/negative impacts the stakeholders may associate with the project
- Get an idea of Stakeholders’ preferred approaches to implementation of the project;
- Get local knowledge on any sensitive areas within the project area of influence (physical, environmental, cultural or proposed facilities); and
- Get expert advice on land use/ area zoning, water availability and supply, power and road infrastructure

Stakeholder consultation is initiated mainly during the scoping phase as various stakeholders are identified and then proceed throughout the EIA process. There are different levels of public participation.

Table 5-1**:** Levels of Public Participation

Levels of Public Participation Goals	
Inform	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.
Consult	To obtain public feedback for decision-makers on analysis, alternatives and/or decisions.
Involve	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered in decision-making processes.
Collaborate	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.
Empower	Inclusion of the public in the decision-making processes.

The team put in place a stakeholder engagement process, which helps to:

- Identify and involve all potentially affected stakeholders
- Generate a good understanding of the project amongst those that was affected
- Identify issues early in the project cycle that may pose a risk to the environment, project or its stakeholders
- Ensure that mitigation measures are appropriate (implementable, effective, and efficient)
- Establish a system for long-term communication between the project and communities that is of benefit to all parties.

The primary goal of the Stakeholder Engagement Process is to ensure **transparency and involvement** of individuals, groups and organizations affected by and/or interested in the project (to be called as stakeholders) in assessing and managing the potential environmental and social impacts of the project, and to provide relevant, timely and accessible information in an appropriate and understandable format (e.g., Project Information Document).

We discuss the different steps to be taken in the next sections. The process was reported in the stakeholder engagement plan.

The **Stakeholder Engagement Plan** is the public document, which presents plans for stakeholder engagement, consultation, and disclosure, and is to be updated for each phase of the project. Parts of the report need to be published through ESIA (public involvement and disclosure). The main purpose of this document is to:

- Define the consultation approach for stakeholders,
- set up a process to address public views and/or concerns,
- Identify resources and responsibilities for implementation and monitoring of the consultation program, and
- Set up a grievance mechanism for local stakeholders.

It consists of the following information:

- Introduction (project information, project program, summary of potential environmental and social impacts);
- National and international requirements;
- Consultation undertaken to date;
- Stakeholders;
- Disclosure of information and public consultation;
- Grievance management;
- Resources and responsibilities;
- Reporting; and
- Annexes: comment/complaint form; complaint action form

The purpose of the SEP is to engage with organisations and people who may be affected by the project(s) or who may be interested in the Project, as mentioned above. Each stakeholder will need a different level of engagement. Throughout the process, we will make clear the level for the respective stakeholder and take the necessary steps.

5.3 Stakeholder

Stakeholders are individuals or groups who are affected or likely to be affected by the project (project affected parties PAP) and who may have an interest in the project and/or the ability to influence its outcome, either positively or negatively (other interested parties OIPs).

The identification of stakeholders under project will be based on (a) their roles and responsibilities; (b) possible influence/interest on the project; and (c) their particular circumstances they may be disadvantaged or vulnerable in different ways from each other. Stakeholders' analysis involves identifying the stakeholder groups that are likely to affect or be affected by proposed project components and sorting them according to the potential impact the activities will have on them.

The preliminary stakeholder analysis has identified the various interests of stakeholder groups and the influence these groups may have on the project. The analysis also shaped the design of stakeholder consultation events and how to engage them. Stakeholders' interest is determined based on the extent to which they may be involved in implementing elements of the project, likelihood in being impacted (positively or negatively) or in which they may benefit from components

5.4 Stakeholder Identification and Consultation

Tansheq team started with stakeholder consultations in September 2022. The below bullets capture the process undertaken to date:

- Introductory meeting with RC (Region Commissioner,) RAS, (Region Administrative Secretary) Region Education Officer, (REO), REMO,(Region Environment Management Officer) in Geita region
- Town Director, TSEO, TLS in Geita Town Council
- Initial meeting with street government, Ward officials including WEO at Bombambili ward and Street Chairperson at Upendo Street
- Meeting with communities around the proposed project area.

Each representative had an opportunity to state their understanding of what is proposed, and they fully support the project and said that they welcomed the team to undertake the requisite study.

5.4.1 Institutional Stakeholders

Institutional stakeholders were identified based on their involvement in decisions that might affect the proposed development or the stakeholder. The Institutional stakeholders include:

- Ministry of Home Affairs (Tanzania Fire and Rescue Force- Geita Office)
- Ministry of Labour and Employment (Occupational Safety and Health Authority, OSHA-Mwanza Office)
- Government Chemist Laboratory Authority (GCLA- Geita Office)
- Regional Government Regional Commissioner (RC- Geita) RAS, (Region administrative Secretary) and Town Director (TD-Geita Town Council); and
- Local Government (Bombambili Ward, Upendo Mtaa).

5.4.2 Other Stakeholders

Individual stakeholders refer to those occupying, owning, living, or working within the AOI and surroundings that may be impacted upon resulting from project implementation. They include:

- Landowners
- Farm owners
- Residents/house owners affected village

5.4.3 Vulnerable group

Means a group of people who, due to their characteristics and circumstances, are likely to suffer more adverse impacts of natural disasters than other groups in the community.

Vulnerable Person means any person who by reason of age, infirmity, illness, disability or any other circumstance is in need of care or attention. Vulnerable groups associated to SEQUIP area:

- Age group (children & elders)
- Indigenous
- Physical challenged group
- Women/Sexuality (Gender issue)

5.5 Main Concerns and Comments of Stakeholders

The comprehensive list of all stakeholders consulted is in Table 5-2. Main concerns and comments from the consultation process raised by stakeholder to date are in Table 5.2.

Table 5-2**:** Stakeholder Consultation Views

Name of Stakeholders	Place	Comments, views and concerns from the stakeholders
Deodatus Kayango-Ag. RAS, Anton Mtweve-REO, Tito Mlelwa-Ag. AAS, EC, Ngatoluwa Christaba-RAO	Regional Office	• They know about the project and they sent a request to Geita Town Council for distribution of land for project implementation and they received 50 acres from the council hence they are waiting for funds to begin implementation of the project
Rashid Muhaya-TSEO, Vicky Rweymam-TEE, Vesna Charles-TLS, Steven Lenard-TLS, Hamza S.N-Vivil Eng, Ramadhan Khalfan-SLO (S), Zengo Polle-TYDO	Geita Town Council	• They know about the project since they received a request from the Regional office for provision of land for project implementation and they responded positively by providing 50 acres of land • Demarcation has already been done and titled is being prepared as it's in the last phase
Salum Mwendapole **OHI**	OSHA	• Proponent must ensure safety and health of workers during the project implementation • The project will ensure the provision of better education for the children • To comply with safety and health Act No.5 of 2003
INS.Maposa Kilavo	Fire and Rescue	• Longido District Council is required to submit architectural and fire protection layout to the fire and rescue office for the proposed project so as fire safety recommendation can be provided regarding to the uses of a particular building before the construction activities.
Cosmas J. Bayaga-WEO, Ferouz Ibrahim-Street Chairperson	Bombambili Ward and Upendo Street	• They know about the project since they are the ones who recommended the allocated project site • Their concerns was that; work force should be recruited from their specific street and ward during project implementation.

Figure 5-1: Consultation and site visit at Upendo Mtaa

5.6 Way Forward

Issues raised by stakeholders shall be assessed on their veracity and included in environmental and social impacts assessment. During the Environmental and Social Impact Assessment process, all stakeholders including public and community participated accordingly. All issues raised during consultation will be detailed responded in the stakeholder engagement plan.

From the consultations, it can be concluded that people are positive about the project as it will generate more employment, enhance business opportunities, education development and social development.

Stakeholder Engagement Plan shall be prepared and implemented through all phases of the project.

CHAPTER SIX

6 ASSESSMENT OF IMPACTS

6.1 Introduction

This section includes expected environmental and social impact assessment during the entire lifecycle of the school construction project. Methods used for impact assessment, as well as quantitative and qualitative criteria were developed to unify and standardize the assessment system, which ensures the objectivity of the assessment. Impact assessment methodology preparation was based on the recommendations of the World Bank and other International Financial Institutions (EBRD, IFC, and ADB).

The following scheme will be used for environmental and social impact assessment of the planned activities:

6.1.1 Step I: Determination of basic impact types

Determination of the impact is based on general analysis of activities, which may be important for these types of projects. This is incorporated in Chapter 2.

6.1.2 Step II: Study of the environmental baseline – search and analysis of the existing information

Analysis of the socioeconomic and environmental status quo of the project affected. This shall also involve identification of the receptors, which are expected to be affected by the planned activities, determination of sensitivity of the receptors

6.1.3 Step III: Characterization and assessment of the impact

Impact character, probability, significance other characteristic determination by considering the sensitive receptors, description of the expected changes in the environment and assessment of their significance. This is covered in this Chapter.

6.1.4 Step IV: Determination of the mitigation measures

Significant impact mitigation, prevention, or compensating measure determination. This is detailed in subsequent Chapter 8.

6.1.5 Step V: Residual impact assessment

Determination of the expected value of change in the environment after implementation of the mitigation measures

6.1.6 Step VI: Monitoring and management strategy development

Monitoring the effectiveness of the mitigation measures is needed to ensure, that the impact must not exceed the predetermined values, effectiveness of the mitigation measures must be confirmed, or the necessity of the corrective measures must be identified.

Table 6-1**:** Sources, Receptors and Magnitude of Environmental Impact all Planned Phases

Phase / Receptor	Construction	Operation	Maintenance	Decommissioning
Air				
Soil				
Water				
Flora				
Fauna				
Protected area				
Landscape & visual impact				
Land ownership				
Infrastructure				
Traffic flow				
Cultural heritage				
Socioeconomic				

Key

Negative	Positive

Table 6-1 gives information about sources, receptors and magnitude of environmental impact for construction and operation phase of the proposed school structures.

6.2 Impact Receptors and their Sensitivity

Implementation of the works may cause such qualitative and quantitative characteristic changes of socioeconomic, physical and biological resources in the impact area, such as:

- Socioeconomic baseline
- Air quality and acoustic background of the environment.
- Soil stability and quality.
- Capacity and quality of surface and groundwater.
- Visual changes of the landscapes.
- Flora and fauna baseline.

The population, which may be impacted by the planned activity, includes people living, working, or involved in other activities (e.g., vocation, travel) nearby the designed facility. Facility staff is considered as a potential sensitive receptor.

Receptor sensitivity is related to the impact volume and ability of the receptor to counteract the change or restore after the change, as well as with its relative ecological, social, or economic value.

6.2.1 Impact Characterization

To estimate environmental impact major impact factors are identified for mobilization, commissioning, decommissioning, and demobilization phases. Anticipated impact is assessed according to the following classification:

- **Character** – positive or negative, direct, or indirect.
- **Magnitude** - insignificant, low, medium, high or very high.
- **Likelihood** – low, medium, or high risk.
- **Impact area** – working site, project area or region.
- **Duration** – short, mid, or long-term.
- **Reversibility** – reversible or irreversible.

That is, for both project phases and for each potential impact has been determined anticipated alteration of environment and its character, area and duration of impact, reversibility, and likelihood of occurrence; based on this information has been defined significance.

Some impact types were estimated quantitatively. Assessment of impact on environmental elements is based on relevant environmental quality standards, whenever appropriate. If qualitative assessment was impossible impact was estimated based on its characteristics and elaborated criteria

The criteria applied for environmental and social impact assessment is given in the below table. They are developed only for those receptors, which may experience significant changes.

6.3 Impact Assessment Methodology

The purpose of conducting an environmental impact assessment is to identify and assess the significant effects that are expected to happen compared to the current baseline conditions (as shown in Figure 6.1).

This evaluation concentrates on the most important issues that are likely to have an impact, while disregarding concerns that are considered insignificant. The effects can be either beneficial or detrimental to the environment.

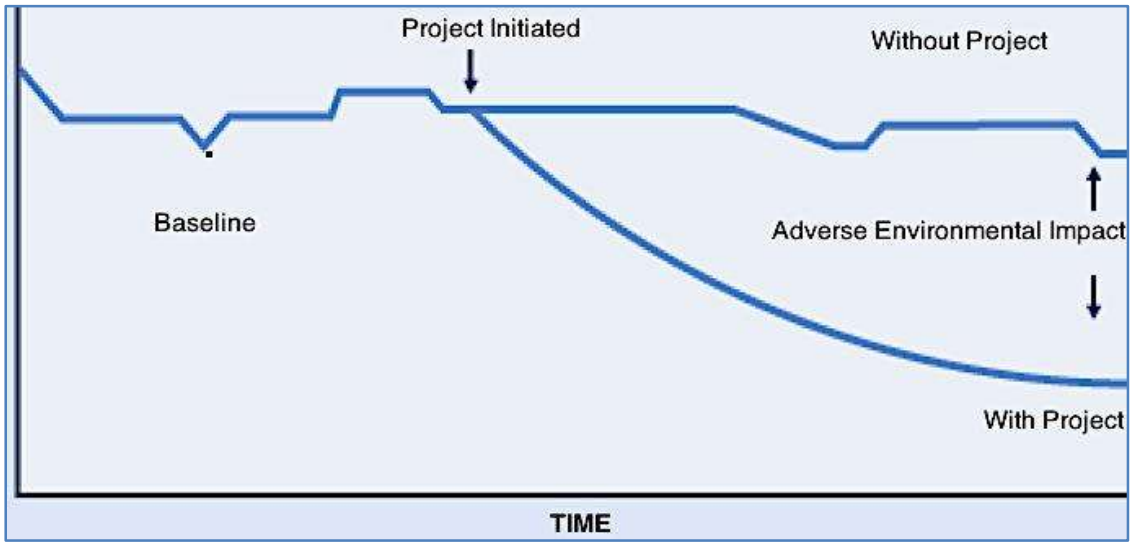


Figure 6-1: An Environmental Impact

The general method for assessing environmental impacts shall be developed based on the criteria in of the **Annex III of EU-EIA Directive (2014/52/EU).** The primary goal of using this method is to ensure that assessments are conducted using precise and well-defined terms, and to enhance transparency in the process. The aim is to suggest potential measures to mitigate the impacts and determine any remaining effects to assist in decision-making. Table 6-2describes when mitigation measures are expected with a view to reducing a given environmental impact.

Table 6-2: Degree of Remedial Measures (Annex III of EU-EIA Directive, 2014/52/EU)

Magnitude of impact	Mitigation Measure
Major impact	Impact considered of sufficient importance to consider whether the project should be changed or whether mitigation measures should be made to reduce this impact
Moderate impact	Impact of a magnitude where mitigation measures are considered
Minor impact	Impact of a magnitude where it is not likely that mitigation initiatives are necessary.
Negligible impact and no impact	Impacts considered so negligible that they are not relevant to take into consideration when implementing the project

A few criteria forms parts of the assessment of environmental impacts. Table below lists the most significant criteria. The likelihood of occurrence or the risk of an environmental impact-taking place has been divided into three groupings in the

Table 6-3; however, as is most often the case in respect of impacts on the natural environment, this division will be more varied and detailed.

Table 6-3: List of Criteria for Assessment of Environmental Impacts (Annex III of EU-EIA Directive (2014/52/EU)

Criteria	Factor
Importance of the issue	• Importance to international interests • Importance to national interests • Importance to regional interests • Importance to local interests • Importance in respect of the area with direct impact • Negligible or not important
Persistence	• Permanent impact (non-reversible) in the life of the project • Temporary for >5 years • Temporary for 1-5 years • Temporary for <1 year
Likelihood of occurrence	• High (>75 %) • Medium (25-75 %) • Low (<25 %)

Furthermore, it is important to consider whether the impact is caused directly by the project or indirectly as a derived effect of a direct impact. **Cumulative impacts** must also be assessed; determining the impact from combined activities or other projects locally or regionally. Table 6-4, Table 6-5 and Table 6-6 indicate the process of assessing the magnitude of individual environmental impacts relating to a project. The following is a description of the Table:
Column 1 states the degree of disturbance: The extent of the disturbance is assessed as high, medium or low. The determination of this is based on the potentially severity of the impact, looking at the impact on some specific issues (e.g. a species), not considering the Importance of the issue, the likelihood of occurrence, or the persistence.

Column 2 assesses whether the issues (e.g. species, habitat, etc.) is important to international, national/regional or entirely local nature conservation interests.

Column 3 indicates the likelihood that the assessed disturbance occurs.

Column 4 shows the persistence of the impact. By combining these four factors the magnitude of impact is found in **Column 5**.

Table 6-4: Assessment of Degree of Impact (High Degree of Disturbance) (Based on Annex III of EU-EIA Directive, 2014/52/EU)

Degree of Disturbance	Importance	Likelihood of Occurrence	Persistence	Magnitude of Impact
High	International Interest	High (>75%)	Permanent (>5 years)	Major
			Temporary (1-5 years)	Major
			Short Term (0-1 years)	Moderate
		Medium (25-75%)	Permanent (>5 years)	Major
			Temporary (1-5 years)	Major
			Short Term (0-1 years)	Moderate
		Low (<25%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Moderate
			Short Term (0-1 years)	Minor
	National or Regional Interest	High (>75%)	Permanent (>5 years)	Major
			Temporary (1-5 years)	Moderate
			Short Term (0-1 years)	Moderate
		Medium (25-75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Moderate
			Short Term (0-1 years)	Minor
		Low (<25%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Minor
	Local Interest (important for the area directly affected or for the immediate surrounding)	High (>75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Moderate
			Short Term (0-1 years)	Minor
		Medium (25-75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Negligible
		Low (<25%)	Permanent (>5 years)	Minor
			Temporary (1-5 years)	Negligible
			Short Term (0-1 years)	Negligible
	Negligible/Not Important	High (>75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Medium (25-75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Low (<25%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none

Table 6-5: Assessment of Degree of Impact (Medium Degree of Disturbance) (Based on Annex III of EU-EIA Directive, 2014/52/EU)

Degree of Disturbance	Importance	Likelihood of Occurrence	Persistence	Magnitude of Impact
Medium	International Interest	High (>75%)	Permanent (>5 years)	Major
			Temporary (1-5 years)	Moderate
			Short Term (0-1 years)	Moderate
		Medium (25-75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Moderate
			Short Term (0-1 years)	Minor
		Low (<25%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Minor
	National or Regional Interest	High (>75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Moderate
			Short Term (0-1 years)	Minor
		Medium (25-75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Minor
		Low (<25%)	Permanent (>5 years)	Minor
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Negligible
	Local Interest (important for the area directly affected or for the immediate surrounding)	High (>75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Minor
		Medium (25-75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Negligible or none
		Low (<25%)	Permanent (>5 years)	Minor
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Negligible or none
	Negligible/Not Important	High (>75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Medium (25-75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Low (<25%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none

Table 6-6: Assessment of Degree of Impact (Low Degree of Disturbance) (Based on Annex III of EU-EIA Directive, 2014/52/EU)

Degree of Disturbance	Importance	Likelihood of Occurrence	Persistence	Magnitude of Impact
Low	International Interest	High (>75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Minor
		Medium (25-75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Negligible
		Low (<25%)	Permanent (>5 years)	Minor
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Negligible
	National or Regional Interest	High (>75%)	Permanent (>5 years)	Moderate
			Temporary (1-5 years)	Minor
			Short Term (0-1 years)	Negligible
		Medium (25-75%)	Permanent (>5 years)	Minor
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Low (<25%)	Permanent (>5 years)	Minor
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
	Local Interest (important for the area directly affected or for the immediate surrounding)	High (>75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Medium (25-75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Low (<25%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
	Negligible/Not Important	High (>75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Medium (25-75%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none
		Low (<25%)	Permanent (>5 years)	Negligible or none
			Temporary (1-5 years)	Negligible or none
			Short Term (0-1 years)	Negligible or none

6.4 Potential Impacts Identification and Analysis

The potential impacts for the proposed project will be analyzed based on the interactions between project activities and environmental and social receptors.

Table 6-7: Potential Environmental and Social Impact of Project by Phases

Activity	Receptor	Impact Source	Description of Impact
Mobilization phase • Arrangement of construction site including water supply, sanitation and power supply • Parking of materials and special equipment • Material delivery and stocking. • Road arrangement rehabilitation	• Atmospheric air • Soil • Water • Flora • Fauna • Infrastructure • Population and personnel	• Vehicle movement • Land clearing and vegetation removal • Temporary development of infrastructure (access roads, storage areas and utilities) • Waste from the construction activities •	• Emission of dust and exhaust due to transportation • Emissions of diesel generators • Dust produced by ground works • Noise and vibration (machinery) • Noise (personnel) • Soil pollution (spilt fuel/oils, waste) • Soil tramping due to traffic • Damage of topsoil • Temporary change of land ownership type • Water pollution by split fuel/oils, sediments and waste (whenever construction operations occur next to surface waters) • Damage, clearance and tramping of vegetation (direct impact) • Damage of vegetation due to emissions, fuel/oil spills (indirect impact) • Fauna disturbance by personnel and vehicles • Impact of electric transmission line /electromagnetic field on fauna and other receptors (personnel, population) • Impact on downstream fauna due to surface water pollution throughout construction operations • Impact of electric transmission line /electromagnetic field on fauna and other receptors (personnel, population) • Waste – solid, liquid • Community disruptions • Impact on infrastructure (e.g. road cover)
Construction phase	Atmospheric air	• Vehicle • Building machinery • Diesel generators • Adhesives, solvents, paints and coatings	• Respiratory issues for workers and nearby communities • Discomfort to nearby communities
	Soil	• Vehicle building machinery • Excavation and earth moving activities	• Soil compaction • Disturbance of soil ecosystem • Soil contamination and pollution • Loss of topsoil • Soil erosion

Activity	Receptor	Impact Source	Description of Impact
		• Improper handling and disposal of construction material waste • Frequent foot traffic	
	Water	• Excavation, grading and land clearing • Improper handling and disposal of construction materials • Obstruction of drainage channels or streams •	• Alteration of water flow patterns • Destruction of aquatic habitats • Soil erosion and sedimentation
	Flora and Fauna	• Vehicle/building machinery • Personnel	Direct impact (collision, disturbance) Temporary and permanent fragmentation of habitats Noise and vibration
	Population and personnel	Vehicle/building machinery	• Dust and exhaust • Noise • Disturbance due to landscape alternation • Possible traumatism of personnel during works • Opportunity to employ local population for construction operations or associated service (positive effect)
Operation	Soil	Waste (Ash from incinerator, used and expired laboratory reagents)	Soil pollution in case of improper waste management specifically ash after incineration
	Water	Waste water	Water pollution in case of improper liquid waste management from sanitary and laboratory activities
	Flora	Improper handling of storm water run-off and chemical use for pest control	Water lodging and disruption of ecological balance
	Population and personnel	Water and Sanitation	Outbreak of diseases to both students and surrounding community when there is inadequate water supply and poor waste management within the school premises

Activity	Receptor Impact Source Description of Impact
Maintenance service/repairs	Impact of maintenance services /repairs will depend on specifics and volume of work and operation area. Possible impact of maintenance service will be similar to those of similar activities done during construction
Decommissioning	There are two possible options: 1. Conservation – in this case all the existing structures are to be preserved. Territory should be enclosed and protected. 2. Decommissioning – in this case all the infrastructure and equipment should be dismantled, waste removed/land filled, tunnel closed and territory cultivated. Though after lifespan period usually instead of liquidation the system is thoroughly rehabilitated and the object continues operation. In case of decommissioning proper acting plan should be worked out. Anticipated impact will be similar to the potential impact of construction. Special attention should be paid to waste management including hazardous waste. Cultivation plan for the area should be designed.

6.4.1 Mobilization/ Construction phase

6.4.1.1 Loss/disturbance of biodiversity

During the mobilization and construction phase of Geita Girls Secondary School in Geita region, there can be potential impacts on biodiversity and the natural environment. The clearing of land, excavation, and construction activities may result in the direct loss or alteration of habitats for various plant and animal species.

The destruction or fragmentation of natural habitats can lead to the displacement or loss of indigenous flora and fauna. This can disrupt ecological processes and negatively impact the local biodiversity. Additionally, the use of heavy machinery, noise, and dust generated during construction activities can further disturb and displace species.

This impact is considered direct negative of short-term duration with moderate significance.

6.4.1.2 Disturbance of air quality and effect on human health due to emissions of exhaust and fugitive gases

Emissions from combustion of diesel in machineries and equipment during the construction phase. The major pollutants will be CO, NOx, CH_4, NO_2, O_3 and SO_2 and these will be monitored accordingly for which various points will be identified and the measurement will be taken by S500 Aeroqual Air Quality Monitor.

Construction facilities and materials will be transported to the proposed project site using trucks from various places in Geita. Transportation of these facilities and materials have the potential to emit pollutants such as CO2, NOx, SOx, and particulate matters which may have an impact on the ambient air quality resulting to an impact on global warming and effect on human health to workers on duty. Considering the size of the project being small it is assumed that at least 3 trucks will be used to mobilize construction facilities and materials.

This impact is considered direct negative of short-term duration with moderate significance.

6.4.1.3 Communication interference, stress, fatigue due to increased noise levels from construction vehicles and machinery

During the mobilization and construction phase of Geita Girls Secondary School in the Geita region, there may be potential noise impacts. The activities involved in the construction process, such as excavation, foundation work, heavy machinery operation, and transportation of construction materials, can generate significant noise levels.

The mentioned noise impacts can affect both the immediate vicinity of the construction site and surrounding areas. Nearby residents may experience increased noise levels, leading to potential disturbances and inconvenience.

Any unwanted sound ("noise") produced as a result of construction activities is expected to be intermittent and of relatively short duration, and will be limited to those periods during which construction activities are occurring. The contractor shall ensure that the vehicles and machinery undergo routine maintenance and outsourced vehicles and machinery shall be checked for compliance with applicable regulations. Vehicles shall be controlled by ensuring that they all have functioning mufflers.

Furthermore, to ensure that the neighboring residents are not disturbed by frequent movement of vehicles, mobilization of construction material shall mainly be done during the day. The noise levels will be assessed and measured by Lutron SL4033SD Class 1 Sound Level Meter. From which the obtained data will develop the noise limit zones to safeguard the workers and community.

This impact is considered direct negative, of short-term duration with moderate significance.

6.4.1.4 Public Health

During the mobilization and construction phase of Geita Girls Secondary School in Geita region, there may be potential public health impacts. These impacts can arise from various factors associated with the construction activities and the surrounding environment.

One of the primary concerns is the potential for air pollution. Construction activities often generate dust and emissions from machinery, vehicles, and construction materials. The release of particulate matter and harmful gases can contribute to poor air quality in the vicinity of the construction site. This can have negative health effects, particularly for vulnerable individuals such as children, the elderly, and those with respiratory conditions.

Additionally, noise pollution from the construction activities can also impact public health. Prolonged exposure to excessive noise levels can lead to stress, sleep disturbances, and other adverse health effects, including cardiovascular issues.

The impacts are considered indirect negative of long-term duration with high significance.

6.4.1.5 Injuries and fatal accidents due to occupational health and safety issues

During the mobilization and construction phase of Geita Girls Secondary School in Geita region, there are potential occupational health and safety impacts that need to be considered. The construction industry carries inherent risks, and it is essential to prioritize the well-being and safety of the workers involved in the project.

Construction activities involve various tasks, such as excavation, heavy machinery operation, lifting and handling of materials, and working at heights. These activities can expose workers to hazards such as falls,

accidents, electrical risks, and exposure to harmful substances. It is crucial for the project to adhere to occupational health and safety regulations and guidelines to minimize these risks and ensure a safe working environment.

The impacts are considered direct negative of long-term duration and of high significance

6.4.1.6 Degradation of natural beauty, outbreak of diseases and injuries due to improper management of surrounding waste materials (Solid and Liquid Waste)

During the mobilization and construction phase of Geita Girls Secondary School, there may be potential impacts related to solid and liquid waste. Construction activities often generate various types of waste, including construction debris, packaging materials, and wastewater.

Solid waste can accumulate from excavation, and general construction activities. Without proper waste management practices in place, this waste can contribute to environmental pollution and pose health and safety risks. It is important for the project to implement appropriate waste management strategies, such as segregating waste, recycling materials when feasible, and disposing of non-recyclable waste at authorized waste disposal facilities.

Liquid waste can be generated from activities such as concrete mixing, equipment cleaning, and site dewatering. If not properly managed, liquid waste can contaminate soil and water bodies, leading to adverse environmental and health effects. The project should establish measures to collect, treat, and dispose of liquid waste in accordance with local regulations and best practices.

This impact is considered indirect negative of short-term duration and of moderate significance

6.4.1.7 Road accidents from moving trucks

During the mobilization and construction phase of Geita Girls Secondary School in Geita region, there can be potential risks of road accidents. The increased movement of heavy construction vehicles, equipment, and materials can pose hazards to both construction workers and the public.

The transportation of construction materials and equipment to the project site may involve the use of large trucks and other vehicles, which can increase traffic congestion and the likelihood of accidents. The presence of construction vehicles on the roads, combined with the disruption caused by ongoing construction activities, can create unsafe conditions for motorists, pedestrians, and workers.

Therefore, this impact is considered indirect negative of long term duration and of moderate significance.

6.4.1.8 Employment Opportunity

During the mobilization and construction phase of Geita Girls Secondary School in Geita region, there are potential employment opportunities that can arise. Construction projects typically requires a diverse workforce, including skilled and unskilled labor, engineers, architects, and other professionals. The project can contribute to the local economy (Upendo Street and Bombambili Ward) by creating employment opportunities for individuals in the surrounding communities.

By engaging local labor, the project can provide job opportunities and income generation for the local population. This can help alleviate unemployment rates and improve the economic well-being of individuals and families in Geita region. Additionally, the project can enhance skills and capacity development within the construction sector, empowering workers with valuable experience and expertise.

This impact of employment opportunity is considered to be direct positive of short-term duration and of high significance.

6.4.2 Operation Phase

6.4.2.1 Disruption of air quality and effect on human health due to emissions of exhaust and fugitive gases

During the operation of Geita Girls Secondary School in Geita region, there can be potential air pollution impacts. These impacts are primarily associated with the transportation activities and energy consumption within the school premises.

Transportation-related air pollution can result from the daily commute of teachers, and staff to and from the school. Depending on the mode of transportation chosen, emissions from vehicles can contribute to air pollution and have adverse effects on air quality.

Another significant source of air pollution during the operation phase is the energy consumption within the school premises. Traditional energy sources, such as fossil fuels, can contribute to air pollution through the emission of greenhouse gases and particulate matter.

The impact of air pollution is considered to be indirect negative of long-term duration and of moderate significance

6.4.2.2 Disturbance of surrounding community due to increased noise levels

During the operation of Geita Girls Secondary School in Geita region, there can be potential noise pollution impacts. These impacts are primarily associated with the activities and operations within the school premises.

The operation of a school involves various sources of noise, including student activities, teaching and learning activities, playgrounds, and transportation. The increased presence of students and staff within the school can contribute to an overall increase in noise levels, which can potentially disturb the surrounding community (Upendo Street).

This impact is considered indirect negative of long-term duration and of moderate significance.

6.4.2.3 Aesthetic degradation, environmental pollution and outbreak of diseases and injuries due to improper management of surrounding hazardous and non- hazardous solid waste materials

During the operation of Geita Girls Secondary School in Geita region, there can be potential solid waste impacts. These impacts are primarily associated with the daily activities and operations within the school premises.

The operation of a school generates various types of solid waste, including food waste, paper and cardboard, plastic packaging, and other non-biodegradable materials such as sanitary pads, laboratory apparatuses and reagents. Improper management of these waste can lead to environmental pollution, health hazards, and aesthetic degradation of the physical area as illustrated in Figure 2-2.

Hazardous waste can include materials such as laboratory chemicals, electronic waste, batteries, fluorescent bulbs, and other substances that can pose a risk to human health to both the students, staff and surrounding community (Upendo Street) and the environment if not properly managed.

This impact is considered direct negative of long-term duration and of high significance.

6.4.2.4 Aesthetic degradation, environmental pollution and outbreak of diseases and injuries due to improper management of surrounding liquid waste

During the operation of Geita Girls Secondary School in Geita region, there can be significant impacts associated with liquid waste. Liquid waste includes wastewater generated from various sources such as kitchen, toilets, cleaning activities, and other daily operations within the school.

If not properly managed, liquid waste can have adverse effects on the environment and public health. Improper disposal or untreated wastewater can contaminate water bodies, including rivers, lakes, and groundwater sources, leading to pollution and the spread of waterborne diseases. It can also negatively impact aquatic ecosystems and the biodiversity they support such as the present in the project site area.

This impact is considered to be direct negative of long term duration and of high significance.

6.4.2.5 General health and safety impacts

During the operation of Geita Girls Secondary School in Geita region, there can be significant impacts associated with general health and safety.

One significant health concern is indoor air quality, which can be affected by poor ventilation, the presence of dust and allergens. Inadequate ventilation and the accumulation of pollutants can lead to respiratory issues and allergies among students and staff. Another important aspect is sanitation and hygiene. Insufficient access to clean toilets, handwashing facilities, and proper waste management can contribute to the spread of diseases and compromise personal hygiene practices.

Accidents and injuries are also potential hazards in schools. Slippery floors, unsafe playground equipment, mishandling of laboratory apparatuses and chemicals and inadequate safety measures can increase the risk of accidents, resulting in injuries among students. Fire safety is another crucial consideration, as the lack of proper fire prevention and emergency response plans can jeopardize the safety of individuals within the school premises.

Furthermore, the ergonomics of the learning environment should be addressed. Poorly designed furniture, improper workstation setups, and lack of ergonomic considerations can lead to musculoskeletal issues and discomfort among students and staff. Security is also a concern, with the potential for unauthorized access, bullying, or other safety threats that can affect the overall well-being of students.

This impact is considered indirect negative of long-term duration and of high significance.

6.4.2.6 Benefit to the Government

The operation of the school generates economic benefits for the government. The presence of a well-functioning educational institution attracts students from the local community (Upendo Street) and neighboring areas (Geita Town Council). This results in increased enrollment, which can lead to the generation of revenue through school fees and other related income sources. These financial resources can be utilized by the government to further improve the quality of education, invest in educational infrastructure, and enhance the overall educational system in the region.

Therefore, this impact is considered direct positive of long-term duration and of high significance.

6.4.2.7 Employment Opportunities

During the operation of Geita Girls Secondary School in Geita region, there can be significant employment opportunities. Once the school is completed and operational, it requires a diverse range of staff to facilitate its day-to-day functioning. These employment opportunities can benefit the local community (Upendo Street and Bombambili ward) by providing jobs and contributing to the local economy.

The operation of a girl's school involves various positions, including teaching staff, administrative personnel, support staff, security personnel, and maintenance workers. These roles offer employment opportunities for individuals with different skills and qualifications, including teachers, administrators, cleaners, and security personnel. By hiring local residents for these positions, the project can provide job opportunities and contribute to the livelihoods of individuals in Geita region.

Moreover, the school's operation can create indirect employment opportunities in related sectors. Local businesses may benefit from supplying goods and services to the school, such as food, stationery, uniforms, and maintenance materials. This can stimulate economic activity and foster the growth of small businesses within the community (Upendo Street).

This impact of employment and training is considered direct positive of long-term duration and of high significance.

6.4.2.8 Impacts associated with demographic change

During the operation of Geita Girls Secondary School in Geita region, there are several impacts associated with demographic change. Firstly, the establishment of a new school attracts students from the surrounding areas, which can lead to an increase in the local population (Bombamili ward and Geita Town Council). Families may choose to move closer to the school to ensure easy access to education for their children. This influx of families can result in changes in the demographic composition of the region, such as increased population density and changes in age distribution.

Also, the presence of a girl's school can contribute to empowering young girls and women, leading to changes in their social and economic roles within the community. Education plays a crucial role in promoting gender equality and empowering women to participate actively in society. By providing access to education for girls, the school project can result in increased female participation in various sectors, including employment, leadership positions, and decision-making processes. This can lead to a more balanced and diverse demographic landscape, with improved gender representation and opportunities for women in the region.

Furthermore, the operation of the girl's school can have long-term impacts on the overall development and growth of the region. Access to quality education has the potential to enhance the skills and capabilities of individuals, leading to improved job prospects and economic opportunities. As a result, the region may experience positive demographic changes, such as a decrease in unemployment rates, an increase in income levels, and a more educated workforce. These changes can contribute to the overall development and prosperity of the community.

This impact is considered direct positive of long-term duration and of high significance

6.4.3 Decommissioning Phase

In case of decommissioning, the following impacts may happen;

6.4.3.1 Degradation of the urban landscape, health hazards and danger to the public as illegal activities are attracted as a result of abandoned infrastructures

During the demolition phase of a girl's school construction project in Geita region, there may be impacts associated with abandoned infrastructures. These abandoned infrastructures, if not properly managed and repurposed, can have negative consequences for the surrounding environment and community.

One of the main impacts is the visual blight caused by abandoned structures. These abandoned buildings can create an unsightly appearance in the area, affecting the aesthetic value of the surroundings.

In addition, abandoned infrastructures can become safety hazards. Without proper maintenance and security measures, these structures may deteriorate over time, leading to structural instability and potential risks such as collapsing walls or roofs. These hazards pose a threat to public safety, especially if the abandoned infrastructures are accessible to unauthorized individuals, including children.

Furthermore, the presence of abandoned infrastructures can attract illegal activities and contribute to social issues. Such structures may become hotspots for vandalism, squatting, or illicit activities, which can further degrade the surrounding environment and pose risks to the community's well-being.

This impact is considered indirect negative of long-term duration of high significance

6.4.3.2 Loss of revenue to the government

This phase can result in the temporary cessation of economic activities and revenue generation in the affected area.

Businesses operating in the demolished structures may experience disruptions or even closure during this phase, leading to a decline in their revenue. This, in turn, can result in a decrease in tax contributions to the government. Additionally, the demolition phase itself may involve the displacement of informal businesses or street vendors who rely on the affected area for their livelihoods. As a result, these individuals may experience income loss, which affects their ability to pay taxes and contribute to the government's revenue stream.

The impact is considered to be direct negative of long-term duration and of high significance.

6.4.3.3 Unemployment

During the demolition phase of a girl's school construction project in Geita region, there may be impacts associated with unemployment. The demolition process often leads to the displacement of workers who were employed in the buildings or structures being demolished. This displacement can result in temporary or even long-term unemployment for these individuals.

Loss of job is considered direct negative of long-term duration since survival of the people is very important here the impact is considered to be of high significance.

6.4.3.4 Injuries and fatal accidents

During the demolition phase of a girl's school construction project in Geita region, there may be impacts associated with injuries and fatal accidents. Demolition work involves the dismantling, removal, and disposal of existing structures, which can be inherently hazardous if not managed properly. The presence of heavy machinery, falling debris, and unstable structures can increase the risk of accidents and injuries for both workers and nearby individuals.

This impact is considered indirect negative long term of high significance

6.4.4 Cumulative Impacts

Cumulative impacts refer to the collective and synergistic effects of multiple activities and actions over time, which can have a cumulative effect on the environment, society, and the economy.

During the mobilization phase, cumulative impacts may arise from the assessment of various site options, land-use changes, and infrastructure development. These impacts could include changes to the natural landscape, loss of biodiversity, and altered ecological processes. It is important for the project to consider the cumulative effects on the local environment and ecosystems to minimize negative consequences.

During the construction phase, cumulative impacts can arise from increased noise, air and water pollution, traffic congestion, and the generation of solid waste. These impacts can affect nearby communities, public health, and local infrastructure.

During the operation phase, the cumulative impacts can include increased demand for resources such as water and energy, as well as ongoing traffic and noise disturbances. These impacts can strain local infrastructure and services, affecting the quality of life for nearby communities.

6.4.5 Residual impacts

A project of girl's school construction in the Geita region can result in residual environmental and social impacts that persist even after the completion of all project phases. These residual impacts may include long-term changes to the local ecosystem, such as loss of biodiversity and alteration of natural habitats, which can take years or even decades to recover. The construction and operation activities can also lead to the accumulation of pollutants in the soil, water, and air, which may have lasting effects on the surrounding environment and potentially impact human health.

In terms of social impacts, the project may leave behind residual challenges such as disrupted community dynamics, changes in social structures, as the school will attract lots of small businesses in the respective street. This can result in a loss of cultural heritage, displacement of communities, and changes in traditional livelihoods. The project may also leave behind physical infrastructure that requires ongoing maintenance and management, which can pose financial and operational challenges for local authorities specifically the Geita Town Council.

Table 6-8 presents the identified residual impacts.

This impact is considered to be negative, direct long term and of moderate significance.

Table 6-8: Identified Residual Impacts

SN	Stage	Nature	
		Positive	**Negative**
1	Mobilization		• Biodiversity loss • Habitat loss and/or alteration • Habitat fragmentation
2	Construction		• Change in landscape and aesthetics
3	Operation	• Employment creation • Provision of education • Minimization of vulnerability to girls	
4	Decommissioning		• Loss of employment

6.5 Ergonomics impacts

Ergonomics is the way you use your body to work and fitting the job or task to you to reduce your risk of injury. These musculoskeletal injuries develop slowly over time and occur in the soft tissues of your body like the nerves, tendons, muscles, ligaments and joints. Generally, the greater the exposure to a single risk factor or combination of risk factors, the greater the probability of an ergonomic injury or illness, also called Work-Related Musculoskeletal Disorders (WMSD). The big three ergonomic risk factors are

- Force (how much you lift/push/pull),
- Repetition (how often you perform the task), and
- Posture (body position).

Other potential ergonomic risk factors include vibration, contact stress, sustained exertions, and cold temperatures Examples of these injuries are low back strain, carpal tunnel syndrome, and tendonitis. These injuries are called musculoskeletal disorders or MSDs.
This impact is likely to occur to all phases of the project cycle, mobilization, implementation and decommissioning phases.

6.6 Activity Risk Assessment.

Risk Assessments are elaborated for all tasks performed at the work fronts, detailing the steps and frequency of the task, the known hazards and the appropriate precautionary measures, procedures/work releases, controls, environmental and industrial hygiene methods, collective and personal protective equipment to minimize or eliminate hazards.

The purpose of the Risk Assessment is to make it a routine to verify the safety items before the start of any activities, assisting with the detection and prevention of risks of accidents and with task planning. Table 6-9 shows the risk assessment criteria

Table 6-9: Risk Assessment

S/N	Impact &Aspect Description	Nature	Magnitude	Extension	Duration	Significance of Impact	Probability of Occurrence	Risk
	Mobilization/Construction phase							
1	Loss of biodiversity due to site clearing	Direct	Medium	DIA	Long-term	Moderate	Definite	Significant Risk
2	Effect on human health due to change in ambient air quality caused by emissions from exhaust gases and dust from vehicles and earth works	Direct	Medium	IIA	Long-term	Moderate	Probable	Low Risk
4	Soil erosion due to site clearance	Direct	Very low	RIIA	Short-term	Minor	Probable	Low Risk
5	Climate change (global warming) due to emissions from vehicle movement, bush clearance	Indirect	Very low	NIA	Long-term	Minor	Probable	Low Risk
6	Degradation of natural beauty, greenhouse emissions and outbreak of diseases due to mismanagement of waste generated (solid and liquid waste) from construction materials, bush clearance and sanitary facilities	Direct	High	DIA	Short-term	Major	Definite	Significant Risk
7	Employment Opportunities (activities will require man power)	Direct	High	NIA	Short-term	Major	Definite	Negligible Risk
9	Injuries and fatal accidents to workers due to heavy duties taking place	Direct	Medium	DIA	Long-term	Major	Probable	Significant Risk
10	Public health and hazard (due to emission of dust and performance of heavy duties	Direct	Medium	NIA	Long-term	Major	Probable	Significant Risk
11	Hearing impairment, stress, headaches, fatigue due to noise and vibration pollution from transportation of material and equipment	Direct	Low	DIA	Short-term	Minor	Probable	Low Risk
	Construction Phase							
1	Loss of biodiversity due to site clearing	Direct	Medium	IIA	Long-term	Major	Definite	Significant Risk
2	Effect on human health due to change in ambient air quality caused by emissions from exhaust gases and dust from vehicles and earth works	Direct	High	DIA	Short-term	Major	Probable	Low Risk
3	Communication interference, stress, headaches, fatigue due to noise and vibration from vehicle movement, equipment and material used during construction	Direct	Low	DIA	Short-term	Minor	Probable	Low Risk
4	Injuries and fatal accidents to workers due to heavy duties	Direct	High	DIA	Long-term	Major	Definite	Significant Risk

S/N	Impact &Aspect Description	Nature	Magnitude	Extension	Duration	Significance of Impact	Probability of Occurrence	Risk
5	Public health and hazard (due to emission of dust and performance of heavy duties)	Direct	Medium	IIA	Short-term	Moderate	Probable	Low Risk
6	Employment Opportunities (activities will require man power)	Direct	High	NIA	Long-term	Major	Definite	Negligible Risk
7	Degradation of natural beauty, greenhouse emissions and outbreak of diseases due to mismanagement of waste generated (solid and liquid waste) from construction materials, bush clearance and sanitary facilities	Direct	High	DIA	Short-term	Major	Definite	Significant Risk
8	Unemployment due to decommissioning of construction activities	Indirect	Medium	NIA	Short-term	Moderate	Definite	Low Risk
	Operation Phase							
1	Employment Opportunities due to recruiting of teachers and other staff for school operation	Direct	High	NIA	Long-term	Major	Definite	Negligible Risk
2	Degradation of natural beauty, greenhouse emissions and outbreak of diseases due to mismanagement of waste generated (solid and liquid waste) from sanitary facilities, classrooms, offices, Dormitories, dining area and other areas within the school compound	Direct	High	IIA	Long-term	Major	Definite	Significant Risk
3	Health and safety (due to fire outbreak, poor housekeeping within the school compounds, mishandling of laboratory apparatuses and reagents)	Direct	Medium	DIA	Long-term	Moderate	Probable	Significant Risk
5	Benefit to the government through taxes from the employed staff(economically and man power)	Indirect	High	NIA	Long-term	Major	Very low	Negligible Risk
	Decommissioning Phase							
1	Degradation of the urban landscape and danger to the public as illegal activities are attracted due to abandoned infrastructure as a result of the project decommissioning	Indirect	Medium	DIA	Medium-term	Minor	Probable	Low Risk
2	Unemployment due to decommissioning of the project	Direct	High	NIA	Short-term	Minor	Definite	Negligible Risk
3	Degradation of natural beauty, injuries due to solid waste from dismantling of buildings	Direct	Low	DIA	Long-term	Minor	Very low	Low Risk

CHAPTER SEVEN

7 IDENTIFICATION OF ALTERNATIVES

7.1 Introduction

The EMA EIA regulations of 2005 requires that alternatives be identified during the scoping process. An important function of the Scoping Phase is to screen alternatives to derive a list of feasible alternatives that need to be assessed in further detail in the ESIA Phase.

The environmental impact statement shall contain an assessment of impacts of the identified alternatives. According to the EMA EIA regulations, analysis of alternatives includes project site, design and technologies and reasons for preferring the proposed site, design, and technologies. An alternative can be defined as a possible course of action, in place of another, that would meet the same purpose and need.

7.2 Project Site Alternative

The selection criteria for the location depends on the availability/ease access and ownership of the proposed land parcel for Geita region. In that regards various economic considerations which include the feasibility of the project in terms of financial and technical perspectives have been considered to select the project location.

Furthermore, the location shall not require demolition of property (houses and other infrastructure) to pave way for the construction and accessibility of the project site. In that regards, alternative location shall not be further considered in the EIS. Alternatives analysis in this project considered the following:

f) No-Go alternative,
g) Design and technological considerations
h) Location

7.2.1 No-Go alternative

The assessment of alternatives must always include the “no-go” option as a baseline against which all other alternatives must be measured. The option of not implementing the activity must always be assessed and to the same level of detail as the other feasible and reasonable alternatives.

The no-go will see the status quo activities persist without the construction on the proposed site. The “no-go” option is taken to be the existing rights on the property, and this includes all the duty of care and other legal responsibilities that apply to the owner of the property.

7.2.2 Design and technological considerations

The schools design will consider several aspects which were previously not part of the school design system. The current design which will be implemented will utilize the standardized updated design from the MoE which will be customized when implemented.

The designs prepared so far are prototypes to be utilized in specific site in this case the school to be constructed in Upendo Street-Bombambili ward. The utilization of prototype will involve the fit in exercise to include all experts in the respective district.

7.2.3 Energy Alternative

The proposed project will use electricity from national grid supplied by TANESCO and generator (diesel) in case of electricity interruption as the sources of energy for lighting, warming/heating and running the office accessories. Since these sources are very reliable and all machines/equipment/accessories use the kind of these energy only. The school is advised to implement use of solar energy as a backup source of energy for lighting during electricity cut-off and disturbances by installing solar panels.

The proposed project will cook by using firewood and charcoal due to availability and cost of them. However, natural gas is advised for environmental friendly reasons, though it will be used for cooking in teachers' houses.

7.2.4 Water Source Alternative

The proposed project has two alternatives to source water apart from drawing water from GEUWASA. The project will abstract water from the borehole located at Waja Schools but apart from that the project is advised to install rain water harvest materials during operation phase so as to prevent water costs and ensure conservation of water for water scarcity periods.

7.2.5 Waste water management Alternative

An alternative source for wastewater management in a school operation, besides septic tanks and soak away pits, is the implementation of a wastewater treatment plant. This plant can be designed to treat wastewater generated from various sources within the school, including toilets, kitchen sinks, and showers. The treated water can then be reused for non-potable purposes such as irrigation, flushing toilets, or cleaning.

Additionally, greywater recycling systems can be installed to treat wastewater from sinks and showers for reuse in activities like irrigation or toilet flushing. Implementing such systems not only helps in reducing water consumption but also minimizes the environmental impact of wastewater discharge, contributing to a more sustainable and eco-friendly school operation.

7.2.6 Location

The selection of project location was conducted prior to conducting ESIA this has been identified as a limitation in this study however the same was conducted utilizing a checklist developed by the clients safeguard team in the same line for projects which were not developed. The consulting team had a chance of raising issues for alternation of the selected site. The site selection was conducted while considering the following:

- Location of the site
- School character such as **Estimated number of students, Estimated number of classrooms Estimated number of teachers needed, Will the school have**
- Environmental character such as water, vegetation, terrain fauna
- Social character Land Tenure, Land Use, Who are the neighbors of this plot of land, Vulnerable Groups
- Type of community Urban
- Geographical location
- Demand of water per total estimated number of students: (l/s/day)
- Materials Use and Need
- The site is located within a protected area, designated by government (national park, natural reserve, world heritage site etc.)?

In conclusion, both options are of uttermost importance for the aim of minimizing the social and environmental impacts that could arise but for this project the option of location, design and technological

consideration were among the factors to be put into action before project implementation and were both analyzed by Geita Town Council before proposing the project area to PO-RALG.

CHAPTER EIGHT

8 ENVIRONMENTAL MITIGATION MEASURES

8.1 Introduction

This chapter provides a summary of mitigation measures of those impacts which are considered of moderate to high significance, by matching the predicted impact, possible mitigation measure, the target levels, responsible entity and approximate cost. It also presents a detailed plan to monitor the implementation and success of the mitigation measures.

For each impact identified assessed in this study, mitigation measures will be proposed to reduce and/or avoid negative impacts and enhance positive impacts. Typical mitigation measures are detailed in Table 8-1.

Table 8-1: Impact Mitigation Measures

Approach	Example
Avoid	Change of site details, to avoid important ecological or archaeological features
Reduce	Filters, precipitators, noise proof, dust, enclosures, visual screening, wildlife corridors, and changed time of activities
Minimize	Minimize emissions and waste generation
Replace	Regenerate similar habitat of equivalent ecological value in different location
Restore	Site restoration after construction

These mitigation measures will be incorporated into an Environmental Management Plan (EMP) to facilitate implementation during the mobilization, construction, operational and decommissioning phases.

The EMP forms part of the final ESIA report as its forms part of the authorization and thus its implementation will become binding on the project applicant and any contractors, should this project be authorized.

8.2 Mobilization/Construction Phase

8.2.1 Loss/disturbance of biodiversity

i. Implementation of measures such as habitat restoration and reforestation programs in areas where vegetation has been cleared during the school operation.
ii. The council shall involve its experts for advice and for potential flora stocks for re-generation of disturbed vegetation in plant areas

8.2.2 Disruption of air quality and effect on human health due to emissions of exhaust and fugitive gases

i. Implementing effective dust control measures, such as applying water or dust suppressants on unpaved roads, stockpiles, and construction sites.
ii. Promoting the use of cleaner fuels and emission control technologies for construction machinery such as generators and vehicles.

iii. Regular monitoring of air quality during the construction phase is important to identify any potential exceedances of air quality standards and promptly address the sources of pollution.

8.2.3 Communication interference, stress, fatigue due to increased noise levels from construction vehicles and machinery

i. The contractor should adhere to relevant noise regulations and guidelines set by the authorities.
ii. Limiting the duration and intensity of noisy activities during sensitive hours.
iii. The contractor should also consider scheduling noisy activities during periods when they would cause the least disruption to nearby residents and businesses.

8.2.4 Public Health from poor housekeeping and waste management

i. Implementing dust control measures such as water spraying or covering loose materials to minimize dust emissions.
ii. Using low-emission equipment and vehicles can help reduce air pollution
iii. Scheduling and managing construction activities to minimize disruptions and noise levels during sensitive hours, particularly in close proximity to residential areas
iv. Furthermore, the contractor should prioritize regular monitoring and assessment of air quality and noise levels to ensure compliance with relevant standards and guidelines.
v. Prepare site waste management plan prior to commencement of construction works
vi. Designate appropriate waste storage areas,
vii. Develop collection and removal schedule,
viii. Institute system for supervision and monitoring, and
ix. Unusable construction waste to be disposed of at an approved dumpsite.

8.2.5 Injuries and fatal accidents due to occupational health and safety issues

i. The contractor should implement proper safety protocols, including providing personal protective equipment (PPE) to workers and ensuring its proper use.
ii. Regular inspections of the construction site should be conducted to identify and address any safety concerns promptly.
iii. Effective communication and engagement with workers and contractors are crucial to fostering a culture of safety.
iv. Furthermore, the contractor should have clear emergency response procedures in place to handle any accidents or incidents that may occur during the construction phase.

8.2.6 Road accidents from moving trucks

i. Designation of proper access routes to the construction site, ensuring clear signage and road markings, and establishing appropriate speed limits.
ii. Construction vehicles should be operated by trained and licensed drivers who adhere to safe driving practices.
iii. The contractor should also consider implementing safety protocols such as regular vehicle maintenance, inspections, and monitoring to ensure that the construction vehicles are in good working condition and meet safety standards.
iv. Adequate lighting and visibility measures should be in place, especially during nighttime construction activities, to enhance road safety.

8.3 Operation Phase

8.3.1 Disruption of air quality and effect on human health due to emissions of exhaust and fugitive gases

i. The school can adopt renewable energy sources, such as solar panels and gas to meet the energy needs of the school such as lighting and cooking.
ii. The school should prioritize energy-efficient designs and equipment within the school. This can involve the use of energy-efficient lighting systems, insulation materials, and energy-saving appliances.
iii. The school can promote sustainable transportation options such as organizing carpooling initiatives for their staffs.
iv. Develop a comprehensive cleaning program that includes regular dusting, vacuuming, and cleaning of surfaces to minimize dust, allergens, and contaminants. Use environmentally friendly and non-toxic cleaning products.
v. Regular monitoring of air quality and implementation of appropriate air pollution control measures should also be undertaken.

8.3.2 Noise emissions

i. Installation of soundproofing materials in classrooms and common areas to reduce internal noise transmission.
ii. Strategic planning of school facilities, such as locating noisy areas away from residential areas or utilizing buffer zones, can help minimize the impact on nearby communities.
iii. Proper maintenance of equipment and facilities within the school premises can also contribute to noise reduction.
iv. Regular monitoring of noise levels and compliance with relevant noise regulations and standards should be prioritized. This can involve periodic assessments and inspections to ensure that noise pollution levels remain within acceptable limits.

8.3.3 Waste Generation

i. Establishment of waste segregation systems, encouraging composting initiatives for the kitchen waste, and providing sufficient waste bins and collection points throughout the school premises.
ii. The school should establish dedicated storage areas for hazardous waste such as laboratory chemicals, faulty electrical appliances, ensuring they are secure, properly labeled, and equipped with appropriate safety measures.
iii. The school should also establish partnerships with authorized entities to ensure the waste is handled and disposed of in compliance with environmental regulations.
iv. Designate bins specifically for the disposal of sanitary pads. These bins should be placed in female restrooms and other private areas, and they should have lids to maintain hygiene and provide privacy.
v. Recycling or re-use of the ash obtained after incineration of waste especially the sanitary pads after testing and analyzing the chemical components of the ash such as use in construction or soil amendments.

8.3.4 Wastewater Generation

i. Proper separation and segregation of different types of liquid waste should be implemented to ensure appropriate treatment and disposal. This can involve separate systems for black water (from toilets), greywater (from sinks and showers), and other liquid waste streams such as water from laboratories.
ii. Construction of water channels for the control of storm water within the school premises
iii. Regular analysis of waste water from laboratories

8.3.5 General health and safety

i. Establishment of a comprehensive health and safety policy.
ii. Conducting regular inspections to identify and mitigate any potential hazards, such as faulty electrical systems, structural weaknesses, or unsafe equipment within the school premises.
iii. Adequate emergency preparedness plans should be in place, including fire safety measures, first aid provisions, and clear evacuation procedures.
iv. The school should prioritize maintaining a clean and hygienic environment to prevent the spread of diseases and ensure the availability of adequate sanitation facilities.
v. Promoting health and wellness among students should also be a focus, with initiatives like health education programs, access to clean drinking water, and appropriate waste management practices.
vi. Implement security measures such as fencing of the school premises. Establish anti-bullying policies and procedures to address and prevent bullying incidents.

8.4 Decommissioning Phase

8.4.1 Abandoned infrastructure

i. PO-RALG and other project stakeholders should develop a comprehensive demolition plan that includes proper disposal or recycling of materials, as well as strategies for repurposing or redeveloping the vacant spaces that will be created.
ii. Creating initiatives to transform the abandoned structures into community assets, such as recreational areas, community centers, or affordable housing projects.

8.4.2 Unemployment

i. Ensuring that all staff are members of the National Social Security Fund and the employees should ensure that the developer's contributions are made.

8.4.3 Safety hazards

i. Effective communication and coordination among project stakeholders, including contractors, workers, and relevant authorities, are vital for maintaining a safe working environment.
ii. It is crucial for the contractor to prioritize safety measures and adhere to strict guidelines and regulations by implementing comprehensive safety protocols, providing appropriate personal protective equipment (PPE), conducting thorough risk assessments, and ensuring proper training for workers to significantly reduce the likelihood of accidents and injuries during the demolition activities.

CHAPTER NINE

9 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

9.1 Overview

The following sections describe measures that shall be followed by the contractor/ project implementing team to ensure that the anticipated environmental and social impacts are avoided, abated, or remediated.

This layouts the systematic plans packaged as the environmental management plan (EMP). The goal of the EMP developed is to address the key impacts identified in the preceding Chapter as well as setting the relevant policies and actions plans needed to achieve an environmentally sound and sustainable project venture.

Table 9-1: Impact Mitigation Measures

Approach	Example
Avoid	Change of route or site details, to avoid important ecological or archaeological features
Replace	Regenerate similar habitat of equivalent ecological value in different location
Reduce	Filters, precipitators, noise barriers, dust, enclosures, visual screening, wildlife corridors, and changed time of activities
Restore	Site restoration after construction
Compensate	Relocation of displaced communities, facilities for the affected communities, financial compensation for the affected individuals etc.

These mitigation measures will be incorporated into an Environmental Management Plan (EMP) to facilitate implementation during the planning, construction, operational and decommissioning phases. The EMP forms part of the final ESIA, as such its forms part of the authorization and thus its implementation will become binding on the project applicant and any contractors, should this project be authorized.

The EMPs for the project should consists of the following:

- Management Policies;
- Management Plans; and
- Decommissioning Plan

9.2 Environmental Management Policy

The environmental policy developed should be one that enables project implementers and Project management and sustainable utilization of environmental resources therein. The policy should therefore cover the following, among other issues:

- Ensure that all Project activities operate within legal requirements of all relevant national legislation covered in Chapter Four;
- That there are continuous environmental improvement and performance through monitoring of Project activities;
- Ensure that utilization of natural resources is optimal with measures in place to ensure resource availability for future generation;
- Awareness creation to the surrounding community regarding sustainable utilization of natural resources, protection of sensitive ecosystems and bio-diversity maintenance for communal livelihood; and
- Balancing between natural resource use, environmental conservation, and economic development.

9.3 Occupational Health and Safety Policy

The Occupational Health and Safety Policy developed for the Project should enable establishment of appropriate measures that ensure that the health, safety and welfare of all users is cared for as well as the health requirements of the local community in which the project is located. The policy should highlight on the following, among others:

- Medical examination of workers;
- Sanitation in the Project area;
- Proper liquid and solid waste management and disposal;
- Emergency preparedness;
- Fire safety;
- Necessity and availability of personal protective equipment
- Safety measures for cold storage equipment;
- Appropriate safety and rescue equipment are availed to Project users;
- Risk minimization of accidental damage, community, and environment; and
- Training in safety.

Preventive and protective measures should be introduced according to the following order of priority:

- Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, using different manufacturing processes, etc.;
- Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, machine guarding, acoustic insulating, etc.;
- Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc.
- Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE.

9.4 Local Community Policy

The Local Community Policy are developed by management of the Project to ensure that the management of the project develops and maintains sound relations with its all users and the local community on mutual respect and active partnership. The policy should highlight on ways the management should:

- Work with the local community and relevant government departments and agencies to achieve sustainability of the project;
- Come up with ways of enhancing information flow from management to the community and Project users, and vice visa;
- Active engagement of the local community in all Project activities that impact on the local community.

9.5 Coordination and Review of the EMP

The EMP forms the basis for environmental management on site. Based on the results of the performance assessment and review process, the EMP may be modified as the project progresses.
Modifications will only be permitted by the District Environmental Officer. Changes to the EMP will only be allowed:

a) If alternative measures with equal or improved outcomes have been identified after the compilation of the report.
b) Prior to non-compliance, therefore requiring pro-active evaluation.

9.6 Reporting

In addition to all reporting requirements identified in the EMP, records shall be kept by the District Environmental Officer of all monitoring results, monitoring reports, incident records, audit reports and management reviews. Minutes of all environmental project meetings shall be submitted to the Environmental officer.

Table 9-2: Summary of Environmental and Socioeconomic Management Plans

Phase	Potential Aspect/Impacts	Management/Mitigation Measures	Responsibility and guiding legal framework	Estimated Costs [TZS]
Mobilization/Construction Phase	Loss/disturbance of biodiversity and threatened species	▪ Minimum vegetation clearance will be ensured by clearing only those areas that are utilized for construction of WSP and layout of networks and the area used to lay down the sewer networks activities. ▪ The town council shall involve its experts for advice and for potential flora stocks for re-generation of disturbed vegetation in plant areas	Geita Town Council Environmental Management Act, Cap.191	N/A
	Disruption of air quality and effect on human health due to emissions of exhaust and fugitive gases	• Implementing effective dust control measures, such as applying water or dust suppressants on unpaved roads, stockpiles, and construction sites. • Promoting the use of cleaner fuels and emission control technologies for construction machinery such as generators and vehicles. • Regular monitoring of air quality during the construction phase is important to identify any potential exceedances of air quality standards and promptly address the sources of pollution. • Using cars with good conditions. • Responsible usage of tracks e.g. instead of using 3 tons track to carry loads twice is better to use 7 tons track which will only make one trip to reduce amount of carbon emissions.	Geita Town Council under PO-RALG along with the Contractor Public Health Act, Cap.242 and Environmental Management (Air Quality Standards) Regulations, 2007	1,000,000
	Communication interference, stress, fatigue due to increased noise levels from construction vehicles and machines	▪ The contractor should adhere to relevant noise regulations and guidelines set by the authorities. ▪ Limiting the duration and intensity of noisy activities during sensitive hours. ▪ The contractor should also consider scheduling noisy activities during periods when they would cause the least disruption to nearby residents and businesses. ▪ Using cars with good conditions, cars with good conditions have the potential of having less noise pollution.	Geita Town Council under PO-RALG along with the contractor Public Health Act, Cap.242 and Environmental Management (Quality Standards	1,000,000

Phase	Potential Aspect/Impacts	Management/Mitigation Measures	Responsibility and guiding legal framework	Estimated Costs [TZS]
			for Controlling Noise and Vibration Pollution) Regulations, 2015	
	Public Health from poor housekeeping and waste management	▪ Implementing dust control measures such as water spraying or covering loose materials to minimize dust emissions. ▪ Using low-emission equipment and vehicles can help reduce air pollution ▪ Scheduling and managing construction activities to minimize disruptions and noise levels during sensitive hours, particularly in close proximity to residential areas ▪ Furthermore, the contractor should prioritize regular monitoring and assessment of air quality and noise levels to ensure compliance with relevant standards and guidelines. ▪ Prepare site waste management plan prior to commencement of construction works ▪ Designate appropriate waste storage areas, ▪ Develop collection and removal schedule, ▪ Institute system for supervision and monitoring, and ▪ Unusable construction waste to be disposed of at an approved dumpsite.	Geita Town Council under PO-RALG along with the contractor Public Health Act, Cap.242, Environmental Management (Solid Waste Management) Regulations, 2009 as amended in 2016 and Environmental Management (Hazardous Waste Control and Management) Regulations, 2021	1,000,000
	Injuries and fatal accidents due to occupational health and safety issues	▪ The contractor should implement proper safety protocols, including providing personal protective equipment (PPE) to workers and ensuring its proper use. ▪ Regular inspections of the construction site should be conducted to identify and address any safety concerns promptly. ▪ Effective communication and engagement with workers and contractors are crucial to fostering a culture of safety.	Geita Town Council under PO-RALG along with the Contractor Occupational Health and Safety Act, 2003	1,000,000

Phase	Potential Aspect/Impacts	Management/Mitigation Measures	Responsibility and guiding legal framework	Estimated Costs [TZS]
		▪ Furthermore, the contractor should have clear emergency response procedures in place to handle any accidents or incidents that may occur during the construction phase.		
	Road accidents from moving trucks	▪ Designation of proper access routes to the construction site, ensuring clear signage and road markings, and establishing appropriate speed limits. ▪ Construction vehicles should be operated by trained and licensed drivers who adhere to safe driving practices. ▪ The contractor should also consider implementing safety protocols such as regular vehicle maintenance, inspections, and monitoring to ensure that the construction vehicles are in good working condition and meet safety standards. ▪ Adequate lighting and visibility measures should be in place, especially during nighttime construction activities, to enhance road safety.	Geita Town Council under PO-RALG along with the contractor Public Health Act, 2009 and Occupational Health and Occupational Health and Safety Act, 2003	500,000
Operation and Maintenance Phase	Disruption of air quality and effect on human health due to emissions of exhaust and fugitive gases	▪ The school can adopt renewable energy sources, such as solar panels and gas to meet the energy needs of the school such as lighting and cooking. ▪ The school should prioritize energy-efficient designs and equipment within the school. This can involve the use of energy-efficient lighting systems, insulation materials, and energy-saving appliances. ▪ The school can promote sustainable transportation options such as organizing carpooling initiatives for their staffs. ▪ Develop a comprehensive cleaning program that includes regular dusting, vacuuming, and cleaning of surfaces to minimize dust, allergens, and contaminants. Use environmentally friendly and non-toxic cleaning products. ▪ Regular monitoring of air quality and implementation of appropriate air pollution control measures should also be undertaken.	School Administration along with Geita Town Council under PO-RALG Public Health Act, Cap.242 and Environmental Management (Air Quality Standards) Regulations, 2007	10,000,000
	Increased Noise emissions	▪ Installation of soundproofing materials in classrooms and common areas to reduce internal noise transmission.	School Administration	10,000,000

Phase	Potential Aspect/Impacts	Management/Mitigation Measures	Responsibility and guiding legal framework	Estimated Costs [TZS]
		▪ Strategic planning of school facilities, such as locating noisy areas away from residential areas or utilizing buffer zones, can help minimize the impact on nearby communities. ▪ Proper maintenance of equipment and facilities within the school premises can also contribute to noise reduction. ▪ Regular monitoring of noise levels and compliance with relevant noise regulations and standards should be prioritized. This can involve periodic assessments and inspections to ensure that noise pollution levels remain within acceptable limits.	along with Geita Town Council under PO-RALG Public Health Act, Cap.242 and Environmental Management (Quality Standards for Controlling Noise and Vibration Pollution) Regulations, 2015	
	Waste Generation	▪ Establishment of waste segregation systems, encouraging composting initiatives for the kitchen waste, and providing sufficient waste bins and collection points throughout the school premises. ▪ The school should establish dedicated storage areas for hazardous waste such as laboratory chemicals, faulty electrical appliances, ensuring they are secure, properly labeled, and equipped with appropriate safety measures. ▪ The school should also establish partnerships with authorized entities to ensure the waste is handled and disposed of in compliance with environmental regulations. ▪ Designate bins specifically for the disposal of sanitary pads. These bins should be placed in female restrooms and other private areas, and they should have lids to maintain hygiene and provide privacy. ▪ Recycling or re-use of the ash obtained after incineration of waste especially the sanitary pads after testing and analyzing the chemical components of the ash such as use in construction or soil amendments.	School Administration along with Geita Town Council under PO-RALG Public Health Act, Cap.242, Environmental Management (Solid Waste Management) Regulations, 2009 as amended in 2016, Environmental Management (Hazardous Waste Control and Management) Regulations, 2021	15,000,000

Phase	Potential Aspect/Impacts	Management/Mitigation Measures	Responsibility and guiding legal framework	Estimated Costs [TZS]
			and Environmental Management (Control and Management of Electrical and Electronic Equipment Waste) Regulations, 2021	
	Wastewater Generation	▪ Proper separation and segregation of different types of liquid waste should be implemented to ensure appropriate treatment and disposal. This can involve separate systems for black water (from toilets), greywater (from sinks and showers), and other liquid waste streams such as water from laboratories. ▪ Construction of water channels for the control of storm water within the school premises ▪ Regular analysis of waste water from laboratories.	School Administration along with Geita Town Council under PO-RALG Public Health Act, Cap.242, Environmental Management (Water Quality Standards) Regulations, 2007 and Environmental Management (Hazardous Waste Control and Management) Regulations, 2021	15,000,000
	General Health and Safety	▪ Establishment of a comprehensive health and safety policy. ▪ Conducting regular inspections to identify and mitigate any potential hazards, such as faulty electrical systems, structural weaknesses, or unsafe equipment within the school premises.	School Administration along with Geita Town Council under PO-RALG	10,000,000

Phase	Potential Aspect/Impacts	Management/Mitigation Measures	Responsibility and guiding legal framework	Estimated Costs [TZS]
		▪ Adequate emergency preparedness plans should be in place, including fire safety measures, first aid provisions, and clear evacuation procedures. ▪ The school should prioritize maintaining a clean and hygienic environment to prevent the spread of diseases and ensure the availability of adequate sanitation facilities. ▪ Promoting health and wellness among students should also be a focus, with initiatives like health education programs, access to clean drinking water, and appropriate waste management practices. ▪ Implement security measures such as fencing of the school premises. Establish anti-bullying policies and procedures to address and prevent bullying incidents.	Public Health Act, 2009 and Occupational Health and Safety Act, 2003	
Decommission phase	Abandoned infrastructure	▪ PO-RALG and other project stakeholders should develop a comprehensive demolition plan that includes proper disposal or recycling of materials, as well as strategies for repurposing or redeveloping the vacant spaces that will be created. ▪ Creating initiatives to transform the abandoned structures into community assets, such as recreational areas, community centers, or affordable housing projects.	Geita Town Council under PO-RALG Land Act, 2019, Environmental Management (Solid Waste Management) Regulations, 2009 as amended in 2016, Environmental Management (Hazardous Waste Control and Management) Regulations, 2021 and Environmental Management (Control and Management of Electrical and Electronic	20,000,000

Phase	Potential Aspect/Impacts	Management/Mitigation Measures	Responsibility and guiding legal framework	Estimated Costs [TZS]
			Equipment Waste) Regulations, 2021	
	Safety Hazards	▪ Effective communication and coordination among project stakeholders, including contractors, workers, and relevant authorities, are vital for maintaining a safe working environment. ▪ It is crucial for the contractor to prioritize safety measures and adhere to strict guidelines and regulations by implementing comprehensive safety protocols, providing appropriate personal protective equipment (PPE), conducting thorough risk assessments, and ensuring proper training for workers to significantly reduce the likelihood of accidents and injuries during the demolition activities.	Geita Town Council under PO-RALG Public Health Act, 2009 and Occupational Health and Safety Act, 2003	1,000,000
	Unemployment	▪ Ensuring that all staff are members of the National Social Security Fund and the employees should ensure that the developer's contributions are made.	School Administration Social Security Act, 2015	N/A
Total estimated Cost				**80,000,000**

CHAPTER TEN

10 ENVIRONMENTAL AND SOCIAL MONITORING PLAN

Environmental Management Plan (EMP) intends to set forth “environmental and social conditions” that are to be abided by the proponent. It aims at ensuring effective implementation of the proposed mitigation measures

The Project requires regular monitoring and auditing of key environmental, health and safety indicators to:

- assess the overall performance of the project;
- to comply with local environmental, health and safety legislation; and
- Benchmark its project with other similar projects for improved management.

Key environmental parameters of concern with the operation of such a project are:

- water consumption,
- energy consumption; and
- solid and liquid waste handling;

Additionally, the following social parameters need to be keenly monitored to ensure benefits to the community and its sustainability:

- Health status of workers;
- Employment opportunities to local community; and
- Corporate Social responsibility programs.

With these factors in mind, there are a need to put in place elaborate and sound environmental management system and mechanisms of monitoring on a continuous basis the environmental performance of the Project. Undertaking monitoring and auditing of key environmental parameters and putting in place of all approved recommendation of the environmental management plan and conditions of the EIA license achieved, this Monitoring undertaken are both active and reactive.

With increased urban development come the challenges of waste handling and disposal. The monitoring program developed must consider possible impacts of solid waste disposal. All waste emanating from the Project and its disposal must be monitored to ensure no environmental nuisance or degradation arises.

10.1 Parameters are Monitored

Monitoring involves measuring, observing, recording and evaluation of physical, socioeconomic and ecological variables within the project area and the neighborhood. This may include the following:

Table 10-1: Recommended Environmental and Social Monitoring Plan

Phase	Potential Impacts	Parameters to be Monitored	Target Level/Standard	Monitoring Area	Monitoring Frequency	Responsibility	Estimated Cost
Mobilization and Construction Phase	*Atmospheric Air Pollution* due to emissions of exhaust and fugitive gases	SO2, NOx, CO2, CO, Particulate matter (TSP, PM10, PM2.5	CO-4.5g/kWh NOx-1.1 g/kWh HC-8.0 g/kWh PM-0.612 g/kWh Smoke 0.15g/m	Established Monitoring Point	Before commissioning and once every three months	Geita Town Council under PO-RALG along with the contractor	300,000
	Communication interference, stress, fatigue impairment due to increased noise levels from construction vehicles and machinery	Noise and vibration level	As minimum emission as possible	Established Monitoring Point	Once Every three months	Geita Town Council under PO-RALG along with the contractor	300,000
	Loss of biodiversity (both Flora and Fauna)	Biodiversity	As minimum disturbance as possible	Project area	Before commissioning and once every three months	Geita Town Council under PO-RALG	N/A
	Injuries and fatal accidents due to occupational health and safety issues	Incident and accident register	As minimum emission as possible	Project site	Once Every six months	Geita Town Council under PO-RALG along with the contractor	800,000
	Waste generation	Waste disposal Inspection of amount of waste not contained in specified collection containers/skips	Zero waste	Transfer stations and disposal areas	Monthly	Geita Town Council under PO-RALG along with the contractor	200,000

Phase	Potential Impacts	Parameters to be Monitored	Target Level/Standard	Monitoring Area	Monitoring Frequency	Responsibility	Estimated Cost
Operation Phase	Disruption of air quality and effect on human health due to emissions of exhaust and fugitive gases	SO2, NOx, CO2, CO, Particulate matter (TSP, PM10, PM2.5	TZS 845:2005 Air Quality – Specification; TZS 983:2007 Air Quality - Vehicular Exhaust Emissions Limits	Established Monitoring Area	Once every six months	Geita Town Council under PO-RALG along with the School Administration	1,000,000
	Increased Noise emissions	dBA	Noise and Vibration Levels Regulations (United Republic of Tanzania, 2011) 45 dBA (Leq) Day and 35 dBA (Leq) Night and baseline of 50dBA (Leq)	Established Monitoring Area	Once every six months	Geita Town Council under PO-RALG along with the School Administration	1,000,000
	Waste Generation	Waste disposal Inspection of amount of waste not contained in specified collection containers/skips	Zero Waste	Transfer stations and disposal areas	Monthly	School administration along with Geita Town Council under PO0RALG	3,000,000
	Employment Opportunity	Employees	Local procurement and Local employment	Number of Employees	Quarterly	Geita Town Council under PO-RALG	N/A
	General Health and Safety hazards	Accident and incident register	Zero incidents and accidents	School compound	Once every six months	School Administration along with Geita Town	2,000,000

Phase	Potential Impacts	Parameters to be Monitored	Target Level/Standard	Monitoring Area	Monitoring Frequency	Responsibility	Estimated Cost
						Council under PO-RALG	
Decommissioning phase	Injuries and fatal accident	Accident and incident register	Zero accident	Project area	Monthly	Geita Town Council under PO-RALG	2,000,000
	Unemployment	NSSF remittance	All employees	School Compound	Once every year	Geita Town Council under PO-RALG	N/A
Total							10,600,000

10.2 Environmental Health and Safety Auditing

Annual Environmental Health and Safety Audits should be carried out as provided for in the Environmental (Impact Assessment and Audit) Regulations of 2005.

The Audits serve to confirm the efficacy and adequacy of the Environmental Management Plan. The audits should include but not limited to the following:

- Air, soil, and water pollution
- Waste generation, management and disposal;
- Resources utilization
- Occupational Health and Safety
- Traffic Safety;
- Monitoring and

Views and comments from neighbors and progress in implementation of Environmental Health and Safety Management Plan.

10.3 Awareness and education

The project proponent with collaboration with contractor or local workers shall encourage environmental awareness among his supervisors before and during implementation of the project. The education will include:

- Provide copies of the EMP and discuss its contents with all construction foremen and workers
- Discuss techniques and answer questions about erosion and pollution control at regular site safety meetings
- Demonstrate proper housekeeping methods
- Inform the workers of actions to take in the event of spill of hazardous materials (oil, fuel, bitumen, concrete, etc.)
- Post sign at key locations reminding workers how to properly store construction materials, handle and dispose of toxic waste, wash water, and similar instructions
- Remind workers of fines, penalties that may be levied against the project by the local permitting agencies control environmental destruction is not adhered to.

CHAPTER ELEVEN

11 RESOURCE EVALUATION/COST BENEFIT ANALYSIS

11.1 Introduction

Chapter 7 and 8 of this EIS report have documented the cost/impacts of the project to Geita region and the degree to which they can be substantially mitigated. Cost-benefit analysis is normally done in the framework of feasibility study of an activity.

The aim of cost-benefit analysis is to inform the project developer to make a decision on: whether it makes economic sense to continue with the project; whether the chosen option is a cost-effective alternative; and the estimate of the size of a project. For this project, the costs will include capital expenditures; operating and maintenance costs; staff costs; materials; research and development; and environment, health and other social costs.

Benefits may include: build on the achievements of previous projects in the education sector which have supported quality improvements. It will support the expansion of the secondary school network in order to substantially reduce travel distances by bringing secondary schools closer to children's homes through an expansion of the secondary school network. Construction will be guided by a minimum infrastructure package based on the School Construction and Maintenance Strategy and minimum construction standards aligned with the Projects Environmental and Social Framework.

11.2 Environmental cost and benefit analysis

Environmental cost benefit analysis is assessed in terms of the negative and positive impacts. Furthermore, the analysis is considering whether the impacts are mitigatable and the costs of mitigating the impacts are reasonable. As it has been mentioned in Chapters 7 and 8, the potential benefits of the project, in terms of economic advancement and social benefit are substantial.

The environmental impacts are reasonably mitigatable. So to mitigate negative impacts, when compared to the required data are relatively small.

11.3 Effect on the Local Community

The benefits from project development can be judged in terms of employment, social welfare, education development, and the local economy (wages, goods and services). Thus, there will be a substantial spread of the benefit within the community through the provision of food, accommodation and other regular services to the employees and students.

11.4 Infrastructure Development

The upgrading, development and maintenance of local infrastructure are benefits that will extend far beyond the project's scope and lifetime. Also, during operation of the project there will camps that will be constructed with engineering standards at the site especially at Geita TC or within project camps

11.5 Advantages for the Broader Community and Country

The earnings of the project will in the final analysis it will contribute the following,

- Creating a gender sensitive, learner-friendly school environment through investing in supportive structures in the school and community including trained school guidance counselors, stronger links with the community through Parent Teacher Associations and life skills training.
- Supporting female students to avoid getting pregnant and dropping out of secondary school through measures that include
    - Encouraging community awareness of risks for girls; and
    - Supporting safe passage and reducing the distance to schools to reduce the risks of gender-based violence on the way to school.

    - Supporting girls who become pregnant to access recognized, quality Alternative Education Pathways (AEPs)
- To obtain lower secondary certification and continue with upper secondary education or post-secondary education.
- Improving the quality of secondary school teaching and learning environments through the hiring of additional qualified teachers in core subjects and providing textbooks in core subjects.
- Increasing the number of secondary school spaces through the construction of new classrooms that meet minimum infrastructure standards and supporting the expansion of the school network to bring schools closer to communities.
- Using innovative digital technology to facilitate mathematics and science teaching and improve learning

CHAPTER TWELVE

12 DECOMMISSIONING PLAN

12.1 Introduction

Decommissioning is the last phase of project life. It involves terminating project activities and operations and rehabilitating site to or close to its original state. It is anticipated that the project shall continue as long as there is a demand for a project, however, individual components of the project shall be decommissioned as need be.

12.2 Components

This decommissioning plan presents a conceptual framework on how the Project can be demolished if need. The plan takes into consideration on how materials and equipment, support infrastructure and land on which the buildings are standing on can be handled.

12.3 Disposal/Demolition of Project Storage Buildings

Decommissioning of project shall only involve dismantling of the temporary office and store room that will be constructed during construction phase.

12.4 Considerations

- All employees involved in the decommissioning and demobilization exercises must have proper protective gear throughout;
- Decommissioning and demobilization activities should be done during day time only unless it's an emergency;
- Waste resulting must be disposed at designated waste disposal sites;
- All relevant lead agencies must be involved in the exercise; and
- Emergency services such as first aid and ambulance services must be on standby in case of any eventualities.

12.4.1 Decommissioning Plan for a Project's Construction

Table 12-1: Decommissioning Plan for the School's Construction Phase

Task	Description	Estimated Cost
Health and Safety	Detail safety protocols for decommissioning	8,000,000
Legal and Regulatory Compliance	Address permits and regulations	1,500,000
Removal of Equipment	Remove construction machinery and equipment	3,000,000
Waste Disposal	Dispose of construction waste responsibly	1,500,000
Site Restoration	Restore the site to its original state	1,000,000
Final Inspections	Conduct final inspections and obtain approvals	Contractor's fee and Project cost

Project Closeout	Document project	Project Cost
Contingency	Allowance for unforeseen costs	5,000,000
Total Estimated Annual Cost		20,000,000

12.4.2 Decommissioning Plan for the Project's Operation

Table 12-2: Decommissioning Plan for the School's Operation

Task	**Description**	**Estimated Cost**
Students Transition	Prepare students for transition to other schools	15,000,000
Staff Transition	Assist staff in finding new positions	25,000,000
Equipment Disposal	Sell or transfer school equipment and assets	Variable
Facility Closure	Conduct facility shutdown procedures	20,000,000
Administrative Closure	Complete legal, financial, and administrative tasks	12,000,000
Contingency	Allowance for unforeseen costs	35,000,000
Legal and Regulatory Compliance	Address legal requirements for closure	15,000,000
Total Estimated Annual Cost		122,000,000

CHAPTER THIRTEEN

13 CONCLUSION AND RECOMMENDATIONS

13.1 Conclusion

This ESIA report provide description of the proposed project, presents a concept project description and has acknowledged a number of issues pertaining to the operation of Project. The issues/ impacts have been assessed and described in some detail to gain an adequate understanding of possible environmental effects of the project in order to formulate mitigation measures in response to negative aspects, which have emerged.

The project shall have massive benefit to the scientific community and human race as a whole as it shall enable development of a deterministic model of climate change.

Given the nature and location of the development, the conclusion is that the potential impacts associated with the proposed development are of a nature and extent that can be reduced, limited and eliminated by the application of appropriate mitigation measures.

The key findings of the ESIA study conducted by Tansheq Limited are as follows:

- The Project Development Objectives (PDOs) are to increase access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys. SEQUIP will contribute to addressing key challenges to girls and boys accessing education and this school will definitely target girls for their studying excel. The project aims to reduce distance to government target: 3km (or 45 minutes)
- The project will contribute to increasing the total number of students in secondary education including Alternative Education Pathways (AEP) by 250,000. It will directly benefit about 1.8 million secondary school students, including 920,000 girls, 95% of whom are enrolled in lower secondary. SEQUIP will help more girls' transition from lower to upper secondary education, as girls are underrepresented at this level

13.2 Recommendations

The Project should systematically manage environmental as well as health and issues so as to ensure sustainability and attainment of overall goal of the project. This can only be achieve if the ESMP and the Monitoring Plan developed hereinwhithin is properly adhered to and improved upon whenever shortcommings are identified.

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United Republic of Tanzania. (2007). *Environmental Management (Water Quality Standards).* Dar es Salaam: Government Printers.

APPENDIX I: LIST OF THE STAKEHOLDERS CONSULTED

TANSHEQ

TAMISEMI

SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESSMENT

S/N	Name/ Jina	Title/ Cheo	Contacts/ Mawasiliano	Date/Tarehe	Signature/ Sahihi
1	DEODATUS B. KAYANGO	Ag RAS	0788011885	30/11/2022	
2	ANTON MINEVE	REO	0769188393	30/11/2022	
3.	TITO Y. MIELMA	Ag. AMS/EC	0787792539	30/11/2022	
4	NGATOLUWA CHRISTOPHER	RAO	0754654172	30/11/2022	

TANSHEQ

TAMISEMI

SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESSMENT

S/N	Name/ Jina	Title/ Cheo	Contacts/ Mawasiliano	Date/Tarehe	Signature/ Sahihi
1.					
2.	Rashid Mukaya	TSEO	0755453945	30/11/2022	
3.	VICKY RWEYEMAM	TEE	vickyrweyemam@gmail.com 0783-868818	30/11/2022	
4	VEDOA CHARLES	TLS	[illegible]	—	
5	STEVEN LENARD	TLS	[illegible] 0769 086 9 23	—	
6	HAMZA J.N	CIVIL ENG	hamza [illegible] 0713869614	— // —	
7	RAMADHANI M. KHALFAN	SLO(S)	0763201319	30/11/2022	
8	CHANE YAHYA	DRIVER	0624892020	— // —	
9	ZEISLO H. POLLE	TSEO	0757835021	—	

TANSHEQ

TAMISEMI

SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESSMENT

S/N	Name/ Jina	Title/ Cheo	Contacts/ Mawasiliano	Date/Tarehe	Signature/ Sahihi
1	FEROUZ IBRAHIM	MWANYENYI	0755405164	30/11/2022	
2	LILIAN NASAI GALUS	CLEO	0620538602	30/11/2022	
3	COSMAS J. BAYAGA	WEO	0754649313	30/11/2022	
	ROSEMARY BUTUIKA	MKAZI	0789007260 02364	30/11/2022	
	Helena Salvatory	MKAZI	0786498896	30/11/2022	
	Sarah Maggyalumba	MKAZI	0674549794	30/11/2022	

TANSHEQ

TAMISEMI

SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESSMENT

SN	Name/Jina	Tittle/Jina	Contacts/Mawasiliano	Date/Tarehe	Signature/Sahihi
1	SALUM MWANDAPILE	OHJ (OSHA)	0713356651	28/04/23	

TANSHEQ

TAMISEMI

SEQUIP – ENVIRONMENTAL AND SOCIAL IMPACT ASESSMENT

SN	Name/Jina	Tittle/Jina	Contacts/Mawasiliano	Date/Tarehe	Signature/Sahihi
1.	INSP MAROSA J. KILAVO	OC. LEGAL	0717-158253	04/05/2023	
2.					

APPENDIX II: EMERGENCY RESPONSE PLAN

1.0 Introduction

The purpose of this Emergency Response Plan is to establish procedures and guidelines that will ensure the safety and well-being of students, staff and visitors in the event of an emergency within the school premises. This plan outlines measures to be taken before, during and after various emergencies to minimize potential risks and provide effective responses.

1.1 Emergences Response Procedures

1.1.1 Fire Emergences

Students, staff, visitors, and members of the school community are kindly requested to remain vigilant and promptly report any signs or evidence of fire within the school premises. It is essential to observe and identify the following indicators:

I. **Smoke**:

- Report any sight or smell of smoke, regardless of its source or location within the school buildings or surrounding areas.
- Pay attention to areas where smoke may accumulate, such as stairwells, restrooms, or utility rooms.

II. Burning smell:

- Take note of any unusual or strong burning odors that may indicate a fire.
- Report any such smell, even if there is no visible smoke or flames.

III. Abnormal heating of any material or machines:

- Be observant of any objects, equipment, or machinery that exhibit abnormal or excessive heat.
- Report any instances where materials or devices feel unusually hot to the touch.

The swift detection and reporting of potential fire incidents are crucial for ensuring the safety and security of everyone within the school. All members of the school community are encouraged to remain alert and immediately inform the designated authorities or the emergency response team upon discovering any of these fire-related signs or evidence. Remember, early detection and timely reporting can help prevent the escalation of fire hazards and facilitate prompt response and evacuation procedures if necessary.

1.1.1.1 Fire response Plan (for Large Fires)

I. Use emergency communication systems to notify the Emergency Coordinator/Supervisor immediately of the fire's location.
II. Ensure that doors in large buildings open outwardly to facilitate easier movement of people outside the building.
III. Activate the nearest fire alarm within the premises to alert others of the emergency.
IV. If safe to do so, rescue any person in immediate danger and move them to a place of safety.
V. If someone's clothing is on fire, cover them with fire blankets. If fire blankets are not available, use water from showers or other sources to extinguish the flames.
VI. Proceed to the nearest exit and evacuate the building area using the nearest available exit.
VII. Close doors behind you to contain any smoke and prevent the fire from spreading further within the building.
VIII. Proceed to the designated assembly area and do not re-enter the building until it has been deemed safe to do so by emergency personnel.
IX. If you are unable to exit the room, try to prevent smoke from entering by using available materials to block gaps under doors or windows.

X. Make efforts to draw attention to your location if you are trapped. Use a phone, window, or call for help to alert others. Remember, smoke inhalation is a significant danger in fires.
XI. Only attempt to use a fire extinguisher if the fire is small and you have been properly trained to operate it safely.
XII. If you have any doubts about operating the fire extinguisher or if the fire extinguishing attempts are ineffective, evacuate immediately from the building.
XIII. Call the firefighting crew or emergency services (e.g., dial 911) immediately for professional assistance.

1.1.2 Chemical and Hazardous Material Spills

This section covers important information for emergence involving the release of chemical or hazardous substance that could harm people health and environmental.

- Train laboratory staff and science teachers in proper safety protocols.
- Establish clear guidelines for reporting accidents or injuries.
- Implement procedures for quickly and safely evacuating students from the laboratory area.
- Designate staff members responsible for administering first aid and contacting emergency medical services, if necessary.

1.1.3 Medical Emergencies

I. Remain calm and focus on ensuring the safety and well-being of all individuals involved, without compromising your own safety.
II. Immediately seek help by contacting the designated emergency phone number for the clinic and inform the Supervisor or appropriate personnel.
III. Provide the necessary First Aid services to the injured person(s) as trained and within your capabilities.
IV. Avoid moving an injured person unless they are in immediate danger of further harm. Stabilize the person and wait for medical professionals to assess the situation.
V. Alert personnel in adjacent areas of any potential hazards to their safety, such as fire explosions, chemical contamination, or civil disturbances.
VI. If a person's clothing is on fire, cover them with a fire blanket if available. If not, instruct them to roll on the floor to extinguish the flames. If showers are immediately available, use them to douse the person with water.
VII. If chemicals have entered the eye, promptly flush the affected eye with plenty of water for at least 15 minutes, ensuring to wash the eyeball and inner surface of the eyelid.
VIII. If necessary, transport the injured person(s) to the nearest dispensary or hospital. If an ambulance is not readily accessible, utilize the available means of transportation to ensure timely medical attention.

1.2 Resources and Equipment

1.2.1 First Aid Kits

In the school area, each designated area will be equipped with a First Aid Kit, which will be stored in a readily accessible location for emergency team members. These kits will contain essential first aid items that can be used before seeking further medical assistance at the clinic.

To maintain the effectiveness of the First Aid Kits, the clinic staff and/or Office Supervisor will conduct regular inspections to ensure that the items are in good condition and have not expired. This includes checking the integrity of the packaging, verifying the expiration dates of medications and perishable items, and replenishing any used or depleted supplies

1.2.3 Fire Extinguisher

To ensure the safety of the school compound, fire extinguishers will be strategically placed in all buildings, including classrooms, dormitories, laboratories, the dining hall, and offices. These fire extinguishers will be regularly inspected to ensure they are operational and ready for use.

A yearly inspection will be conducted to verify the functionality and condition of each fire extinguisher. Trained personnel or a designated fire safety team will perform these inspections, checking for any signs of damage, ensuring that pressure gauges are within the recommended range, and confirming that safety seals are intact. If any issues are identified during the inspection, immediate maintenance or replacement of the fire extinguisher will be arranged.

1.2.5 Alarms

The school's alarm system serves as a crucial tool for emergency notification. In the event of an emergency, all students, staff, visitors, and contractors are required to respond promptly and gather at the designated assembly point once the alarm is activated. The safety and well-being of everyone within the school compound are of utmost importance, and this response protocol ensures a swift and organized evacuation or response to any potential threat or emergency situation. By adhering to this procedure, we can maintain a secure environment and effectively practice our emergency preparedness measures

1.3 Accident / Incident Reporting Obligation

- All incidents/accidents must be reported
- Notify the department responsible, Safety Managers and Environmental personnel if the accident/ Incident have led into Environmental impacts
- Report all incidents and accidents using and incidents/ Accident form to ensure that corrective measures are in place to prevent re occurrence in future
- The filled incident and Accident form will be signed off when all corrective is already done.

1.4 Responsibilities

1.4.1 Workers and Students

- Workers and Students are responsible to ensure that all incidents or suspicious situations are reported immediately
- When fire alarm signal has sounded or shout for fire, workers and students are required to immediately evacuated the buildings and if possible, knocking on their neighbor doors and while saying **EMERGENCE GET OUT!**
- Familiarize with the Emergence Response Plan
- Familiarize with the signs **EXIT, EMERGENCY EXIT, ASSEMBLY POINT**
- Observe the fire warning sign such as **DO NOT SMOKE, FIRE**
- To know where the assembly point is it

1.4.2 Office Supervisor/ Emergence Coordinator

Emergence Coordinator or office Supervisor will be responsible to responsible the rescue team (Fire crew, first aiders and emergence response team) during emergencies cases
To identify OHS training needs depending upon the existing requirement

1.4.3 District Secondary Education Officer

- To provide recourses to implement Emergence Preparedness Plan

1.4.4 Emergence Respond Team

- To quickly respond, evacuate the facility within the designated timeframe, and follow all other procedures as listed in the emergency plan.
- Know where emergency and first aid equipment are found in the building (s) and how to use such equipment.
- Know the Emergency number and understand how the chain of command works.
- Known Emergence numbers and understand how the chain of command works

1.5 Trainings Programs

- Workers and Students will be trained depending upon the Training needs of each section
- Occupational Health, Safety and Environmental meeting will be held in month basis to ensure that issues from department are communicated and managed according
- Key personnel will be trained on evacuation procedures, use of fire Equipment's, first aid procedure etc.
- Notices indicting contact details for first aiders or appointed persons, the emergence contact number and where the first – aid box is must be posted at the site

1.6 Emergence Contact Detail

Table 1.1 List of Emergency Contacts

S/N	Organisation	CONTACT
1.	Geita Town Executive Director	
2.	Geita Town Secondary Education Officer	
3	Fire and Rescue Office	
4	TANESCO	
5	Bombambili Ward Executive Officer	
7	Geita Regional Referral Hospital	

APPENDIX III: TITLE DEED

TITLE No: 3952 GLR
REGISTERED ON: 10·07·2023
AT: 11:00 A.M
Senior Asst. Registrar of Titles

Land Form No. 22
TANGANYIKA STAMP DUTY ACT
Stamp Duty Shs: 400/= Paid
Receipt No: 92203809308633
of: 11·02·2022
Stamp Duty Officer

TANGANYIKA STAMP DUTY ACT
Stamp Duty Shs: 100/= Paid
By Original Receipt Shs: 92203809
of 3086334 of 11·02·2022
Stamp Duty Officer

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

Title No. 3952 GLR
L. O. No. **660780**
LD/GTC/11253

The 12th day of June Two thousand and twenty three.

THIS IS TO CERTIFY that **GEITA TOWN COUNCIL** of **P.O. Box 384 Geita** (hereinafter called "the Occupier") is 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 (99)** years from the first day of **January, two thousand and twenty two** according to the true intent and meaning of the Land Act and subject to the provisions thereof and to any regulations made there under and to any enactment in substitution there for or amendment thereof and to the following special conditions;

1. The Occupier having paid rent up to the thirtieth day of June **2023** shall there after pay rent of **shillings five thousand (5,000/=) only** a year in advance on the first day of July in every year of the term without 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) Plant, maintain protect and preserve or conserve not less than five trees on the land within thirty six months from the day of commencement of the right. The occupier may plant fruits or wood trees depending on the climatic conditions or such land or as it can be directed by the Planning Authority and shall insure such trees are kept, maintained or replaced throughout the term of such right of occupancy.

(iv) Buildings to be in permanent materials

(v) Building plans to be submitted to **Geita Town Council** within six months from commencement of the Right.

(vi) Building Construction to begin within **six months** after the approval of the plans.

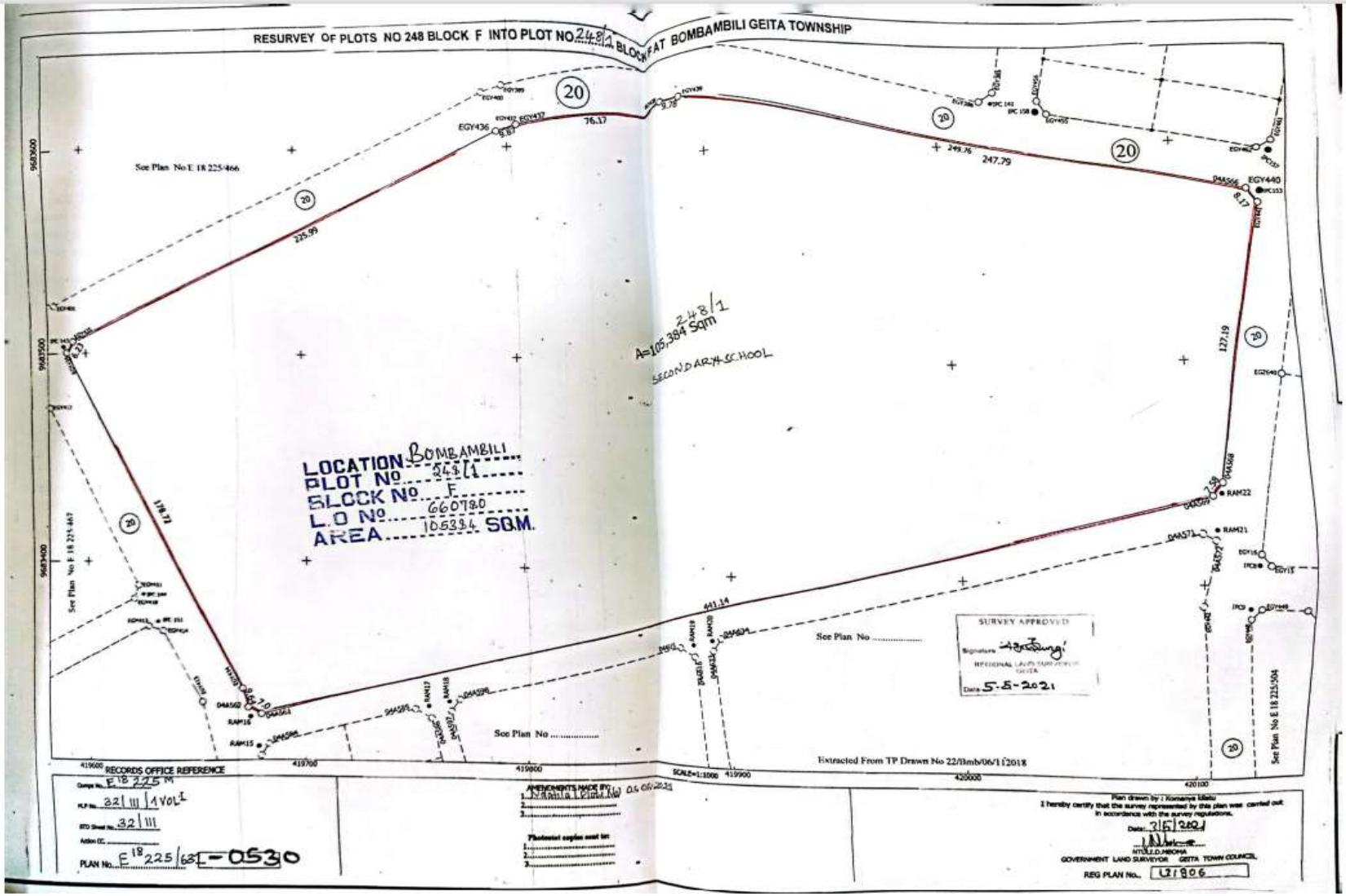
(vii) Building to be completed within **thirty six** months from the commencement of the Right.

3. **USER**: The land and the buildings to be erected thereon shall be used for **Secondary school purposes only, Use Group "K" Use Class (c) as** defined in the Urban Planning (Use Groups and Use Classes) Regulations, 2018.

4. The Occupier shall not assign the right within three years of the date thereof without the prior approval of the 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 or in public interest.


RESURVEY OF PLOTS NO 248 BLOCK F INTO PLOT NO 248/1 BLOCK F AT BOMBAMBILI GEITA TOWNSHIP
See Plan No E 18 225/466
See Plan No E 18 225/467
See Plan No E 18 225/504
See Plan No .....
LOCATION BOMBAMBILI
PLOT No 248/1
BLOCK No F
L.O No 660780
AREA 105384 SQM.
A=105,384 Sqm
248/1
SECONDARY SCHOOL
SURVEY APPROVED
Date 5-5-2021
Extracted From TP Drawn No 22/Bmb/06/1 2018
SCALE=1:1000
RECORDS OFFICE REFERENCE
PLAN No. E 18 225/63 L-0530
REG PLAN No. L/1806
GOVERNMENT LAND SURVEYOR GEITA TOWN COUNCIL

SCHEDULE

ALL that Land known as Plot No. **248/1 Block 'F'** situated at **Bombambili** in **Geita Town Council** containing **one hundred and five thousand three hundred eighty four (105384) square meters** shown for identification only edged **red** on the plan attached to this Certificate and defined on the registered Survey Plan numbered **131806** 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.

ASST. COMMISSIONER FOR LANDS

We, the within named **GEITA TOWN COUNCIL** hereby accept the terms and conditions contained in the foregoing Certificate of Occupancy.

SEALED with the Common Seal of the said)
GEITA TOWN COUNCIL)
)
in presence of us this..... day of .....2022)

Name: ZAHARA MICHUZI)
Signature.....)
Postal Address: 384, GEITA)
Qualification: TOWN DIRECTOR)

Name: CONSTANTINE MORANDI)
Signature.....)
Postal Address: 384, GEITA)
Qualification: CHAIRMAN)

APPENDIX IV: GEOTECHNICAL INVESTIGATION REPORT

JAMHURI YA MUUNGANO WA TANZANIA

WIZARA YA UJENZI

WAKALA YA BARABARA TANZANIA

Unapojibu tafadhali taja:

Kumb Na AH.178/338/01F/68 Tarehe: 10 .1. 2024

Halmashauri ya Mji Geita,
Shule Maalumu ya Sekondari ya Wasichana,
S.L.P 384,
Geita.

YAH: UPIMAJI WA UBORA WA KOKOTO KATIKA MAABARA YETU.

Tafadhali rejea barua yako ya tarehe 07.12.2023.

2. Kwa barua hii napenda kukutaarifu kuwa tumefanya vipimo vya ubora wa kokoto kama ulivyoomba.

3. Matokeo ya vipimo hivyo yameambatishwa kwa hatua Zaidi.

Nawasilisha.

Ian M. Nyeme,
Kaimu Meneja wa Mkoa,
TANROADS - GEITA,

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS
TANZANIA NATIONAL ROADS AGENCY
REGIONAL MANAGER'S OFFICE, GEITA

GEOTECHNICAL INVESTIGATION FOR THE PROPOSED CONSTRUCTION OF GEITA GIRLS HIGH SCHOOL

Prepared by
Regional Manager's Office,
TANROADS P.O Box 433, Geita

Client Address
Geita Girls High School,
P.O. Box 70, Geita.

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Acronyms and Abbreviations

DPL	-	Dynamic Probing Light Test
GL	-	Ground Level
MPa	-	Mega Paschal
kPa	-	Kilo Paschal
P	-	Point
qu	-	Bearing Capacity
SPT-N	-	Standard Penetration Number
SPT-N60	-	Corrected Standard Penetration Number
TP	-	Trial Pit
BS	-	British Standard
PI	-	Plasticity Index
BH	-	Borehole
BGS	-	British Geological Survey
UCS	-	Uniaxial Compressive Strength
UTM	-	Universal Transverse Mercator
WGS	-	World Geodetic System
m.s.l	-	Above mean seal level
b.g.l	-	Below ground level
FoS	-	Factor of Safety
k_a	-	Ground acceleration factor
MYA/MA	-	Million years ago
PGA	-	Peak Ground Acceleration
TANROADS	-	Tanzania National Roads Agency

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Executive summary

This report presents the findings of the geotechnical investigation performed for the purpose of providing detailed geotechnical report for construction of Geita Girls High School in Geita Region.

The facility will serve to support various activities of the education as an effort to improve the environment for good education in Geita Region.
The project will be successful if the findings and recommendations presented in this report are incorporated in the preparation of foundation design and construction. The recommendations contained herein are contingent upon adequate monitoring of the geotechnical aspects of the construction by the client and contractor.

The field geotechnical investigation was conducted on 11th September 2023 at the proposed site for the aim of providing bearing capacity for construction of proposed School building. Total of twenty-three (23) light probing dynamic penetrometer test were conducted to the depth between 0.3 m to 1.0 m for the purpose of screening the area. Five (5) boreholes were excavated as detailed geotechnical investigation for subsurface with maximum depth of 7.0 m respectively.

Stratigraphy

Generally, the stratigraphy of the project site composed of Very clayey SAND of intermediate plasticity extending from surface to a depth 1.5m deep followed by Sandy CLAY of high plasticity to a depth of 2m deep. The soil layer is characterized by fine to medium grained particles of Sandy

Recommendations

Based on bearing capacities calculated by using light dynamic penetrometer test (DPL), SPT-N Values, cohesion and friction angle, and UCS results, some recommendations are made as follows;

I. The best foundation zone is at 1.5m to 2m deep where the bearing capacity is 218kPa, Pad foundation with big ground beam will make the foundation to be safe or favourable strip footing is recommended. It should be noted that according to the laboratory results the site has threat of settlement due to presence of clayey soil at a depth of 2m deep, therefore to minimize the effect dumped and compacted rock of 0.4m should be considered before foundation.

II. Bearing capacity at 2m deep is 319kPa.

III. The ground beam should be designed to counteract potential uplift pressure and minimize defferential settlement, hence to consider torsional reinforcement.

Based on the above recommendations, it could then be concluded that the area is good for construction of the intended building.

CHAPTER TWO

2.0 SITE INVESTIGATION

2.1 Investigation methodology

Geotechnical site investigations typically comprise a desk study; walk–over reconnaissance site survey; intrusive field ground investigation; soils, water or rock laboratory testing; results analysis and finally factual or interpretative reporting.

In the desk study all information related to the project were collected and reviewed. The site reconnaissance comprised performing a physical walk-over survey of the site being investigated by a trained Geotechnical Technical staff and then by Geotechnical Engineer visited the site and identifies surface features visible to an unaided eye which are deemed of importance to the performance of the proposed engineering use intended for the project site. In this investigative stage relevant local knowledge is also sourced by conversing with informed locals. After these two, a ground investigation is appropriately catered to the outcomes obtained so far as well as to the proposed engineering use.

Field ground investigation necessitates intrusion of the ground by opening up trial pits or advancing boreholes depending on the suggested depths of investigation and doing appropriate sampling and characterization of the encountered ground strata as on each relevant depth. Characterization of the encountered ground strata is done jointly, on site and by appropriate laboratory testing. Laboratory results with the in-situ field tests are then analysed and interpretations are done based on the expected soil mechanical behaviour and assumed interaction with any of the proposed engineering uses.

2.2 Desk Study

The desk study was conducted which involved to obtain all available information with regard to the site and its geological environments. It also involved a search through records, maps, (topographical and geological), and any other information which is relevant to the geology, history and present condition of the site.

2.3 Site geology

Magogo in Geita local geology description by Tanganyika map first edition of the Geological Survey of Tanganyika, Figure 3, suggests the project area consists of superficial deposits of Granite rocks, the soil consist of typical well graded mixture of stone fragments of coarse sand, fine sand and silt sand with a slightly plastic soil bidder.

2.4 Site seismic category

As per various reviewed map sources, the Geita area, and therefore the proposed project site, is generally categorised with Very low to low seismic hazard potential and rare earthquake activities with an estimated 0.02 - 0.2 PGA, m/s^2 with a 10% probability of

exceedance in 50 years and 475 years return period refer Building research and Uro code 19. The regional seismic risk map from the Tanzania Technical Guideline of Loads for Structural Design similarly categorises Geita as Zone 1 which has weak and not frequent seismic events, 3 – 5 on the Richter scale with a ground acceleration factor, k_a of 0.025.

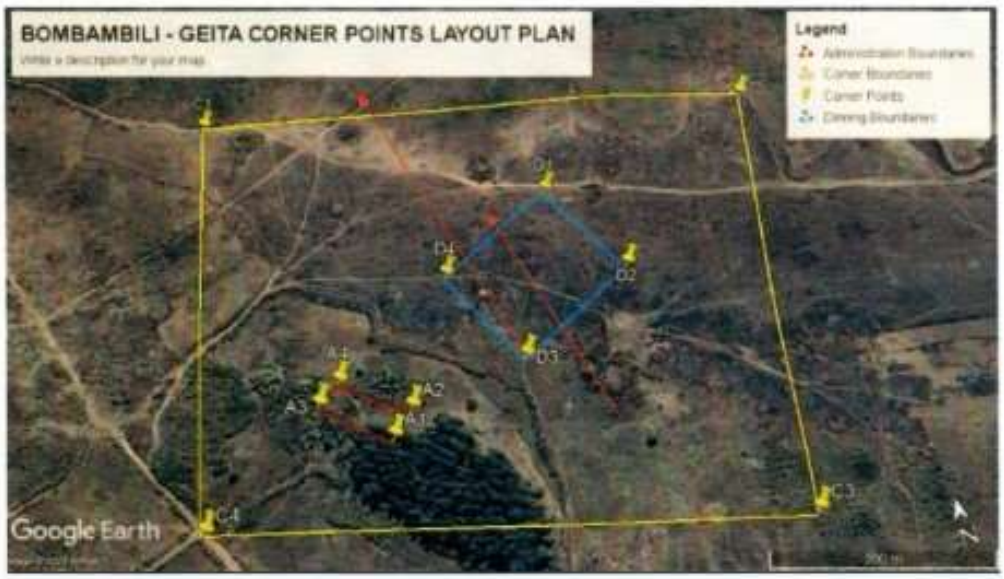


***Figure 1**: Google Earth © 2021 aerial view satellite image showing the project site locations for geotechnical investigation for the proposed construction of construction of Bombambili Girls High School at Magogo Geita Town Council in Geita Region,. (Imagery date 1)*

2.5 Site weather

Generally, Geita has an average temperature of **22 C°. September – November** are the warmest months and the lowest average temperature in the year occur in **July and August when the temperature is 17C°.**

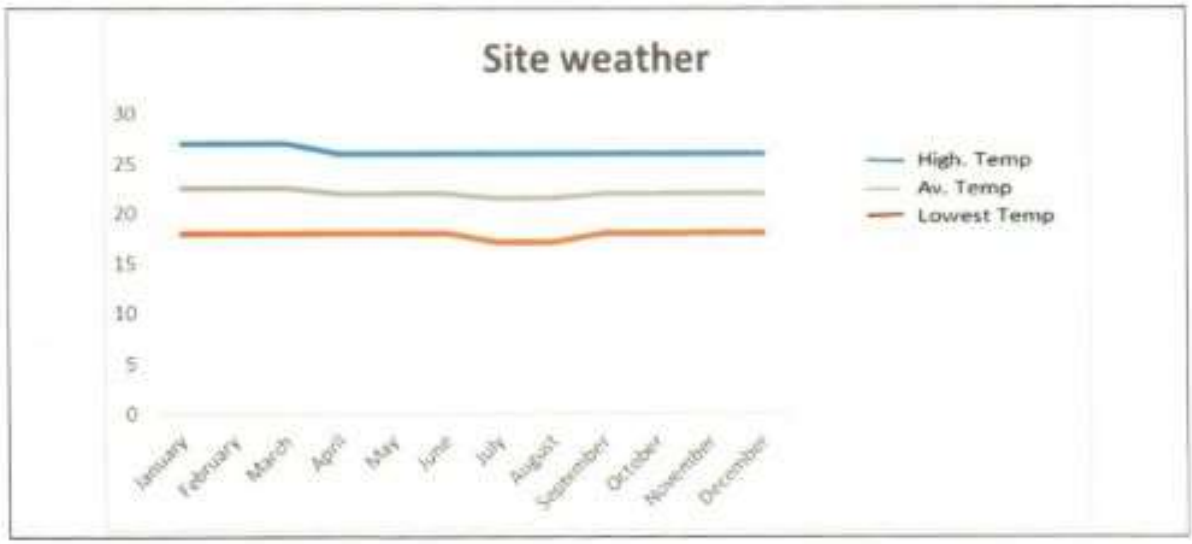


Figure 3: *Geita weather Forecast.*

The average precipitation varies 1238 mm between the driest month and the wettest month. The variation in temperatures throughout the year is 5.0 °C.

CHAPTER THREE

3.0ANALYSIS AND FINDINGS

3.1 Site ground profiling

The field characterisations of the soil layers were taken to laboratory for further investigation as they were excavated. The field ground investigation was undertaken from 11th September, 2023.

The investigation trial pit was dug at the site where up to 7.0m below ground level as per the layout shown on Figure 1. Table 1 shows the details of the DPL geotechnical investigation points at the site.

The trial pits were excavated by hand through the soil. In this technique a 1000mm to 2000mm trial pits were dug to depth of 4500mm, 4500mm and 4500mm for Magogo and at every 1500mm undisturbed sample was collected for laboratory tests in connection to that field classified and arranged on the ground in a line sequence as in the order they were exhumed so as to define the ground profile.
Bulk disturbed samples were taken from every different stratum layer encountered along the excavation profile as well as using the 50-mm diameter split spoon sampler slightly disturbed samples were done. A U4 sampler 4 inches (100mm) diameter 130mm short steel tube with a 10mm hardened cutting edge and hammering mechanism was used to take 'undisturbed samples' of slightly cohesive to cohesive soils whenever encountered.

Details of the investigation points undertaken for the proposed structure construction at Magogo which found in Geita Town Council.

Table 1: *Corner point of the proposed area (Coordinates in WGS 84)*

Investigation point	Coordinates	Elevation a.m.s.l (m)	Location
LDCP1	9683303 N 419746 E	1271	Magogo
LDCP2	9683243 N 420048E	1272	Magogo
LDCP3	9683013 N 419980E	1272	Magogo
LDCP4	9683078 N 419719E	1270	Magogo

Table 2: *DPL Coordinates Points*

Point ID	Coordinates	
	Eastings (E)	Northings (N)
DPL 01	419863	9683165
DPL 02	419896	9683161
DPL 03	419932	9683152
DPL 04	419869	9683093
DPL 05	419836	9683121
DPL 06	419795	9683112
DPL 07	419754	9683088
DPL 08	419742	9683136
DPL 09	419776	9683182
DPL 10	419748	9683242
DPL 11	419804	9683272
DPL 12	419885	9683240
DPL 1 3	419955	9683248
DPL 1 4	420016	9683217
DPL 15	419942	9683191
DPL 16	419984	9683152
DPL 17	419985	9683089
DPL 18	419935	9683115
DPL 19	419914	9683070
DPL 20	419954	9683036
DPL 21	419885	9683041
DPL 22	419840	9683061
DPL 23	419785	9683071

Table 3: *Trial pits*

Pont ID	Coordinates	
	Eastings(E)	Northings(N)
BH 1	419912	9683195
BH 2	419881	9683131
BH 3	419790	9683112
BH 4	419779	9683252
BH 5	419953	9683054

3.2 Field Exploration and Post Field Works

3.2.1Field Exploration Works

Field exploration work started with the screening of the proposed area whereas a team member from Geita Tanroads and Edge Engineering and Consulting ltd visited the site and conducted initial investigation, which later aided in setting the location of the test holes. Visual observation was made to study the geological settings in different part of the study area and to assess potential risk associated with the area as presented in Chapter 4. Screening of the site by using light dynamic penetrometer test (DPL) was conducted during site visit. Finally, borehole excavation was conducted for detailed geotechnical investigation of subsurface conditions.

3.2.2Light Dynamic Penetration Tests

A geotechnical investigation by using DPL test was conducted on 11th of September 2023 for the proposed construction site. A total of Twenty-three (23) Light penetrometer test to the depth between 0.3 m to 1.0m was conducted at the proposed sites for the purpose of investigating the ability of the ground to bear load and acquisition of information on the depth of the bedrock and the allowable bearing capacity for designing.

A DPL apparatus operates with a 10 kg weight, drop height 50 cm, generating the energy of 50 kJ to drive rods and cone to 2.5-meter depth. The cone, massive, of diameter d = 35.7 mm, tip angle 90° and cross section 10 cm², admits capturing resistance information of the soil. The results of the penetration test indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. The purpose of DPL tests is to undertake screen tests and obtain in-situ bearing capacities that will assist in recommending the type of foundation to be adapted.

3.3 Post Field Work

Laboratory tests were carried out at accredited Laboratory of University of Dar es Salaam in order to acquire necessary information with regards to the physical and mechanical properties of the soil layers which later were used to evaluate and determine the strength parameters (frictional angle and cohesion) required for the designing of foundations. The soil tests within the manual have adopted BS1377: Part 2:1990. Table (5-1) show the list of tests that were conducted.

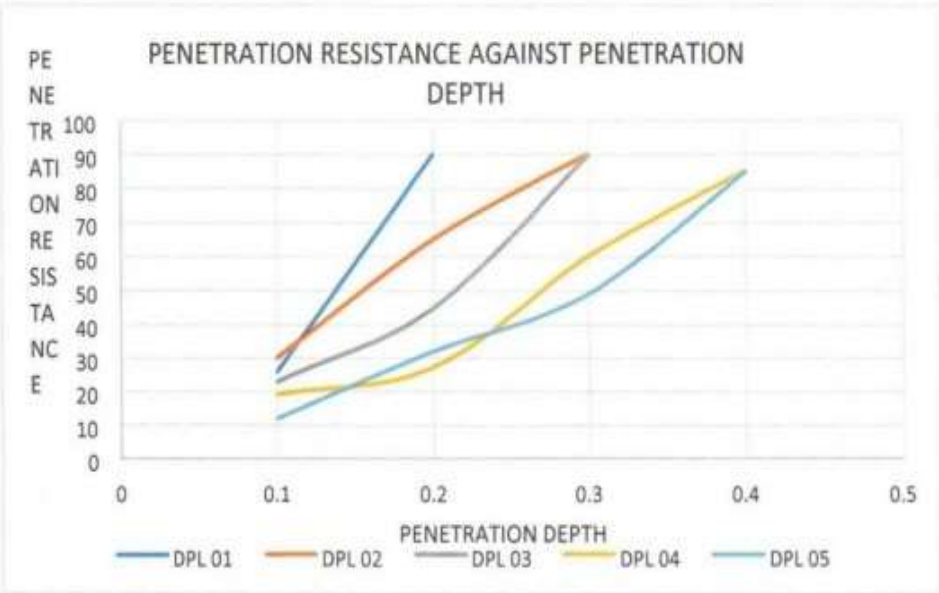


Figure 4: Number of Blows from DPL 1 to DPL 5

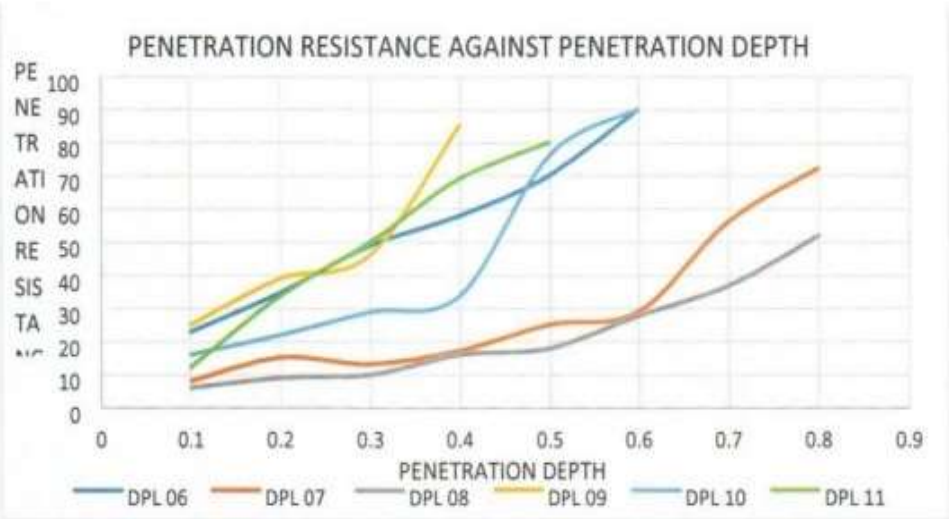


Figure 5: Number of Blows from DPL 06 to DPL 11

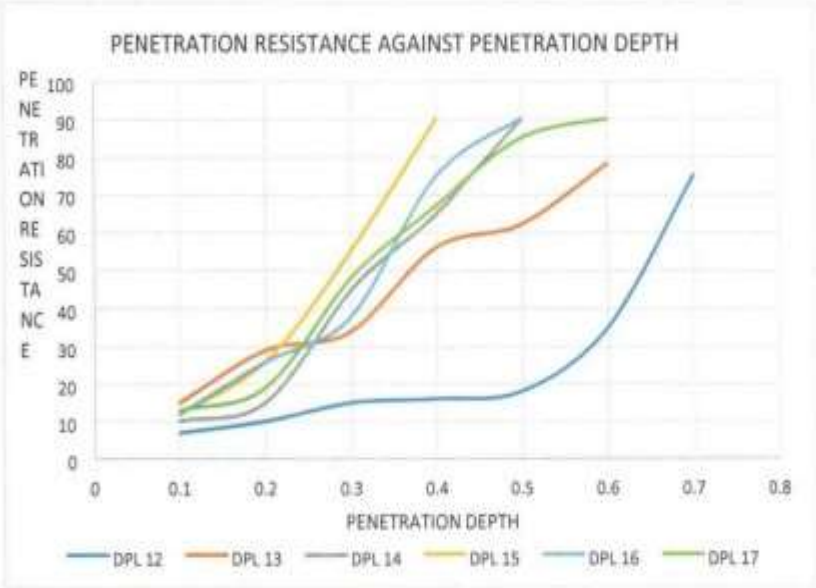


Figure 6: Number of Blows from DPL 12 to DPL 17

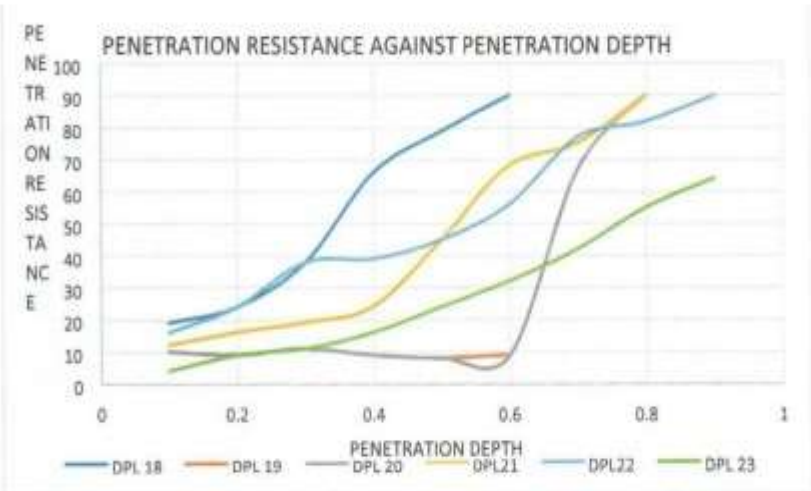


Figure 7: Number of Blows from DPL 18 to DPL 23

The SPT N-Value of the project site from the depth of 1.5m to the bottom are summarised on the Table 6-1. The variation of SPT N- Values indicates the difference in layer compactness at different depths.

Table 4: Summary of laboratory tests

Type of test	Scope	Material	Laboratory
Direct shear	Strength properties	Soil	UDSM
Consistency	Material properties	Soil	TAN -LAB Geita
Density of solid	Materials properties	Soil	TAN -LAB Geita
Water content	Materials properties	Soil	TAN -LAB Geita
Consistency	Materials properties	Soil	TAN -LAB Geita

3.4 Findings

3.4.1 Ground Screening Test Results

Ground screening test was performed on the project site at twenty-three (23) different points with a varied depth of 0.3m to 1m deep as a preliminary soil investigation. Figure 1-1 shows the graphical presentation of the DPL points from DPL1 to DPL6

As a rule of thumb, the number of blows increases as the penetration depth, however the graph on the Figure 6.1 shows the number of blows against penetration depth is not continues top soil extending from the surface to a varied depth of 0.1m to 0.4m deep, estimated as soft to compact soil layer with resistance value of 10-21 blows. This soil layer is unlikely to provide good support for foundation. The soil layers need ground improvement technique to ensure safe and stable foundation.

Followed by a soil layer varied to a depth of 0.4m to 6.0m deep, estimated as silty SAND soil layer with resistance value ranging from 21- >50 blows. This soil can provide good support for foundation.

The bottom soil layer to a depth of 7.0m deep, estimated as hard soil layer with resistance value of >50 blows. This soil is likely to provide good support for foundation.

Table 5: SPT N- Vaue

BH ID	Depth (m)	SPT N - Value	Degree of Compaction
BH 01	1.5	21	Compact
	3.0	30	Compact
	4.5	43	Dense
	6.0	>50	Very dense
BH 02	1.5	20	Compact
	3.0	43	Dense
	4.5	49	Dense
	6.0	>50	Very dense
BH 03	1.5	19	Compact
	3.0	34	Dense
	4.5	>50	Very dense
	6.0	>50	Very dense
BH 04	1.5	17	Compact
	3.0	30	Compact
	4.5	49	Dense
	6.0	>50	Very dense
BH 05	1.5	19	Compact
	3.0	28	Compact
	4.5	46	Dense
	6.0	49	Dense

Basing on the Table 5, the minimum blows of 17 was recorded on the BH 04 at a depth of 1.5m deep and the maximum blows of 50 was recorded at a depth of 6.0m deep on BH 01, BH 02 and BH 03 at a depth of 4.5m and 6.0m. This explained that the soil at a depth

of 1.5m is compact, this notify that the soil is suitable for foundation but requires soil compaction and soil improvement techniques to ensure safe and stable construction. Where from the depth of 2m to 7m deep the soil is dense to very dense which is suitable for foundation.

Table 6: the bearing capacity due to SPT – N Value

BH ID	Depth (m)	SPT N - Value	Bearing Capacity (kPa)
BH 01	1.5	21	168
	3.0	30	240
	4.5	43	344
	6.0	>50	400
BH 02	1.5	20	160
	3.0	43	344
	4.5	49	392
	6.0	>50	400
BH 03	1.5	19	152
	3.0	34	272
	4.5	>50	400
	6.0	>50	400
BH 04	1.5	17	136
	3.0	30	240
	4.5	49	392
	6.0	>50	400
BH 05	1.5	19	152
	3.0	28	224
	4.5	46	368
	6.0	49	392

From Table 6: The bearing capacity at a depth of 1.5m to 3.0 m deep are varied from 136kPa to 344kPa. this can be explained that the soil is good support for the foundation

up to 3m deep, but the soil requires ground improvement technique to ensure safe and stable foundation.

The soil from 3.0 to 6.0m deep bearing capacity varied from 344kPa to 400kPa, the soil layer can provide good support for the foundation, the soil from 6.0m to more is rock can sufficiently provide good support to foundation.

The soil of the project site is dominated by very clayey SAND of intermediate plasticity with cohesion value of 22Mpa and friction angle of 25 degree extending from the surface to a depth of 1.5m deep, followed by the soil layer of sand CLAY of high plasticity with cohesion value of 28Mpa and friction angle of 23 degree.

Table 7: Allowable safe bearing Capacity from the investigation points undertaken for the proposed construction of Bombambili Girls High School at Geita Region.

Proposed structure	Depth of foundation (m)	Bearing capacity	Bearing capacity due to cohesion and friction angle	Recommended bearing capacity	Recommended foundation type
Building	1.5	136	301	218	Pad/strip foundation
	2	224	319	271	Pad/strip foundation

3.5 Conclusion and Recommendation

Based on bearing capacities calculated by using light dynamic penetrometer test (DPL), SPT-N Values, cohesion and friction angle, and UCS results, some recommendations are made as list below;

I. The best foundation zone is at 1.5m to 2m deep where the bearing capacity is 218kPa, Pad foundation with big ground beam will make the foundation to be safe or favourable strip footing is recommended. It should be noted that according to the laboratory results the site has threat of settlement due to presence of clayey soil at a depth of 2m deep, therefore to minimize the effect damped and compacted rock of 0.4m should be considered before foundation.

II. Bearing capacity at 2m deep is 319kPa.

III. The ground beam should be designed to counteract potential uplift pressure and minimize deferential settlement, hence to consider torsional reinforcement.

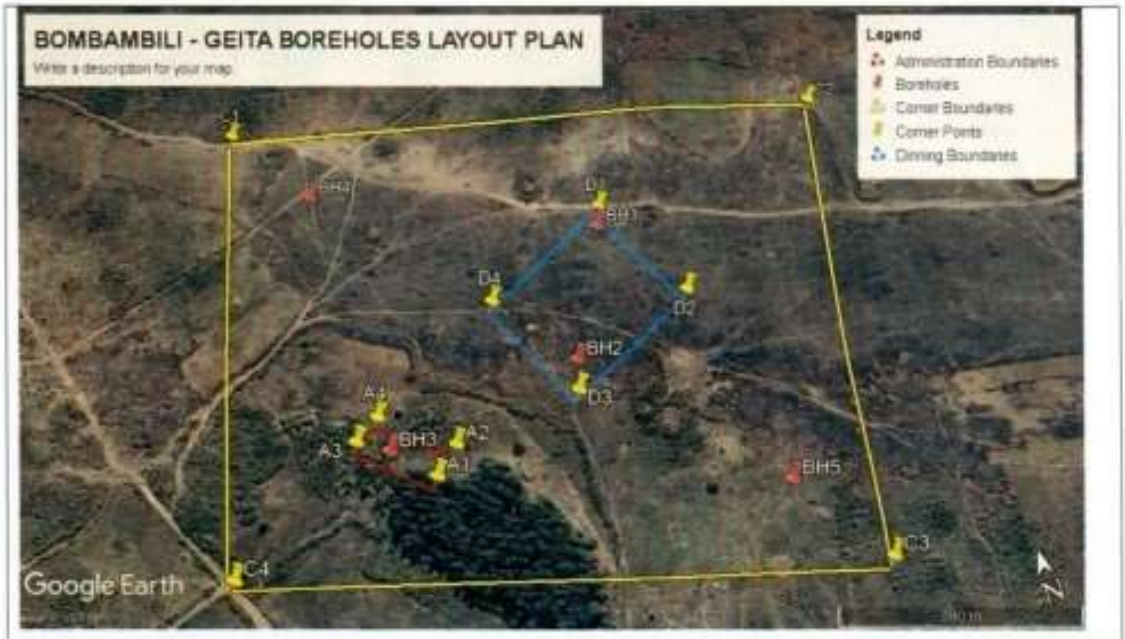
Based on the above recommendations, it could then be concluded that the area is good for construction of the intended building.

REFERENCES

1. Atkinson, J. (2008) 'Rules of thumb in geotechnical engineering', in 18th NZGS Geotechnical Symposium on Soil-Structure Interaction, pp. 1–13.
2. Hardy, A. et al. (2016) 'Mapping hotspots of malaria transmission from pre-existing hydrology, geology and geomorphology data in the pre-elimination context of Zanzibar, United Republic of Tanzania', (July). doi: 10.1186/s13071-015- 0652-5.
3. Michael, M. and Ferdinand, R. (2021) 'Probabilistic Seismic Hazard Analysis for Northern Tanzania Divergence Region and the Adjoining Areas', (June). doi: 10.4314/tjs. v47i2.40.
4. Tanzania, United Republic of and President's Office, Regional Administration and Local Government (2017) Geita Region Investment Guide
5. Meyerhof, G. (1956). Penetration test and Bearing capacity of Cohesion less soils. J Soil Mechanics and Foundation Division ASCE, 82(SMI).

APPENDICES

APPENDIX-A: SITE LAYOUT


BOMBAMBILI - GEITA BOREHOLES LAYOUT PLAN
Write a description for your map
Legend
Administration Boundaries
Boreholes
Corner Boundaries
Corner Points
Dinning Boundaries
C1
C2
C3
C4
D1
D2
D3
D4
BH1
BH2
BH3
BH5
A1
A2
A3
A4
Google Earth

BOMBAMBILI - GEITA DPL LAYOUT PLAN
Write a description for your map
Legend
Administration Boundaries
Corner Boundaries
Corner Points
Dinning Boundaries
DPL
C1
C2
C3
C4
D1
D2
D3
D4
DP1
DP2
DP3
DP4
DP5
DP6
DP7
DP8
DP9
DP11
DP15
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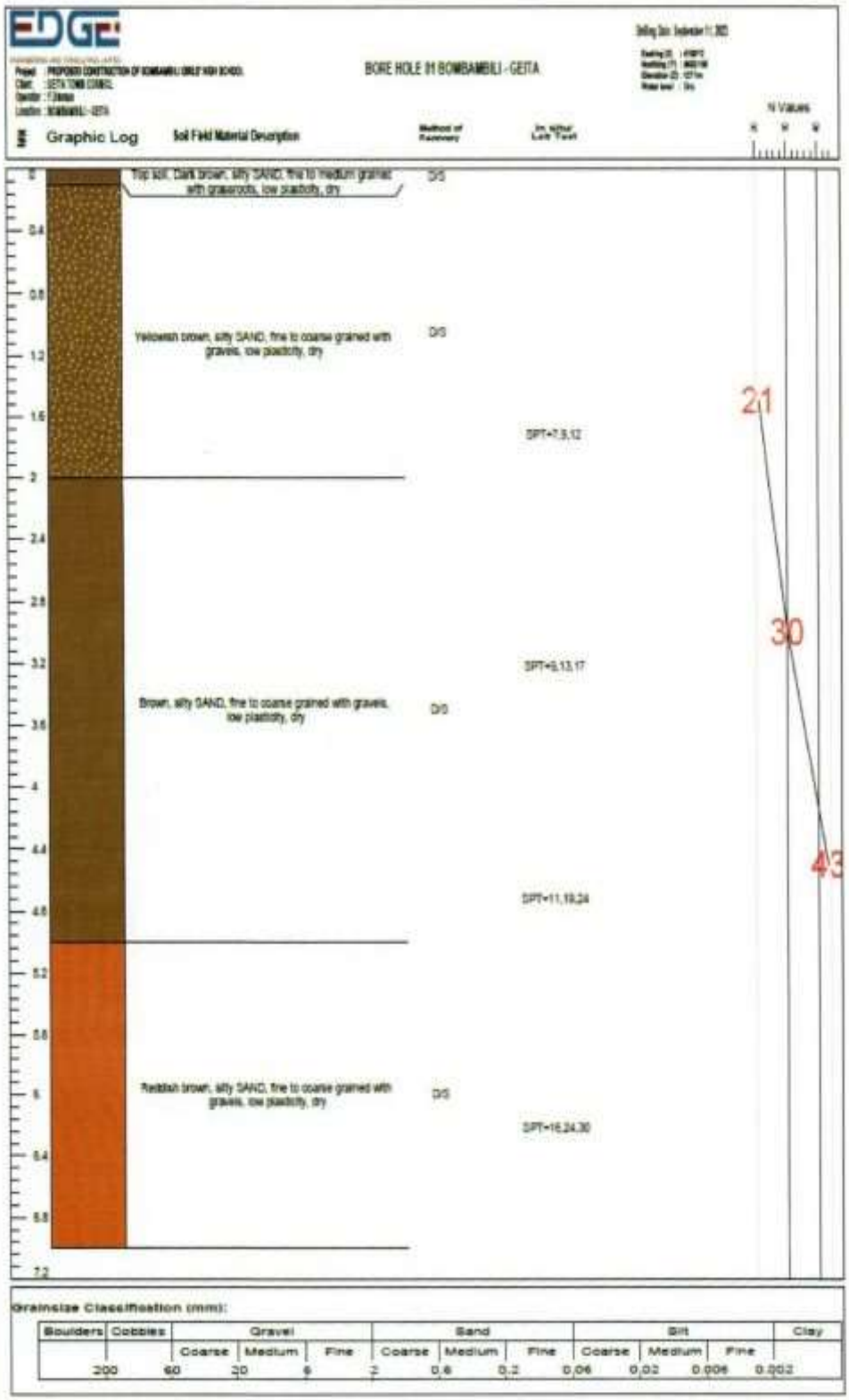
Google Earth

APPENDIX B: LOG SHEETS


BORE HOLE 01 BOMBAMBILI - GEITA
Graphic Log
Soil Field Material Description
N Values
Top soil, Dark brown, silty SAND, fine to medium grained with grassroots, low plasticity, dry
Yellowish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
Brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
Reddish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
SPT=7,9,12
SPT=9,13,17
SPT=11,19,24
SPT=16,24,30
21
30
43
Grainsize Classification (mm):
Boulders
Cobbles
Gravel
Coarse
Medium
Fine
Sand
Coarse
Medium
Fine
Silt
Coarse
Medium
Fine
Clay
200
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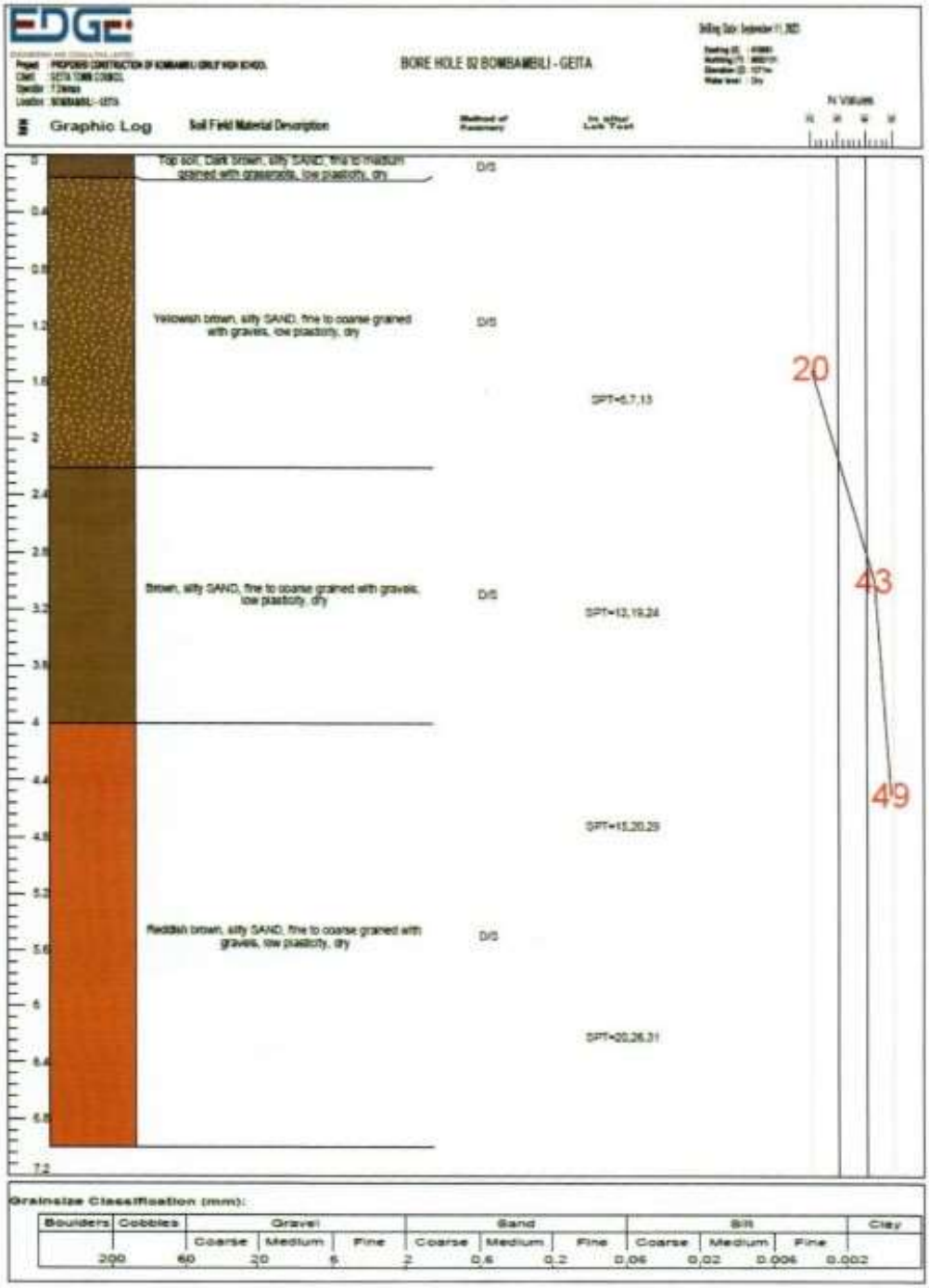
20
6
2
0.6
0.2
0.06
0.02
0.006
0.002


BORE HOLE 02 BOMBAMBILI - GEITA
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Brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
Reddish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
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SPT=13,19,24
SPT=15,20,29
SPT=20,26,31
N Values
20
43
49
Grainsize Classification (mm):
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Cobbles
Gravel
Sand
Silt
Clay
Coarse
Medium
Fine
200
60
20
6
2
0.6
0.2
0.06
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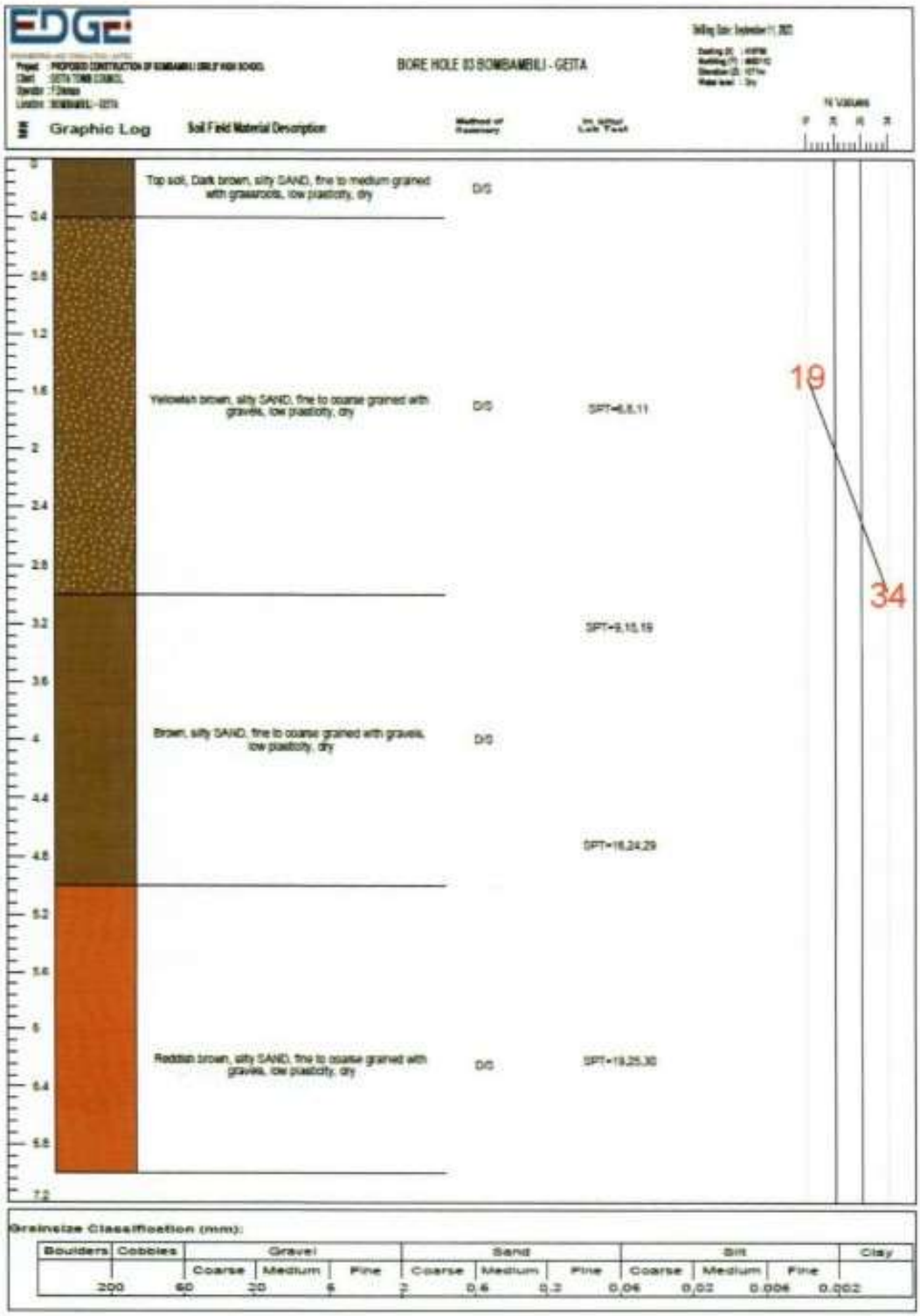
0.002


EDGE
BORE HOLE 03 BOMBAMBILI - GETTA
Graphic Log
Soil Field Material Description
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D/S
Yellowish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
SPT=6,8,11
SPT=9,15,19
Brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
SPT=16,24,29
Reddish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
SPT=19,25,30
19
34
Grainsize Classification (mm):
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Cobbles
Gravel
Coarse
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Fine
Sand
Coarse
Medium
Fine
Silt
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Medium
Fine
Clay
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0.02
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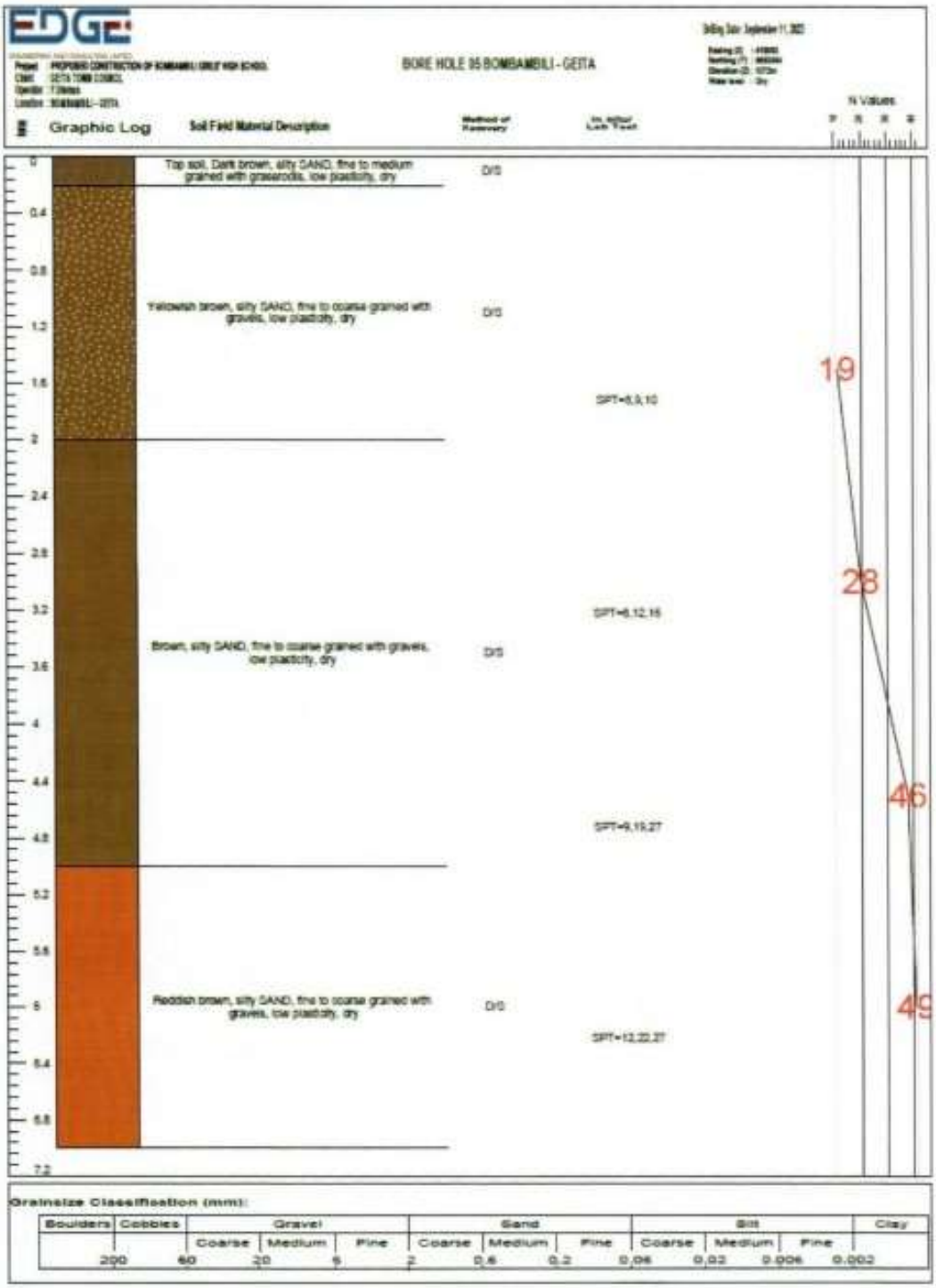
EDGE
BORE HOLE 05 BOMBAMBILI - GETA
Graphic Log
Soil Field Material Description
N Values
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D/S
Yellowish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
SPT=6,9,10
Brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
SPT=6,12,16
SPT=9,15,27
Reddish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
SPT=12,22,27
19
28
46
49
Grainsize Classification (mm):
Boulders
Cobbles
Gravel
Coarse
Medium
Fine
Sand
Coarse
Medium
Fine
Silt
Coarse
Medium
Fine
Clay
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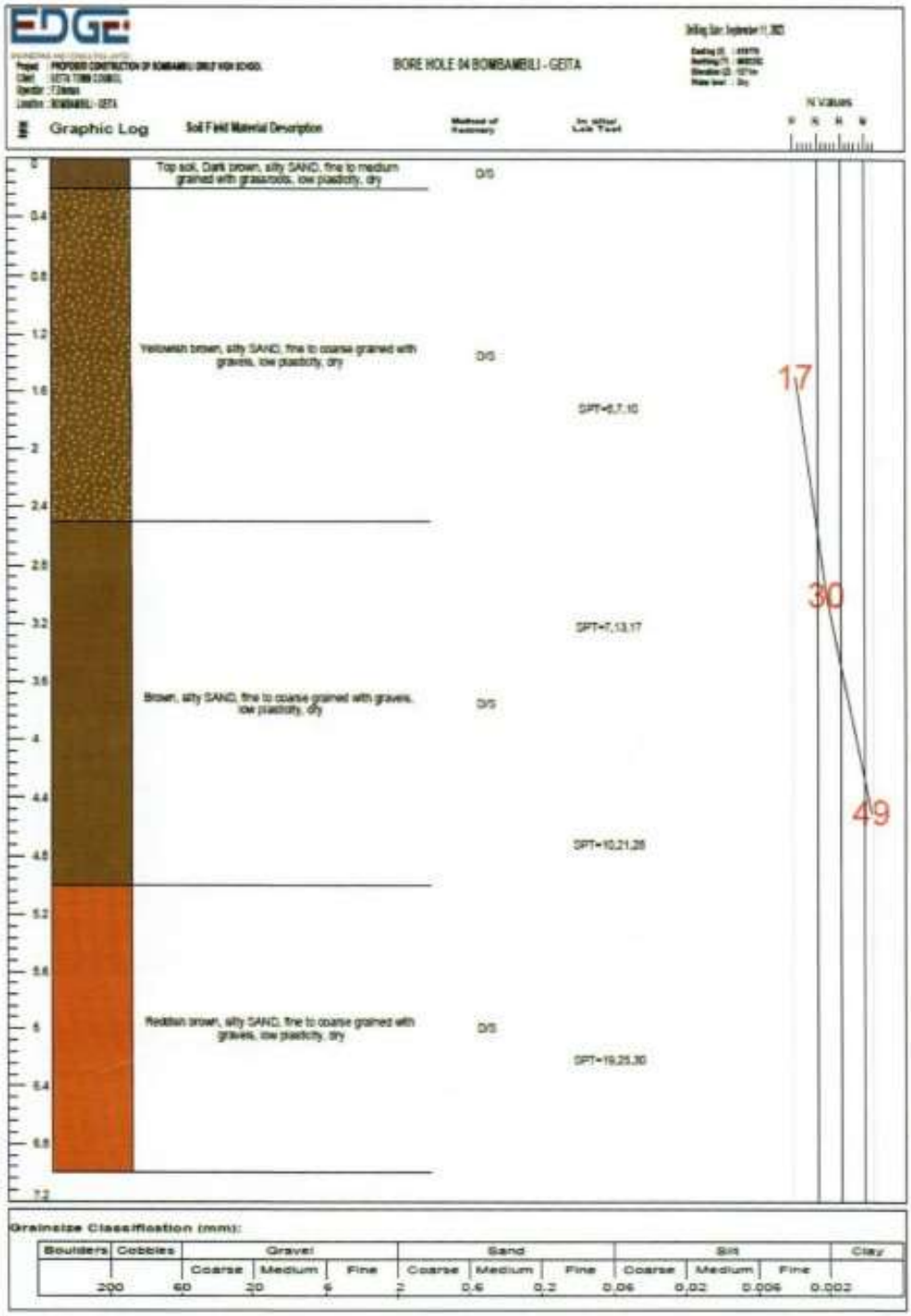
EDGE
BORE HOLE 04 BOMBAMBILI - GEITA
Graphic Log
Soil Field Material Description
Top soil, Dark brown, silty SAND, fine to medium grained with grassroots, low plasticity, dry
Yellowish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
Brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
Reddish brown, silty SAND, fine to coarse grained with gravels, low plasticity, dry
D/S
SPT=6,7,10
SPT=7,13,17
SPT=10,21,28
SPT=19,25,30
N VALUES
17
30
49
Grainsize Classification (mm):
Boulders
Cobbles
Gravel
Coarse
Medium
Fine
Sand
Coarse
Medium
Fine
Silt
Coarse
Medium
Fine
Clay
200
60
20
6
2
0.6
0.2
0.06
0.02
0.006
0.002

APPENDIX - C: DPL DATA ANALYSIS

DPL Point	Depth (m)	Bearing Capacity (kPa)	DPL Point	Depth (m)	Bearing Capacity (kPa)
DPL 1	0.1	364	DPL 12	0.1	98
	0.2	1260		0.2	140
DPL 2	0.1	420		0.3	210
	0.2	910		0.4	224
	0.3	1260		0.5	252
DPL 3	0.1	322		0.6	490
	0.2	630		0.7	1050
	0.3	1260		0.8	1260
DPL 4	0.1	266	DPL 13	0.1	210
	0.2	378		0.2	406
	0.3	840		0.3	476
	0.4	1190		0.4	784
DPL 5	0.1	168		0.5	868
	0.2	448		0.6	1092
	0.3	686	DPL 14	0.1	140
	0.4	1190		0.2	210
	0.5	1260		0.3	630
DPL 6	0.1	322		0.4	910
	0.2	490		0.5	1260
	0.3	686	DPL15	0.1	168
	0.4	812		0.2	364
	0.5	980		0.3	770
	0.6	1260		0.4	1260
DPL 7	0.1	112	DPL16	0.1	168
	0.2	210		0.2	364
	0.3	182		0.3	532
	0.4	238		0.4	1050
	0.5	350		0.5	1260
	0.6	406	DPL 17	0.1	182
	0.7	784		0.2	266
	0.8	1008		0.3	672
	0.9	1260		0.4	938

DPL Point	Depth (m)	Bearing Capacity (kPa)	DPL Point	Depth (m)	Bearing Capacity (kPa)
DPL 8	0.1	84		0.5	1190
	0.2	126		0.6	1260
	0.3	140	DPL 18	0.1	266
	0.4	224		0.2	336
	0.5	252		0.3	532
	0.6	392		0.4	924
	0.7	518		0.5	1106
	0.8	728		0.6	1260
	0.9	1190	DPL 19	0.1	140
	1	1260		0.2	126
DPL 9	0.1	350		0.3	154
	0.2	546		0.4	126
	0.3	644		0.5	112
	0.4	1190		0.6	126
DPL 10	0.1	224	DPL 20	0.1	140
	0.2	308		0.2	126
	0.3	406		0.3	154
	0.4	476		0.4	126
	0.5	1064		0.5	112
	0.6	1260		0.6	126
DPL 11	0.1	168		0.7	938
	0.2	476		0.8	1260
	0.3	700	DPL 23	0.1	56
	0.4	966		0.2	126
	0.5	1120		0.3	154
DPL 21	0.1	168		0.4	224
	0.2	224		0.5	336
	0.3	266		0.6	448
	0.4	336		0.7	588
	0.5	630		0.8	770
	0.6	952		0.9	896
	0.7	1050		1	1260

APPENDIX- D LABORATORY RESULTS

UNIVERSITY OF DAR ES SALAAM
College of Engineering and Technology
xDepartment of Transportation and Geotechnical Engineering
Soil Mechanics Laboratory

KEY TO SYMBOLS
To column 3: ud = undisturbed d = disturbed C = core sample O = organic Pt = peat A1= Area 1
To column 5: G = gravel S = sand M = silt P = poorly graded L = low plasticity H = high plasticity

COMPILATION OF MECHANICAL COEFFICIENTS

PROJECT: GEOTECHNICAL INVESTIGATION FOR PROPOSED CONSTRUCTION OF BOMBAMBILI GIRLS HIGH SCHOOL

CLIENT: EDGE ENGINEERING AND CONSULTING LIMITED

Operator: B.Eshiwakwe Checked: Lugano Approved: F.Msafiri Date: 19/10/2023

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	21		22
			British Soil Classification System		Particle size distribution				Densities				Consistency			Swell Pressure		Direct Shear		Permeability	Triaxial shear		Oedometer
BH	Sample Depth(m)	Sample type	Description	Group Symbol	Clay 0.002 mm	Silt .0002 to 0.063 mm	Sand 0.063 to 2.0 mm	Gravel 2.0 to 63 mm	Bulk Density	Dry density	Density of solids	Natural water content	Liquid Limit	Plastic Limit	Plasticity Index			Friction Angle	Cohesion	Coefficient of permeability	Friction Angle	Cohesion	
Symbols									ρ	ρd	ρs	W_n	L_L	P_L	I_P		-	Φ	C	K-Value	Φ'	C'	E_s
Units					%	%	%	%	Mg/m³	Mg/m³	Mg/m³	%	%	%	%	kN/m²		Degrees	kN/m²	C/m/sec	Degrees	kN/m²	MN/m²
2	2.0	UD	Sandy CLAY of high plasticity	CHS	12	24	56	8	1.69	1.51	2.66	11.6	56	24	32						23	28	
3	1.50	UD	Very clayey SAND of intermediate plasticity	SCI	10	22	64	4	1.79	1.52	2.65	17.8	39	20	19						25	22	

Md. Manzur Rahman, B.Sc (Civil), M.Sc. Scholar (Geotech)
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APPENDIX V: NON-TECHNICAL EXECUTIVE SUMMARY

NON-TECHNICAL EXECUTIVE SUMMARY FOR ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR THE PROPOSED DEVELOPMENT OF GEITA GIRLS SECONDARY SCHOOL LOCATED ON PLOT NO. 248/1, BLOCK "F" AT UPENDO MTAA, BOMBAMBILI WARD, GEITA TOWN COUNCIL IN GEITA REGION

PROPONENT	
TAMISEMI	The Permanent Secretary President's Office Regional Administration and Local Government (PORALG) P. O. Box 1923 Dodoma, Tanzania Telephone: +255 262 321 234 Email: ps@tamisemi.go.tz
SUBMITTED TO:	PREPARED BY:
National Environmental Management Council (NEMC) Lake Victoria Zone PSSF Front Wing, 6th floor Plot No. 17/1, 17/2 and 18 P.O. Box 11045, Mwanza Tel: +255 28 2541679 Fax: +255 28 2541679 E-mail:nemcmwanza@nemc.or.tz,	TANSHEQ Tansheq Limited, Plot No. 83, Wakulima Road, Hananasif Estate P. O. Box 31517, Dar es Salaam. Phone: +255735100105 E-mail: info@tansheq.co.tz Web: www.tansheq.co.tz

Introduction

The Government of United Republic of Tanzania (URT) in collaboration with the World Bank has prepared the Secondary Education Quality Improvement Project (SEQUIP). The objectives of SEQUIP are to increase access to secondary education, provide responsive learning environments for girls and improve completion of quality secondary education for girls and boys. In summary, activities under SEQUIP will be structured into four main components:

Component 1: Empowering Girls through Secondary Education and Life Skills
1.1 Creating Safe Schools: Implementation of the Safe Schools Program including:

i. Trained school guidance and counselling teachers;
ii. Students' life skills training through girls' and boys' clubs by the guidance and counselling teachers; In-service training of secondary school teachers on the teacher code of conduct and gender sensitive pedagogical approaches;
iii. Training of school heads and School Boards on GBV, safe school issues etc.;
iv. School and classroom monitoring system for early identification of and intervention on girls at risk of drop out; and
v. Community-based mechanism for safe passage to school.

1.2 Promoting Girls' Completion of Secondary Education through Quality Alternative Education Pathways including:

i. Setting up an ICT-enabled system for tracking girls dropping out at national and district level to provide key information for AEP planning and implementation.
ii. Alternative Education Centers and LGAs undertaking local outreach activities to out-of-school girls in the community, which will include activities such as AEP center-organized community meetings, information via local radio, flyers and brochures.
iii. Enhancing access to Alternative Education Pathways through (i) expansion of the network of AEP centers; and (ii) tuition fee subsidies for vulnerable girls.
iv. A quality package for strengthening student learning in Alternative Education Pathways will also be implemented
v. Environmental and Social Management Framework –Tanzania - Secondary Education Quality Improvement Project (SEQUIP)

Component 2: Digitally Enabled Effective Teaching and Learning
2.1 Effective Teaching and Learning

i. Minimum package of critical teaching and learning resources for all schools: This package consists of an adequate number of textbooks and teacher guides in core subjects (English, Math and Sciences).
ii. Equitable, gender-balanced teacher deployment to schools
iii. In-service teacher training/continuous professional development (CPD) to improve classroom teaching practice for secondary English, Mathematics and Science teachers
iv. Evaluate student learning in lower secondary to provide opportunities for remedial use: to allow for targeted early intervention to prevent girl dropout due to learning difficulties

2.2 Digitally-enabled Teaching of Math Sciences and English:

i. Development of an ICT in Education Strategy and plan for secondary education.
ii. Digital content and connectivity package to facilitate the teaching of English, Mathematics and Science in phases.

Component 3: Reducing Barriers to Girls' Education through Facilitating Access to Secondary Schools

Expansion of the secondary school network to substantially reduce the distance to secondary schools through an expansion of the secondary school network, especially in rural areas. SEQUIP will disburse project funding based on the number of schools in each LGA meeting minimum infrastructure standards

Support upgrading existing secondary schools with the minimum infrastructure package (number of classrooms/students, adequate WASH facilities; multi-purpose science labs, electricity, etc.) with the objective is that at least 50 percent of all existing schools in all LGAs will meet the minimum standards set.

Component 4: Technical Assistance, Impact Evaluation and Project Coordination Environmental and Social Management Framework –Tanzania - Secondary Education Quality Improvement Project (SEQUIP). SEQUIP will be jointly implemented by the Ministry of Education, Science and Technology (MoEST) and the President's Office, Regional Administration and Local Government (PO-RALG).

Tansheq Limited, a NEMC registered environmental consulting firm with offices at House No. 83 Wakulima/Ngano Rd, Hananasif Estate and P.O. Box 31517 Dar es Salaam, has been contracted by Po-RALG as Implementing Supporting Team (IST).

Project Location and Accessibility

The proposed project site is administratively located at Upendo mtaa, Bombambili ward in Geita Town Council- Geita Region and is surrounded by human settlement about 50 meters on both sides of the project site, neighbors of the school will be; Hamisi Rajabu (Resident), Waja specialized hospital and Geita Adventist dispensary.

The proposed site is accessible through Geita-Mwanza road whereas the road is tarmac and in good condition. The proposed project site is about 5km from the Regional office headquarter and 2km from Waja hospital.

Project Description

The school construction and design will consist of a required infrastructure package based on the school construction and maintenance strategy (e.g. number of classrooms/students, adequate WASH facilities, especially important for girls; multi-purpose science labs, electricity, etc.). The construction package will involve the following buildings;

Classrooms

The classrooms are designed following Education Bulletin number 1 of 2007 that directs capacity of each classroom level, 30 students for advance and 40 students for ordinary level. However, schedule of materials indicates each classroom will be having capacity of 40 students.

Construction will be undertaken in two phases. The first phase will involve construction of 12 classrooms within six blocks followed by the second phase that will involve the construction of 6 classrooms which will be of 3 different designs (2 classrooms with office, 2 classrooms with toilet and a 2 classrooms block).The proposed project development will adhere to the fire and rescue force directives for public premises.

The Education Global Practice Africa Region report prepared by World Bank provides the following directives; Student classroom ratios of 50:1 or less, student to functioning latrine ratio of 25:1 for girls and 30:1 for boys, at least one multipurpose science laboratory, student textbook ratios in mathematics and science subjects of 1:1, teacher: teacher guide availability of 2:1.

Laboratories

Education Bulletin number 1 of 2007 explain the capacity and set up of laboratory building for each level is 40 students, The scheduling of materials will adhere the bulletin as the following laboratory rooms will be constructed;

- Physics and geography lab
- Chemistry and biology lab,
- ICT room which is to be constructed in the second phase, and
- Domestic science

Administration block

The bulletin indicate for the school having capacity of 1000 student plus need to have not less than 40 teachers excluding other staffs such as school bursar, secretary etc. The administrative building will be constructed as an elevated building whereas only one (1) building will be constructed.

Toilets

The proposed toilet facility will comprise of one block with 16 holes to be constructed standalone as scheduling shows with estimates of one (1) hole for twenty (20) people, nevertheless, some of classrooms will be having sanitary rooms as designed, dormitory, and dining hall will also be having sanitary rooms.

The development of sanitary facilities is necessary to ensure the surrounding environment is well-managed and ensuring social well-being and practical operation of the school since human dignity is directly linked to access of safety and hygienic sanitation.

Dining hall

The Dining Hall is a pivotal gathering space on School's campus and is emblematic of The Family Boarding School ideal. The school will be having enough dinning space to all students since it is a boarding school thus meal will be served. According to the designs of the dining hall, it has the capacity of 2000 students.

Staff houses

The teachers' houses are designed to attract teachers out to the countryside, as well as to increase teachers morally to perform their duties unlike if they are coming far from the school. The design considers the staff house to have one (1) master bedroom, two (2) bedrooms/ one (1) master bedroom, three (3) bedrooms with Public toilet, Sitting room/dining, Kitchen and Store. Four (4) of the staff houses will be constructed.

Dormitories

Dormitories are places where students stay. The student housing must also aim to provide healthy and acoustically pleasant environments for the protection, comfort, and productivity of the students. The dormitories are designed as per provided to meet the SEQUIP objectives having a capacity to accommodate 120 students. For phase one five (5) buildings will be constructed while for phase two four (4) buildings.

Library

The library is important because it affects cultures, it affects innovation, and it affects individuals. Because of all this, library architecture has the responsibility to enhance these effects by providing a knowledge center that is inspirational and conducive to good communication and teaching interactions.

According to designs, the library to be constructed will accommodate 52 students for readings and the computer learning room will accommodate 8 students.

Sickbay

A sick bay provides a dedicated space for students who may feel unwell or require immediate medical attention. It will serve as a primary point of care within the school premises, allowing for timely assessment and treatment of minor illness or injuries.

Incinerator

This will provide safe and efficient men of disposing waste specifically biomedical waste such as used sanitary pads, medical supplies and other potentially hazardous materials.

Other components that will be constructed within school compounds area are Playgrounds, Water tunnel, Water tank (hippo) and its pillars), Manhole and gully trap, Walkway & Paving.

Project activities

Main activities of the project include preconstruction, Construction, Operations, and decommissioning.

Mobilization phase/Pre-Construction Activities

The mobilization phase of the project, which is estimated to take average of maximum three months, will entail the following activities:

- Establishment of construction of camps, material and equipment storage areas, materials processing yards, including sanitation facilities. The following activities will be involved during establishment of the camp.
    - Bush clearing.
    - Construction of Material and equipment storage areas
    - Construction of sanitation facilities
    - Installation of electrical infrastructure
    - Installation of water and wastewater infrastructure
- Identification of naturally-occurring material borrow sites (sand, fill, gravel borrow and quarry sites),
- Identification of sources of water for domestic and construction works

Construction Phase

The construction phase of the project, which is estimates to take 12 month for each of the phase one and will encompass following major activities:

- Earth works to facilitate widening and re-alignment of the road. Earth works will entail the following activities:
    e) Clearing and grubbing (clearing of vegetation, including trees).
- Extraction of naturally occurring construction materials. This will include:
    f) Excavation and transport of natural sand, gravel, and sub-base materials to construction sites
    g) Stone quarrying (including blasting), crushing and transport of crushed aggregates to construction sites
    h) Transport and handling of fuel, lubricants etc. from their sources to the project site
- Transport of construction materials from source to site such as roof, steel, woods, nails, rope

Operation phase

The maintenance activities of the Overall, SEQUIP will contribute to increasing total enrolment in secondary school by 1.8 million students and increase the number of girls graduating from both secondary schools and alternative secondary education pathways.

Decommissioning Phase

After completion of construction, all the utilities, which were used, shall be reverted to the Municipal Director who will decide on their future use. The main activities during demobilization phase will engross the following:

- Collection and disposal of storage facilities such as pallets, packing, boxes
- Collection and disposal of construction materials and waste such as waste oil, sewage, solid waste (plastics, wood, metal, papers, etc.) at the workshop, site office etc. to authorized dumpsite
- Restoration of material borrows areas to safer condition

Project Cost

Total Project Cost is four billion Tanzanian shillings

Legal Framework

Relevant sectorial and cross–sectorial policies that provide directives on how projects should be operated in/on concerned natural resources and sensitive ecosystems are:

i. The National Energy Policy,2015
ii. Education and training policy,2014
iii. The National Environmental Policy, 2021
iv. The Occupational Health And Safety Policy 2009
v. The National Employment Policy, 2008
vi. The National Research And Development Policy, 2010
vii. The National Biotechnology Policy,201

Key legislation, which PO-RALG must adhere to during implementation of this project, includes:

i. The Education Act, Cap.353.
ii. The Law Of The Child Act, Cap. 13 R.E 2019
iii. The Engineers Registration Act, Cap 63
iv. The Architects and Quantity Surveyors Act, Cap 267
v. The Workers Compensation Act, Cap 263
vi. The Persons With Disabilities Act, Cap 183
vii. The Occupier Liability Act, Cap 64
viii. The standard Act, Cap. 130
ix. The Environmental Management Act, Cap 191
x. The Water Resources Management Act, Cap 331
xi. The Forest Act, Cap 323 R.E 2022
xii. The Electricity Act, Cap 131
xiii. The Local Government (District Authorities) Act, Cap,287
xiv. The Local Government (Urban Authorities) Act, Cap,288
xv. The Fire and Rescue Force (Safety Inspection And Certificates) Regulations, 2008 As Amended In 2017
xvi. The Fire and Rescue Force (Fire Precautions In Buildings) Regulations, 2015
xvii. The Environmental Management (Control and Management Of Electrical and Electronic Equipment Waste) Regulations, 2021

Stakeholder Involvement and Participation

The Consultants identified organizations, groups, and individuals considered to be key stakeholders that
Might be impacted by the project components or have influence on the project.

- Region Academic Officer, (RAO), Regional Community Development Officer (RCDO).
- Town Council Executive Director in Geita Town Council, Town Environmental Officer (TEO) and Town Secondary Education Officer (TSEO)
- Ward Exevutive Officer (WEO)
- Upendo street chairperson
- Local Fundi

Stakeholders Opinions and Concerns

The stakeholder consultations identified both positive opinions and negative concerns. Stakeholders had positive opinions of the project in terms of:

- Education opportunities to the specific project area and surrounding communities
- Rising of Chemchem Ward's economy as a result of population increase

Stakeholders were concerned about:

- Their concerns was that; work force should be recruited from their specific street and ward during project implementation.

ENVIRONMENTAL AND SOCIAL IMPACTS

The following impacts were identified in the various project development stages such as mobilization and construction, operational as well as decommissioning stage. These impacts were as follows:
Mobilization/Construction Stage:

- Loss/disturbance of biodiversity and threatened species
- Atmospheric emissions from engines of vehicles
- Dust and noise pollution from mobilization vehicles.
- Public health hazards and safety from construction of supportive infrastructure.
- Land disturbance.
- Roads accidents of the moving vehicles

Operation Stage:

- Disruption of air quality from emissions of exhaust and fugitive gases
- Disturbance to surrounding communities due to increased noise levels
- Aesthetic degradation, environmental pollution and outbreak of diseases and injuries due to improper management of surrounding hazardous and non-hazardous solid waste materials
- General health and safety impacts
- Increased population density

Socio – Economic Aspects:

- A more educated workforce in the country
- Decrease in unemployment rates
- Increase in income levels resulting to benefit to the government from taxes provided
- Women empowerment
- A more balanced and diverse demographic landscape with improved gender representation and opportunities for women in the respective regions and country

Decommissioning Stage:

- Abandoned infrastructure.
- Unemployment.
- Loss of revenue to the government

Enhancement of Positive Socio-Economic Impacts:

- Employment and training especially during construction
- Increased income/revenue/induced development.
- Increased income by utilization of local resources.
- Support to local social services and livelihood.

PROJECT ALTERNATIVES ANALYSIS

Different options were considered for the project. Analysis of alternatives compares reasonable alternatives to the proposed project site, technology, design, and operation in terms of their potential environmental and social impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements.

It also states the basis for selecting the particular project designs proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

Alternatives considered for this project were the following

i) No-Go alternative,
j) Design and technological considerations
k) Location alternative
l) Energy alternative
m) Water alternative

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental Impact Assessment for the proposed construction of Regional Girls Secondary School, has identified a number of impacts that are likely to arise during construction and operation stage of the proposed project.

The EIA has examined bio-physical, socio-economic and cultural effects of the proposed activity from site clearance, school construction and the school operation.

The real benefits of the proposed project can result only if the risks of the identified adverse impacts are minimized. This can be accomplished through implementation of adequate preventive and mitigation measures by formulating policies to cover them accordingly.

Environmental Management Policy

This will ensure that Project management and staffs are carrying out their activities with the highest regard to the natural environment and sustainable utilization of environmental resources therein. The policy should therefore cover the following, among other issues:

- Ensure that all Project activities operate within legal requirements of all relevant national legislation
- That there are continuous environmental improvement and performance through monitoring of Project activities;
- Ensure that utilization of natural resources is optimal with measures in place to ensure resource availability for future generation;
- Awareness creation to the surrounding community regarding sustainable utilization of natural resources, protection of sensitive ecosystems and bio-diversity maintenance for communal livelihood; and
- Balancing between natural resource use, environmental conservation and economic development.

Occupational Health and Safety Policy

It is developed for this project so as enable establishment of appropriate measures that ensure that the health, safety and welfare of all users is cared for as well as the health requirements of the local community in which the project is located. The policy should highlight on the following, among others:

- Medical examination of workers;
- Sanitation in the Project area;
- Proper liquid and solid waste management and disposal;
- Emergency preparedness;
- Fire safety;
- Necessity and availability of personal protective equipment
- Risk minimization of accidental damage to the community and environment

Community Relations Policy

The Local Community Policy are developed by management of the Project to ensure that the management of the project develops and maintains sound relations with all stakeholders on mutual respect and active partnership. The policy should highlight on ways the management should:

- Work with the local community and relevant government departments and agencies to achieve sustainability of the project;
- Come up with ways of enhancing information flow from management to the community and Project stakeholders, and vice versa;
- Community capacity building; and
- Active engagement of the local community in all Project activities that affect the local community.

With regard to environmental management during the pre-construction, construction, operation and decommissioning phase of the project, the principal responsibilities of each party as described below. For certain aspects of the programme, assistance will be needed from the Local Government Authorities and the NEMC (mainly in the form of guidance and advice and in project monitoring).

ENVIRONMENTAL MONITORING PLAN

This report contains a detailed plan to monitor the implementation of mitigation measures and the impacts of the project during its execution. This plan includes a cost estimate for carrying out the proposed monitoring plan.

COST BENEFIT ANALYSIS AND RESOURCES EVALUATION

Environmental cost benefit analysis is assessed in terms of the negative and positive impacts. Furthermore, the analysis is considering whether the impacts are mitigatable and the costs of mitigating the impacts are reasonable. As it has been mentioned in Chapters 7 and 8, the potential benefits of the project, in terms of economic advancement and social benefit are substantial.

The environmental impacts are reasonably mitigatable. So to mitigate negative impacts, when compared to the required data are relatively small.

Social Cost Benefit Analysis

The benefits from project development can be judged in terms of employment, social welfare, education development, infrastructure development and the local economy (wages, goods and services). Thus, there will be a substantial spread of the benefit within the community through the provision of food, accommodation and other regular services to the employees and students.

Furthermore, the upgrading, development and maintenance of local infrastructure are benefits that will extend far beyond the project's scope and lifetime.

DECOMMISSIONING

Decommissioning is the last phase of project life. It involves terminating project activities and operations and rehabilitating site to or close to its original state. It is anticipated that the project shall continue as long as there is a demand for a project, however, individual components of the project shall be decommissioned as need be.

CONCLUSION

The project will have both positive and negative impact to the environment and the local communities along it. Measures have been proposed to enhance impacts, which are positive to the environment and the local people.

For those impacts that are negative, mitigation measures have been proposed to avoid or abate them to the extent possible for the purpose of maximizing benefits of the school project and minimizing detriments of the project intervention to the communities.

Overall, the project shall act as a catalyst for positive change in the surrounding communities by improving education, infrastructure and social well-being, and by involving and engaging the local residents, the project can have a lasting impact and contribute to the overall development of the region.

MUHTASARI

UTANGULIZI

Serikali ya Jamhuri ya Muungano wa Tanzania (JMT) kwa kushirikiana na Benki ya Dunia wameandaa Mradi wa Kuboresha Ubora wa Elimu ya Sekondari. Lengo la mradi huu ni kuongeza upatikanaji wa elimu ya sekondari, kutoa mazingira bora ya kujifunzia kwa wasichana na kuboresha uhitimu wa elimu ya sekondari kwa wasichana na wavulana. Kwa ufupi, Mradi huu utajumuishwa katika sehemu kuu nne:

Sehemu ya 1: Kuwawezesha Wasichana kupitia Elimu ya Sekondari na Ujuzi wa Maisha

1.1 Kuunda Shule Salama: Kutekeleza Programu ya Shule Salama ikiwa ni pamoja na:

i. Walimu wa ushauri;

ii. Mafunzo ya stadi za maisha kwa wanafunzi kupitia klabu za wasichana na wavulana zinazoendeshwa na walimu wa ushauri; Mafunzo ya walimu wa shule za sekondari kuhusu kanuni za tabia na njia za ufundishaji zenye kuzingatia usawa wa kijinsia;

iii. Mafunzo ya viongozi wa shule na Bodi za Shule kuhusu Ukosefu wa usawa wa kijinsia, masuala ya shule salama nk.

iv. Mfumo wa ufuatiliaji wa shule na darasa kwa kutambua mapema na kuingilia kati kwa wasichana waliohatarini kuacha shule; na

v. Mfumo wa jamii kwa ajili ya njia salama ya kufika shuleni.

1.2 Kuchochea Uhitimu wa Wasichana wa Elimu ya Sekondari kupitia Njia za Elimu Mbadala Bora, ikiwa ni pamoja na:

i. Kuweka mfumo ulio na teknolojia ya habari na mawasiliano (ICT) wa kufuatilia wasichana wanaoacha shule kwa kiwango cha kitaifa na wilaya ili kutoa taarifa muhimu kwa ajili ya kupanga na utekelezaji wa Programu ya Elimu Mbadala.

ii. Vituo vya Elimu Mbadala na Halmashauri za Wilaya kufanya shughuli za kuwafikia wasichana ambao hawako shuleni katika jamii, ambazo zitajumuisha shughuli kama vile mikutano ya jamii iliyoandaliwa na vituo vya Programu ya Elimu Mbadala, taarifa kupitia redio za ndani, vipeperushi na brosha.

iii. Kuongeza upatikanaji wa Programu za Elimu Mbadala kupitia (i) upanuzi wa mtandao wa vituo vya Programu ya Elimu Mbadala; na (ii) ruzuku ya ada ya masomo kwa wasichana walio katika mazingira hatarishi.

iv. Pia kuwepo kwa mfuko wa ubora wa kuimarisha ufunzaji kwa wanafunzi katika Programu za Elimu Mbadala

v. Mfumo wa Usimamizi wa Mazingira na Jamii - Tanzania - Mradi wa Kuboresha Ubora wa Elimu ya Sekondari (SEQUIP)

Sehemu ya 2: Ufundishaji na Ujifunzaji Ulionaswa Kwa Kutumia Teknolojia

2.1 Ufundishaji na Ujifunzaji Uliofaa

i. Vifurushi vya chini vya rasilimali muhimu za kufundishia na kujifunzia kwa shule zote: Kifurushi

hiki kinajumuisha vitabu vya kutosha na miongozo ya walimu katika masomo ya msingi (Kiingereza, Hisabati na Sayansi).

ii. Upangaji wa walimu wenye usawa na usawa wa kijinsia katika shule.

iii. Mafunzo ya walimu katika utumishi/ukufunzi wa kitaaluma (CPD)

iv. Kuimarisha mazoezi ya ufundishaji darasani kwa walimu wa Kiingereza, Hisabati na Sayansi katika shule za sekondari.

v. Kuchunguza ujifunzaji wa wanafunzi katika elimu ya sekondari ya chini ili kutoa fursa za matumizi ya marekebisho: ili kutoa fursa ya kuingilia kati kwa lengo la kuzuia wasichana kuacha shule kutokana na ugumu wa kujifunza.

2.2 Ufundishaji kwa Kutumia Teknolojia ya Mawasiliano na Habari katika Hisabati, Sayansi na Kiingereza:

i. Kuandaa Mkakati na mpango wa Teknolojia ya Habari na Mawasiliano katika Elimu ya Sekondari.

ii. Kifurushi cha maudhui ya kidijitali na huduma za mawasiliano kufanikisha ufundishaji wa Kiingereza, Hisabati na Sayansi kwa awamu.

Sehemu ya 3: Kupunguza Vizuizi vya Elimu ya Wasichana kwa Kurahisisha Upatikanaji wa Shule za Sekondari Upanuzi wa mtandao wa shule za sekondari ili kupunguza umbali kwa kiasi kikubwa kwa shule za sekondari kwa njia ya kupanua mtandao wa shule za sekondari, hasa katika maeneo ya vijijini.

Mradi huu utatoa ufadhili wa mradi kulingana na idadi ya shule katika kila Halmashauri inayokidhi viwango vya miundombinu ya chini kusaidia kuboresha shule za sekondari zilizopo na mpango wa miundombinu ya chini (idadi ya madarasa/wanafunzi, miundombinu ya kutosha; maabara za sayansi za shughuli mbalimbali, umeme, nk.) kwa lengo la kuhakikisha kuwa angalau asilimia 50 ya shule zote zilizopo katika Halmashauri zote zinakidhi viwango vya chini vilivyowekwa.

Sehemu ya 4: Msaada wa Kiteknolojia, Tathmini ya Athari, na Ushirikiano wa Mradi Mfumo wa Usimamizi wa Mazingira na Jamii – Tanzania - Mradi wa Kuboresha Ubora wa Elimu ya Sekondari. Mradi huu utatekelezwa kwa pamoja na Wizara ya Elimu, Sayansi na Teknolojia na Ofisi ya Rais, Tawala za Mikoa na Serikali za Mitaa (TAMISEMI).

Tansheq Limited, kampuni ya inayojishughulisha na ushauri elekezi wa mazingira iliyosajiliwa na Baraza la Taifa la Uhifadhi na Usimamizi wa Mazingira, yenye ofisi zake katika mkoa wa Dar es Salaam , S.L.P 31517, Dar es Salaam, imeingia mkataba na TAMISEMI kwa ajili ya utekelezaji wa kufanya tathmini ya Athari ya Mazingira.

Eneo la Mradi

Eneo lililopendekezwa la mradi lipo katika mtaa wa Upendo, Kata ya Bombambili katika Halmashauri ya Mji wa Geita - Mkoa wa Geita na limezungukwa na makazi ya watu takribani mita 50 kila upande wa eneo la mradi. Majirani wa shule watakuwa; Hamisi Rajabu (Mkazi), Hospitali ya Waja na Zahanati ya Geita Adventist.

Eneo lililopendekezwa linaweza kufikiwa kupitia barabara ya Geita-Mwanza ambayo ni ya lami na katika hali nzuri. Eneo la mradi lipo umbali wa takriban kilomita 5 kutoka ofisi kuu za Mkoa na kilomita 2 kutoka hospitali ya Waja.

Maelezo ya Mradi:

Ujenzi na ubunifu wa shule utajumuisha mfuko wa miundombinu uliohitajika kulingana na mkakati wa ujenzi na matengenezo ya shule (k.m. idadi ya madarasa/wanafunzi, miundombinu ya maji inayotosha, hasa muhimu kwa wasichana; maabara ya sayansi ya matumizi mbalimbali, umeme, nk.). Mfuko wa ujenzi utahusisha majengo yafuatayo.

Madarasa

Madarasa yameundwa kufuatana na Kanuni za Elimu namba 1 ya mwaka 2007 ambazo zinaelekeza uwezo wa kila darasa, wanafunzi 30 kwa darasa la juu na wanafunzi 40 kwa darasa la kawaida. Hata hivyo, ratiba ya vifaa inaonyesha kila darasa litakuwa na uwezo wa wanafunzi 40.

Ujenzi utafanyika kwa awamu mbili. Awamu ya kwanza itahusisha ujenzi wa madarasa 12 katika majengo sita, ikifuatiwa na awamu ya pili ambayo itahusisha ujenzi wa madarasa 6 ambayo yatakuwa na miundo tofauti (madarasa 2 yatakuwa na ofisi, madarasa 2 yatakuwa na choo, na majengo 2 ya madarasa). Maendeleo ya mradi yaliyopendekezwa yatazingatia maelekezo ya idara ya zimamoto na uokoaji kwa majengo ya umma.

Maabara

Kanuni za Elimu namba 1 ya mwaka 2007 inaelezea kuwa uwezo na muundo wa majengo ya maabara kwa kila ngazi ni wanafunzi 40. Ratiba ya vifaa itazingatia kanuni hiyo na maabara zifuatazo zitajengwa:

• Maabara ya Fizikia na Jiografia
• Maabara ya Kemia na Biolojia
• Chumba cha Teknolojia ya Habari na Mawasiliano ambayo itajengwa katika awamu ya pili.

Jengo la Utawala

Kanuni inaonyesha kuwa shule yenye uwezo wa wanafunzi 1000 au zaidi inapaswa kuwa na walimu wasiopungua 40 bila kuhesabu wafanyakazi wengine kama mhasibu wa shule, katibu, nk. Jengo la utawala litajengwa kama jengo lililoinuliwa ambapo jengo moja tu litajengwa.

Vyoo

Muundo wa choo uliopendekezwa utajumuisha jengo moja lenye mashimo 16 ambalo litajengwa kama jengo huru na kila shimo moja kwa watu ishirini (20). Vyoo vingine vitajengwa kwenye majengo ya madarasa, mabweni na sehemu ya chakula.

Maendeleo ya miundombinu ya vyoo ni muhimu kuhakikisha mazingira yanayozunguka yanadhibitiwa vizuri na kuhakikisha ustawi wa kijamii na uendeshaji wa shule kwa kuwa utu wa binadamu unahusiana moja kwa moja na upatikanaji wa vyoo salama na safi.

Chumba cha Chakula

Chumba cha chakula ni nafasi muhimu ya kukusanyika kwenye eneo la shule na ni ishara ya wazo la Shule ya Bweni kama familia. Shule itakuwa na nafasi ya kutosha ya chakula kwa wanafunzi wote kwa kuwa ni shule ya bweni hivyo chakula kitahudumiwa. Kulingana na muundo wa chumba cha chakula, kinaweza kuhudumia wanafunzi 2000.

Nyumba za wafanyakazi

Nyumba za walimu zimeundwa ili kuwavutia walimu kuishi vijijini, pamoja na kuongeza motisha kwa walimu kutekeleza majukumu yao kuliko wakija kutoka mbali na shule. Muundo unazingatia kuwa nyumba za wafanyakazi zitakuwa na vyumba vitatu vya kulala / vyumba vinne vya kulala vyenye choo cha umma, sebule/jiko, chumba cha kulia na ghala. Nyumba nne (4) za wafanyakazi zitajengwa.

Mabweni

Mabweni ni sehemu ambapo wanafunzi wanakaa. Makazi ya wanafunzi lazima pia yalenge kutoa mazingira yenye afya na sauti nzuri kwa ulinzi, faraja, na ufanisi wa wanafunzi. Mabweni yameundwa kulingana na malengo ya SEQUIP na kwa uwezo wa kuhifadhi wanafunzi 120. Katika awamu ya kwanza, majengo matano (5) yatajengwa, wakati katika awamu ya pili, majengo manne (4) yatajengwa.

Maktaba

Maktaba ni muhimu kwa sababu inaathiri utamaduni, inaathiri ubunifu, na inaathiri watu binafsi. Kwa sababu ya hayo yote, usanifu wa maktaba una wajibu wa kuimarisha athari hizi kwa kutoa kituo cha maarifa ambacho kinatoa hamasa na kinafaa kwa mawasiliano bora na mwingiliano wa kufundisha.

Kulingana na miundo, maktaba itakayojengwa itakuwa na uwezo wa kuhudumia wanafunzi 52 kwa ajili ya kusoma, na chumba cha kujifunzia kompyuta kitakachohudumia wanafunzi 8.

Chumba cha huduma za afya

Chumba cha Huduma za Afya kwa Wanafunzi Wagonjwa hutoa nafasi maalum kwa wanafunzi ambao wanaweza kujisikia vibaya au wanahitaji huduma ya matibabu ya haraka. Itatumika kama kituo kikuu cha huduma ndani ya eneo la shule, kuruhusu tathmini na matibabu ya wakati unaofaa kwa magonjwa madogo au majeraha.

Kichomea taka

Kichomea taka hiki kitatoa njia salama na yenye ufanisi ya kuharibu taka, hasa taka za kitabibu kama vile pedi zilizotumika, vifaa vya matibabu, na vifaa vingine hatari.

Vipengele vingine vitakavyojengwa ndani ya eneo la shule ni Maeneo ya Kuchezea, Mtaro wa Maji, Tangi la Maji (Tangi la maji 'hippo' na nguzo zake), Mfereji wa Maji, Njia za Kutembelea.

Shughuli za Mradi

Shughuli kuu za mradi zinajumuisha maandalizi kabla ya ujenzi, ujenzi, uendeshaji, na kufunga mradi..

Maandalizi kabla ya ujenzi

Maandalizi kabla ya ujenzi, ambayo yanakadiriwa kuchukua muda wa kati ya miezi mitatu, yatajumuisha shughuli zifuatazo:

- Kuanzishwa kwa kambi za ujenzi, maeneo ya kuhifadhi vifaa, maeneo ya usindikaji vifaa, pamoja na miundombinu ya vyoo. Shughuli zifuatazo zitahusika wakati wa kuanzisha kambi:
    - Kufyeka vichaka.
    - Ujenzi wa maeneo ya kuhifadhi vifaa.
    - Ujenzi wa miundombinu ya vyoo.
    - Ufungaji wa miundombinu ya umeme.
    - Ufungaji wa miundombinu ya maji na maji taka.
- Kutambua maeneo ya asili ambapo vifaa vinaweza kupatikana (kama vile mchanga, kifusi, na jiwe kutoka kwenye machimbo),
- Kutambua vyanzo vya maji kwa ajili ya matumizi ya kazi za ujenzi.

Hatua ya Ujenzi

Hatua ya ujenzi ya mradi, ambayo inakadiriwa kuchukua miezi 12 kwa kila awamu ya kwanza, itajumuisha shughuli kuu zifuatazo:

- Uundaji wa ardhi ili kurahisisha upanuzi na urekebishaji wa barabara. Kazi za uundaji wa ardhi zitajumuisha shughuli zifuatazo:

  a) Kufyeka na kutoa mizizi (kuondoa mimea, ikiwa ni pamoja na miti).

- Kupata vifaa vya ujenzi. Hii itajumuisha:

  i) Kuchimba na kusafirisha mchanga, kifusi, na vifaa vingine kwa ajili ya msingi wa ujenzi kwenye maeneo ya ujenzi.
  ii) Kuchimba mawe (ikiwa ni pamoja na kulipua), kuyavunja na kusafirisha vifusi vilivyovunjwa kwenye maeneo ya ujenzi.
  iii) Kusafirisha na kushughulikia mafuta, mafuta ya kupaka, n.k. kutoka vyanzo vyao hadi eneo la mradi.
- Kusafirisha vifaa vya ujenzi kutoka chanzo hadi eneo la ujenzi kama vile bati, chuma, mbao, misumari, kamba, nk.

Muhula wa Utekelezaji

Shughuli za matengenezo za SEQUIP zitachangia kuongeza idadi ya wanafunzi wanaojiandikisha katika shule za sekondari kwa wanafunzi milioni 1.8 na kuongeza idadi ya wasichana wanaohitimu kutoka shule za sekondari na njia mbadala za elimu ya sekondari.

Muhula wa Kufuta Kazi

Baada ya kukamilika kwa ujenzi, vifaa vyote vilivyotumiwa vitarejeshwa kwa Mkurugenzi wa Mji ambaye atafanya uamuzi juu ya matumizi yao ya baadaye. Shughuli kuu wakati wa awamu ya kufuta kazi zitajumuisha yafuatayo:

• Ukusanyaji na kuteketeza vifaa vya kuhifadhi kama vile pallets, pakiti, masanduku

• Ukusanyaji na kuteketeza vifaa na taka za ujenzi kama vile mafuta machafu, maji taka, taka ngumu (plastiki, kuni, metali, karatasi, nk) katika karakana, ofisi za eneo la kazi, n.k. kwenye dampo rasmi

• Kurudisha maeneo ya kukopa vifaa katika hali salama

Gharama za Mradi

Gharama Jumla ya Mradi ni shilingi bilioni nne za Kitanzania.

Mfumo wa Kisheria

Sera muhimu za kisekta na za kuvuka sekta ambazo zinatoa maelekezo juu ya jinsi miradi inavyopaswa kuendeshwa kuhusiana na rasilimali za asili na mifumo inayoteketezwa kwa urahisi ni:

i. Sera ya Taifa ya Nishati, 2015

ii. Sera ya Elimu na Mafunzo, 2014

iii. Sera ya Taifa ya Mazingira, 2021

iv. Sera ya Afya na Usalama Kazini, 2009

v. Sera ya Taifa ya Ajira, 2008

vi. Sera ya Taifa ya Utafiti na Maendeleo, 2010

vii. Sera ya Taifa ya Bioteknolojia, 2010

Sheria muhimu ambazo TAMISEMI lazima zichukue wakati wa utekelezaji wa mradi huu ni:

I. Sheria ya Elimu, Kifungu cha 353.

II. Sheria ya Mtoto, Kifungu cha 13 R.E 2019

III. Sheria ya Usajili wa Wahandisi, Kifungu cha 63

IV. Sheria ya Wasanifu Majengo na Wathamini, Kifungu cha 267

V. Sheria ya Fidia kwa Wafanyakazi, Kifungu cha 263

VI. Sheria ya Watu Wenye Ulemavu, Kifungu cha 183

VII. Sheria ya Uwajibikaji wa Mmiliki, Kifungu cha 64

VIII. Sheria ya Viwango, Kifungu cha 130

IX. Sheria ya Usimamizi wa Mazingira, Kifungu cha 191

X. Sheria ya Usimamizi wa Rasilimali za Maji, Kifungu cha 331

XI. Sheria ya Misitu, Kifungu cha 323 R.E 2022

XII. Sheria ya Umeme, Kifungu cha 131

XIII. Sheria ya Serikali za Mitaa (Mamlaka za Wilaya), Kifungu cha 287

XIV. Sheria ya Serikali za Mitaa (Mamlaka za Mijini), Kifungu cha 288

XV. Kanuni za Jeshi la Moto na Uokoaji (Uangalizi wa Usalama na Vyeti), 2008 Kama ilivyorekebishwa mwaka 2017

XVI. Kanuni za Jeshi la Moto na Uokoaji (Tahadhari ya Moto Katika Majengo), 2015

XVII. Kanuni za Usimamizi wa Mazingira (Kudhibiti na Kusimamia Taka za Umeme na Umeme), 2021

Ushiriki na Kushirikisha Wadau

Wakala wa Ushauri ulitambua taasisi, makundi, na watu binafsi walio na maslahi katika mradi ambao huenda wakaathiriwa na sehemu za mradi au wanao ushawishi juu ya mradi.

• Afisa Elimu wa Mkoa (RAO), Afisa wa Maendeleo ya Jamii wa Mkoa (RCDO).

• Mkurugenzi wa Halmashauri ya Wilaya (DED) wa Wilaya ya Rufiji na Afisa wa Afya wa Wilaya (DHO)

• Afisa Mtendaji wa Kata (WEO)

• Mwenyekiti wa kijiji cha Kindwitwi

• Fundi wa ndani

Maoni na Masuala ya Wadau

Mashauriano na wadau yalibainisha maoni mazuri na masuala hasi. Wadau walikuwa na maoni mazuri kuhusu mradi kwa upande wa:

• Fursa za elimu katika eneo maalum la mradi na jamii za jirani

• Kuongezeka kwa uchumi wa Kata ya Chemchem kama matokeo ya ongezeko la idadi ya watu

Wadau walikuwa na wasiwasi kuhusu:

• Wakati wa utekelezaji wa mradi, raia wa kata maalum na Watanzania kwa ujumla wanapaswa kupewa kipaumbele katika fursa za ajira kwa sababu wako jirani na Burundi

ATHARI ZA MAZINGIRA NA KIJAMII

Athari zifuatazo ziligunduliwa katika hatua mbalimbali za maendeleo ya mradi kama vile uhamasishaji na ujenzi, uendeshaji na hatua ya kufuta kazi. Athari hizi zilikuwa kama ifuatavyo:

Hatua ya Uhamasishaji/Ujenzi:

• Upotevu/uvurugaji wa bioanuai na spishi zilizo hatarini

• Uzalishaji wa hewa chafu kutoka kwenye injini za magari

• Uchafuzi wa vumbi na kelele kutokana na magari ya uhamasishaji.

• Hatari za afya ya umma na usalama kutokana na ujenzi wa miundombinu ya msaada.

• Uvurugaji wa ardhi.

• Ajali za barabarani za magari yanayosafirisha vifaa.

Hatua ya Uendeshaji:

• Uvurugaji wa ubora wa hewa kutokana na uzalishaji wa moshi na gesi zinazoondoka.

• Uvurugaji kwa jamii za jirani kutokana na ongezeko la kelele.

• Uharibifu wa taswira, uchafuzi wa mazingira na kuzuka kwa magonjwa na majeraha kutokana na usimamizi usio sahihi wa taka hatari na zisizo hatari karibu na eneo hilo.

• Athari za afya na usalama kwa jumla.

• Ongezeko la msongamano wa watu.

Masuala ya Kijamii na Kiuchumi:

• Nguvu kazi iliyoelimika zaidi nchini.

• Kupungua kwa viwango vya ukosefu wa ajira.

• Kuongezeka kwa kiwango cha mapato na faida kwa serikali kutokana na kodi zinazotolewa.

• Kuwawezesha wanawake kiuchumi.

• Mandhari ya kijamii na kiuchumi iliyo na usawa na tofauti iliyoboreshwa na uwakilishi bora wa kijinsia na fursa kwa wanawake katika mikoa na nchi husika.

Hatua ya Kufuta Kazi:

• Miundo mbinu iliyoachwa.

• Ukosefu wa ajira.

• Upotevu wa mapato kwa serikali.

Kuongeza Athari Chanya za Kijamii na Kiuchumi:

• Ajira na mafunzo hasa wakati wa ujenzi.

• Ongezeko la mapato/mafao/maendeleo yaliyochochewa.

• Ongezeko la mapato kwa kutumia rasilimali za ndani.

• Msaada kwa huduma za kijamii na uhai wa kijamii wa ndani.

Uchambuzi wa Chaguzi za Mradi.

Chaguzi tofauti zilizingatiwa kwa mradi huu. Uchambuzi wa chaguzi mbadala unachunguza chaguzi sahihi kwa eneo la mradi, teknolojia, muundo, na uendeshaji kwa kuzingatia athari zake za mazingira na kijamii; uwezekano wa kupunguza athari hizo; gharama za mtaji na za kawaida; ufaa wao chini ya hali za ndani; na mahitaji yao ya taasisi, mafunzo, na ufuatiliaji.

Pia inabainisha msingi wa kuchagua miundo maalum ya mradi iliyoainishwa na kuthibitisha viwango vilivyopendekezwa vya uzalishaji na njia za kuzuia uchafuzi.

Chaguzi zilizotiliwa maanani kwa mradi huu zilikuwa zifuatazo

a) Chaguo la Kutokwenda,

b) Mipangilio na uteuzi wa teknolojia

c) Chaguo la Mahali

d) Chaguo la Nishati

e) Chaguo la Maji

MPANGO WA USIMAMIZI WA MAZINGIRA NA JAMII

Tathmini ya Athari za Mazingira kwa ujenzi uliopendekezwa wa Shule ya Upili ya Wasichana wa Mkoa, imetambua idadi ya athari ambazo zinaweza kutokea wakati wa ujenzi na uendeshaji wa mradi uliopendekezwa.

EIA imeangalia athari za kibiolojia, kiuchumi na kitamaduni za shughuli iliyopendekezwa kuanzia kusafisha eneo, ujenzi wa shule na uendeshaji wa shule.

Faida halisi za mradi uliopendekezwa zinaweza kujitokeza tu ikiwa hatari za athari hasi zilizotambuliwa zinapunguzwa. Hii inaweza kufanikiwa kupitia utekelezaji wa hatua za kuzuia na kupunguza athari kwa kutunga sera za kuzishughulikia ipasavyo.

Sera ya Usimamizi wa Mazingira

Hii itahakikisha kuwa usimamizi wa Mradi na wafanyakazi unafanya shughuli zao kwa kuzingatia mazingira asilia na matumizi endelevu ya rasilimali za mazingira. Sera inapaswa kushughulikia mambo yafuatayo, pamoja na mengine:

• Hakikisha kuwa shughuli zote za Mradi zinaendeshwa kwa kuzingatia mahitaji ya kisheria ya sheria za kitaifa zinazohusiana na mazingira.

• Kuhakikisha kuwa kuna maboresho endelevu ya mazingira na utendaji kupitia ufuatiliaji wa shughuli za Mradi.

• Kuhakikisha matumizi bora ya rasilimali za asili na kuweka mikakati ili kuhakikisha upatikanaji wa rasilimali kwa kizazi kijacho.

• Kuongeza uelewa kwa jamii inayozunguka kuhusu matumizi endelevu ya rasilimali za asili, ulinzi wa mazingira nyeti na uhifadhi wa bioanuai kwa maisha ya pamoja.

• Kupata uwiano kati ya matumizi ya rasilimali za asili, uhifadhi wa mazingira na maendeleo ya kiuchumi.

Sera ya Afya na Usalama Kazini

Imeandaliwa kwa ajili ya mradi huu ili kuhakikisha kuwa hatua zinazofaa zinaanzishwa ili kuhakikisha kuwa afya, usalama na ustawi wa watumiaji wote unazingatiwa pamoja na mahitaji ya afya ya jamii ya eneo ambalo mradi unafanyika. Sera inapaswa kuzingatia mambo yafuatayo, pamoja na mengine:

• Uchunguzi wa matibabu ya wafanyakazi.

• Usafi katika eneo la Mradi.

• Usimamizi na utupaji sahihi wa taka za maji na taka za kiowevu na taka za kiowevu na taka za kiowevu.

• Maandalizi ya dharura.

• Usalama wa moto.

• Hitaji na upatikanaji wa vifaa binafsi vya kinga.

• Kupunguza hatari ya uharibifu wa bahati mbaya kwa jamii na mazingira.

Sera ya Mahusiano na Jamii

Sera za Jamii za Mitaa zimeandaliwa na uongozi wa Mradi ili kuhakikisha kuwa usimamizi wa mradi unajenga na kuendeleza mahusiano thabiti na wadau wote kwa kuheshimiana na kushirikiana kwa vitendo. Sera inapaswa kuzingatia njia za usimamizi kufanya yafuatayo, pamoja na mambo mengine:

• Kufanya kazi na jamii ya eneo na idara na mashirika husika ya serikali kufikia ustahimilivu wa mradi.

• Kujenga njia za kuongeza mawasiliano kutoka kwa usimamizi hadi kwa jamii na wadau wa Mradi, na kinyume chake.

• Kuendeleza uwezo wa jamii; na

• Kuhusisha kwa vitendo jamii ya eneo katika shughuli zote za Mradi zinazoathiri jamii ya eneo.

Kuhusiana na usimamizi wa mazingira wakati wa hatua za awali, ujenzi, uendeshaji na kuondoa mradi, majukumu makuu ya kila chama kama ilivyoelezwa hapa chini. Kwa baadhi ya vipengele vya programu, msaada utahitajika kutoka kwa Mamlaka za Serikali za Mitaa na NEMC (hasa kwa njia ya mwongozo na ushauri na ufuatiliaji wa mradi).

MPANGO WA UFUATILIAJI WA MAZINGIRA

Ripoti hii ina mpango wa kina wa kufuatilia utekelezaji wa hatua za kupunguza athari na athari za mradi wakati wa utekelezaji wake. Mpango huu una gharama za kufuatilia kutekelezwa na athari za mradi wakati wa utekelezaji wake.

Uchambuzi wa Faida na Gharama za Jamii

Faida za maendeleo ya mradi zinaweza kutathminiwa kwa kuzingatia ajira, ustawi wa kijamii, maendeleo ya elimu, maendeleo ya miundombinu na uchumi wa eneo husika (mishahara, bidhaa na huduma). Kwa hivyo, faida hizo zitasambazwa kwa kiasi kikubwa ndani ya jamii kupitia upatikanaji wa chakula, malazi na huduma nyingine za kawaida kwa wafanyakazi na wanafunzi.

Zaidi ya hayo, uboreshaji, maendeleo na utunzaji wa miundombinu ya eneo ni faida ambazo zitaendelea zaidi ya wigo na muda wa mradi.

UONDOAJI WA MRADI

Uondoaji ni hatua ya mwisho ya maisha ya mradi. Inahusisha kusitisha shughuli za mradi na operesheni na kurejesha eneo kwenye hali yake asili au karibu na hali yake ya awali. Inatarajiwa kuwa mradi utaendelea kwa muda mrefu kama kuna mahitaji ya mradi, hata hivyo, sehemu za kipekee za mradi zitafutwa kadiri inavyohitajika.

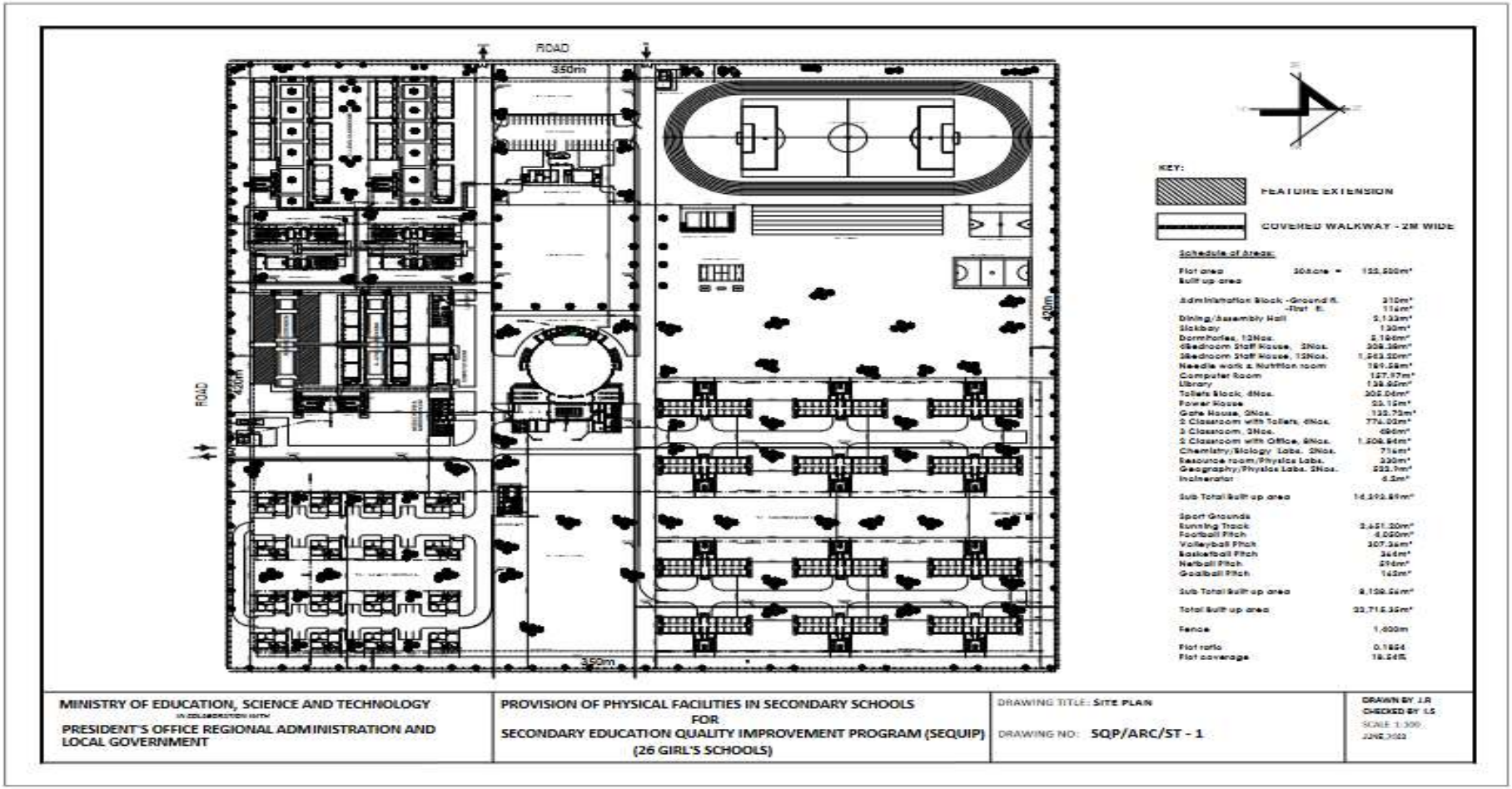
HITIMISHO

Mradi utaleta athari chanya na hasi kwa mazingira na jamii ya eneo lililo karibu nayo. Hatua zimependekezwa kuboresha athari chanya kwa mazingira na watu wa eneo hilo.

Kwa athari zile ambazo ni hasi, hatua za kuzuiwa zimependekezwa ili kuepuka au kupunguza athari hizo kwa kiasi kinachowezekana ili kuongeza faida za mradi wa shule na kupunguza madhara ya kuingilia kati kwa mradi kwa jamii.

Kwa ujumla, mradi utakuwa kama kichocheo cha mabadiliko chanya katika jamii zinazozunguka kwa kuboresha elimu, miundombinu na ustawi wa kijamii, na kwa kuhusisha na kushirikisha wakazi wa eneo hilo, mradi unaweza kuwa na athari endelevu na kuchangia katika maendeleo ya jumla ya kanda.

APPENDIX VI: SITE LAYOUT PLAN



APPENDIX VII: SCHEDULE OF MATERIALS AND ARCHITECTURAL DRAWINGS