



MINISTRY OF EDUCATION

**Zambia Education Enhancement Project  
Additional Financing**

**Project ID: No. P180401**

**REVISED ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN  
(ESMP)**

FOR PHASE 1 OF 73 SCHOOLS IN WESTERN, COPPERBELT, NORTH-WESTERN, AND SOUTHERN  
PROVINCES OF ZAMBIA

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**Abbreviations and Acronyms**

DEBS	District Education Board Secretary
ESP	Environmental and Social Plan
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EPB	Environmental Project Brief
ESA	Environmental Social Assessment
E&S	Environmental and Social Risks
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GRZ	Government of the Republic of Zambia
HIV	Human Immuno-deficiency Virus
IPF	Investment Project Financing
LMP	Labor Management Plan
MOE	Ministry of Education
PMU	Procurement Management Unit
PEO	Provincial Educational Officer
PIC	Project Implementation Committee
PTA	Parent Teachers Association
RBF	Results Based Financing
SEP	Stakeholder Engagement Plan
WB	World Bank
ZEEP	Zambia Education Enhancement Project
ZEMA	Zambia Environmental Management Agency
ZEPCU	Zambia Education Project Coordinating Unit

## Executive Summary

The Ministry of Education (MOE) is implementing the Zambia Education Enhancement Project - Additional Financing (ZEEP - AF) with support from the World Bank. The objective of the project is to improve the quality of teaching and learning in Mathematics and Science in targeted primary and secondary schools and increase equitable access to secondary education. The ZEEP-AF will support the construction of the 120 additional secondary schools in alignment with the proposed new school package across the 10 (ten) provinces of Zambia. The Environmental Social Management Plan (ESMP) for the construction of the 120 schools has been designed in a phased approach as follows: - Phase 1: Construction of 73 Schools (Copperbelt, Southern, North-Western, and Western Provinces) and Phase 2: Construction of 47 schools (Lusaka, Muchinga, Luapula, Northern, Central and Eastern Provinces). This ESMP has been prepared for phase 1.

The project will support construction of 1 x 3 classroom block, 1 x 2 classroom blocks, 2 toilet blocks girls' and boys' dormitories, administration block, teachers' houses, rehabilitation of unsafe structures, provision of school furniture and mobile lab equipment, 2 Weekly Boarding units, 1 x 3 Laboratory Block, 1 x 2 (design and technology and 1 for home economics), construction of the library, construction of 1 x school hall, sewer reticulation systems, provision of electricity supply (solar grid or ZESCO), and on-site molding of approximately 154,419 blocks for sites in Western Province.

This Environmental and Social Management Plan (ESMP) has been prepared to identify the potential environmental and social risks and impacts of proposed sub-project activities and propose suitable mitigation measures to manage these risks and impacts. It maps out the Zambia's laws and regulations and the World Bank policies applicable to the Project and describes the principles, approaches, implementation arrangements, and environmental and social mitigation measures to be followed.

### Potential Positive Impacts of the Project

- ❖ Improved quality of teaching and learning.
- ❖ Reduced spread of public health diseases and improved hygiene for girl child.
- ❖ Increased access to secondary school education and employment creation

### Potential negative risks and impacts at construction phase

- ❖ Loss of vegetation, soil erosion and degradation
- ❖ Resource depletion due to exploitation raw materials such as cement, sand and gravel Soil and water resources contamination from site spills, solid and hazardous waste
- ❖ Conflicts in land acquisition
- ❖ Elevated dust and noise levels
- ❖ Increased water consumption from construction and block making activities
- ❖ Waste oil, hydrocarbons, and oil spills from vehicles and equipment
- ❖ Wastewater and storm water run-off from block making activities
- ❖ Reduced safety and security risks for community and staff/learners
- ❖ Worker's injuries
- ❖ Labour influx and spread of HIV & AIDS risks.

- ❖ Gender Based Violence, Sexual Harassment and Exploitation.

### **Potential risks and Impacts at Operation and Maintenance**

- ❖ Odor, water contamination and disease spread
- ❖ Electronic waste generation
- ❖ Reduced student health and safety and Gender Based Violence (GBV)

### **Mitigation Measures**

- ❖ Implementation of best practices for waste management and any other safeguards concerns that will be identified during project implementation.
- ❖ Follow the MoE acceptable school design standards to ensure the health of the learners is always protected.
- ❖ Use of the Raw Material and Resources Abstraction Guidance Document
- ❖ Ensure efficient use of water resources for onsite molding of blocks
- ❖ Ensure that existing natural drains and watercourses on or within the vicinity of the site are not affected by blocking making activities
- ❖ Ensure proper siting of the pit latrine and provide training to communities on proper use of latrines and hygiene.
- ❖ Provide hand washing facilities and ensure proper cleaning of pit latrines.
- ❖ Voluntary land donation by chiefs in the area.
- ❖ All septic tank construction will conform to the MoE guidelines for schools, WB EHSOs to ensure leaks and slippages into ground water are eliminated.
- ❖ Implementation of the electronic waste management plan
- ❖ Implementation of the ESMP and the code of conduct

### **Implementation of the Project**

Project implementation will be in four (4) levels, namely at national, provincial, district and community levels. The implementation team will comprise of the Zambia Education Program Coordinating Unit (ZEPUCU), The Zambia Education Projects Implementing Unit (ZEPIU) - MoE staff in Infrastructure section under the Directorate of Planning and Information. At provincial level, the sub-projects will be coordinated by a team of staff comprising the Senior Planner, Resident Engineer, and Senior Buildings Officer under the Provincial Office, MoE. At district level the sub-projects will be coordinated by the DEBS office which shall include District Planning Officer under MoE, and other officers as may be determined by the DEBS to facilitate community mobilization and training. At School/Local Community level a Project Implementation Committee (PIC) will be elected to coordinate project implementation activities. The PIC will report to the Parents and Teachers' Association (PTA) and the DEBS or PEO, and it will have sub-committees such as the Procurement Sub-Committee responsible for material procurement.

### **Monitoring**

Monitoring of the ESMP implementation will be done by ZEPUCU and Third-Party Verifier during the verification process. The World Bank will monitor implementation of the ESMP during its regular supervision mission.

## **Chapter One: Introduction**

### **1.1 Project Background**

The Environmental and Social Management Plan (ESMP) has been developed to support the environmental and social plan through due diligence provisions for activities financed by the World Bank in the ZEEP – AF. The project will support construction of the classroom blocks and additional structures to support teaching and learning in the 120 sites in all the 10 provinces of Zambia. The project will in the first phase focus on constructing 73 sites from the Copperbelt, Western, North-western and Southern Provinces. The Ministry of Education through ZEPCU will be implementing the project activities.

### **1.2. Objectives of the ESMP**

The aim of this ESMP is to identify, assess and manage all E&S risks and impacts of the construction activities in accordance with Zambian legal requirements, safeguards and, where required, WB ESHGs and GIIPs. The specific objectives are to (a) assess the potential environmental and social risks and impacts of the proposed project and propose mitigation measures; (b) establish procedures for the environmental and social screening, review, approval, and implementation of activities; (c) specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social issues related to the activities; (d) identify the staffing requirements, as well as the training and capacity building needed to successfully implement the provisions of the ESMP; (e) address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances; and (f) establish the budget requirements for implementation of the ESMP.

This ESMP should be implemented with other plans prepared for the project, including the Raw Materials and Resources Abstraction Guidance Document and the Electronic Waste Management Plan (EWWP).

## **Chapter Two: Project Description**

### **2.1 Project Overview**

The Zambia Education Enhancement Project (ZEEP) phase II also known as ZEEP – AF is a national project by the Government of the Republic of Zambia (GRZ) under the Ministry of Education (MoE) that aims to improve the quality of teaching and learning in mathematics and science in targeted primary and secondary schools and to increase equitable access to secondary education. The project comprises three components namely:

- ❖ Improving the Quality of Teaching and Learning.
- ❖ Increasing Equitable Access to Secondary Education.
- ❖ Enhancing M&E Capacity and Project Coordination.

Of the three components, the focus of the ESMP is on component 2: Increasing Equitable Access to Secondary Education. The objective of this component is to increase access to secondary education in underserved communities by constructing additional classrooms and other relevant infrastructure in some existing primary schools to create safe environment and better learning conditions for boys and girls at secondary-level education. This component will provide opportunities to children who pass Grade 7

examinations but are denied entrance to Grade 8 due to an inadequate supply of secondary school places. Under this component, secondary school classroom space will be provided at selected primary schools to be run as autonomous secondary school sections, to serve deserving students in the local underserved communities in rural areas in all 10 provinces. Ten all-girls weekly boarding facilities will be constructed to reduce the likelihood of girls' dropping out of school. The ESMP will be implemented with safe infrastructure standards and guidelines for management of these boarding facilities to ensure safety of boys and girls. The guidelines will be developed by the MoE and cleared by the Bank.

The Ministry of Education will coordinate project activities, including day-to-day implementation, coordination, supervision, and overall management of project activities. During the implementation of the project and associated subprojects, preparation, construction, and operational activities are likely to result in the following environmental and social impacts; loss of vegetation, generation of general and construction waste, surface and ground water contamination, elevated dust levels, reduced safety and security risks for community and staff/learners, increased incidences of HIV/AIDS.

## Chapter Three: National Legal Framework and World Bank Environmental and Social Safeguards Policies

### 3.1 Zambia Legal Framework

The principal environmental law is Zambia Environmental Management Act, No. 12 of 2011 read together as one with the Environmental Management (Amendment) Act No.8 of 2023. This and other national legislation are in Table 1 below.

Table 1: Zambia’s Relevant Legal Framework

LEGISLATION	INTERPRETATION OF LEGISLATION	RELEVANCE AND COMPLIANCE APPROACH ON THE PROJECT
National Construction Council (NCC) Act No 10 of 2020	This legislation provides for the establishment of the council for construction to guide construction and regulate construction qualification and standards	<b>Relevance:</b> It regulates the qualifications and competence of the key staff working on the project <b>Compliance:</b> Ensure the buildings are constructed in accordance with a national building and fire code. Two means of access for each building, i.e., a front and back door. No asbestos material to be used in construction.
Engineering Institution of Zambia (EIZ) Codes of Practice	This legislation provides for the establishment of the EIZ to geoenvironmental works in construction industry and regulate engineering qualification and standards	<b>Relevance:</b> It regulates the qualifications and competence of the key staff working on the project <b>Compliance:</b> The key staff doing the engineering work must be registered with the EIZ for quality control and competence.
The Standards Act No. 4 of 2017	Act to continue the existence of the Zambia Bureau of Standards and re-define its powers and functions; provide for standardization and quality assurance of products and services through the setting of national standards and provision of conformity assessment services for products and services.	<b>Relevance:</b> It regulates the standards and codes of products, and services across various <b>Compliance:</b> All products sourced, from building materials to furnishings will be done in accordance with the standards and codes set by this Act



Forestry Act No. 4 of 2015	Forest Act 2015 applies to the extent of Part I section 3: The ownership of all trees standing on, and all forest produce derived from, customary areas, National Forests, Local Forests, State Land, botanical reserves, and open areas is vested in the President, on behalf of the Republic, until lawfully transferred or assigned under this Act or any other written law	<p><b>Relevance:</b> The project is unlikely to involve activities that will involve loss of vegetation. The construction of additional classroom blocks at already existing secondary schools will have a small footprint and the loss of vegetation will be minimal.</p> <p><b>Compliance:</b> Vegetation clearance to be restricted to construction sites only.</p>
Extended Producer Responsibility (EPR) SI No. 65 of 2018	This act extends the responsibility of the producer of a product or class of products to the post-consumer stage of the product or class of products. The EPR Regulations also regulate non-returnable glass and plastic bottles, cartons, beverage cans, waste oils, pesticides, or chemical containers, used tyres, electrical and electronic equipment and their resultant waste. The Regulations require a person or persons whose activities generate waste with potential to pollute the environment to employ measures essential to minimize waste through treatment, reclamation, re-use, recovery, or recycling.	<p><b>Relevance:</b> The Act extends responsibility of the polluter pays principle.</p> <p><b>Compliance:</b> Managing and collecting all waste generated by the project activities shall be managed by the technical supervisor and the PIC.</p>
The Environmental Management (Licensing) Regulations, SI No. 112 of 2013	To provide legislation on emitting or discharging a pollutant or contaminant into the environment one shall apply to the Agency for an emission license	<p><b>Relevance:</b> The technical supervisor shall endeavor to</p> <ol style="list-style-type: none"> <li>i. Take reasonable steps to contain the discharge of emissions from the site to prevent, mitigate or remedy their adverse effects on human and fauna health, animal or plant life and the environment.</li> <li>ii. Part III, Section 11 of the regulations states that a person shall not conduct open air burning of waste from industrial, commercial operations or domestic or community activities except with the written consent of the Agency.</li> </ol>

		<b>Compliance:</b> The PIU will ensure compliance to the provisions of these regulation by closely monitoring the works
The Employment Code Act No 3 of 2019	To provide legislation relating to the employment of persons; to make provision for the engagement of persons on contracts of service and to make provision for the protection of wages of employees.	<b>Relevance:</b> This contract will result in the creation of jobs through, for example, site clearing and construction phases of the project. The Act safeguards the rights of all the workers engaged on the project to ensure that they work in a humane environment. <b>Compliance:</b> The PIU will work with the technical supervisor to ensure workers' rights are protected, and that they work in a humane environment devoid of any form of exploitation.
Environmental Impact Assessment Regulations, SI No. 28 of 1997	A developer shall not implement a project for which a project brief or an environmental impact statement is required under these regulations unless the project brief or an environmental impact assessment has been concluded in accordance with these Regulations and the Council has issued a decision letter.	<b>Relevance:</b> The various activities to be undertaken on the project are likely to trigger environmental and social impacts and this will require that site specific environmental instruments be prepared to eliminate or minimize possible risks. At national level, in Zambia the Environmental Impact Assessment (EIA) regulation of 1997 gives guidance, schedules and categories the various project types and the relevant EIA studies to undertaken. It further gives provision on post EIA approval management of projects and guidelines for developing Environmental Social Management Plans (ESMPs). <b>Compliance:</b> These sub-project undertakings have already received a No Objection from ZEMA and this ESMP has been prepared in accordance with the WB and ZEMA guidelines as this project is a category B.
Environmental Management Act, No. 12 of 2011 as read together with the Environmental Management (Amendment Act) No.8 of 2023.	The Act provides for: the integrated environmental management, protection and conservation of natural resources, and sustainable; prevention and control of pollution and environmental degradation; public participation in environmental decision making and access to environmental information.	<b>Relevance:</b> The Act provides for overall guidance on environmental management and assessments. It further provides for an integrated environmental protection and conservation of biodiversity through sustainable management and use of natural resources. <b>Compliance:</b> The PIU through the district planner to ensure the technical supervisors are compliant with the provisions of this Act in environmental management.
Occupational Health and Safety Act No. 36 of, 2010	Provides for the protection of persons, other than persons at work, against risks to health	<b>Relevance:</b> - The Act provides for the safety and welfares of workers to be recruited by the contractors and contractors' daily operations. The Act

	<p>or safety arising from, or in connection with the activities of persons at work. Part IV, Section 16 (1 and 2) has provided for duties of the employee, and they generally are: providing a safe working environment; making sure that the employees are healthy and fit to work in the provided work environment; provide protective clothing or equipment; making sure there are health, safety, emergency and first aid measures; providing information on safety and health and compliance with the standards; conduct suitable and sufficient assessment of risks; eliminate hazards or reduce risks, provide plant and safe system of work, provide information, instruction and training measures.</p>	<p>provides for the establishment of safety committees and protection of workers from any potential risks by provision of personal protective clothing (PPE).</p> <p><b>Compliance:</b> The PIU will ensure that all technical supervisors and the PIC for all project sites comply with OHS requirements of this Act. The plan, will include as a minimum, construction and operational hazard identification, risk assessment, the provisions of control measures, the inclusion of worker welfare, relevant training requirements and training register, accident and incident reporting forms, safe systems of work, emergency preparedness and control measures, the provision of PPE etc.</p>
<p>Mental Health Act No. 6 of 2019</p>	<p>The Act provides for the promotion and protection of the rights of persons based on mental wellbeing.</p>	<p><b>Relevance:</b> Mental health affects everyone in diverse ways and in any environment including workplaces</p> <p><b>Compliance:</b> PIU and technical supervisor shall seek to support all staff in project working environments for the protection of mental wellbeing</p>
<p>Water Resources Management Act, No. 21 of 2011 read together with Statutory Instrument No 18 of 2018 (ground water and borehole regulations)</p>	<p>An Act to establish the Water Resources Management Authority and define its functions and powers; provide for the management, development, conservation, protection and preservation of the water resource and its ecosystems.</p> <p>provide for the equitable, reasonable, and sustainable utilizations of the water resource; ensure the right to draw or take water for domestic and non-commercial</p>	<p><b>Relevance:</b> Activities may result in water contamination through accidental discharge of effluents into surface or ground water bodies.</p> <p><b>Compliance:</b> The school construction project will put in a place a rigorous environmental monitoring regime to ensure that both surface and ground water flows are not affected in a manner that is undesirable and sustainable to the use of water resources the project lifecycle.</p>

	<p>purposes, and that the poor and vulnerable members of the society have an adequate and sustainable source of water free from any charges; create an enabling environment for adaptation to climate change;</p>	
Roads Traffic Act, No. 8 of 2022	<p>An Act to establish the Road Transport and Safety Agency and to define its functions; to provide for a system of road safety and traffic management; to provide for the licensing of drivers and motor vehicles; to provide for the registration of motor vehicles and trailers; to provide for compulsory third-party insurance of motor vehicles; to provide for the licensing and control of public service vehicles; to provide for the promotion of road safety.</p>	<p><b>Relevance:</b> All project related vehicles must be fit for purpose, passed the necessary vehicle inspections, registered, possess test certificates and all drivers possess valid driving licenses for the vehicle driven or operated, that the driver is competent, the driver is physically fit to drive and within all legal parameters such as age etc.</p> <p><b>Compliance:</b> The PIU will ensure that the technical uses of construction vehicles is in a manner that is appropriate and safe.</p>
Urban and Regional Planning Act, No.3 of 2015	<p>The Act provides for the development, planning and administration principles, standards and requirements for urban and regional planning processes and systems; provide for a framework for administering and managing urban and regional planning for the Republic; provide for a planning framework, guidelines, systems and processes for urban and regional planning for the Republic; establish a democratic, accountable, transparent, participatory and inclusive process for urban and regional planning that allows for involvement of communities, private sector, interest groups</p>	<p><b>Relevance:</b> The Act is relevant to this project because all project activities such as construction are to follow approved building codes and will require permission from the planning authority. The project will ensure that all relevant permissions are obtained before construction commences.</p> <p><b>Compliance:</b> The PIU to ensure that construction sites and designs are in line with the planning Act</p>

	and other stakeholders in the planning process.	
Public Health Act Cap. 295 of the laws of Zambia and National Public Health Institute Act No. 19 Of 2020	This law together with this Act provides for various lines for the prevention and suppression of diseases and the general regulation of all matters connected with public health in Zambia. Amongst other things, the Act prohibits anyone from causing a nuisance.	<p><b>Relevance:</b> The Act is relevant to this project because project activities could result in an outbreak of a disease at sites.</p> <p><b>Compliance:</b> The technical supervisor, PIC and the PIU will ensure that the place of work and the surrounding environment do not pose any health risks to the workers and the general populace. The pit latrines to be used will be kept in clean and sanitary conditions.</p>
Anti-Gender-Based Violence Act, 2010.	An Act to provide for the protection of victims of gender-based violence; constitute the Anti-Gender-Based Violence Committee; establish the Anti-Gender-Based Violence Fund; and provide for matters connected with, or incidental to, the foregoing. The act was also established to assist with shelters to support victims and or survivors of gender-based violence, provide emergency monetary relief and address harmful traditional practices.	<p><b>Relevance-</b> The ZEEP will enhance access to secondary school education to vulnerable grouping such as women giving them more opportunities access tertiary education and improve their earning power and economic independence. This will give the marginalized grouping a voice against Gender Based Violence (GBV). ZEEP will also put in place mitigation measures for GBV and will work with the GBV focal point person at the Ministry of Education.</p> <p><b>Compliance:</b> A GBV action plan will be prepared which will include GBV mitigation measures and the Grievance Redress Mechanism (GRM).</p>

### 3.2 The World Bank Environmental and Social Safeguards Policies

As a key financing institution, the World Bank is committed to supporting developmental projects, while eliminating or minimizing any adverse impacts or risks on the environment, society and human health. These impacts can be severe or moderate, localized or regional, short or long term. To minimize and manage environmental and social impacts, the Bank’s operational policies are triggered, and the environmental and social assessment is key process of the Bank due diligence. These safeguards provide a mechanism and tools for ensuring integration of environmental concerns and social issues into the planning and implementation of development projects financed by the Bank. The Bank has a total of ten safeguard policies which can be triggered depending on the nature and complexity of the proposed projects or sub-projects. In addition to the policies, the Bank uses Environmental, Health and Safety Guidelines including Good International Industry Practices for E&S risks mitigation measures.

In the context of the proposed education sector enhancement project and the associated sub-projects, one (1) of the ten (10) safeguard policies has been triggered is summarized in Table 2 below.

Table 2: Triggered World Bank Environmental and Social Safeguards Policy

World Bank	Safeguards Policies Triggered?	Reason why the Policy was Triggered or not Triggered
Environmental Assessment OP/BP 4.01	Yes	The safeguards policy on Environmental Assessment is triggered as Component 2 of the project will involve the construction of additional classrooms, teachers houses and support facilities at already existing schools across Zambia. The support facilities will include the provision of sanitation facilities such as toilets, potable water and sanitation to Learners and staff. The Project is classified as environment Category B, requiring a partial environmental assessment. Hence, the preparation of this ESMP. The potential negative impacts associated with the project activities will largely be associated with civil works emanating from school construction activities including vegetation clearance, sourcing of the construction materials, water use and pollution, solid and hazardous waste, community and occupational health and safety risks.

## Chapter Four: Environmental and Social Risk Impacts and Standard Mitigation Measures

### 4.1 Baseline Information

Zambia is divided into ten provinces, namely Central, Lusaka, Luapula, Western, Southern, Northern, North-western, Muchinga, Copperbelt and Eastern Provinces. The ZEEP project will be implemented in all the 10 provinces. Construction of schools in these provinces will be done in two phases, 1 and 2. The baseline information provided is for phase 1 which include four Provinces; North-western, Western, Copperbelt and Southern, the specific site location details in annex 1. The project will include construction of classroom blocks and support facilities on lots of selected schools across the provinces in secondary and primary schools. The Project will also include molding of blocks for the construction of the class blocks in the 22 sites of Western province. The number of blocks required per lot has been illustrated in annex 2.



Figure 1: Map of Zambia's Ten Provinces <https://editablemaps.com/product/zambia-map-with-10-provinces>.

**Baseline information on utility services in the selected provinces.** Utility companies provide water and sanitation services to most urban parts of the provinces. However, schools that are in rural areas depend on onsite sanitation facilities including pit latrines. Most homes and businesses in rural areas get their water from hand dug shallow wells, drilled boreholes with a hand pump, rivers, or lakes. The newly constructed schools will have a modern soak away system as an on-site sanitation facility and will have a drilled borehole at each site as a water source. The source of energy in urban areas is prime power.

However, most rural areas are not connected to the national grid. Hence, most schools will have solar energy. Solid waste management services are provided by the local authorities in urban areas while in rural areas, it remains a challenge and as such the community resorts to burying or burning waste.



Table 3: Summary of Potential Impacts and Mitigation Measures

Aspect	Impact*	Mitigation measures	Frequency of monitoring	Performance indicator (suggested)	Responsible person
<b>Pre-Construction</b>					
Landforms/ Geomorphology (Topography)	<ul style="list-style-type: none"> <li>Environmental degradation through earth materials - e.g., unmanaged borrow pits, sand pits, degraded riverbed</li> </ul>	<ul style="list-style-type: none"> <li>For earth materials, procure from legitimate sources to avoid encouraging environmental degradation</li> <li>Utilize the Raw Materials Abstraction Guidance document</li> </ul>	Daily	Material verification log sheet/reports	MoE, DEBS building officer/district Planner, Technical Supervisor & PIC
Land Rights	<ul style="list-style-type: none"> <li>Involuntary land donations</li> </ul>	<ul style="list-style-type: none"> <li>In the event that construction of schools requires additional land from the chiefs and the community, the project will consider voluntary land donation.</li> <li>The construction footprint will be restricted to the site designs and school boundaries.</li> </ul>	Throughout	Grievance Redress Mechanism Log Sheets Consent letters form chiefs	MoE, DEBS building officer/district Planner Community Leaders, Headteacher at beneficiary school
Occupational and Community Safety disasters (Climate Proofing)	<ul style="list-style-type: none"> <li>Structural integrity failure (early fatigue of infrastructure) leading to E&amp;S disasters</li> </ul>	<ul style="list-style-type: none"> <li>Design to Zambia Bureau of Standard Codes, and WBG EHS guideline for building facilities</li> <li>Ensure technical supervisor and skilled workers are registered with NCC and EIZ and apply appropriate standards and codes Life Safety and Fire Safety Codes: BS 7000-4:2013; BS 9991:2015 and BS EN 13501-2: 2018.</li> </ul>	One off	Site and accident Reports	MoE, DEBS building officer/district planner/ Technical Supervisor

		<ul style="list-style-type: none"> <li>• Surfaces, structures, and installations design should account for easy to clean and maintain, and not allow for accumulation of hazardous compounds.</li> <li>• Buildings to be designed to be structurally safe, provide appropriate protection against the environmental hazards and disasters, and have acceptable light and noise management conditions.</li> <li>• Design for fire resistant in mind, with noise-absorbing materials.</li> <li>• Floors should be level, even, and non-skid</li> </ul>			
<b>Construction</b>					
Flora and fauna biodiversity	<ul style="list-style-type: none"> <li>• Vegetation loss and soil cover due piling of building materials.</li> <li>• Soil erosion</li> </ul>	<ul style="list-style-type: none"> <li>• Locating buildings on less vegetated areas.</li> <li>• Construction footprint to be restricted to the site designs and school boundaries. The loss of vegetation will be kept to a minimum within the design footprint</li> <li>• Construction workers will be sensitized on the need to conserve vegetation around the sites.</li> <li>• Designate specific areas for stock-piling construction materials.</li> <li>• Reuse extracted soils for foundation compaction.</li> <li>• Incorporate soil erosion management in site plans design.</li> </ul>	Daily	Monthly site reports Area of revegetated site	MoE, DEBS building officer/district planner & Technical Supervisor

<p>Water Resource</p>	<ul style="list-style-type: none"> <li>Blockage of water channels, water turbidity from land preparation and stockpiling, waste and erosion</li> <li>Wash water from molding blocks can contaminate water sources</li> </ul>	<ul style="list-style-type: none"> <li>Create run-off settling ponds to allow sediment collection before discharge to local water channels.</li> <li>3R strategy where applicable</li> <li>To avoid boreholes contamination, septic tanks will be located at least 50 meters away from borehole location.</li> <li>Regular collection of domestic solid waste and appropriate disposal</li> <li>No waste of any type should be disposed of in watercourse including drains or streams</li> <li>Moulding sites should be 50 meters away from borehole locations and other water sources</li> <li>Wash water to be channelled into sedimentation tanks. From the sedimentation tank, it should be treated and be reused for dust suppression and the settled solids be reused.</li> </ul>	<p>Daily</p> <p>Daily</p> <p>Daily</p>	<p>Monthly site logbooks/reports on water use/quality</p> <p>Number of sites with refuse bags or waste bins</p> <p>Records of waste appropriately disposed of</p> <p>Absence of waste in drains or surface watercourses</p> <ul style="list-style-type: none"> <li>Number of moulding sites appropriately located</li> <li>Absence of spills from blocking making activities</li> <li>Number of blocks making sites with sedimentation tanks</li> <li>Absence of complaints from downstream water users</li> <li>Water quality results</li> </ul>	<p>Technical Supervisor, DEBS building/district planner/PIC.</p> <p>Technical Supervisor, DEBS building and district planner/ PIC</p>
<p>Dust generation</p>	<p>Air pollution</p>	<ul style="list-style-type: none"> <li>Dust suppression measures employed to minimize dust.</li> <li>Nasal filter masks as appropriate PPE</li> <li>Dust suppression through use of water sprinkling methods.</li> </ul>	<p>Daily</p>	<p>Number of trucks covered during haulage of construction materials.</p> <p>Number of workers issued with dust masks where required.</p>	<p>Technical Supervisor, DEBS building/district planner/PIC.</p>

		<ul style="list-style-type: none"> <li>• Trucks would be covered during haulage of construction materials.</li> <li>• Keep construction vehicle speeds to a minimum on site.</li> <li>• Workers to wear dust filter masks where required.</li> <li>• Ensure safe storage of materials on sites including the loading and offloading of cement, sand, and other materials to reduce dust emissions</li> </ul>		Reduced dust levels on site	
Construction traffic	<ul style="list-style-type: none"> <li>• Reduced public road safety</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure drivers are licensed and respect speed limits.</li> <li>• Training of drivers in road safety</li> </ul>	Daily	Number of licensed drivers/driving licenses, Vehicle maintenance register Number of speed humps around the sites Number of accidents or incidents involving construction traffic and the local community/workers	Technical Supervisor, DEBS building/district planner/PIC.
Soil	<ul style="list-style-type: none"> <li>• Soil structure/ profile alteration</li> <li>• Soil quality degradation due to erosion and compaction</li> <li>• Nutrients flow disruption</li> <li>• contamination from paints and/or chemical spills</li> </ul>	<ul style="list-style-type: none"> <li>• Designate specific areas for stock-piling construction materials.</li> <li>• Reuse extracted soils for foundation compaction.</li> <li>• Incorporate soil erosion management in site plans design.</li> <li>• Use containment mechanisms such as concrete pads/ hard standing surfaces.</li> <li>• Concealments/packaging/original containers to avoid spills.</li> <li>• Store in cool dry place on hard standing surfaces</li> <li>• 3R strategy where applicable</li> <li>•</li> </ul>	Daily	<ul style="list-style-type: none"> <li>• Designated materials storage areas</li> <li>• Absence of contaminated soil</li> </ul>	Technical Supervisor, DEBS building/district planner/PIC.

	<ul style="list-style-type: none"> <li>Resource depletion due to material abstraction and use of sand, gravel and cement</li> <li>Exploitation of water resources</li> </ul>	<ul style="list-style-type: none"> <li>Application of the Raw Material and Resources Abstraction Guidance Document prepared for the project.</li> <li>Ensure efficient use of water for construction including the application of rainwater harvesting for cleaning of construction equipment and block making machinery.</li> </ul>			
Noise and vibration and dust emissions	<p>Increased noise levels and vibrations (Workers hearing affected)</p> <p>Increased dust levels and vehicle emissions</p>	<ul style="list-style-type: none"> <li>Provision of PPE for workers for noise pollution</li> <li>Train workers on the use of PPEs for noise mitigation and reprimand those not complying</li> <li>Switch off equipment when not in use</li> <li>Operations including block making should be restricted to normal and daytime working hours</li> <li>Noise generating equipment should be provided with appropriate noise reducing material or structures</li> <li>Ensure proper and regular maintenance of equipment</li> <li>Suppress dust generation at project sites.</li> <li>Construction workers and drivers would be sensitized to switch off equipment, machinery, and vehicle engines when not in use and/or offloading materials.</li> </ul>	monthly	<p>Number of noise complaints recorded.</p> <p>Records of PPE issued.</p> <p>Records of vehicle maintenance log sheet/certificate of fitness</p> <p>Records of training conducted/materials used</p>	MoE, Technical Supervisor DEBS building/district planner/PIC

		<ul style="list-style-type: none"> <li>Ensure appropriate provision of PPE to the workers to protect against dust including cement dust</li> </ul>			
Solid Waste & Sanitation	<ul style="list-style-type: none"> <li>Blockage of water channels</li> <li>Vermin related illnesses</li> </ul>	<ul style="list-style-type: none"> <li>Solid or semi solid wastes will be placed in tear resistant plastic bags judged by their thickness or durability.</li> <li>All organic waste will be reused, recycled, or composted. Residual waste will be stored to accumulate sufficient load to transport to a licensed solid waste disposal site. Monitor and Manage waste streams and sites until disposed of appropriately by licenced dealers.</li> </ul>	Daily	<p>Waste appropriately segregated, stored and legally disposed.</p> <p>Number of times waste is collected.</p> <p>Number of awareness and sensitization events carried out</p>	Technical Supervisor, DEBS building/district planner/PIC
Cultural Heritage	<ul style="list-style-type: none"> <li>Damage to artifacts or anything of national or international scientific significance</li> </ul>	<ul style="list-style-type: none"> <li>Implement "chance-find procedure</li> </ul>	Daily	Cultural Heritage Site reports	Technical Supervisor, DEBS building/district planner
Occupational Health and Safety	<ul style="list-style-type: none"> <li>Sickness, falls from height, injury, snake and insect bites, heat stroke, dust inhalation, - cuts and abrasions, musculoskeletal injuries, injuries to the eyes and increased noise.</li> </ul>	<ul style="list-style-type: none"> <li>Implement an OHS measures to prevent fall from heights and pits impact injuries (from machinery, vehicles and dropped items) and many other OHS risks.</li> <li>Use of fall prevention such as appropriate scaffolds with proper platforms to prevent access to fall hazard area.</li> <li>Use of fall protection devices, e.g., full body harnesses</li> <li>Use of other appropriate PPE (eyewear, ear plugs and nasal masks)</li> </ul>	Daily	<p>Number of incidents/accidents recorded.</p> <p>Records of PPE issued.</p> <p>Records of toolbox talks conducted/ material used.</p>	Technical Supervisor, DEBS building/district planner

	<ul style="list-style-type: none"> <li>Safety and security of learners, community and technical supervisors or community workers during construction works.</li> </ul> <p>Electrical risks associated with power installations.</p> <ul style="list-style-type: none"> <li>Exposure to cement dust and wet cement during construction and blocking making activities.</li> </ul>	<ul style="list-style-type: none"> <li>Making sure that all workers on site are masked up and Toolbox talks on health and safety.</li> <li>On the job training of workers and provision of appropriate PPE.</li> <li>The construction areas will be properly secured with signposting, warning signs, barriers.</li> <li>Adjustment of working hours to prevent disruption of pedestrian access and local traffic patterns.</li> <li>Additionally, the project will abide by General EHS guidance for management of OHS risks as well as risks to community health and safety.</li> <li>All power connection to the national grid/off grid will be undertaken with the help of ZESCO or the Rural Electrification Authority (REA).</li> <li>Ensure provision of appropriate nose respirators to the workers</li> <li>All workers involved in the mixing of cement have full PPE including nose respirators, goggles, waterproof overalls, goggles, and gumboots</li> </ul>			
<p>Gender Equity, Sexual Harassment</p>	<p>Gender based violence, sexual exploitation, abuse and harassment</p>	<ul style="list-style-type: none"> <li>Provide and implement a gender-based violence action plan, which will include:</li> <li>Gender mainstreaming in employment at the worksite with opportunities provided for females to work, in consonance with local laws and customs.</li> <li>Prevention of SEA/SH including signing of code of conduct and sensitization of contractor workers and communities</li> </ul>	<p>Daily</p>	<p>Number of incidents/complaints recorded.</p> <p>Record of signed worker's code of conduct</p> <p>Number of sensitization meetings held</p>	<p>MoE, Technical Supervisor/PIC/DEBS district planner</p>

		<ul style="list-style-type: none"> <li>Grievance redresses mechanisms including non-retaliation.</li> <li>Provide and implement an employee code of conduct.</li> <li>Sensitization to the community on GBV/SEA/SH</li> <li>An inclusive approach shall be adopted to provide equal opportunity and meaningful participation of women.</li> <li>Communication about the works that will be undertaken will be shared to all project stakeholders</li> </ul>			
<b>Operations &amp; Maintenance</b>					
Water Quality (Surface & Ground)	<ul style="list-style-type: none"> <li>Contamination and pollution of water boreholes</li> <li>Sedimentation of run-of and drainage water channels</li> </ul>	<ul style="list-style-type: none"> <li>Regular water tanks maintenance</li> <li>Corrosion control on all steel works</li> <li>Water quality monitoring and management</li> <li>Ensure waste segregation and removal from the site at regular intervals.</li> <li>Keep install automatic switches to boreholes that control water pumping and overflow control in good condition.</li> </ul>	Weekly	Wastewater quality logs sheets/reports	MoE/Head Teacher/DEBS
	<ul style="list-style-type: none"> <li>Ground water contamination from septic tanks and soak away</li> <li>Odor/foul smell</li> <li>Disease spread.</li> </ul>	<ul style="list-style-type: none"> <li>All septic tank construction will conform to the MoE guidelines for schools to ensure leaks and slippages into ground water eliminated</li> <li>Occasional removal of faecal waste in soakaway</li> <li>Provide training to learners/communities on proper use of toilets and hygiene</li> </ul>			



Energy/Power	<ul style="list-style-type: none"> <li>• Fire risks (Loss of assets, infrastructure,</li> <li>• Electrocutation</li>   <li>• E-waste from photovoltaic materials</li> </ul>	<ul style="list-style-type: none"> <li>• Provide hand washing facilities</li> <li>• All solar electrical installations and equipment will be inspected and assessed regularly.</li> <li>• Implement Energy management measures to ensure efficient energy utilization.</li> <li>• Fire management and servicing of fire extinguishers</li> <li>• Regular building inspection and maintenance</li>   <li>• Implementation of E-waste Management Plan</li> </ul>	Throughout	<p>Power Installation Assessments reports/Fire protection equipment log sheets test/verification reports</p> <p>Electrical Situation Assessment &amp; Verification Reports</p>	MoE/Head Teacher/DEBs
Hazardous, Solid Waste & Sanitation	<ul style="list-style-type: none"> <li>• Blockage of water channels, vermin related illnesses.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement waste segregation practices and provide storage bins</li> <li>• All organic waste will be reused, recycled, or composted. Residual waste will be stored to accumulate sufficient load to transport to a licensed solid waste disposal site.</li> <li>• Monitor and Manage waste streams and sites until disposed of appropriately by licenced dealers.</li> <li>• Incorporate waste management in daily school activities to ensure learners and the surrounding communities dispose of waste in line with best disposal practices.</li> <li>• E-waste to be managed and disposed of in accordance with the E-waste Management Plan.</li> </ul>	Monthly	<p>Waste segregated, stored and legally disposed.</p> <p>The number of bins provided, and times waste is collected.</p> <p>Number of awareness and sensitization events carried on pupils.</p>	MoE/Headteacher/DEBS

Community/Occupational Health and Safety	<ul style="list-style-type: none"> <li>Safety and security of learners, community and technical supervisors or community workers during maintenance works.</li> </ul>	<ul style="list-style-type: none"> <li>The rehabilitated areas will be properly secured with warning signs, barriers and traffic diversions. Signage should inform the public of potential hazards.</li> <li>Maintenance activities to abide by General EHS guidance for management of OHS risks as well as risks to community health and safety</li> </ul>	Throughout	<p>Presence of warning signs and secured site. Records of workers with PPE observed on site. Records of induction or health and safety training conducted. PPE Logging</p>	MoE/DEBS/Head Teacher
Provision of ICT Equipment	<ul style="list-style-type: none"> <li>Generation of electronic wastes (tablets) which when poorly disposed are a hazard to the environment.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the electronic waste management plan which should be dispatched to all schools with the ESMP.</li> <li>E-waste will be handled through the project E-waste management plan to prevent inappropriate disposal to the environment and harm the local community.</li> <li>Project will secure official EEE with protective covers and insurance where applicable with suppliers that take back, recycle or otherwise dispose of obsolete equipment where possible.</li> <li>Teachers, schools and other entities receiving ICT from the project will be informed of and sensitized about proper disposal of EEE. The sensitization or training should include the usefulness and significance of e-waste recycling and the need for returning all-electronic items procured by the project to a collection Centre that should be established at an appropriate location.</li> </ul>	Throughout	<ul style="list-style-type: none"> <li>Number of schools with the ESMP and electronic waste management plan</li> <li>Quantity of E-waste generated and appropriately disposed of</li> </ul>	MoE/Headteacher/DEBS

		<ul style="list-style-type: none"> <li>When there is no supplier take back scheme, this waste will be disposed of through licensed hazardous waste management service providers as stipulated in the Environmental Management Act, 2011, and Environmental Management (Licensing) Regulations (Sl. No 112 of 2013) fifth schedule, regulation 18 (1).</li> </ul>			
Use/operation of laboratories	<ul style="list-style-type: none"> <li>Exposure of students and teachers to chemicals and wastes while undertaking activities in the laboratories</li> </ul>	<ul style="list-style-type: none"> <li>Provide training to students and ensure they have proper knowledge of the toxic effects of these chemicals, the routes of exposure and the hazards that may be associated with handling and storage of hazardous reagents.</li> <li>Ensure that laboratories are equipped with a safety or operations manual that includes material safety data sheets or other chemical hazard information from chemical manufacturers and/or suppliers. Ensure the compliance and implementation of the safety measures in the safety manuals for laboratories.</li> <li>Ensure that there are cabinets designed to protect the students, the laboratory environment and work materials from exposure to infectious aerosols and splashes.</li> <li>Similarly, laboratories should have standard safety equipment such as eyewashes and observe standard safety protocols.</li> <li>Provide PPE for students when handling chemicals in the laboratory (goggles, gloves, dust masks), etc.</li> </ul>	Throughout	<ul style="list-style-type: none"> <li>Presence of Safety and operations manual in laboratories including availability of data sheets and other hazard information from chemical suppliers or manufacturers.</li> <li>Number of PPE provided to the learners including safety goggles, gloves etc.</li> </ul>	School administration/DEBS

		<ul style="list-style-type: none"><li>• Always ensure that, students while in the laboratory are accompanied by a competent science/subject teacher.</li><li>• Ensure that the students are provided with training for responding to emergency situations like exposure (dermal, ingestion) etc.</li><li>• Ensure there is a disposal plan for disposal of the wastes (solvents and general wastes) generated by the laboratory activities. In accordance with the EHS, reagents should be autoclaved if possible and then incinerated.</li></ul>			
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## Chapter Five: Implementation Arrangements and ESMP Supervision and Monitoring

### 5.1 Implementation Arrangements

Implementation arrangements of the ESMP involve the national, provincial, district and school and community levels. At these levels have roles and responsibilities to ensure that project activities are conducted in an environmentally and socially acceptable manner with no harm to the people and the environment. Table 4 below summarizes the implementation arrangements.

Table 4: Implementation Arrangements

Responsible Party	Roles and Responsibilities
ZEMA	ZEMA is the institution mandated to decide on whether a full scale ESIA is necessary for proposed investments or otherwise. To make this determination, ZEMA has a screening and approval process. ZEMA issued No Objection for the construction of the schools. ZEMA will monitor the compliance of the project to the conditions of the No Objection Letter. The Bank also requires that sub project investments are screened to make a determine as to whether a full scale ESIA, a stand-alone ESMP or no further environmental studies are needed for investments. Screening was done for all the 73 sites for which an ESMP has been prepared.
ZEPCU	ZEPCU will also monitor construction works and the implementation of ESMP. ZEPCU will work with the Third-Party Verifier during the verification process to make sure that safeguards implemented. The World Bank will also monitor the implementation of the ZEEP project during its regular supervision missions.
National Level	The implementation team will comprise the MoE staff in the infrastructure section (ZEPIU) under the Directorate of Planning and Information. It will consist of architects, engineers, and quantity surveyors. This team will be led by an architect and will be responsible for the oversight of the implementation of this component at the national level. It will work with the MoE's PSU to procure all services, furniture, and equipment that will need to be procured at the central level. As the implementation takes a community-based approach, the Ministry of Local Government will be consulted, and its support will be solicited to provide support to ensure the overall quality of infrastructure at the community level.
Provincial /District level	At the provincial level, all construction under this project will be coordinated by a team of staff (Senior Planner, Resident Engineer and Senior Buildings Officer), both under the MoE. The Senior planner will be the focal Point for Environmental and Social monitoring at Provincial level. At the district level, all of the construction under this project will be coordinated by the DEBS, which shall include the District Planner under the MoE and other officers who may be appointed by DEBS to facilitate community mobilization and training. If the local system is already decentralized, the Resident Engineer and the Senior Planners at the provincial level will coordinate and supervise construction activities at the school/local community level. The monitoring will include regular site visits by the District Planners and monthly written reports from the field that will be submitted to ZEPCU

	through the Senior Planners. Monitoring will also be carried out by the technical supervisors on site using the monitoring checklist derived from the environmental management and monitoring tools of the ESMP reports.
School/Local community Level	At this level, a Project Implementation Committee (PIC) will be elected by members of the community where a selected expansion school resides to coordinate project implementation activities. The PIC will report to the PTA, the DEBS, or the PEOs. It will form subcommittees, such as the procurement subcommittee responsible for procurement of materials, the stores subcommittee responsible for storing and issuing material and tools, and the finance committee responsible for ensuring that construction is properly funded and that all payments are made on time. The PIC will ensure that construction works with the E&S risks mitigation measures as specified in ESMP and contract documents, as well as national and local legislation. Work with the technical supervisor and take all necessary measures to protect the health and safety of workers and community members, and avoid, minimize, or mitigate any environmental harm resulting from project activities.

## 5.2 ESMP Supervision and Monitoring

Supervision and monitoring are a key component of the ESMP during project implementation. Monitoring should be undertaken during the ZEEP-AF implementation phase to authenticate the effectiveness of impact management, including the extent to which mitigation measures are being successfully implemented. During the implementation, the hired independent verification agency will verify the presence and compliance of ESMP and the implementation of mitigating measures during construction, in addition to verifying the achievement of the agreed results. The aim of monitoring will be to:

- ❖ Improve environmental and social management practices.
- ❖ Check the efficiency and quality of the EA processes.
- ❖ Establish the scientific reliability and credibility of the EA for the project.
- ❖ Provide the opportunity to report the results on safeguards and impacts and proposed.
- ❖ implementation of mitigation measures.

### Compliance Monitoring

This is to authenticate that the required mitigation measures, which are the environmental and social commitments agreed on by the implementing agency, local implementing agencies and technical supervisors are being adhered to. A monitoring checklist will be developed for compliance monitoring. The PIU will be responsible for undertaking compliance monitoring.

### Impact Monitoring

Monitoring of sub-projects impacts mitigation measures should be the duty of the PIU. The Environmental and Social Safeguards agreed in the contract specifications should be monitored to ensure that works are proceeding in accordance with the laid down mitigation measures. The PIU and

will ensure that the project implementers submit reports on work progress and any challenges in observing the Environmental and Social Safeguards. The monitoring results should form a major part of the reports to be submitted to the MoE PIU and shared with the World Bank.

### **Cumulative Impacts Monitoring**

The impacts of the ZEEP on the environmental and social resources within the project areas should be monitored with consideration to other developments which might be established or already existing. There should be collaboration between the PIU and proponents of other development projects to compare Environmental and Social Safeguards guiding the individual projects implementation to ensure coordinated and comprehensive management of cumulative impacts. There are two aspects of monitoring in the PIU which include the first aspect considers the monitoring at ward and community level (project site) where the project is being implemented and secondly, at the larger scale for all sub-projects at district and provincial level.

### **Annual Monitoring and Reviews**

Environmental and social monitoring needs to be carried out during the implementation of the sub-projects. Monitoring of the compliance of sub-project implementation with the mitigation measures set out in the sub-project's ESMP will be carried out by the PIU, where relevant, jointly with the support from community leaders and local authorities. Compliance monitoring comprises on-site inspection of activities to verify that measures identified in the ESMP are being implemented. One of the monitoring tasks is to ensure that the technical supervisor is achieving the required standards and quality of work. The PIU will oversee the inspections. An annual inspection report must be submitted (together with the monitoring report) to the World Bank for review and approval. Annual reviews may be carried out by an independent consultant or other service provider that is not otherwise involved with ZEEP-AF. The purpose of the reviews is to: -

- ❖ To assess compliance with ESMP procedures, learn lessons, and improve on the ESMP performance.
- ❖ To assess the occurrence of, and potential for, cumulative impacts due to project-funded and other development activities.

The annual reviews will be a principal source of information to the PIU for improving performance. Thus, they should be undertaken after the annual report on monitoring has been prepared and before World Bank supervision of the project.

### **5.3 Proposed Training and Capacity Building**

Capacity building will be in the form of training seminars/ workshops and short courses for project implementing partner staff from the implementing agencies to be able to successfully implement environmental and social aspects of the project. The proposed training modules will cover among others:

- ❖ World Bank safeguards policies and ZEMA environmental regulations and other relevant national legislation including OHS.
- ❖ ZEEP-ESMF

- ❖ Subproject Screening Checklist.
- ❖ Environmental and Social Monitoring
- ❖ Code of Conduct

Table 5: Proposed Training and Capacity Building Approach

Level	Responsible Party	Audience	Topics/Themes that May Be Covered
National Level	ZEPCU/MOE	Director P&I ZEPIU Engineers	<ul style="list-style-type: none"> <li>• Training of trainers</li> <li>• ESMP, relevant World Bank safeguard policies and Checklists</li> </ul>
Provincial and District Education officers	ZEPIU ZEPCU	Senior planners, District Planners, Buildings Officers, Resident Engineers	<ul style="list-style-type: none"> <li>• Facilitate subproject implementation and monitoring process/ procedures.</li> <li>• Workshop on the ESMP and relevant World Bank safeguard policies, including GBV and SEA, Health and Safety Training.</li> </ul>
Beneficially schools and communities	ZEPCU District Planner PIC	Implementation of Subprojects, including environmental and social mitigation mechanisms	<ul style="list-style-type: none"> <li>• Basic environmental and social safeguards, training, including monitoring.</li> <li>• Basic Health and Safety Training</li> </ul>
Local/site level	ZEPCU Technical Supervisors	Local staff Community Workers	<ul style="list-style-type: none"> <li>• Application o grievance/beneficiary feedback mechanism</li> <li>• Code of Conduct, incident reporting, SEA/SH, Application of ESMPs, as relevant and the Environmental Checklist</li> <li>• Basic OHS measures and Personal Protective Equipment</li> </ul>
<b>Community level</b>	ZEPCU Specialists	Community members Community Workers, if relevant	<ul style="list-style-type: none"> <li>• Community health and safety issues</li> <li>• SEA/SH issues, prevention, measures</li> <li>• Grievance Redress Mechanism</li> </ul>

Community driven projects and community ownership are essential in ensuring compliance to environmental and social safeguards. Based on various levels of interactions and consultations with communities in the target districts and lessons from on-going similar projects, it is notable that public sector institutions' service delivery does not adequately meet communities' expectations.

#### 5.4 Estimated Budget for ESMP Implementation

The following table lists estimated cost items for the implementation for the ESMP, which have been included in the overall project budget:

Table 6: ESMP Implementation Budget

Activity/Cost Item	Potential Cost (ZMK)
Training for Provincial Officers, District Officers, and community workers (venue, travel, refreshments, etc.)	3, 075, 100
Awareness raising materials /Grievance Redress materials.	
i. Rolling out of GRM Manual	50, 000
ii. Procurement of GRM boxes	735, 500
iii. Distribution of GRM Registers	92, 000
Implementation of site-specific ESMPs and other site-specific plans	



i.	Personal Protective Equipment for 73 sites	
ii.	Transportation costs of monitoring for the Provincial and District Office	5,773,205
iii.	Cost of security /fencing (barricades)	
Travel and accommodation budget for environmental and social staff site visits		8, 260, 000
External monitoring, supervision consultant or Audit		1, 353, 750
Midterm review of ESMP		2, 500, 000
<b>TOTAL</b>		<b>21, 839, 555</b>

### Chapter 6: Stakeholder Consultations

Stakeholders were identified and consulted as part of the preparation of the ESMP. The consultations were held during the E&S screening process with Provincial Education Officers, DEBS representative's, Senior Building Officers, Building Officers, Resident Engineers, school administration, the community and local leadership. The purpose of this exercise was to ensure that all land screened for the construction of schools was free from any encumbrances. In the event that land identified would result in economic or physical displacement, alternative land by the chief or headmen will be provided.

## Appendices

### Appendix 1: List of Proposed 73 Secondary Schools for Phase 1

S/N	Province	District	Name of School	Distance from DEBS
<b>COPPERBELT PROVINCE</b>				
1	Copperbelt	Chililabombwe	Chimfunshi Day	40km
2	Copperbelt	Chililabombwe	Kamenza East Day	37km
3	Copperbelt	Chingola	Chingola South Day	15km
4	Copperbelt	Kalulushi	Buyantashi Day	36km
5	Copperbelt	Kitwe	Kafue Park Day	27km
6	Copperbelt	Kitwe	Kitwe West Day	15km
7	Copperbelt	Luanshya	Kamuchanga Day	20km
8	Copperbelt	Lufwanyama	Chilumba Boarding	84km
9	Copperbelt	Lufwanyama	Sibuchinga Day	84km
10	Copperbelt	Masaiti	Kalulu Day	80km
11	Copperbelt	Mufulira	Mukuba Day	37km
12	Copperbelt	Mpongwe	Machiya Boarding	82km
13	Copperbelt	Mpongwe	Kalweo Day	70km
14	Copperbelt	Ndola	Mapalo Day	15km
15	Copperbelt	Ndola	Minsundu Day	15km
<b>SOUTHERN PROVINCE</b>				
1	Southern	Chikankata	Buchebuche Day	20km
2	Southern	Chirundu	Syakalyabanyama Boarding	80km
3	Southern	Chirundu	Chikanzaya Boarding	120km
4	Southern	Chirundu	Katwezele Day	50km
5	Southern	Namwala	Shimayobwa Day	70Km
6	Southern	Monze	Bweengwa Boarding	53km
7	Southern	Pemba	Hakainde Hichilema (Nkandela) Boarding	75km
8	Southern	Gweembe	Chimanda Day	75km
9	Southern	Sinazongwe	Siameja Day	60km
10	Southern	Zimba	Mapatizya Day	194km
11	Southern	Livingstone	Light of Hope Day	10km
12	Southern	Kazungula	Kawewa Day	20km
<b>NORTH-WESTERN</b>				
1	North-western	Chavuma	Kambuya Day	35km
2	North-western	Chavuma	Kakhoma Day	15km
3	North –Western	Kabompo	Chikonkwelo Day	46km
4	North- Western	Kabompo	Kamisombo Day	86km
5	North –Western	Kabompo	Kabulamema Boarding	52km
6	North –Western	Kasempa	Mukunashi Day	48km
7	North- Western	Kasempa	Muyombe Day	85km
8	North –Western	Manyinga	Chipanda Day	20km
9	North –Western	Manyinga	Mawande Day	25km
10	North –Western	Mufumbwe	Miluji Day	361km
11	North –Western	Mufumbwe	Shukwe West Day	11km
12	North –Western	Zambezi	Nyakulenga Day	60km

13	North –Western	Zambezi	Muyembe Day	41km
14	North –Western	Ikelenge	Mwinilamba Day	12km
15	North –Western	Ikelenge	Mukangala Day	22km
16	North –Western	Ikelenge	Saluzhing'a Boarding	49km
17	North –Western	Ikelenge	Lwakela Boarding	40km
18	North –Western	Kalumbila	Chitungu Day	85km
19	North –Western	Mushindamo	Kilumba Day	100km
20	North –Western	Mushindamo	Mujimanzovu Day	112km
21	North –Western	Mwinilunga	Kakoma Day	168km
22	North –Western	Mwinilunga	Chisengisengi Day	110km
23	North –Western	Solwezi	Kyapatala Day	15km
24	North –Western	Solwezi	Humphrey Mulemba Day	8km
<b>WESTERN PROVINCE</b>				
1	Western	Kalabo	Sishekano Boarding	48km
2	Western	Kalabo	Nguma Day	84km
3	Western	Mongu	Lwatile Day	25km
4	Western	Mongu	Lukalanya Day	98km
5	Western	Kaoma	Lunyati Day	79km
6	Western	Kaoma	Winda Day	165km
7	Western	Sikongo	Sikushi Day	79km
8	Western	Lukulu	Dongwe Day	130km
9	Western	Mitete	Lutembwe Day	100km
10	Western	Limulunga	Ushaa Day	50km
11	Western	Nkeyema	Kanchale Day	90km
12	Western	Nkeyema	Kahare Day	68km
13	Western	Luampa	Nyambi Day	120km
14	Western	Luampa	Lui Day	52km
15	Western	Mulobezi	Kamanga Day	60km
16	Western	Mwandi	Magimwi Day	130km
17	Western	Sioma	Sinjembela Day	157km
18	Western	Sesheke	Imusho Boarding	189km
19	Western	Senanga	Mata Boarding	126km
20	Western	Nalolo	Likuma Day	65km
21	Western	Shangombo	Shangombo GRZ Day	7km
22	Western	Shangombo	Kaungamashi Boarding	64km

**Appendix 2: Description of Lots and number of blocks required**

S/N	Lot Description	No. of Blocks
1	1 X 2 Classroom Block, 1 X 3 Science Laboratory and One (1) Ablution Block and a Storeroom	20,832
2	1 X 3 Classroom Block, 1 X 2 School Library & Computer Room, 1x2 Home Economics & Design Technology Block and one (1) Ablution Block.	24,710
3	One (1) Administration Block and One (1) School Hall.	21,048
4	Six (6) stand-alone teachers' houses and Two (2) Tank Stands	29,996
5	Six (6) stand-alone teachers' houses and Sick Bay	30,569
6	Weekly boarding facilities (Girls' Boarding Facility and Ablution, Boys' Boarding and Ablution) for schools with boarding facilities.	20,338
7	Sewer Reticulation	6,926
	<b>GRAND TOTAL</b>	<b>154,419</b>

**Appendix 3: Environmental Codes of Practice**

Issue	Environmental Prevention/Mitigation Measures
Noise during construction	<ul style="list-style-type: none"> <li>❖ Plan activities in consultation with communities so that construction noisiest activities are undertaken during periods that will result in least disturbance.</li> <li>❖ (Use noise-control methods such as fences, barriers, or deflectors (such as muffling devices for combustion engines or planting of fast-growing trees)</li> <li>❖ Minimize project transportation through community areas.</li> <li>❖ Maintain a buffer zone (such as open spaces, row of trees or vegetated areas) between the project site and residential areas to lessen the impact of noise to the living quarters</li> </ul>
Soil erosion	<ul style="list-style-type: none"> <li>❖ Schedule construction during dry season</li> <li>❖ Contour and minimize length and steepness of slopes.</li> <li>❖ Use mulch, grasses, or compacted soil to stabilize exposed areas.</li> <li>❖ Cover with topsoil and re-vegetate (plant grass, fast-growing plants/bushes/trees) construction areas quickly once work is completed.</li> <li>❖ Design channels and ditches for post-construction flows and line steep channels/slopes (e.g., with palm frowns, jute mats, etc.)</li> </ul>
Air quality	<ul style="list-style-type: none"> <li>❖ Minimize dust from exposed work sites by applying water on the ground regularly.</li> <li>❖ Do not burn site clearance debris (trees, undergrowth) or construction waste materials.</li> <li>❖ Keep stockpile of aggregate materials covered to avoid suspension or dispersal of fine soil particles during windy days or disturbance from stray animals</li> </ul>

Water quality and availability	<ul style="list-style-type: none"> <li>❖ Activities should not affect the availability of water for and availability drinking and hygienic purposes.</li> <li>❖ No soiled materials, solid wastes, toxic or hazardous materials should be poured or thrown into water bodies for dilution or disposal.</li> <li>❖ The flow of natural waters should not be obstructed or diverted to another direction, which may lead to drying up of riverbeds or flooding of settlements.</li> <li>❖ Separate as best as possible concrete works in waterways and keep concrete mixing separate from drainage leading to waterways</li> </ul>
Solid and hazardous waste	<ul style="list-style-type: none"> <li>❖ Collect and transport construction waste to appropriately.</li> <li>❖ hazardous waste designated/ controlled dump sites.</li> <li>❖ Maintain waste (including earth dug for foundations) at least 300 meters from rivers, streams, lakes, and wetlands.</li> <li>❖ Use secured area for refueling and transfer of other toxic fluids distant from settlement area (and at least 50 meters from drainage structures and 100 meters from important water bodies); ideally on a hard/non-porous surface.</li> <li>❖ Train workers on correct transfer and handling of fuels and other substances and require the use of gloves, boots, aprons, eyewear and other protective equipment for protection in handling highly hazardous materials.</li> <li>❖ (Collect and properly dispose of small maintenance materials such as oily rags, oil filters, used oil, etc.</li> </ul>
Health and Safety	<ul style="list-style-type: none"> <li>❖ Working conditions are safe and hygienic (ILO Convention C155): Contractors or supervisors of community workers must take adequate steps to provide safe and hygienic working environments. Additionally, workers' safety must be a priority and adequate steps must be taken to prevent accidents and injury to health associated with or occurring in the course of work.</li> <li>❖ Provide personal protective gear for workers as necessary (gloves, dust masks, hard hats, boots, goggles).</li> <li>❖ Follow the below measures for construction involve work at height (e.g., 2 meters above ground. <ul style="list-style-type: none"> <li>○ Do as much work as possible from the ground.</li> <li>○ Do not allow people with the following personal risks to perform work at height tasks: eyesight/balance problem; certain chronic diseases – such as osteoporosis, diabetes, arthritis, or Parkinson's disease; certain medications – sleeping pills, tranquillizers, blood pressure medication or antidepressants; recent history of falls – having had a fall within the last 12 months, etc.</li> <li>○ Only allow people with sufficient skills, knowledge, and experience to perform the task.</li> <li>○ Check that the place (e.g., a roof) where work at height is to be undertaken is safe.</li> <li>○ Take precautions when working on or near fragile surfaces.</li> <li>○ Clean up oil, grease, paint, and dirt immediately to prevent slipping.</li> <li>○ Where possible provide fall protection measures e.g., safety harness, simple scaffolding/guard rail for works over 4 meters from ground.</li> <li>○ Keep worksite clean and free of debris on daily basis.</li> <li>○ Keep corrosive fluids and other toxic materials in properly sealed containers for collection and disposal in properly secured areas.</li> <li>○ Ensure adequate toilet facilities for workers from outside of the community.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Rope off construction area and secure materials stockpiles/ storage areas from the public and display warning signs. Do not allow children to play in construction areas.</li> <li>○ Fill in all earth borrow-pits once construction is completed to avoid standing water, water-borne diseases, and possible drowning.</li> <li>○ Each construction sub-project to have a basic first-aid kit with bandages, antibiotic cream, etc.</li> </ul>
Other	<ul style="list-style-type: none"> <li>❖ No cutting of trees or destruction of vegetation other than on construction site</li> <li>❖ No hunting, fishing, capture of wildlife or collection of plants.</li> <li>❖ No use of unapproved toxic materials including lead-based paints, un-bonded asbestos, etc.</li> <li>❖ No disturbance of cultural or historic sites</li> </ul>

**Appendix 3: Electronic Waste Management Plan (ESMF Annex 9)**

**Appendix 4: Raw Materials Abstraction Guidance Document (Standalone document)**