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ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK FOR THE REVITALIZING EDUCATION DEVELOPMENT PROJECT IN SIERRA LEONE (REDiSL)

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March 31, 2014

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1 INTRODUCTION

The Government of Sierra Leone (GoSL) is preparing a project on Revitalizing Education Development in Sierra Leone (REDiSL). The REDiSL grant is processed under the development project financing instrument available to the government of Sierra Leone for the global partnership for education fund and it builds on the progress achieved through the previous EFA-FTI, and is also embedded in the Education Sector Plan (ESP) for 2014-2018. It aims to support interventions underpinned by authorities as they are laid out in the ESP, with the following objectives:

i) Improve access, equity and completion;
ii) Improve quality and learning outcomes;
iii) Strengthen education service delivery

The overall objective is to improve the learning environment in targeted schools and establish system for monitoring of education outcomes.

As part of the process of project formulation, the preparation of the Environmental and social management framework (ESMF) was commissioned. The recommendations will be elaborated into project and site specific management action plans for the project as required by the World Bank. This ESMF is prepared by Dr Ralph Bona, former Environmental Manager of CEMMATS Group Ltd, the lead environmental consulting firm in Sierra Leone, and who is also now, the consultant for the Environmental Protection Agency Sierra Leone (EPA-SL), with inputs from staff of the MOE and EPA-SL.

2 PROJECT DESCRIPTION

A. Project Components reviewed

The REDiSL is a US$23.5 million grant processed under the Investment Project Financing (IPF) instrument available to the Government of Sierra Leone from the GPE Fund as well as the Sierra Leone Multi-Donor TF. It builds on the progress achieved through the previous EFA-FTI operation and is embedded in the ESP (2013-2018). It is funded by a $17.9 million allocation from GPE; and $5.6 million equivalent from a multi-donor TF, currently funded by DFID.

<u>COMPONENT 1 – Improving the learning environment and opportunities in targeted areas</u>

1.1 Performance-based School Grants ($4.4 million)

The objective of the performance-based school grants component is to improve the learning environment and opportunities in primary and junior secondary schools in targeted districts. Financial incentives (grants) will be provided to schools in most marginalized districts based on a fixed set of criteria related to poverty and education outcomes. Schools must meet agreed outputs or outcomes to receive funding. This is an innovation in the education sector in Sierra Leone, but it has been tested with some success in the health sector.

The project will provide grants to schools in three phases, and the amount disbursed to schools will be based on the number of results that schools achieve. The specific objectives of the system are to: (1) provide additional resources at school level to cover the cost of delivering services and removing the need for 'informal' charges in primary school; (2) increase educational equity, since local councils with the lowest educational outcomes and highest poverty levels are targeted; (3) improve the learning environment and opportunities in selected schools – by strategic selection of the indicators and targets; and (4) strengthen capacities of local councils, district education staff, and heads of schools in the administration of the grants.

Grants will be provided in three phases.

> Phase 1: All approved primary and junior secondary schools will receive a grant of up to US$1,000 at the start of the year. Selected schools will have (or commit to) the following: (i) Have a school management committee (SMC) or Board of Governance, with relevant executive; (ii) have a bank account with the relevant signatories; (iii) record teacher attendance daily; (iv) record student attendance daily; (v) keep daily record of when school is open; (vi) submit all required reports as necessary; (vii) maintain updated accounting records.
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> Phase 2: All schools who meet the Phase 1 requirements will be eligible for 2nd round funding, but the amount received will be based on results achieved. The more targets a school achieves, the larger the amount of funding that they will get.
>
> Phase 3: Rewards will be given to schools that have made the most improvements in performance. The amount of funding remaining will determine the amount to be received by schools as well as the number of schools eligible.

1.2 Piloting approaches to increase school readiness (US$1 million)

The project would support the establishment of approximately 50 pre-primary classrooms; half of these will be attached to Government supported schools and the rest hosted in Community Learning Centers, which are established in select communities and managed by the Department of Non-Formal Education within MEST. The classrooms will primarily serve children age 5, many of whom are currently enrolling in Grade 1 and adding to the already challenging learning environment at that level

In addition to the classrooms, the Project will support teacher and caregiver training for those who will be teaching in the pre-primary classrooms. This will include initial 3 weeks of training and then ongoing training throughout the school year. Approximately 110 teachers will be directly trained through the project, but materials will also be made available to teacher training institutions throughout the country for use by teachers and caregivers considering working in ECCE.

To ensure the quality of service delivery, the project will also support the capacity building of the MEST to establish Minimum Quality Standards for ECCE. These Minimum Quality

Standards would be applied to the classrooms established under the pilot, along with a sustainable system for monitoring and supporting compliance. To achieve this and ensure sustainability of efforts and commitment to ECCE, a pre-primary unit will be created within MEST (MEST funding will be used to pay MEST staff) separate from primary level responsibilities (which is the current arrangement).

1.3 Strengthening reading outcomes at early grades (US$6.9 million)

To support the ESP's aim of improving the pedagogical methodologies used by teachers to improve learning outcomes, the operation will support a comprehensive national reading program intended to improve literacy in early grades and create a culture of reading as a foundation for learning. Specific interventions would include:

Reading books for primary classes (1-3) and relevant learning materials (teachers' guides and teaching support packets for trained teachers). The GPE would finance the production, and distribution of approximately 1.8 million reading books for grades 1-3 for all primary schools throughout the country. This would be an approximate ratio of 2 reading books per student though they are developed to be used and re-used so it's likely students would be exposed to more titles throughout the school year. These books would complement the current syllabus and would be selected using criteria based on literacy-levels, literary value, and social-cultural relevance. Teachers and students are expected to use the books as tools to complement literacy skill and fluency based instructional goals, using strategies such as word family work, vocabulary learning, comprehension teaching, reading aloud, storytelling, literary games, and individual silent reading.

Grade-level reading campaign. The project will support the roll out of a reading campaign using multiple channels. At the community level, there would be Talking Drum Studio stories and similar events. At the national level, the Sierra Leone Broadcasting Corporation (SLBC) will be approached to carry bi-monthly interviews and presentations about the importance of literacy and the ways in which parents and schools work for children's success together. At the school level, the SMC would be asked to create regular slots for learning about literacy using proposed topics such as "importance of learning to read", "why do we want our children to be able to read?", and "how do children learn to read". Schools can also hold short storytelling events with print outcomes, or make alphabet books with help from teachers.

Training for teachers of early primary grades. The project will fund the development of a training that to help teachers understand effective teaching for quality outcomes. These training will include tools like teacher lesson guides, pedagogical materials, as well as scope and sequence lists. These are part of the teacher training initiative to support more. As demonstrated by initial results of a pilot training currently under implementation, enhanced lesson planning and strategy guides show positive increases in teacher's skills and student's knowledge. The training will be carried to 10 percent of the primary schools teaching workforce (about 3,800 teachers over the three years and 600 pre-service teachers in training). To ensure sustainability of the practice, the project will also work with the MEST and teacher training institutions to integrate the training on the use of supplementary reading

books into the pre-service and distance learning for initial teacher training on college campuses where early primary school teachers are certified. To achieve this, the cohort of trainers will include representation from all the Teacher Training College Departments of Language Arts to insure their abilities to participate in the development of new practices with new pre-service teachers in the second phase.

COMPONENT 2 – Strengthen education service delivery

2.1 Improvements in teacher management (US$3 million)

The Teaching Service Commission (TSC) The project will make the TSC functional and would be used to cover operational costs of the Commission both at central and decentralized levels. The main output for this intervention would be an effective and efficient management of the teaching labor force underpinned by a database which would inform management decision making with respect to the promotion of professional development and performance of teachers and reporting protocols from districts.

2.2 Building the foundation for better measurement of learning outcomes (US$1.1. million)

Building on previous outputs, the project would establish and operationalize a semi-autonomous assessment unit within the Directorate of Policy and Planning of the MEST to coordinate the design and execution of assessments at lower and upper primary and JSS. The project would fund a Class 4 assessment in Mathematics and English. Sample selection, data collection, data processing and editing, weighting and variance estimation would be sub-contracted to Statistics Sierra Leone or another entity that has experience in the work to be carried out and does not require much, if any, capacity building to incorporate the learning assessment into their work programs.

2.3 Robust consistent school data collection (US$0.4 million)

The REDiSL will build on the system already in existence to support the ministry in mainstreaming a briefer version of the school census in off years so not all data is collected annually but those indicators will be relevant for monitoring purposes of the project are included.

2.4 Establishing a system for implementation of the Education Sector Strategy ($4.4 million)

The REDiSL will develop a strategy for monitoring the Education Sector Plan and for reporting on its outcomes. In this context the project will provide technical assistance to the MEST, TSC, and Local Councils to undertake M&E activities with the aim of ensuring information flows to all parties (students, communities, and educators) and enforcing accountability.

In line with the aim of bringing about the transformation of the MEST envisioned in the ESP, the Project would also drive the transformation of the MEST towards enhanced capacity, at central and local council levels, building on the recommendations outlined in the Capacity Development Study carried out in 2011. The unit would be responsible for coordinating

donor intervention and reporting, which will in turn lead to improved efficiency in service delivery. This unit would serve as a vehicle for donors to align their support to the MEST, using a best practice approach that has been tested in the health sector. Once executed, this setup should catalyze significant transformation in the education sector and enable the Government to achieve the targets set out in its ESP.

COMPONENT 3 – Project Management and Supervision

3.1 Project Management and Supervision (US$0.9 million)

This component will provide the necessary funding for the operations of the project implementation unit to be housed within the MEST. In addition to funding the administrative costs associated with implementation of the components above, it will also support fiduciary management, procurement, and auditing (Details are noted in Annex 3). In addition, it will fund the day-to-day costs of operation and systems needed including accounting systems, FM audits, capacity building workshops, and field visits. As such, the Project is expected to finance the ESP Secretariat, namely (i) ESP coordinator, (ii) Finance Officer, (iii) M&E Officer, as well as the procurement specialist (consultant) and project assistants.

A. Limitations of study

Consultations were carried out and relevant information will be disseminated throughout the execution of the project which will keep to the tenets of a proper Public Consultation and Disclosure Process (PCDP) for an ESMF.

3 SCOPE AND TERMS OF REFERENCE OF THE ESMF

Preparation of the ESMF

The ESMF has considered the following:

a. The types of investment to be financed by REDiSL, by examining the potential environmental and social impacts, both individual and cumulative, for each type of sub-component. The study has consulted information available from the existing project documents, investigated similar sub-components already operating in the project areas and results from any pilot operations. The study has describe the principal problems and environmental and social impacts which may result from investments and suggested appropriate mitigation measures;
b. Upgrading and proposing streamlined procedures for the environmental assessment (EA) and subsequent supervision of sub-component to be integrated into the project implementation manual. The procedures include a format for simple checklist of relevant environmental and social criteria to be taken into account in the evaluation of micro-projects and a process to discuss environmental and social issues with the communities and local authorities throughout the process of micro-project formulation and implementation. The procedures have been designed to ensure that the EA process is seen as assisting the design of micro-projects and not as an obstacle to project implementation;
c. Assessing through interviewing key Government counterparts and other stakeholders, the institutional capacity to carry out EA and to manage environmental and social issues of subproject design and implementation; and recommending steps for building capacity and strengthening institutions in order to better manage the environmental and social issues associated with the project activities. Describing the implementation/institutional framework, including the grievance redress mechanism, with the objective of clarifying the roles and responsibilities in the implementation of the ESMF for effective environmental and social management of REDiSL activities. Proposing and cost capacity building including training for the key implementing agencies and other stakeholders.
d. Preparing a public disclosure notice and guiding the client in disclosing the ESMF as per the World Bank and Sierra Leone requirements.

Consultations

The consultant supported government counterparts in organizing stakeholder consultations on the environmental and social aspects of the project. The consultant has presented the preliminary ESMF at a one-day stakeholder consultation/briefing. Any pertinent suggestions and recommendations made during this consultation has been considered in the final report and summarized in an annex to the ESMF which includes:

(i) A summary of items discussed including a list of issues raised by stakeholders
(ii) A description of the way the issues raised have been addressed by the project and in the ESMF
(iii) A list of attendees

4 METHODOLOGY

This exercise consisted of a combination of desk review of available data, consultative meetings and preparation of the ESMF.

A. Consultative Meetings

Consultative meetings were held to solicit stakeholders' perception of the project and sub-components and their environmental and social ramifications. Consultative meetings were organized with the EPASL to assess their capacity and track record in implementing and independently monitoring environmental and social impacts and compliance.

B. Preparation of ESMF

The consultant has reviewed all relevant documents, and consulted national and World Bank guidelines and IFC performance standards and local legislations, regulations and policies in formulating the plan. The draft plan was submitted to the Ministry of Education for reviews and comments.

C. Deliverables

Outputs of this undertaking are as follows:

- Environmental and Social Management Framework
  - General Environmental and Social Management Framework
  - E&S Monitoring Framework
- Suggestion Public consultations process and grievance redress mechanism

5 OVERVIEW OF THE PROJECT AREA: THE SIERRA LEONE ENVIRONMENT

A. Administrative and Political structure

Administratively, Sierra Leone is divided into four region, split into 14 districts which are in turn split into 19 Local Councils. These Local Councils are elected locally and oversee 149 chiefdoms. The structure starting from the bottom to the top is village, chiefdom, Local Council/district, province and country.

B. Government and Administration

Freetown is the capital city where most of the Government Ministries are located. District councils were established in the year 2000, with the appointment of management committees. The Government is committed to decentralization. The elected councils constitute representative bodies with delegated powers and funds for local governance.

Councils are operating and the government is slowly devolving power and functions of various Ministries to these bodies.

The responsibility for provincial administrative matters is within the purview of The Ministry of Local Government and Rural Development, which is responsible for Provincial Administration. The Minister is assisted in his duty by a Resident Minister in each of the three provinces whose offices are in the respective provincial headquarter towns. The Resident Ministers are assisted by Provincial Secretaries at provincial level.

The Ministry of Local Government and Rural Development in consultation with the respective Paramount Chiefs, appoints local court chairmen in the 149 chiefdoms in the country. The local court houses are known as court barries, of which there are 287 throughout the country. The Native Administration utilizes the services of the Chiefdom Police and "lock ups" for law enforcement purposes.

The Local and or Town Council is the highest political authority in the locality, with legislative and executive powers, and responsible for promoting the development of the locality and the welfare of the people in the locality with the resources at its disposal (The Local Government Act 2004). The Local Council is responsible among other things, for:

- The mobilization of human and material resources necessary for overall development and welfare of the people of the locality;
- Promoting and supporting productive activity and social development;
- Initiating and maintaining programs for the development of basic infrastructure and providing works and services;
- Initiating, drawing up and executing development plans for the locality;
- Overseeing Chiefdom Councils in the performance of functions delegated to them by the local councils;

- Determining the rates of local taxes, approving the annual budgets of Chiefdom Councils and overseeing the implementation of such a budget; and
- The local council is also responsible for the formation of committees. The Council has a major stake in all development programs and collection of licenses and taxes within their localities.

Before the legislation of the Local Government Act 2004, chiefdom administration was centralized mainly in the District Offices. But since its legislation, the Local Government Act 2004 splits the administration of the eleven chiefdoms in the Port Loko District between the Port Loko District Council (that oversees and supervises the chiefdom budgets) and the Provincial Secretary's Office (that oversees and supervises chieftaincy elections and land disputes). The Port Loko District Council is one of the nineteen local councils established by the Local Government Act (LGA) of 2004 to be "the highest political authority in the locality" with "Legislative and executive powers," and with powers to "generally promote the development of the locality and the welfare of the people in the locality with the resources at its disposal and with the resources and capacity as it can mobilize from the central government and its agencies, national and international organizations, and the private sector."

Social, Political and Economic Aspects

The long term perspective studies (NPTLS) for Sierra Leone which culminated in the Sierra Leone vision 2025 has a critical look at the past and current performance on peace and development, and evaluates the economic, social, political, technological and environmental situation of the country.

The Agenda For Prosperity (2012-2017): Pillar 6 – Social Protection

The Government of Sierra Leone commissioned the Agenda for Prosperity in 2013. Pillar #6 "Accelerating Human Development" seeks to develop human capital, to empower people to reduce poverty, and to accelerate the achievement of the Millennium Development Goals following significant strides 2008-12. Strategies will accelerate human development, through improving education quality and access, providing extensive health services, controlling HIV/AIDS, providing safe water and improved sanitation, population policy including reducing migration to the cities and slowing fertility, and mainstreaming gender parity. Pillar 6 refers to Social Protection but also includes education as one of the facets. Inequity based on gender, age, location, education and income impacts livelihoods. Malnutrition is widespread; while female barriers to education include high teenage pregnancy and early marriage.

A. Marco-Economic Environment

The country's small open economy is predominantly agricultural, and sustain about two-thirds the population at a bare subsistence level. Agriculture accounts for 47.5 percent GDP, but in terms of export earnings the mining sector is more significant than agriculture. Diamond remain the chief export earner, with significant reserves of other minerals such as gold, rutile, bauxite, chromite and iron ore, as well as a potential of only about 20% of GDP due to improper policies for the exploitation and utilization of the resources in the sector.

More particularly the trade in diamonds as the principal mineral resource exposed to smuggling and other related illegal activities. The agricultural and mining sectors co-exist with small modern sector that provide services accounting for about 25.2 percent. Sierra Leone attain independence in 1961 with the immediate post independent era showing encouraging signs of steady economic growth of around 4 percent a year during the first decade. The fiscal and foreign exchange position was healthy and manageable single-digit inflation rate. The prospect for sustained growth were doomed by the decade of the 1970s, mainly as a result of the first external oil price shock during that period. During the half of the 1970s GDP, growth averaged around 3 percent per annum, and by the period 1975 – 1980 it slowed down around an average of 1 percent a year, mainly due to falling earnings from the mining sector. In the wake of the second oil shock, rising import costs compounded the expansionary budgetary policies, with government expenditures exceeding 30 percent of GDP. This trend resulted in worsening fiscal and current account deficits towards the end of decade. The consequences of inadequate development efforts, ill-conceived economic policies, and generally the oil price shocks of the 1970s all counted for the speedy deterioration of the economic structure.

Sierra Leone's economy suffered a major stagnation in the decade leading to the civil war and thereafter. Over two-thirds of the population lives in the rural areas with subsistence farming as their main activity. A large number of people live below the poverty line. The economy is largely dependent on the extraction of mineral (such as diamond, rutile, bauxite and gold) and subsistence agricultural practices. Industrial development is still in the formative period, with import substitution comprising the major industrial activity (Richards 1988). Development in the country has stagnated for too long, with Sierra Leone being frequently ranked as the least underdeveloped country.

Agriculture

Sierra Leone is an agricultural country. Agriculture is the largest sector in the economy, providing employment for over 60% of the labour force, and contributing about 35 to 40% of the Gross Domestic Product (GDP), (GOSL, 1994). The area under cultivation is estimated as 409,674 ha. Most of the agriculture is carried out in the uplands largely slash-and-burn, with rice cultivation making up the bulk of the subsistence activity. Rice, the staple food, is grown by more than 80% of the farmers. Rice is gown for over 300,000 to 400,000 ha of land with an annual production of 450,000 to 550,000 mt annually. Rice alone account for as much as 85% of the agriculture sector's contribution to GDP. Apart from the upland rice is produced in 4 other distinct ecologies - inland valley swamps (IVS), mangrove, riverine grassland and bolilands. Upland rice is usually intercropped with up to 16annual crops. Cash crops such as oil palm, cocoa, and coffee are still exported in a small scale compared to countries like Cote d'Ivoire and Ghana, which have huge plantations and a large share of the world market. Livestock production is largely free range. They include cattle, goat, sheep and pigs. In 1984 the estimate of ruminants was 33,200 heads of cattle, 264,000 sheep and 145,000 goats. There are an unspecified number of pigs and rabbits. The birds (poultry) include chickens, ducks, guinea fowl, and pigeons. The latter are mostly kept as pets.

Mining

The mining sector, though smaller than the Agricultural sector, account for over 90% of the country's export earning, though its contribution to the GDP has currently stated down. Construction, Manufacturing, Industry, Commerce and Other services are other sectors of the economy

Forestry

The contribution of the forestry sector to national development in Sierra Leone is both quantifiable as in the case of timber products and non-quantifiable as in the case of erosion control. However its contribution, especially the energy sector, infrastructures development, biological research, food security, employment and welfare services etc. is significant but is generally underestimated. The quantity of firewood, local building materials and even timber that is utilized by rural communities is yet to be quantified. If this is done the estimated 6-7% contribution of the forestry sector to the GDP will increase. Most dwelling houses in villages utilize bush pole, canes, etc. in the construction of mud and wattle buildings.

Of the total annual roundwood removals in the country, 95 percent by volume of the harvest is for firewood; 3 percent for poles and 2 percent for sawn timber (FAO, 199). Assuming that 80 percent of the 4.5 million people in Sierra Leone resident in the rural areas use firewood for cooking at a per capita annual consumption of 1.63m^3, then about 4,8 million m^3 of firewood has not been properly accounted for in the consumption of forestry's contribution to the GDP. Sierra Leone timber provides the bulk of construction timber for local construction industries. There is presently a proliferation of timber stores in the city and the provincial and districts headquarters. The impact of local timber on the construction and carpentry industries could best be valued in terms of foreign exchanged saved due to the availability of the commodity locally. The roundwood requirements for the production of timber, poles and firewood is about 4 million m^3 and is rising and about 95 percent of which is utilized as fuelwood (FAO, 1982). The estimated annual round wood consumption is 2.91 million m^3, 2.75million m^3 of which is consumed as fuelwood, 0.17 million m^3 as poles and 0.04 million m^3 as sawlogs. Fuelwood demand is expected to increase at a rate of 1.8 – 2.0 percent per annum.

Fisheries

Fishing both marine and inland is an important economic activity in Sierra Leone. It is the principal source of livelihood for a large proportion of the population of the coastal villages. Fish and other seafood are important sources of protein for the people. Fisheries contribute about 20% to the GDP. However industrial fisheries are primarily in the private sector. Fishery development activities are concentrated on the artisanal fishermen by assisting them to improve their techniques of production and processing (such as smoking and curing of fish) and by improvement of the infrastructures of credit, storage, transport and marketing, have been undertaken in the post independence period (GOSL, 1985). The Fisheries Division lacks the capability for effective patrolling of fishing in Sierra Leone territorial waters.

Tourism

Sierra Leone has exceptional advantages for development of tourism – a dry season of 5 to 6 months, excellent beaches, a superb landscape of villages and hills along the coast and a hinterland with a great variety of landscapes and vibrant culture. The Tourism industry is still in its infancy. The ten years civil conflict has excersabated the slow growth and development of the sector. Most of the limited infrastructures of the tourism industry were destroyed. Before the war, in 1987/88, the number of charter tourists coming to Sierra Leone, mainly from UK and France, seemed to have reached a plateau of about 20,000 per year since 1978/79. Major increases in numbers will require large investments, public and private, in hotels, physical infrastructures and various tourism related services. Already in place is the establishment of a hotel and tourism training school to address the need for trained

manpower. The construction of the Freetown-Masiaka Road and the Peninsula Road which is under construction will improve access to the most scenic beaches in the Western Area and will also simulate construction of hotels along the beaches.

Land Tenure

Two basic types of land tenure system exist in Sierra Leone, that in the Western Area (former colony) and that in the provinces. In the Western area, land which is not state land can legally be bought or sold. The Paramount Chief is the chief custodian of the chiefdom lands. There is a general notion that land is communal. In fact, it is neither wholly commercial nor individualistic. Preferably, it can be said that the rights of individual exist within the context of, and side by side, with group with the same and tenure system. Land throughout the provinces is regarded as the property of well-defined and discrete social groups such as the families and/or the entire community which might consist of several families, clans or lineages. Therefore, the individual does not possess absolute title to land. Rather his right in land is derived from the fact that he is a member of a given family, clan or lineage. Each head of family that owns land retains the right to determine who, within or outside of the family, uses any tract of land for agricultural purposes for a given period of time as long as it is not sold. He is, however, prohibited from disposing of land of the group either by sale or mortgage.

Population

Sierra Leone has had three population censuses since independence in 1961. The first census was in 1963 and it showed that there are 2,118,355 persons in the country. The 1974 census put the population at 2,735,159 and the 1985 census indicated that there were 3.5 million people in Sierra Leone. There are about 4.5 million people in the country.

Population figures generally show that there are more women than men in the world. In Sierra Leone there are about 98 males to every 100 females countrywide. In terms of the age structure about 41 percent of the population are under 15 years of age 53 percent between 15 and 59 years and over.

The population is not evenly spread across the country. About 68 percent of the population lived in the rural areas and over 80 per cent live close to the forest or forest regrowth and depend on it for their livelihood. The national average population density increased from 38 persons per km^3 in 1974 to 49 per km^3 in 1985 and in 1992 it increased to about 58. It was projected to increase to 80 per km^3 by the year 2000, if the population increased continued at the observed trend. The national average density varies considerably among the districts, chiefdoms and towns. Generally these regions which have important economic activities tend to have larger (dense) populations. According to ESCG (1988) areas with high population of above 80 persons per km^3 are mostly those which contain diamond mines or are mainly engaged in rice cultivation and other economic activities. These regions include Kono, Kenema and Bo (diamond, trading, etc) and Freetown (capital city and main industrial town). Areas with medium density (between 50 – 80 persons per km^3) are mainly found in the arable alluvial soils and are centers for rice, coffee and cocoa production. Areas with low density (below 30 persons per km^3, are mainly in the north, the southern coastal areas and the east. Those areas like Pujehun, Bonthe and Koinadugu districts have fewer arable lands, no economic minerals and generally have a high, closed forest cover.

Education and Literacy

Sierra Leone had a strong educational base, dating as far back as the colonial era. The first University College in Africa, South of the Sahara was located in the country. As a center of excellence in manpower development in the entire sub-region, it earned the enviable accolade of the "Athens of West Africa". Three decades of misgovernance and gradual neglect during the post-independence period led to the deterioration of the educational system. Today, the country has one of the lowest literacy rates in the world, averaging around 32%. At independence literacy rate was 8% and at 1985 it rose to 16%. Independence budgetary support to the social sector, including education (about 1.7% of GDP), fueled by the decade of rebel crisis seriously hampered the provision of quality educational services. The rebel was caused destruction to educational infrastructure and disrupting the educational system for a large number of school going children. School dropout rates both at the primary and secondary levels are also estimated to be high.

There has, however been an increase in the number of school-going children as a result of increasing population growth, and free basic education (Class I to JSS III). A new system of education has been introduced, and requires pupils to spend 6,3,3, and 4 years respectively, in primary, junior (JSS), senior (SSS) secondary school and tertiary. The thrust of this new system is on vocational and middle manpower training, catering for early school leavers, weak students and drop outs.

Employment and Poverty

No reliable statistics are available on employment and underemployment, but it is estimated that between 50-60% of the labour force is without access to productive employment. The lack of employment opportunities prevents a large segment of the population, particularly among the youth and women who constitute about 70%, from actively participating in the growth process and benefiting from it. In 1990 an annual growth rate of 2.6% in the labour was envisaged, with an estimate 50,000 jobs that needed to be created per annum. However, Government policy of retrenchment and freezing employment in the early 1990s, in the public service during the initial phases of the structural adjustment program me, forestalled the creation of new jobs. This policy, together with the disruption of productive activities in mining, manufacturing business and commerce during the war resulted in large-scale unemployment and underemployment. Most of the able-bodied youths turned to the natural resources for survival. The high level of unemployment and underemployment, declining real incomes and the civil conflicts, among others, all accounted for the pervasive poverty in the country. For the past years Sierra Leone has consistently been ranked the poorest and least developed country in the world according to the UNDP Human Development Index.

Biodiversity

Sierra Leone is rich in both planet and animal life, as well as with diverse natural ecosystems. Human impacts on the natural ecosystem and its resources have been severe. Once dominated by forests, the country now has less than 5% of mature forest remaining. Logging mineral exploitation and slash-and-burn agriculture have all taken a toll on the country's rich biological life (biodiversity). With nearly 28 categories of protected areas in representative ecosystems, the era coverage is still less than 4% of the land era, with nearly all of these protected areas suffering from inadequate protection due to lack of manpower, technical support and financial resources. Sierra Leone has also gone through a costly civil unrest, with severe impact on its human life and biodiversity (Lebbie 1998, Garnette and Utas 2000).

6 LEGISLATION AND REGULATORY FRAMEWORK

It is imperative that the planned sub-components are in concert with the legal and regulatory framework of Sierra Leone. The existing laws and regulations that pertain to environmental conservation could restrict specific projects or sub-components or the method of implementation. On the other hand, they may also create opportunities for an improved environmental management within the context of the sub-component. This section covers the potentially policies, laws and regulations applicable to the REDiSL sub-component context.
It is important that the EMF remain adaptive to evolving legislative framework, by incorporating mechanisms for regular monitoring and revision of project components and sub-components. A mechanism to achieve such environmental monitoring is included in this ESMF.
The following laws, regulations and policies have been reviewed in this chapter for their applicability to the project/sub-components:

List of regulations, legislation and policies

Policy	**Regulation**	**Law**
National Environmental Policy, 1994	Forestry regulation 1990	Environment Protection Agency Act, 2008
National Lands, Policy	Fisheries regulation 1990	Supplementary EPA Acts, 2010, Environmental Impact Assessment Act, 2010
Wildlife sector policy, 2003	Wildlife regulation, 1997	Forestry Act, 1998
Biodiversity Action Plan, 2003		Fisheries Act, 1988
		Factories Act, 1974
		Wildlife conservation Act, 1972
		Local government Act 2004

1) National Environmental Policy, 1994

This National Environmental Policy seeks to achieve sustainable development in Sierra Leone through the implementation of sound environmental management systems which will encourage productivity and harmony between man and his environment. It also promotes efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of nationals, and serves to enrich the understanding of ecological systems and natural resources important to the Nation. Thus the key objective of the policy is to secure for all Sierra Leoneans a quality environment that can adequately provide for their health and well-being.

The policy indicates intersectoral synergies in major areas for policy formulation. It takes into consideration major sector goals and policies for enhancing sustainability in environmental management systems. The following sectoral policies are highlighted within the National Environmental Policy:

- Land Tenure, Land Use and Soil Conservation
- Water Resources Management
- Forestry and Wildlife

- Biodiversity and Cultural Heritage
- Air Quality and Noise
- Sanitation and Waste Management
- Toxic and Hazardous Substances
- Mining and Mineral Resources
- Coastal and Marine Resources
- Working Environment (Occupational Health and Safety)
- Energy Production and Use
- Settlements, Recreational Space and Greenbelts
- Public Participation
- Quality of Life
- Gender Issues and the Environment
- Institutional and Government Arrangements
- Legal Arrangement
  Subsequent to this policy is the Environmental Protection Act of 2008

> ***Applicability to the REDiSL sub-component context:***
>
> **This policy could only affect one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. The nature of the project area of choice would determine the extent to which this policy is applicable.**

2) National Lands Policy

The Land Policy of Sierra Leone aims at the judicious use of the nation's land and all its natural resources by all sections of the Sierra Leone society in support of various socio-economic activities undertaken in accordance with sustainable resource management principles and in maintaining viable ecosystems.

In specific terms, the objectives of this policy are to:-

- Ensure that every socio-economic activity is consistent with sound land use practices through sustainable land use planning in the long-term national interest;
- Facilitate equitable access to and security of tenure based on available registered land;
- Ensure the payment, within reasonable time of fair and adequate compensation for land acquired by government;
- Provide laws that will protect citizen's right to land against Government; and
- Instill order and discipline into the land market to curb the incidence of land encroachment, unauthorized development schemes, multiple or illegal land sales, falsification and multiple registration of land documents, land speculation and other forms of land racketeering.

For the purpose of sustainability of land use, it is stipulated in the following subsections of section 4.4 that:

- Land categories outside Sierra Leone's permanent forest and wildlife estates are available for such uses as agriculture, timber, mining and other extractive industries, and human settlement within the context of a national land use plan;

- Inland and coastal wetlands are environmental conservation areas and the following uses considered incompatible with their ecosystem maintenance and natural productivity are strictly prohibited;
- All land and water resources development activities must conform to the environmental laws in the country and where Environmental Impact Assessment report is required this must be provided. Environmental protection within the 'polluter pays' principle will be enforced'; and
- Provided that payment of adequate compensation in reasonable time will be made, government may acquire land wherever and whenever appropriate to, among other things:
  - Secure and control areas of urban expansion;
  - Facilitate urban renewal and redevelopment programmes;
  - Implement any rural or urban improvement programme;
  - Provide social infrastructure;
  - Supply promptly serviced or un-serviced lands at prices, which can secure socially and economically acceptable patterns of economic development;
  - Provide for the purpose of national defense, national security, national health and conflict-resolution, and;
  - Protect areas of historical, cultural or ecological interest.

Applicability to the REDiSL sub-component context:

This policy could only affect one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. The specific subproject of interest is the construction aspect, as this could require development in previously untouched areas or acquisition of land.

3) National Biodiversity Strategy and Action Plan, 2003

The action plan proposed in the Sierra Leone Biodiversity Strategy and Action Plan comprises a series of measures and mechanisms intended to conserve and promote the sustainable use of the different components of the country's biodiversity. The action proposed cover several key thematic areas under: terrestrial biodiversity, inland water ecosystems, forest biodiversity, marine and coastal biodiversity and agricultural biodiversity. In addition, actions are also proposed for key cross cutting issues affecting the sustainable utilization of biodiversity, including: policy, legislation and institutional review, capacity building, identification and monitoring, sustainable use, incentive measures, research and training, public education and awareness, regulation of access to genetic resources, protection of indigenous knowledge and intellectual property rights of local communities, technology transfer and handling of biotechnology and exchange of information and technical cooperation.

The actions proposed in this plan are diverse. The time frame that will ensure the maintenance of biodiversity is estimated to be between 5-10 years if the measures proposed are undertaken. Some of the actions proposed will either serve to protect, restore or lead to the sustainable utilization of biodiversity. Other actions will focus on assessments and research, the provision of policy and institutional framework, etc. Below, each major theme

and cross cutting sub-components are summarized, including actors and lead agencies needed for implementation, financial cost and timeframe needed for successful implementation.

This Action Plan is intended to:

- Provide a framework for setting priority policies and actions for the conservation and sustainable use of biological diversity in Sierra Leone;
- Catalyze and provide guidance for legal policy and institutional reforms necessary to achieve effective conservation and sustainable use of biological diversity;
- Enhance the planning and co-ordination of national efforts aimed at the conservation and sustainable use of biological diversity;
- Guide the investment and capacity building programmes for the conservation and sustainable use of bio-diversity; and
- Facilitate information sharing and co-ordinated action among the various stakeholders at the national level and foster scientific and technical cooperation with other countries and international organisation.

Applicability to the REDiSL sub-component context:

This action plan could only affect one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. The nature of the project area of choice would determine the extent to which this plan is applicable.

4) Wildlife Sector Policy

The Draft Forestry and Wildlife Sector Policy for Sierra Leone, 2003

This draft policy document is still under review and awaiting parliament approval. The goal of the document is to support the development and exploitation of forests and wildlife of Sierra Leone in a sustainable manner for the material, cultural and aesthetic benefit of the people of Sierra Leone in particular and mankind in general.

The main general forestry policy objectives of Government are to:

- Promote best practices in forest management so as to develop an environmentally-friendly, self-sustaining forestry sector that is sensitive and responsive to the economic, social and cultural needs of those who live in the forest;
- Foster enabling environments for supervised production of sustainable volumes and quality of forest products that will create national wealth and contribute to food security, and;
- To encourage the private sector to create employment opportunities for local populations thereby reducing rural poverty.

Applicability to the REDiSL sub-component context:

This policy could only affect one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. The specific subproject of interest is the construction aspect, as this could require development in previously untouched areas or acquisition of land.

5) Land Tenure and Ownership

Land administration in Sierra Leone is governed by a dual system of law, dispersed in about twenty statutes and regulations.

- In the Western Area of Sierra Leone, land tenure is governed by Property Statutes. Land is either State (publicly) owned or privately owned. The right of the state to public land is inalienable and indefeasible. Rights of occupation over public land may be granted under warrant. The state has the power, conferred by the Unoccupied Lands Act, Cap 117, to take possession of unoccupied land.
- In the provinces, customary Law co-exists with statute. The recognition of the force of customary law in the provinces is established by section 76 (1) of the Courts Act 1965.
- Through customary law, ownership of land is vested in the chiefdoms and communities; and can never be owned freehold. Land always belongs to the communities under the different forms of tenure under customary law. This principle is established by the Chiefdom Councils Act as well as by Section 28 (d) of the Local Government Act 1994.

Applicability to the REDiSL sub-component context:

This policy could only affect one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. The specific subproject of interest is the construction aspect, as this could require development in previously untouched areas or acquisition of land.

Legislations governing environment issues are found as Acts enacted in parliament. The legislations of the various government line ministries or institutions includes:

6) Environmental Protection Agency Act, 2008

The EPAA, 2008 is the government of Sierra Leone's overarching legislation that deals with the protection of the environment. The Environment Protection Agency was established with a Board of Directors set up as its governing body. This Board consists of a Chairman and representatives from the various line Ministries and a Unit as stated in section 3 of part II of the Act.

Subject to this Act, the control and supervision of the Agency is the responsibility of the Board, which acts in liaison and co-operation with other government agencies.

The general administrative functions of the Board as stipulated by the EPAA, 2008 include the following:

- Promoting effective planning and the management of the environment;
- Coordinating and monitoring the implementation of national environmental policies relating to Sierra Leone;
- Providing policy guidance and advice to ensure the efficient implementation of the functions of the Agency so as to enhance its overall performance;
- Facilitating cooperation and collaboration among Government Ministries, local authorities and other governmental agencies, in all areas relating to environmental protection; and
- Coordinating environmentally related activities as well as serving as the focal point of national and international environmental matters, relating to Sierra Leone.

Part IV of the EPAA, 2008 exclusively deals with the activities and requirements of an EIA. This part of the Act emphasizes the processes and procedures leading to the acquisition of an environmental licence with respect to the conduct of fully acceptable EIA studies. It further stipulates the duties and obligations of both the environmental licenses' holder and the Board of Directors in the event that an environmental license is granted.

Applicability to the REDiSL sub-component context:

This Act could potentially affect more than one of the sub-components, but the subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected is the most prominent amongst these, as it could have significant implications for the biophysical environment.

7) Forestry Act, 1998

This Act came into operation on 1st July, 1988 and the Chief Conservator of Forest, with the directives of the Minister, is responsible for the implementation of its regulations. He therefore has the role of preserving the forest environment, promoting the practice of forestry in all use of forestland, to ensure sustainability of forest products, and the protection of the soil and water resources that constitute the environment.

Applicability to the REDiSL sub-component context:

This Act could potentially affect only one of the sub-components, the subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. Construction is the more likely aspect as it could imply developments in areas previously covered by vegetation.

8) The Fisheries Act

The major drawback of the 1988 Fisheries Act however, was that it had very little or no specific conservation provisions. The Fisheries Act of 2007 provides protection for both fresh and marine species as classified by IUCN with the Sierra Leone water. It defines clearly where commercial vessels could harvest-Exclusive Economic Zone (EEZ) and where artisanal fisheries operations could exploit – Inshore Exclusive Zone (IEZ).

Applicability to the REDiSL sub-component context:

This Act could potentially affect only one of the sub-components, the subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. Wash out of construction materials into rivers and streams and its implication for aquatic life

9) The Factories Act – 1974

This Act became effective on the 30th May, 1974. It basically deals with health and safety measures as they concern the factory worker. It protects the worker through demands for all aspects of cleanliness, reports of all injuries, accidents, diseases and death.

A Factories Appeal Board is in operation and has the duty of hearing and determining any appeal submitted by factory owners, thus giving right where it is due. Going by the interpretation of the word factory, as stipulated in this Act, mining companies are factory based companies, and are therefore covered by any legislation pertaining to this aspect. The necessary environment conditions of the Act are therefore stated or highlighted below.

Powers of Inspectors

Section 14 of part IV of this Act states that an inspector shall, in executing this Act, have the power to do the following:

- To enter, inspect and examine a factory and its environs at any time, as long as he has reasonable cause to believe that explosives or any highly inflammable materials are stored or used;
- To take with him during an inspection, a police officer, if he has reasonable cause to expect any serious obstruction during the execution of his duty;
- To require the production of all documents and to examine and copy them in pursuance of this Act;
- To make necessary inquires and examinations to ascertain whether the provisions of the Act are complied with; and
- To prohibit the use of any machinery, if he is reasonably of the opinion after examination, that it is not in good and safe condition.

If anyone willfully delays or obstructs the Inspector in the exercise of any of his duties under this Act, then such a person shall be guilty of an offence and be liable to a fine not exceeding twenty Leones or to imprisonment for a term not exceeding one month or both. The occupier of the factory shall also be guilty of such an offence and be liable to punishment in like manner, even though he has not personally caused the obstruction.

As stated in section 16, the Minister may make rules for the effective implementation of this Act and such rules may provide:

- For the safety of persons employed in such trades and occupations as may be declared to be dangerous trades;
- For imposing obligations for the better safeguarding of persons against accidents from dangerous parts of any machinery;
- For the construction and maintenance of fencing to the dangerous parts of any machinery;

- For the proper maintenance and safe-working of raising and lowering machinery;
- For prescribing the duties of inspectors appointed for the purpose of this Act;
- For prescribing the qualifications to be possessed by engineers and other persons, for them to be placed in charge of, or entrusted with the care or management of any specified machinery;
- For the reporting of any occurrences at any works arising from, or in connection with, the use, maintenance or repair of any machinery;
- For the appointment of persons to hold enquiries under this Act, and prescribing powers and duties of such persons; and
- For the fixing of penalties not exceeding a fine of one hundred Leones or imprisonment for a term of six months or both such fine and imprisonment, for the contravention of any rule.

Safety, Security and Welfare of Employees

Part V of this Act, deals with the aspect of health and stipulates that every factory shall be kept in a clean state and free from effluent arising from any drain, sanitary convenience or nuisance. This part of the Act also states that for overall safety of all employees, the factory must not be overcrowded, must be effectively ventilated, and provided with suitable lighting systems. Every care must be taken by the factory holder, to secure the health, safety and welfare of all employees.

Applicability to the REDiSL sub-component context:

This Act is the single piece of legislation that covers occupational health and safety. The subproject 1.2 involving the construction or rehabilitation of 50 classrooms could have health and safety implications for the workers.

10) The Wildlife Conservation Act, 1972

The Wildlife Conservation Act, 1972 and the Forestry Act, 1988 are the main legislations that deal with issues of Biodiversity Conservation in Sierra Leone. It provides for the establishment, conservation and management of National Parks, Game Reserves and other forms of Natural Reserves.

As in the case of the Forestry Act of 1988, this Act clearly defines the roles and responsibilities of various personnel in administering the Act.

It gives the Chief Conservation of Forest the authority to execute the directives of the Minister of Agriculture in establishing a Strict Natural Reserve, a National Park and a Game Reserve. It also stipulates that in the process of establishing a reserve or a national park, the Minister should appoint a Reserve Settlement Officer who will investigate claims and rights issues of affected communities.

Specific provisions dealing with the protection, management and conservation of these areas and the limitations therein are highlighted in Part II of the Act and include the following:

- Prohibition of all forms of hunting, capture and other activities leading to the injury of wild animals;

- Destruction of any plant form by any means including fire;
- Fishing within these protected areas;
- Erection of structures, construction of dams, forestry, agriculture, mining or prospecting activities; and
- Introduction of species from outside of the boundaries of the reserve.

The Act however gives Chiefdom Councils the authority, albeit with approval from the Minister, to declare an area a Game Sanctuary or reverse the declaration of a Game Sanctuary. Further modifications to the legalese relating to the hunting of animals are made in the Act, to include any willful disturbance, molestation and intent to kill.

Part III puts strict limitations on hunting of species generally (not limited to reserves and parks), and the categories of animals as prescribed in the schedules.

They range from those which can be prohibited from any forms of hunting, to those which can be hunted with strict control and to those which can be hunted as pest control measures.

The Wildlife Conservation Act of 1972 saw minor amendment in 1990 (known as the Wildlife Conservation Amendment Act), which included redefinition of terms, and other modifications and qualifications. For example, the prohibition of hunting of elephants which was limited to protected areas in the 1972 Act was extended to include all forests. The 1990 Amendment Act provided for change of name from Forestry Department to Forestry Division. Despite the minor amendment the Wildlife Conservation Act of 1972 along with the Forestry Act of 1988 continue to be the main legislature for biodiversity conservation in Sierra Leone.

The Wildlife Regulations of 1997 however makes provision for the acquisition of licences or permits for hunting in such designated areas and for other purpose as may be prescribed.

Applicability to the REDiSL sub-component context:

This Act could potentially affect only one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected is the most prominent amongst these, as it could have significant implications for the biophysical environment.

11) Local Government Act, 2004

This Act deals with the establishment and operation of local councils around the country to enable meaningful decentralization and devolution of Government functions. It stipulates that a local council shall be the highest political authority in the locality and shall have legislative and executive powers to be exercised in accordance with this Act or any other enactment. It shall be responsible, generally for promoting the development of the locality and the welfare of the people in the locality with the resources at its disposal and with such resources and capacity as it can mobilize from the central government and its agencies, national and international organisations, and the private sector. The local council should initiate and maintain programmes for the development of basic infrastructure and provide works and services in the locality. A local council shall cause to be prepared a development plan which shall guide the development of the locality

Many companies are bound to operate within areas controlled by one local council or another. There is also a relationship between the local council and the Chiefdom within which a mine operates. It is advisable for mining companies involve local councils in their development work. The schedules to the Local Government Act outline the activities of various MDAs that have been devolved to local councils.

Applicability to the REDiSL sub-component context:

This Act could be relevant to all sub-components planned for the provincial areas, with the current move towards devolution of responsibilities to provincial and district authorities.

12) Forestry Regulations

These regulations are deemed to have come into force on the 1st July, 1990. The Chief Conservator holds the same responsibilities as he does for the Act of 1988.

Generally community forests are managed by the Forestry Division or by agreement with the Division; it could be managed by the local government; or Community Forest Association. Based on this responsibility of the Division, no protected forest shall be tampered with in any way as is stated in section 21, subsection (2) of the Forestry Act - 1988, without written permission from the Chief Conservator of the forest. In section 15 of the Forestry Regulations 1989, subsection (1) it is stated that a license may be issued by an inspector of the Forestry Division authorising the holder of the mining lease, to clear land in a classified forest for the purpose of mining. However, having acquired a license, deforestation of, or vegetation removal from the environment, can only be affected by the mining company under certain conditions. These conditions are found under section 15, subsection 3 and are highlighted below:

- Removal of vegetation, can be done for mining operations only within an area licensed for this purpose;
- The specified land area, shall be cleared within a stated time, but trees requested not to be felled, removed or damaged, are to be left standing;
- Trees to be felled shall be identified, except where total felling is authorised;
- A forest severance fee and a minor forest produce fee, shall be paid in respect of all forest produce that is merchantable, which may be removed by clearance of vegetation;
- At the completion of mining, the area shall be replanted with approved crops or trees by the mining company, or provision made for this to be done by payment of the estimated reforestation cost; and
- Required method of cultivation and silviculture, specified by the chief conservator, must be employed.

As a method of environmental protection, it is stated in section 38 of part XI, that no land between the high and low water marks, nor those above the high water mark on both sides of the bank of any waterway, covering a distance of one hundred feet (approx.. 33 m), shall be cleared of any vegetation except permitted by a clearance license.

Sacred bushes are protected by the stipulated regulations of section 40, whereby clearance of vegetation from land designated as sacred bush, is prohibited except by clearance authority from the Chief Conservator.

Applicability to the REDiSL sub-component context:

This Act could potentially affect only one of the sub-components, the subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. Construction is the more likely aspect as it could imply developments in areas previously covered by vegetation.

13) The Fisheries Regulations

National Fisheries Regulations such as the Fisheries Act 1988 and Fisheries Amendment Act 1990 respectively, have evolved over time in order to address specific matters relating to the conservation and management of natural resources within the marine environment.

The 1994 Decree further established sufficient provisions for the conservation of Marine Resources. These range from monitoring, control and surveillance provisions, as well as those relating to enforcement.

The Maritime Zone (Establishment) Decree of 1996 sets the limits of the sovereignty of Sierra Leone's maritime for which the government has absolute jurisdiction, in conformity with the United Nations Convention on the Law of the Sea. Such jurisdictions may be extended over the establishment and use of installations and other structures.

Section 9 (1&2) of the Decree gives the government sovereign right over the Economic Exclusion Zone. They include rights for the exploitation, exploration, conservation and management of its natural resources. It further stresses the requirement for a written consent to be provided by government for any form of activities to be undertaken within this zone by states, international organizations or persons.

Other forms of empowerment as provided by the decree include controls necessary to prevent infringement as well as maintaining sanitary and environmental regulations.

The Decree also provides for specific punishments to be meted out for any breach of the regulations.

The Fisheries Act of 2007 provides protection for both freshwater and marine species as classified by the International Union for Conservation of Nature and Natural resources (IUCN) within the Sierra Leone waters. It clearly defines where commercial vessels are to harvest that is the Exclusive Economic Zone (EEZ) and where artisanal fishing is to exploit, that is the Inshore Exclusive Zone (IEZ). It also stipulates the gears tolerable in Sierra Leone and even the quality and quantity to be harvested is stated in this Act.

Applicability to the REDiSL sub-component context:

This Regulation could potentially affect only one of the sub-components, the subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected. Wash out of construction materials into rivers and streams and its implication for aquatic life

14) The Draft Wildlife Regulation

The Wildlife Regulation came in to force in 1997. It describes Wildlife Conservation Estate as areas described under the 1972 Wildlife Conservation Act as a National Park, Game Reserve, Strict Natural Reserve, Game Sanctuary or Non-hunting Forest Reserve. The regulation prohibits all unlicensed hunting with a Wildlife Conservation Estate to include the removal of honey. It prohibits the hunting of young and immature wild animal or bird; female wild animal accompanied by its young; and birds which are apparently breeding. It also prohibits dazzling of birds and animals.

The regulations stipulates that a license or permit should be sought before any form of hunting of game and bird can be done as required by Section 33 and 34 of the Act. The regulation also states that such licenses and permits can be revoked by the Chief Conservator of Forest if the holder fails to comply with the provisions of the regulations.

Applicability to the REDiSL sub-component context:

This Regulation could potentially affect only one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected is the most prominent amongst these, as it could have significant implications for the biophysical environment.

4.1.1 International Conventions

Sierra Leone is a signatory to many relevant international conventions, some of which include:

15) United Nations Convention on Biological Diversity (UNCBD)

This convention, whose main objectives are to preserve biological diversity and rehabilitate all degraded areas, was ratified by Sierra Leone on 12th December, 1994. All signatory States are obliged to affect the prescribed undertakings which include:

- Development of national biological diversity strategy plan;
- Establishment of protected areas;
- Prevention, control and eradication of invasive and alien species; and
- Provision of educational facilities.

Applicability to the REDiSL sub-component context:

This Convention could potentially affect only one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected is the most prominent amongst these, as it could have significant implications for the biophysical environment.

16) Convention on wetlands of international importance (RAMSAR)

The Ramsar Convention on Wetlands (Ramsar) was signed by Sierra Leone on December 13, 1999, and went into effect on April 13, 2000. As required by Ramsar, Sierra Leone identified and listed one wetland site for inclusion on the Ramsar wetland list. This non-contiguous wetland is located along the Sierra Leone River Estuary near Freetown. The three areas making up the wetland have a combined area of approximately 295,000 hectares (ha) and include mangrove swamps and upland coastal plains. The mangrove swamp included in this wetland makes up approximately 19% of all the mangrove swamp in Sierra Leone. There are no Ramsar wetland sites near the mining operation, but signatory countries to the Ramsar convention agree to:

- Include conservation of wetlands in land use planning throughout the country, including the promotion of "wise use" of wetlands;
- Establish nature reserves within wetland areas;
- Promote training in the fields of research, management, and gardening; and
- Consult with other signatory countries about implementation of the convention especially in areas of shared wetlands, shared water systems, and shared species.

Applicability to the REDiSL sub-component context:

This Convention could potentially affect only one of the sub-components, subproject 1.2 involving the construction or rehabilitation of 50 classrooms in locations throughout Sierra Leone yet to be selected is the most prominent amongst these, as washout from construction materials could end up in aquatic and marine ecosystems. This would have grave significance if developments are taking place close to the Sierra Leone River Estuary, which is the only designated RAMSAR site in Sierra Leone

17) Other International Conventions to which Sierra Leone is a signatory

- The United Nations Framework Convention on Climate change
- The United Nations Convention to Combat Desertification (UNCCD)
- Abidjan Convention for the cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region.

7 OPERATIONAL POLICIES AND GUIDELINES OF THE WORLD BANK

Operational Policy	Category
OP 4.01	Environmental Assessment

OP 4.36	Forestry
OP 4.04,	Natural Habitats
OP 4.09	Pest Management
OP 4.37	Safety of Dams
OD 4.12	Involuntary Resettlement
OP 4.11	Cultural Property
OP 4.10	Indigenous Peoples

1) OP 4.01 Environmental Assessment

The Bank requires environmental assessment (EA) of projects proposed for Bank financing to ensure that they are environmentally sound and sustainable, in order to incorporate environmental sustainability into decision making.

Applicability to the REDiSL sub-component context:

This ESMF entails an assessment of all the sub-components of the REDiSL

2) OP 4.36 Forestry

In forest areas of high ecological value, the Bank finances only preservation and light, non-extractive use of forest resources. In areas where retaining the natural forest cover and the associated soil, water, biological diversity, and carbon sequestration values is the object, the Bank may finance controlled sustained-yield forest management.

Applicability to the REDiSL sub-component context:

This ESMF list environmental impacts and mitigation measures relating to the loss of vegetation should one of the sub-components, construction of new classrooms require removal of vegetation

3) OP 4.04, 4 Natural Habitats

Wherever feasible, Bank-financed projects are sited on lands already converted. The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs.
If the environmental assessment indicates that a project would significantly convert or degrade natural habitats, the project includes mitigation measures acceptable to the Bank.

Such mitigation measures include, as appropriate, minimizing habitat loss and establishing and maintaining an ecologically similar protected area. The Bank accepts other forms of mitigation measures only when they are technically justified.
In deciding whether to support a project with potential adverse impacts on a natural habitat, the Bank takes into account the borrower's ability to implement the appropriate conservation and mitigation measures. If there are potential institutional capacity problems, the project includes components that develop the capacity of national and local institutions for effective environmental planning and management. The mitigation measures specified for the project may be used to enhance the practical field capacity of national and local institutions.
In projects with natural habitat components, project preparation, appraisal, and supervision arrangement include appropriate environmental expertise to ensure adequate design and implementation of mitigation measures.
Natural habitats are land and water areas where (i) the ecosystems' biological communities are formed largely by native plant and animal species, and (ii) human activity has not essentially modified the area's primary ecological functions.
Critical natural habitats include existing protected areas and areas officially proposed by governments as protected areas and those recognized as protected by traditional local communities (e.g., sacred groves).
Implications for the REDiSL sub-component context
Wildlife sanctuaries and national parks constitute critical natural habitats. The EMF addresses this in the context of the Wildlife (Protection) Act, 1972.

Applicability to the REDiSL sub-component context:

This ESMF list environmental impacts and mitigation measures relating to the degradation of natural habitats should one of the sub-components, construction of new classrooms results in the contamination of natural ecosystems

4) OP 4.09 Pest Management

In Bank-financed agriculture operations, pest populations are normally controlled through IPM approaches, such as biological control, cultural practices, and the development and use of crop varieties that are resistant or tolerant to the pest. The Bank may finance the purchase of pesticides when their use is justified under an Integrated Pest Management (IPM) approach.
In Bank-financed public health projects, the Bank supports controlling pests primarily through environmental methods. Where environmental methods alone are not effective, the Bank may finance the use of pesticides for control of disease vectors.
The procurement of any pesticide in a Bank-financed project is contingent on an assessment of the nature and degree of associated risks, taking into account the proposed use and the intended users. With respect to the classification of pesticides and their specific formulations, the Bank refers to the World Health Organization's '*Recommended Classification of Pesticides by Hazard and Guidelines to Classification'* (Geneva: WHO 1994-95).

The following criteria apply to the selection and use of pesticides in Bank-financed projects:
(a) They must have negligible adverse human health effects.
(b) They must be shown to be effective against the target species.

(c) They must have minimal effect on non-target species and the natural environment. The methods, timing, and frequency of pesticide application are aimed to minimize damage to natural enemies. Pesticides used in public health programs must be demonstrated to be safe for inhabitants and domestic animals in the treated areas, as well as for personnel applying them.
(d) Their use must take into account the need to prevent the development of resistance in pests.

Applicability to the REDiSL sub-component context:

Pest Control does not apply to the REDiSL project

5) OP 4.37 Safety of Dams

The Bank distinguishes between small and large dams.
a) Small dams are normally less than 15 meters in height. This category includes, for example, farm ponds, local silt retention dams, and low embankment tanks.
b) Large dams are 15 meters or more in height. Dams that are between 10 and 15 meters in height are treated as large dams if they present special design complexities—for example, an unusually large flood-handling requirement, location in a zone of high seismicity, foundations that are complex and difficult to prepare, or retention of toxic materials. Dams under 10 meters in height are treated as large dams if they are expected to become large dams during the operation of the facility.

Applicability to the REDiSL sub-component context:

Dam construction, operation or safety does not apply to the REDiSL project

6) OP 4.12 Involuntary Resettlement

Involuntary resettlement should be avoided or minimized where feasible, exploring all viable alternative project designs. For example, realignment of roads or reductions in dam height may significantly reduce resettlement needs.

Applicability to the REDiSL sub-component context:

There will be no land acquisition leading to the physical or economic displacement of people under the REDiSL project

8 IMPACTS AND MITIGATION MEASURES

Although the REDiSL projects and sub-components mainly take the form of environmentally and socially benign undertakings, such as the provision of scholarship and school materials, a particular sub-component involving construction activities has necessitated the examination of potential environmental and social impacts. That notwithstanding, all sub-components have been assessed in this document for their potential impacts, followed by suggested mitigation measures, where applicable. The impacts and mitigation measures of these projects will provide a fair understanding of what may be expected in the REDiSL project.

Any new developmental activity has the potential to impact the environment. The impact may be significant or insignificant, positive or negative, direct or indirect, short term or long term, reversible or irreversible.

With respect to the construction activities, no specifics are available at this point on the selected beneficiaries, although a decision is slated to be based on information provided by a 2011 household survey and school census. Hence the impacts discussed here are more generic than specific to ensure that safeguards are put in place for various scenarios, as may be encountered following the selection.

Impacts and Mitigation Measures for Selected Sub-component Types

The main purpose of this section is to present impacts that are considered of medium to major significance for each sub-component type. The respective mitigation measures are also discussed. Impacts of minor significance are not mentioned. The degree of significance is a measure of the nature, magnitude and sensitivity of the impact.

Category	Sub-component	Impact	Mitigation Measures
Component 1: Improving the learning environment and opportunities in targeted areas			
1. School grants		**Environmental impact: None** **Positive Social impact:** • increased access to school, • improved teaching and learning environment, • reduced cost of schooling, • capacity development, • strengthening of systems for planning, budgeting, and reporting in the education sector	None
2. Piloting approaches to increase school readiness	1. Establishment of 50 pre-primary classrooms attached to government-supported schools	**Environmental Impacts**	
	a) 30 new classrooms	1. Contamination of surface water courses by sediment runoff from exposed soil during construction	1. A buffer zone of 50 m will be established close to a neighbouring watercourse, but these will be extended in rare cases of sensitive watercourses and wetlands. 2. Clearing will be limited to the area absolutely necessary for construction; 3. Major construction will be restricted to the Dry Season to minimize the effect of runoff;

Category	Sub-component	Impact	Mitigation Measures
			4. If clearing is conducted in the Wet Season, sediment control measures must be put in place.
		2. Atmospheric contamination or pollution from particulate matter released into the atmosphere from plying of lateritic roads by vehicles transporting building materials; Atmospheric pollution from exhaust fumes; toxic particulates from cement dust	1. Dust suppression measures such as sprinkling will be done on lateritic roads with major vehicular traffic; 2. Cement will be carefully handled when released from its sack, until it has been mixed with water and rocks to produce mortar or concrete. 3. Vehicles and generators will be regularly serviced and handled well to minimize gas/fume emissions from exhaust pipes. 4. All vehicles on site will be confined to sign-posted speed limits. 5. Trucks carrying earth material and cement will have covered loads and tightly sealed tailgates. 6. Miscellaneous dust sources such as spillages from trucks and silts from sediment controls will be regularly cleaned up. 7. Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions will not be operated until corrective repairs or adjustments are made.
		3. Clearing and stripping of trees for	1. Clearing of vegetation will be restricted

Category	Sub-component	Impact	Mitigation Measures
		construction activities could lead to loss of vegetation	to the defined project site; 2. Neighbouring vegetation will remain undisturbed; site operations personnel will be deterred from conducting any work outside of the designated project site. 3. Induction will be organized for all personnel working at the site on the importance of avoiding any disturbance in the vegetated area.
		4. Risk of contamination of environmental media (soil, water or air) from construction wastes and hazardous materials (used batteries, rubbish, metals, glass, spills, etc)	1. All fuel will be transported to the project area in containers that are considered safe; 2. Transporting petroleum products and/or hazardous material will be done in compliance with government regulations. 3. All employees who handle fuel or other dangerous goods on the project will have to be experienced in the handling of dangerous goods prior to working on the project; 4. All dangerous goods will be handled by persons having experience and training in these products. 5. All non-toxic or non-hazardous wastes that are not designated as combustible will be either recycled or disposed of in an approved landfill. Construction debris will be appropriately stored on site until

Category	Sub-component	Impact	Mitigation Measures
			removed. 6. Refuse generated during the servicing of equipment will be stored and removed from the site and disposed of in an appropriate manner. 7. Used batteries will not be placed in dumpsters or trash containers! 8. Used non-leaking batteries will be collected separately and temporarily stored in a safe place, and in a way that protects human health and the environment.
		Social Impacts	
		5. Depending on the level of activities in a specific location, elevated vehicular traffic could lead to community safety issues	1. Speed limits should be erected and enforced on the Access Road and project site. 2. Speed limit on the Access Road within settlements should be kept at 5kph. 3. Vehicles should be instructed to hoot their horns when entering any settlements. 4. Speed bumps should be installed at the entrance and exit of every settlement along the Access Road. 5. Flagmen should be positioned at the critical areas such as schools close to the Access road during high vehicle traffic periods. 6. Traffic signs should be interpreted and

Category	Sub-component	Impact	Mitigation Measures
			communicated in social sessions to village communities along the Access road.
		6. Issues relating to workers' safety, the handling of dangerous goods utilized in the construction of classrooms: risk to workers and community safety	1. Raising the profile of occupational and environmental health issues at construction sites, by building awareness of even basic health and safety practices, and by developing a sense of due diligence among contractors' staff and foremen. 2. Minor deficiencies in the structure, equipment or furniture e.g. exposed nails and screws, loose fittings and handles, uneven and damaged flooring, rough and splintered edges to woodwork, jamming doors etc – may cause cuts, bruises, trips and falls. They should therefore, be repaired or taken care of, as soon as they are noticed. 3. Suitable safety footwear should be worn at all times. 4. Personnel should be supplied with suitable personal protective equipment particularly when engaged in work involving a particular hazard, which can be reduced by the provision of personal protective equipment. 5. Community people should not be allowed at construction sites

Category	Sub-component	Impact	Mitigation Measures
		7. Noise pollution and vibration effect from operation of construction equipment and machines	1. Work should be undertaken as quickly as possible to shorten the period of disturbance. 2. Plants and equipment should be operated in a manner that minimizes noise. 6. Noise levels in the nearest settlement arising from construction activities should not exceed 55 dB. 7. Excessive noise generated activities should be restricted to daytime and be suspended on religious or cultural occasions.
		8. Conflict from employment issues: failure to give preference to the locals over in-migrants	1. Preference should be given to the local community in the area of job opportunities. 2. Jobs should only be given to migrant workers when no suitably qualified and experienced local person is available. 3. Opportunities should be created for employment of female workers at a level that is on par with similar establishments nationwide. 4. In the area of job opportunities for desk assignments, preference should be given to female applicants. 5. A complaint management plan must be put in place to address grievances.

Category	Sub-component	Impact	Mitigation Measures
		9. Transmission of HIV-AIDS and other STDs from in-migration of job seekers and employees	1. Appropriate messages concerning HIV or AIDS and other sexually transmitted diseases at construction sites should be provided to staff and locals in project affected communities. 2. The same should be done for sensitization on HIV and AIDS, Teenage Pregnancy and Malaria.
	b) 20 rehabilitated classrooms	**Environmental Impact** Atmospheric contamination or pollution from particulate matter released into the atmosphere from plying of lateritic roads by vehicles transporting building materials; Atmospheric pollution from exhaust fumes; toxic particulates from cement dust	See mitigation measures on atmospheric pollution above
		Social Impact Issues relating to workers' safety, the handling of dangerous goods utilized in the rehabilitation of classrooms: risk to workers and community safety	See mitigation measures on workers safety above
	3. Establishing minimum standards for ECCE	**Environmental Impact: None** **Positive Social Impact** 1. Upgrading the quality of ECCE across the country 2. Higher standard of teachers' qualifications	NA
	3. Developing Pre-	**Environmental Impact: None**	NA

Category	Sub-component	Impact	Mitigation Measures
	primary education curriculum	**Positive Social Impact: Minimal**	
	4. Train approximately 200 teachers and care givers	**Environmental Impact: None** **Positive Social Impact** 1. Better output (teaching and students quality)	NA
	5. Provide stipends for graduating teachers and caregivers working in the new classrooms	**Environmental Impact: None** **Positive Social Impact** 1. Better output (teaching and students quality)	NA
	6. Support establishment of pre-primary unit in the MEST	Same as section 2, subsection 5 above.	NA
3.Strengthening reading outcomes at early grades	1. provision of reading books and relevant primary materials for primary classes	**Environmental Impact: None** **Positive Social Impact** 1. Better output (teaching and students quality)	NA
	2. Reading campaign	**Environmental Impact: None** **Positive Social Impact** 1. Raising the profile of education over and beyond the classroom	NA

Category	Sub-component	Impact	Mitigation Measures
		environment with a view to increasing literacy levels	
	3. Training of teachers of early primary grades	Same as section 3, sub-section 2 above	
Component 2: Strengthening education service delivery			
1. Improvements in teacher management		Same as section 3, sub-section 2 above	
2.Building foundation for better measurement of learning outcomes		Same as section 3, sub-section 2 above	
Component 3: Project Management and Supervision			
Funding for 2 years of school		NA	
Census and enhancement of the FM		NA	
Procurement		NA	
M&E Functions within ESP Secretariat		NA	

9 RECOMMENDATIONS FOR PUBLIC CONSULTATIONS

Purpose

In order to disclose the contents of the ESMF to the public and to obtain their comments, views and suggestions about the project and the environmental and social implications, a public consultation workshop was held at the capital city, Freetown involving a cross section of project affected and interested persons. This section of the report delves into the entire consultation process, culminating in the PCD workshop.

Public consultation and participation are essential because they provide an opportunity for informing the stakeholders about the proposed Project and sub-components. By providing an opportunity for people to contribute to both the design and implementation of the Project activities by present their views and values and allowing consideration and discussion of sensitive social mitigation measures and trade-offs, public consultation and participation fosters a sense of ownership by stakeholders that is necessary for the success of the Project.

The socio-economic situation prevailing in Sierra Leone makes public consultation with the communities indispensable. Furthermore, consultation and participation by local people are invaluable to the success of the Project because of their wealth of knowledge of local conditions. In recognition of this, particular attention would be paid to public consultation with potentially PAPs when resettlement concerns are involved.

In line with existing legislation and World Bank OP 4.12, consultation and participation of individuals, households and communities affected by the Project as well as any host communities for the resettlement of displaced households is an essential component of the land acquisition, compensation and resettlement process. To ensure that the entire process is carried out in a transparent, accountable and fair manner, it is essential that the affected individuals, households and communities are properly informed and consulted about the following issues:

i. Main concepts and aspects of the proposed subprojects;
ii. Mechanisms for conflict resolution and grievance redress.

Public consultation and participation are essential because they afford potentially displaced persons the opportunity to contribute to both the design and implementation of the Project activities, including:

i. Project inception and planning;
ii. Alternatives and screening process;
iii. Feasibility study;
iv. Preparation of sub-component designs;

Grievance Redress Mechanisms

Providing credible and accessible means for Project affected persons (PAPs) to pursue grievances allows the Project to address genuine issues in a timely manner and decreases the chances of resistance to the Project from disgruntled PAPs

At the time that the individual RAPs are approved and individual compensation contracts are signed, affected individuals and households will have been informed of the process for expressing dissatisfaction and to seek redress. The grievance procedure will be simple and will be administered as far as possible, at local levels to facilitate access by PAPs.

All grievances concerning non-fulfilment of contracts etc shall be addressed to the Chiefdom development committee (CDC) or Ward Committee (WC). All attempts shall be made to settle grievances amicably. Those seeking redress and wishing to state grievances will do so by notifying their CDC/WC. The CDC/WC will inform and consult with the local and regional administration to determine validity of claims. If a claim is valid, the CDC/WC will notify the complainant accordingly. If the complainant's claim is rejected, the matter shall be brought before the local and/or regional authority for settlement. The complainant may seek redress in the established national legal system.

It has to be noted that in the local communities, people take time to decide to complain when aggrieved. Therefore, the grievance procedures will ensure that the PAPs are adequately informed of the procedure for filing grievances. The grievance redress mechanism is designed with the objective of solving disputes at the earliest possible time, which will be in the interest of all parties concerned and therefore, it implicitly discourages referring such matters to a court for resolution.

All objections to grievances shall be made in writing, in the language that the PAPs understands and are familiar with, to the CDC/WC, or in English language with the help of a translator if the complainant is illiterate. Copies of the complaint shall be submitted to the concerned project implementation officer at the chiefdom/ward level within 60 days after the issue of the Notification of Expropriation Order. Channelling complaints through the CDC/WC is aimed at addressing the problem of distance and cost the PAP may have to face. The CDC/WC shall maintain records of grievances and complaints, including minutes of discussions, recommendations and resolutions made.

The procedure for handling grievances should be as follows:

i. The affected person must file his/her grievance in writing to the CDC/WC with a copy submitted to the concerned Project implementation unit. The grievance note should be signed and dated by the aggrieved person. Where the affected person is unable to write, she/he should obtain assistance to write the note and endorse the letter with his/her thumbprint.

ii. The CDC/WC must respond within 14 days during which any meetings and discussions to be held with the aggrieved persons must be conducted. In this case, the aggrieved person must be notified by the CDC/WC that his/her complaint is being considered.

iii. If the aggrieved person does not receive a response or is not satisfied with the outcome within the agreed time, they must lodge their grievance to the district administration and the project implementation unit.

iv. The district administration and PIU will then attempt to resolve the problem (through dialogue and negotiation) within 14 days of the complaint being lodged. If no agreement is reached at this stage, then the complaint is taken to court.

10 ENVIRONMENTAL MANAGEMENT FRAMEWORK

A. Background

The purpose of the Environmental Management Framework is to ensure that development activities do not compromise the health and integrity of the environment or the socio-economic conditions of local communities. It serves to explore possibilities of increase the standard of living and welfare of people and communities on the one hand in a complementary manner with the environment on the other, as a result of the project and sub-component activities proposed.
The objectives of the ESMF are to:

- prevent and/or mitigate any negative environmental impacts akin to the sub-components
- ensure the long term sustainability of benefits from sub-components by securing the environmental resource base to which they are linked;
- execute sub-components in a manner that can be expected to lead to increased through put and improved management

B. Screening for Decision on Level of Environmental Assessment

Environmental screening is designed to make sure that the proposed projects and sub-components are evaluated in such a way that they are aptly classified into a category of Environmental Impact Assessment (EIA). It also helps to determine the type of EIA instruments necessary for an adequate evaluation based on the nature and scale of the project. The REDiSL project is a grant processed under the Investment Project Financing instrument available to the Government of Sierra Leone (GoSL) from the Global Partnership for Education Fund. It builds on the progress achieved through a previous EFA-FTI operation and is embedded in the ESP (2014-2018). This umbrella project would finance several sub-components to improve the quality and coverage of primary and pre-primary school education in select communities in Sierra Leone.

Based on the *scale* and *nature* of sub-components described in the project document, the screening procedure for the REDiSL project has been identified and classification done into the following suggested 4 levels: LEVEL 0, LEVEL 1, LEVEL 2 and LEVEL 3.

Sub-components that will irreversibly damage cultural property; those that will involve procurement of illegally logged forest products or working in forests areas of high ecological significance; and those that involve the significant conversion or degradation of critical natural habitats will be categorized in a NEGATIVE List that cannot and will not be supported by the REDiSL Project. However, the Environmental Assessment process will be conducted in such a manner as to assist the design of the sub-components and not as an obstacle to their implementation.

As specifics on the sub-component details, such as selected project sites and recipients, have not been provided by the REDiSL project developer, opportunities do exist and could be explored for regular update and review

Criteria for LEVEL 0
If a proposed sub-component does not directly interact with and adversely impact any natural resource, it then falls under this level, and detailed environmental assessment is not required However, some proactive environmental initiatives may be included.

Criteria for LEVEL 1
If a proposed sub-component has marginal or short-term impact on the natural resources or environment, then an environmental review is necessary.

Criteria for LEVEL 2
If the proposed project has a significant, irreversible or long-term negative impact, such as on pristine water sources, then a Level II assessment or rapid environmental assessment is triggered.

Furthermore,

- If sub-components involve relocation of a cultural property or heritage, it falls in a level 2 assessment.
- Training and institutional-building required for the preservation of the cultural property should form a part of the mitigation/enhancement measures to be implemented.
- Infrastructure sub-components within protected forest areas will invariably require a Level 2 assessment.
- In this level of assessment, no sub-components resulting in the significant transformation of natural habitats are permitted.
- This level of assessment requires stakeholder engagement and expert scientific investigation through field surveys and desk reviews. Stakeholder involvement should span the planning, designing, implementing, monitoring, and evaluation stages of the sub-components.
- It is imperative that the developer of the sub-component has the capacity to implement recommended mitigation measures. If there are potential institutional capacity problems, then the sub-component will not be approved, until training and resources for capacity building are provided.

Criteria for LEVEL 3
If the proposed sub-component has severe adverse, irreversible environmental impacts that cannot be mitigated using best available technology not entailing excessive cost (BATNEEC) and within a reasonable timeframe, then a Level III assessment is suggested. This level is akin to an Environmental Impact Assessment. The probability of any sub-component under the REDiSL project to fall in this category is marginal.

Furthermore,

- If initial assessment requires further investigation, then a Level 3 assessment should be done.
- This level of assessment requires stakeholder engagement and expert scientific investigation through field surveys and desk reviews. Stakeholder involvement should span the planning, designing, implementing, monitoring, and evaluation stages of the sub-components.

- If the sub-component is located in a protected forest area and the Level 2 assessment indicates that the sub-component requires removal of the forest resource and that the forest areas are ecologically significant, then a Level 3 assessment should be embarked upon.
- If forest removal is unavoidable, adequate compensation should be made in the form of forest and bio-diversity conservation projects; and to ensure the right of use by local communities.
- In rare cases, if there are no feasible alternatives for the siting and implementation of a sub-component that requires a significant transformation of natural habitats, such as wetlands, the sub-component will be upgraded to a Level 3 assessment.
- It is imperative that the developer of the sub-component has the capacity to implement recommended mitigation measures. If there are potential institutional capacity problems, then the sub-component will not be approved, until training and resources for capacity building are provided.
- The Level 3 assessment will involve a biophysical and socio-economic assessment that demonstrates that the overall project benefits considerably outweighs the environmental costs.

C. Responsible parties

The Level I assessment will be done by the Supervisor of schools and the chiefdom or ward development committee;
The Level II assessment will be done by the Deputy Director and the Inspector of Schools at the district level with inputs from a local environmental consulting firm;
The Level III assessment will be commissioned at the national level by the Project Management Unit (PMU) of the Ministry of Education in consultation with the regulator, the Environment Protection Agency, Sierra Leone.

Reference to Appendices

Instruments/tools	**Appendix**
sub-components that fall into each of these categories is presented as 'Sub-component Classification Table'	1
'Criteria for Decision on Level of Environmental Assessment'	2
'General Guidelines for Screening of Sub-components'	3

Assessment of Potential Impacts of Sub-components

The predicted biophysical and social impacts of the projects and sub-components have been listed in Chapter 7 along with the applicable mitigation measures. It could be safe to presume that only one sub-section, involving construction, will require significant environmental and social evaluation, beyond this point, for its impacts as the REDiSL project continues to evolve. The impact for this sub-section will be integrated in the tools that will be developed for Level 1 and Level 2 assessments, and a future environmental management and monitoring

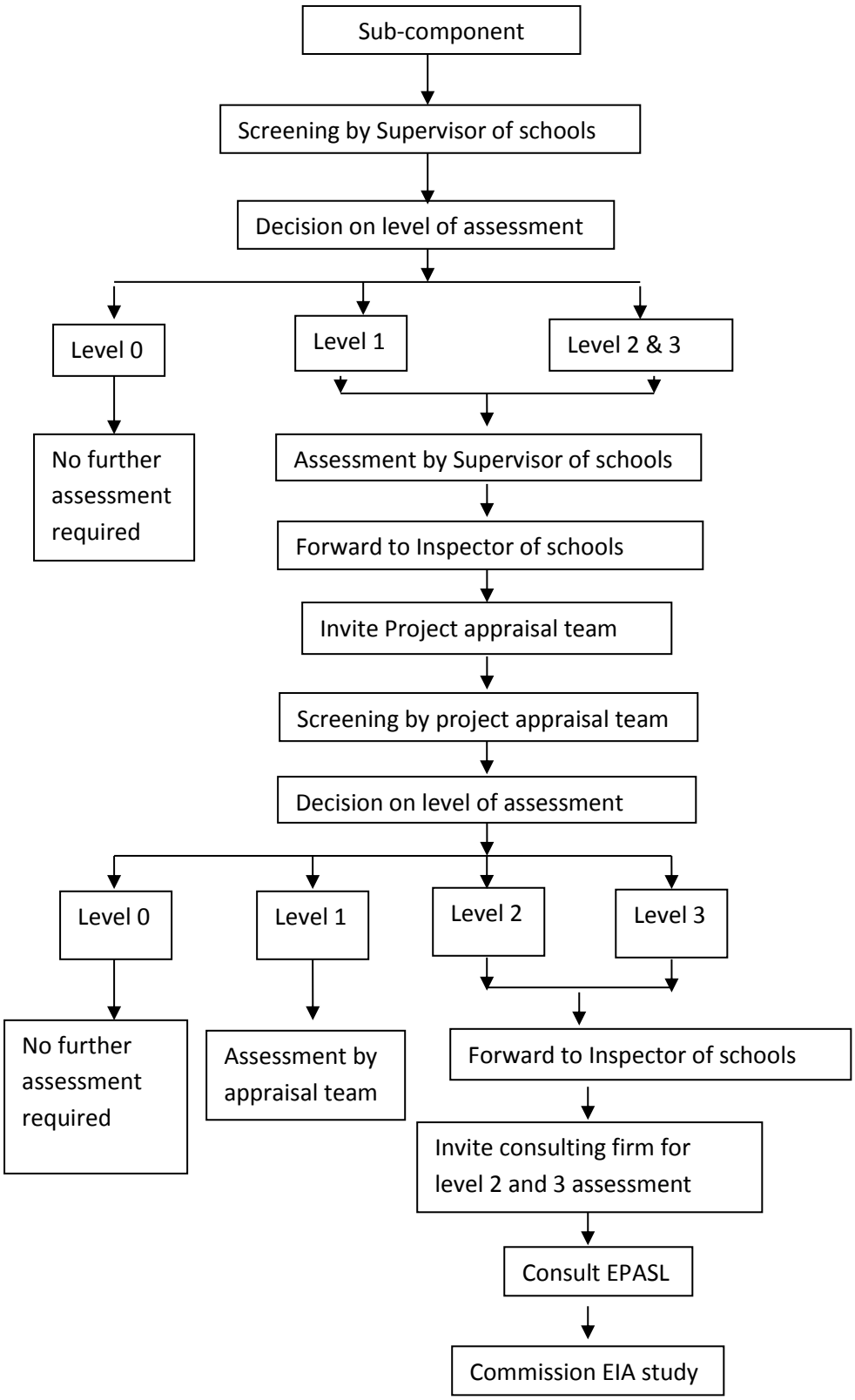
plan. Expediency and efficient use of resources requires that focus is placed on the impacts resulting from the implementation of these sub-components. Impacts are likely to evolve as decisions on specific sub-component sites are made.

Level I: If the screening indicates that a Level I assessment is required, the Supervisor of schools and the ward committee are to refer to Level 1 EA tools to determine whether or not to proceed with the sub-component, as is, or modify with plausible alternatives to improve its acceptability. The mitigation measures are described.
For those sub-components for which the sub-component specific tools are not available, the responsible Level 1 personnel will go by the 'General Guidelines for Environmental Assessment of Sub-components' for assessing impact (Appendix 3).

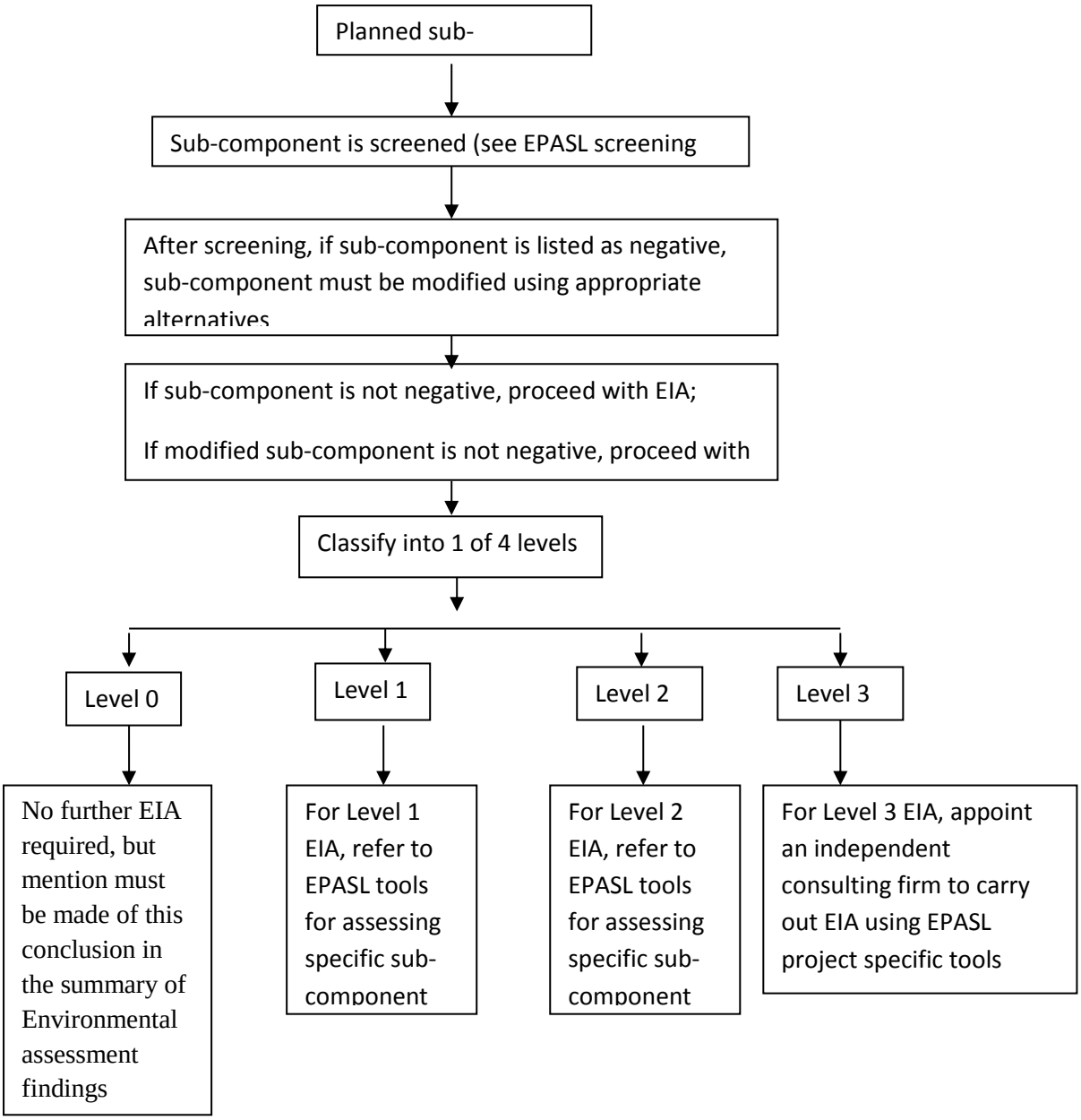
Level 2: If the screening indicates that a Level 2 assessment is required, the assessment should be referred to the Deputy Director and the Inspector of Schools at the district level. These personnel will solicit technical input from consultants in the form of Level 2 assessment involving field investigations. The consultants will refer to Level II tools to determine whether to proceed with the as is, or modify. Mitigation measures are discussed if it is decided to proceed with the sub-component.

The Deputy Director will refer it to the PMU of the MOE for Level 2 assessment. This will also require consultants' input using Level II tools. For sub-components for which the sub-component specific tools are not available, the consultants can use the 'General Guidelines for Environmental Assessment of Sub-components' (Appendix 3) and conduct the assessment.

D. Environmental Assessment Process



Guidelines for use of Tools for Environmental Assessment



E. Awareness Raising in Communities

Each Chiefdom committee will organize environmental awareness programmes for the communities they are involved with on a half yearly basis over the project implementation period. The material on the mode and procedure of communication that will be developed later will assist the chiefdom/ward committee in organizing these awareness programs.

F. Independent Environmental Consultants

A review of potential environmental consultants or firms would be done to select a firm or an individual that would provide technical assistance to the PMU at the national level and the Deputy Director at the district level. The consultants will be contracted to provide support to the implementation of the ESMF especially at the district level. If necessary, one or two individuals in each district will be selected to develop a team to provide further support.

G. Relationship between the EPASL and Consultants

The Environment Agency will facilitate the functioning of the consultants by training and feedback on environmental assessment conducted by those consultants. The consultants will support the work of the Environment Agency by providing feedback on application of the assessment tools, the need for new tools for emerging sub-component areas and inputs for the environment monitor.

H. Environmental Supervision, Monitoring & Information Systems

Environmental Supervision

Environmental supervision would be conducted to ensure that the chiefdom/ward committees are implementing the ESMF guidelines and the environmental and social mitigation measures as spelt out in this document and in the approved sub-component. The PMU will also ensure that issues arising from project supervision, information and data on scheduled implementation of mitigation measures, and outcome of consultative meetings are documented in an overall reports submitted by the Project. The MEST will conduct supervision of the EMF, selecting specifically, the project on the construction and rehabilitation of schools and any other Level I or Level II sub-component that may evolve during development of the sub-components.

Environmental Monitoring

This aspect remains the sole responsibility of GPE Team. The agency will be updated on progress in ESMF implementation and institution of the mitigation measures and how these affect environmental and social conditions, as well as information on emerging concerns. The agency will be involved or be represented in consultative sessions with ministries, departments and agencies. Prior to implementation, the ESMF will be subject to agency review and comments and revisions made by the ESMF developer. Details on revisions, emerging concerns or changing conditions, stakeholder consultations, etc will be compiled into a report by the PMU for submission to the agency.

11 APPENDICES

APPENDIX 1 - Subproject classification based on the initial impact assessment

The subprojects of the REDiSL project could fall under the following levels from an initial assessment of the nature and degree of impacts. Depening on the level of impacts and the nature of the project environment, the subproject on the construction and rehabilitation of classrooms could fall under level 1 or 2; however, this is suggestive only, as an actual evaluation would need to be conducted by the designated personnel.

LEVEL 0 SUB-COMPONENTS	LEVEL 1 - SUBPROJECTS	LEVEL 2 SUBPROJECTS
School Grants	Constrruction and rehabilitation of 50 pre-primary classrooms	Constrruction and rehabilitation of 50 pre-primary classrooms
Instituting Minimum quality standards for ECCE		
Developing pre-primary education curriculum		
Training 200 teachers and caregivers		
Stipends for graduating teachers and caregivers		
Establishment of pre-primary unit in the MEST		
Strengthening reading outcomes at early grades		
Building foundation for better measurement of learning outcomes		
Project management, monitoring and supervision		

APPENDIX 2 - Criteria for Decision on Level on Environmental Assessment

LEVEL 0

The type of natural resource used, impact on natural resource, if any, and explanation for categorizing each sub-component as Level-0 is given below:

SUB-COMPONENT	NATURAL RESOURCE USED	REMARKS
School Grants	Forest products, fuel (gasolene or diesel), limestone (cement), granite	Grants will take the form of teacher learning materials, training, remedial classes, stipends, uniforms, transportation, supplies and minor rehabilitation
Instituting Minimum quality standards for ECCE	None	This could take the form of workshops and meetings
Developing pre-primary education curriculum	None	This could take the form of workshops and meetings
Training 200 teachers and caregivers	None	This could take the form of workshops and lectures
Stipends for graduating teachers and caregivers	None	This could take the form of workshops and meetings
Establishment of pre-primary unit in the MEST	None	This could take the form of workshops and meetings
Strengthening reading outcomes at early grades	None	This could take the form of workshops and meetings
Building foundation for better measurement of learning outcomes	None	This could take the form of workshops and meetings
Project management, monitoring and supervision	None	This could take the form of field visits and meetings

LEVEL – I (ENVIRONMENTAL REVIEW)

The natural resource and communities impacted, potential positive and negative environmental and social impacts for sub-components qualifying for environmental screening Level – I is given in the table below:

SUB-COMPONENT	NATURAL RESOURCE/COMMUNITIES IMPACTED	POSITIVE IMPACTS	NEGATIVE IMPACTS
Constrruction and rehabilitation of 50 pre-primary classrooms	Human health and safety	None	Occupational risk and potential for accidents involving staff and community

SUB-COMPONENT	NATURAL RESOURCE/COMMUNITIES IMPACTED	POSITIVE IMPACTS	NEGATIVE IMPACTS
	surface and ground water	None	Sediment runoff from construction materials into water courses to degrade water quality
	air	None	Dust (and cement) from construction materials and vehicles plying lateritic roads could lead to air pollution
	soil	None	Soil contamination from spills and chemicals
	Wildlife and biodiversity	None	Potential for loss of ecosystems from clearing or construction activities
	Forest	None	Potential for loss of forests from clearing or construction activities
	Communities	Improves learning environment and opportunities; increase access to education	Noise, dust, health risk from contaminated environmental media, social issues

LEVEL – 2 (LIMITED ENVIRONMENTAL ASSESSMENT)

The natural resource impacted nature of resource depletion or degradation and potential adverse long-term environmental impact for a selected list of sub-components which qualify for environmental screening, level-II are given below. The difference between levels 2 and 3 relates to the temporal scale and irreversibility of the impacts. This level of screening requires acquisition and review of primary and secondary data, field visits by expert, and consultations with communities and other stakeholders.

SUB-COMPONENT	NATURAL RESOURCE/COMMUNITIES IMPACTED	RESOURCE DEPLETION OR DEGRADATION OR COMMUNITY DISTURBANCE	LONG TERM IMPACTS
Constrruction and rehabilitation of 50 pre-primary classrooms	Human health and safety	Loss of life or impairment of body parts	Loss of confidence with community; emergence of conflicts
	surface and ground water	Declining water quality	Inability of water to perform its social or ecological functions
	air	Declining air quality	Preponderance of respiratory diseases
	soil	Soil degradation	Contaminated soil loses

SUB-COMPONENT	NATURAL RESOURCE/COMMUNITIES IMPACTED	RESOURCE DEPLETION OR DEGRADATION OR COMMUNITY DISTURBANCE	LONG TERM IMPACTS
			agricultural potential
	Wildlife and biodiversity	Declining wildlife	Species could deteriorate to conservation levels
	Forest	Depleted or degraded forest	deforestation
	Communities	Social disturbance	Emergence of conflict

LEVEL 3 (ENVIRONMENTAL IMPACT ASSESSMENT)
Such projects, requiring an EIA, are not in the REDiSL project.

APPENDIX 3 - General Guidelines for Screening of Sub-components

Step I: Identification of natural resources impacted by the sub-component

This step covers natural resource input, the nature of impacts, and timescale of impact beginning from implementation of the proposed sub-component.

Name of the sub project: ……..……

Natural Resource to be impacted: .....

Classification into positive or negative impact, backed by description: .....

Is it short or long term, backed by justification of choice? .....

(Community discussions, field observations and discussions with consultants could help in soliciting information on resources and nature of impact)

What resources will be used in sub-component implementation?

What are the water and energy requirements?

What other inputs are required?

What are the products of the sub-components?

What is the nature and quantity of wastes generated?

What are the health impacts?

Are there any cultural impacts?

What are the mitigation measures?

Step II: Decision on level of environmental assessment

The decision on level of environment assessment to be employed depends on the extent of dependence or use of natural resources, extent of impact on the resources, nature of impact such as short or long-term impact, possibility to mitigate the impacts.

APPENDIX 4 – Checklist for the Issuance of Environmental Impact Assessment

CHECKLIST FOR THE ISSUANCE OF ENVIRONMENTAL IMPACT ASSESSMENT (EIA) LICENCE FOR PROJECTS UNDER THE FIRST SCHEDULE OF THE ENVIRONMENT PROTECTION AGENCY ACT, 2010

The developer/proponent is required to undertake the following stages.

Stage One – Registration

1. Proponent/Developer is required to register the project proposal through an application process. The letter is addressed to the Executive Chairperson and copied to the Director for the attention of the EIA Focal Point. This is to expedite the processing of the EIA application.
2. Application and screening forms are issued to the proponent/developer after a payment of two hundred thousand Leones at an account designated for EIA's application fees.
3. The proponent is required to return duly completed forms to the Environment Protection Agency Sierra Leone (EPA-SL).

Stage Two – Screening

1. Project proposal and screening forms are screened to determine whether or not the development proposal should be subject to an EIA and, if so, the level of detail required.
2. This stage of the EIA process is done within two weeks.

Stage Three – Scoping

1. After the project has been classified and a determination is made that the activity requires an environmental impact assessment license the proponent will be required to submit a scoping report on the project.
2. The Agency and proponent will agree on the (Terms of Reference) ToRs before the commencement of the impact studies.
3. Upon receipt of the scoping report, the process for the determination of the ToRs shall be within two weeks.
4. Staff of the Agency will visit the location of the project before approval of the ToRs.

Stage Four – Environmental, Social and Health Impact Studies and Preparation of the Report

1. Upon approval of the ToRs the proponent undertakes the impact studies.
2. The ESHIA report must document clearly and impartially impacts of the proposal, the proposed measures for mitigation, the significance of effects on the environment, and the concerns of the interested public and the communities affected by the proposal. In this regard, management plans including the environmental management plan (EMP), community development and action plan (CDAP), resettlement action plans etc. must be clearly articulated in the document.
3. Upon completion of the impact studies, the proponent should submit eighteen hard and soft copies of the ESHIA report to the Agency for circulation to Board members and professional bodies.

Stage Five – Review of the ESHIA Report

1. The Agency will determine whether the ESHIA report meets the terms of reference provides a satisfactory assessment of the proposal(s) and contains the information required for decision making.
2. The report will be gazetted and circulated to professional organizations for comments by the Agency. The proponent will have to disclose the ESHIA report through publication of dates for disclosure on newspapers, and hold two or more public hearing meetings for public participation in the decision-making process. The placement of the ESHIA report in specific places will enable the affected or interested persons to make comments on the impact studies and submit to the Agency for decision

making. Staff of the Agency will also visit the site or operational areas of the project to ascertain the components and content of the ESHIA Report in the review stage.

3. Depending on the location of the project the proponent will be required to make announcements over the media in the local languages

Stage Six – Decision Making

1. This is the stage where the ESHIA report is approved or rejected.
2. The Board of the EPA is vested with the power to approve or reject an application for an EIA.

If an application for an EIA license is approved, it will be subject to the terms and conditions, provided by the Board and is issued for twelve months and is subject to renewal.

3. When an application has been rejected by the EPA board, the proponent has a right to seek legal redress.

Stage Seven – Compliance and Enforcement.

This is the implementation stage, environmental monitoring and auditing of the project activities is undertaken to ensure that the terms and conditions of approval of the Environment Impact Assessment license are met in accordance with the Environment Protection Agency Act, 2008.as amended in 2010

Note: EPA-SL should be involved through all these stages for guidance and compliance with the provisions of the EPA Act, 2008.

APPENDIX 5 – Impact Assessment Review Form

REVIEW OF THE ENVIRONMENTAL IMPACT ASSESSMENT FOR …

Name of the project	
Name of company which compiled the EA report	
Date that the EA report was completed	
Name of reviewer	
Address of reviewer	
Date of review	

REVIEW FORM

PREAMBLE AND GUIDE TO REVIEW DOCUMENT

1 STRUCTURE OF REVIEW FORM

This standard review form allows the reviewer to assess an EIA report in a systematic and structured way both in terms of process and content. An explanation of the grading system used in the review is provided in section 2 below and a summary of the findings of the review is presented in section 3. This is followed by the detailed review form, which is divided into the following sections:

1. Methodology followed in the EIA
2. Legal, Policy and Administrative Requirements
3. Description of the project
4. Assessment of alternatives to the project
5. Description of the receiving environment
6. Description of impacts
7. Consideration of measures to mitigate impacts
8. Non-technical summary
9. General approach

2 EXPLANATION OF REVIEW NOTATION

2.1 For each question posed in the Review Form, the reviewer considers whether the information is relevant to the project and it is marked Y (yes) or N (no).

2.2 If the information is relevant, the reviewer reads the relevant sections of the EIA report and specialist studies and establishes whether the information provided is:

- **Complete or comprehensive (C)**: all information required for decision-making is available. No additional information is required even though more information might exist.
- **Acceptable or adequate (A)**: the information presented is incomplete, but the omissions do not prevent the decision-making process from proceeding.
- **Inadequate (I)**: the information presented contains major omissions. Additional information is necessary before the decision-making process can proceed.

3 NARRATIVE REPORT

3.1 Introduction

3.2 Methodology for the review

The Southern African Institute for Environmental Assessment (SAIEA) has a standard Review Form which is used for all EIA and EMP reviews, irrespective of the sector or the location of the EIA/EMP. This form acts as a checklist so that the reviewer can make sure that all pertinent aspects have been covered in the EIA or EMP.

The review was conducted by … . S/He has … years experience as an environmental practitioner with specific experience in … (area or other specialities).

A site visit was … undertaken as part of the review.

3.3 Summary opinion

Summary appraisal of the EIA report

	Judgement (C/A/I)	Comments
1. EIA Process		•
2. Legal framework		•
3. Description of the project		•
4. Alternatives to the project		•
5. Description of the environment		•
6. Impacts		•
7. Mitigation measures		•
8. Non-technical summary		•
9. General approach and presentation		•

3.4 Conclusion

The overall grading of the EIA report is as follows:

☐ **Excellent:** The EIA report contains everything required for decision-making on the project. There are no gaps.

☐ **Good*:*** The EIA report contains most of the information required as far as it is relevant in the particular circumstances of the project; any gaps are relatively minor.

☐ **Satisfactory*:*** The information presented is not complete; there are significant omissions but in the context of the proposed project, these are not so great as to

prevent a decision being made on whether the project should be allowed to proceed to the next stage.

☐ **Inadequate:** Some of the information has been provided, but there are major omissions; in the context of the proposed project these must be addressed before a decision on whether the project should be allowed to proceed can be taken.

☐ **Poor:** The information required has not been provided or is far from complete and, in the context of the proposed project, the omissions must be addressed before a decision on whether the project should be allowed to proceed can be taken.

Key questions	**Yes**	**No**	**Partially**	**Don't know**
Does the EIA report comply with the Terms of Reference?				
Does the EIA report comply with the legal requirements for EIA in the country?				
Did the EIA process include genuine public participation?				
Were the consultants unduly influenced by the proponent or the Authorities?				
Did the EIA report focus on the most important issues?				
Is the EIA report of acceptable quality?				
Will the EIA report help to make a more informed decision about the project?				

DETAILED REVIEW

		Relevant? Yes/No	Judgement (C/A/I)	Comments
1.	**METHODOLOGY**			
1.1	Does the report clearly explain the methods used in the EIA, public participation process and in each specialist study?			
1.2	Does the report set out the assumptions and limitations of the study?			
1.3	Did the EIA process include genuine stakeholder consultation?			
1.4	Have the views of stakeholders been meaningfully incorporated into the findings of the EIA?			
1.5	Does the report include lists of interested and affected parties consulted, as well as their original submissions and comments?			

	Relevant? Yes/No	Judgement (C/A/I)	Comments
2. LEGAL, POLICY AND PLANNING REQUIREMENTS			
2.1 Have the relevant international treaties, conventions and agreements been listed with reference to where and how these obligations have been met on this project?			
2.2 Have the relevant policies, laws and regulations of the country been listed, with reference to project compliance?			
2.3 Have the relevant standards and guidelines for compliance been listed?			
2.4 Have local, regional and national plans e.g. SEAs, structure plans, integrated development plans, environmental action plans, zoning plans been reviewed in order to place the project into context?			

3. DESCRIPTION OF THE PROJECT			
	Relevant? Yes/No	**Judgement (C/A/I)**	**Comments**
3.1 Has the land required for the project and any affected surroundings, been described and shown on a map?			
3.2 Have the activities in each project phase been described: construction, operation, decommissioning and closure.			
3.3 Have all the project components been described, including transport, other activities or infrastructures?			
3.4 Have the proposed technologies been described, with a motivation as to how they comply with BATNEEC and BEO principles?			
3.5 Have the social issues related to the project been described e.g. number of employees, percent from local community, skills breakdown, transportation, accommodation, support services, recreation facilities etc?			
Project inputs			
3.10 Are the nature and quantities of materials needed during construction and operation, clearly indicated - e.g. water, power, lubricants, raw materials, ore, structural components, fill, etc?			
3.11 Have the sites from where these materials			

	will be sourced, been described?			
3.12	Have the means of transporting materials, products, workers and visitors to and from the site during construction and operation, been explained?			
Waste and emissions				
3.13	Have the types and quantities of waste that will be generated been estimated e.g. air emissions, liquid effluent, solid waste, runoff, noise, odour?			
3.14	Has a risk assessment been performed, including estimates of probability, exposure pathways, and consequences?			
3.15	Does the report discuss ways in which wastes can be reduced, recycled or re-used?			
3.16	Have the ways in which wastes will be stored, handled or treated prior to disposal been explained?			
3.17	Has the receiving environment for any wastes been identified and described?			

		Relevant? Yes/No	Judgement (C/A/I)	Comments
4	**ALTERNATIVES**			
4.1	Were strategic alternatives to the project considered in the EA?			
4.2	Does the EIA assess various "within-project" alternatives (e.g. design, location)			
4.3	Are the reasons for selecting the proposed alternatives adequately described?			
4.4	Has a prediction of the likely future environmental conditions in the absence of the project been developed (no go option)?			

5a DESCRIPTION OF THE RECEIVING ENVIRONMENT - BIOPHYSICAL			
	Relevant? Yes/No	**Judgement (C/A/I)**	**Comments**
5.1 Have the areas likely to be affected by the project, been indicated on suitable maps?			
5.2 Have the land uses on the project site(s) and in the surrounding areas been described and assessed?			
5.3 Have the *biophysical* components of the environment likely to be affected, been described sufficiently for the prediction of impacts?			
5.3.1 Climate			
5.3.2 Geology, topography			
5.3.3 Soils (incl agricultural and rehabilitation potential)			
5.3.4 Topography (slopes)			
5.3.5 Surface hydrology			
5.3.6 Groundwater			
5.3.7 Hydrochemistry			
5.3.8 Air quality			
5.3.9 Flora			
5.3.10 Terrestrial fauna			
5.3.11 Aquatic ecology			
5.4 Has the EIA Report consulted the latest literature / reports / data relevant to the study?			

5b DESCRIPTION OF THE RECEIVING ENVIRONMENT – SOCIO-ECONOMIC AND CULTURAL			
	Relevant? Yes/No	**Judgement (C/A/I)**	**Comments**
5.5 Have the *social* components likely to be affected by the project been described sufficiently for the prediction of impacts?			
5.4.1 Social structure and demographics			
5.4.2 Skills			
5.4.3 Employment			
5.4.4 Community facilities and services			
5.4.5 Settlement patterns			
5.4.6 Health			
5.6 Have the *cultural* components of the environment been described sufficiently for the prediction of impacts?			
5.5.1 Sites of spiritual and/or religious significance			
5.5.2 Sites of cultural and/or archaeological significance			
5.5.3 Aesthetics			
5.7 Have the *economic* components of the environment likely to be affected by the project been described sufficiently for the prediction of impacts?			
5.6.1 Local, regional livelihoods			

	5.6.2 Poverty level			
5.8	Has the EIA Report consulted the latest literature / reports / data relevant to the study?			

		Relevant? Yes/No	Judgement (C/A/I)	Comments
6 DESCRIPTION OF IMPACTS				
Impact Identification				
6.1	Have direct and indirect effects of the project been clearly explained?			
6.2	Have the above types of impacts been investigated in so far as they affect the following:			
6.2.1	*Air quality*			
6.2.2	*Surface Water*			
6.2.3	*Ground water*			
6.2.4	*Soils*			
6.2.5	*Noise*			
6.2.6	*Landscape*			
6.2.7	*Biodiversity*			
6.2.8	*Historic and cultural heritage*			
6.2.9	*Land use*			
6.2.10	*People and communities*			
6.2.11	*Health*			
6.2.12	*Sense of place (aesthetics and visual impact)*			
6.2.13	*Transportation and traffic*			
6.2.14	*A neighbouring country*			
6.3	Are cumulative impacts considered?			
6.4	Has consideration been given to impacts arising from accidents, emergencies, unusual			

	conditions?			
Magnitude and significance of Impacts				
6.5	Are impacts described in terms of their extent?			
6.6	Has the timescale of impacts been considered (short, medium or long term, reversible or irreversible?			
6.7	Where possible, have impacts been expressed in quantitative terms?			
6.8	Does the information include a clear indication of which impacts may be significant and which may not?			
6.9	Have the magnitude, location and duration of the impacts been discussed in the context of the value, sensitivity and rarity of the resource or environment?			

	Relevant? Yes/No	Judgement (C/A/I)	Comments
7 MITIGATION			
Description of mitigation measures (in EIA)			
7.1 Has the mitigation of negative impacts been considered and, where feasible, have specific measures been proposed to address each impact?			
7.2 Where mitigating measures are proposed, has the significance of any impact remaining after mitigation been described?			
7.3 Is it clear to what extent the mitigation methods are likely to be effective?			
7.4 Has the EIA report clearly explained what the costs of mitigation are likely to be, and compared these to the benefits (including the costs of non-mitigation)?			
Commitment to Mitigation			
7.5 Have details of how the mitigation been presented in an Environmental Management Plan?			
Monitoring Proposals			
7.6 Has the EIA proposed practical monitoring arrangements to check the environmental impacts?			
7.7 Have indicators been proposed to track impacts and trigger management intervention?			

Environmental Effects of Mitigation			
7.8 Have any negative effects of mitigation measures been investigated and described?			

		Relevant? Yes/No	Judgement (C/A/I)	Comments
8.	**NON-TECHNICAL SUMMARY**			
8.1	Is there a non-technical summary that will easily be understood by a lay-person?			
8.2	Does the summary contain a description of the project and the environment, an account of the main issues and mitigation measures, and a description of any remaining impacts?			
8.3	Does the summary include a brief explanation of the overall approach and the public participation?			
8.4	Does the summary indicate whether the project is or is not environmentally acceptable			

	Relevant? Yes/No	Judgement (C/A/I)	Comments
9. GENERAL APPROACH			
Organisation of the information			
9.1 Is the information logically arranged in sections?			
9.2 Is there a table of contents?			
9.3 Have all reference sto other studies been listed?			
9.4 Does the report contain the Terms of Reference for the EIA?			
9.5 Are the credentials and qualifications of the report authors and specialists presented?			
Presentation of the information			
9.6 Has information been offered to support all conclusions drawn?			
9.7 Has information been presented using maps, tables and graphical material?			
9.8 Are the maps at an appropriate scale, show co-ordinates, north sign, scale and relevant features?			
9.9 Has superfluous information been avoided?			
9.10 Has emphasis been given to significant impacts and controversial issues?			
9.11 Is the information objective?			
9.12 Are all the specialist studies and appendices present?			

APPENDIX 6 - The Sierra Leone Topography, Environment, and Resources

1.1.1 Geographical Features

Sierra Leone is a small country located on the West Coast of Africa and lies between latitude 6^0 00' and 10^0 0'N and latitude 10^0 16' W and 13^0 18'W. The country has a North-South distance of 331 km^2. It is bounded on the west by the Atlantic Ocean, where it stretches along the coastline for approximately 400km, by Guinea on the North and North-East, and by Liberia on the South-East. The country is divided into four administrative regions: Eastern, Northern and Southern Regions, and the Western Area, which is the peninsular on which the capital, Freetown is situated.

1.1.2 Climate

The climate is essentially tropical, showing distinct dry and rainy seasons. Rainfall is most the important climate element in Sierra Leone. It varies both in space and time. Mean annual variability is about 20%. The average rainfall decrease from 5000mm in the Freetown peninsular to about 3000mm in the south-east, which are the lowland and escarpment regions down to about 2500mm in the drier areas of the north-west to the north-east. The mean annual rainfall in this region is 400mm, with some months recording virtually no rain. The rainfall pattern is unimodal with most of the rain falling between late April and early November. July and August are the wettest months in most areas. Due to heavy rain fall in the wet season, discharges and runoff are high and ranges between 20% to 40% total annual rainfall. Rivers overflows their banks during this period. However, there is pronounced dry season from November to March when flows may be sufficiently reduced to be a constraint.

The whole country experiences a hot and humid climate throughout, except for the wet season and the Hamattan period (December to February). Diurnal temperatures vary from 25^0C to 34^0C although they could be as low as 16^0C at night during the hamattan. Relative humidity is usually about 90% but drops to about 20% during the hamattan. Normal wind speed throughout the year averages 8 knots. Sunshine is plentiful; it varies substantially with the amount of cloudiness averaging 6-8 hours/day during the dry season and 2-4 hours/day during the rainy period. During the dry season (November to March) mean monthly solar radiation is high, 380 $cal.cm^{-2}$ day^{-1} (480 lux); mean hours of sunshine varies from 7-9, and pan evaporation is about 4.5mm per day. The wet season is generally dull and cloud with a mean monthly solar radiation of 280 cal cm^{-2} day^{-1}, mean hours of sunshine is 3 hours day^{-1} in July and August, and pan evaporation generally less than 2.0mm day^{-1} , due to high diurnal humidity.

1.1.3 Relief

Sierra Leone covers a geographical area of 72,300km^2. The country is divided into four main physical regions: coastal plains, interior plateaux, and hills and mountains (Table 1).

The coastline or coastal plains is relatively gentle and comprised of estuarine swamps, terraces, alluvial plains and beach ridges (Allan 1990). The interior lowland plains extend from the coastal terrace in the west to the east of Sierra Leone, occupying approximately 43% of the land area. At the edge of the lowland plains are the interior plateaus, made up of granite that runs from the northeast of the country o the southeast. They seldom rise above 700m and are comprised of alluvial ironstone gravel in the southeastern region, while the northern end is comprised of weathered outcrops of granitic rocks. In the north and east of the country are found two of the highest mountains, with the Loma mountains is Bintumani,

which rises o 1945m, while sankan Biriwa on the Tingi hills, rises to 1805m. West f these two mountains, is the Freetown peninsular, which is also made up of dissected peaks, with the two highest peaks being Sugar loaf(760m) and Picket hills (886m). The hills on the Freetown peninsular are unique to this region, and found nowhere else in the sub-region.

REGIONS	**SUB-REGIONS**	**AREA (KM^2)**	**PROPORTION (%)**
1. COASTAL PLAINS	Estuarine swamps Beach Ridges Alluvial Plains Coastal Terraces	2,347 1,433 1,404 5,260	3.2 2.0 1.9 7.3
	SUBTOTAL	10,444	14.4
2. INTERIOR PLAINS	Bolilands Undualating Plains Low Plateau	3,136 27,601 681	4.3 38.2 0.9
	SUBTOTAL	31.418	43.4
3. PLATEAUX	Undulating High- Lying Plains Rolling Plains Hills Hills	4,533 3,131 5,595 2,455	 10.6 7.7 3.4
	SUBTOTAL	15,714	21.8
4. HILLS AND MOUNTAINS	Hills on basic and Ultra basic Rocks Hills on Acid Rocks	3,131 11,568	4.3 16.0
	SUBTOTAL	14,723	20.4
	TOTAL	72,300	100

Sierra Leone's main physical regions, total land area = 72,300 km^2

SOURCE: LWDD/MANR

1.1.4 Land Resources

Of the total land area of 72,300 km^2, some 60,650km^2 are upland and 11,650 km^2 are lowlands, 53,620 km^2 (5.36 million ha) has been estimated as suitable for crop production, about 74.2%of the total land area. Non-arable land which includes hills, rocky lands, roads, towns, rivers and creeks account for the remaining 18,860km^2 (25.8%) of the country (Table 2). According to Koroma (1980), land in Sierra Leone is divided into agricultural (60 per

cent), pastoral (18 per cent), mangrove and Inland swamps (8 per cent), forest under the protection and management of Forestry Division (4.5 per cent) and others (9.75 per cent). The land issue is very intricately enmeshed with the land tenure/ownership. About 6,570,000 ha (90 per cent) are privately owned by families; 360,000 ha (6 per cent) are owned by communities or families and only 285,000 ha (4 per cent) are held by the government in the form of Forest reserves (Tejwani, 1988). These family lands are small and fragmented which restricts systematic planning and management. In addition land owners have great freedom and discretion to exploit their land in any manner.

LAND TYPE	**AREA (KM^2)**	**PROPORTION (%)**
Total Land Area	72,000	100.0
Uplands	60,650	83.9
Hills	17,350	24.0
Undulating Plains	40,000	55.3
Beach Plains	1,000	1.4
Terraces	2,300	3.2
Lowlands	11,650	16.1
Major Flood Plains	1,300	1.8
Minor Flood Plains & valley swamps	6,900	9.5
Drainage Depressions (Bolis)	1,450	2.0
Tidal Swamps	2,000	3.2
Arable Upland	43,020	59.5
Non-Arable Upland	17,630	24.4
Arable Lowland	10,600	14.7
Non-Arable Lowland	1,050	1.4
TOTAL ARABLE LAND	53,620	74.2

TOTAL NON-ARABLE LAND	18,680	25.8

Summary of areas occupied by various land types

SOURCE: FAO/MANR AGRIC. REVIEW MISSION REPORT, AUGUST, 1992

Of the about 36 million ha of cultivated land, 4.2 million ha are upland of relatively low soil fertility, and 1.16 million ha are more fertile swamps with considerable potentials for increased cultivation if proper farm management techniques are applied.

The lowlands comprise:

- Inland Valley Swamps (IVS) 0.69 million ha
- Bolilands 0.14 ,, ,,
- Mangrove 0.20 ,, ,,
- Riverain Grasslands 0.13 ,, ,,

1.16

‘’ ‘’

SOURCE: MANR/FAO, 1992

There is no comprehensive land use plan for the country although adhoc planning is conducted by various departments. The net effect of this has been mutually antagonistic land use and lack of co-ordination in natural resources planning. This has resulted in the creation of environmental stress on the resources. The major environmental threat is the high vegetation, land and soil degradation.

1.1.5 Water Resources

There are abundant water resources in the country, but the supply is limited in the dry season. At present adequate and safe drinking water is only available in Freetown. In some of the urban areas the portable water supply systems have broken down**.** Rural areas depend on untreated wells, rivers and streams for water supply.

There are nine major river systems flowing through the country generally in a North-East to South-West direction. Great Scarcies, Little Scarcies and Moa are shared with Guinea. Moa and Mano are also shared with Liberia. There are in addition three minor water resource areas – Western, Sherbro and Ribbi-Thauka. Table 3 shows the areas of the watersheds and water resource areas.

Most of these rivers have forested areas in addition to fringing forests along most of their river banks. All the major rivers empty into the Atlantic Ocean through the coastal plain region which has a complex drainage pattern with a significant proportion, flooded at high tide during the rainy season, resulting in vast areas of mangroves.

NO	WATERSHED	AREA (KM^2)
1.	Great Scarcies	3,050
2.	Little Scarcies	13,150
3.	Moa	8,690
4.	Mano	2,290
5.	Lokko	1,500
6.	Rokel	8,500
7.	Gbangbaia	2,880
8.	Jong	8,350
9.	Sewa	19,000
	Water Resource Area	
1.	Western	260
2.	Ribbi-Thauka	3,780
3.	Sherbro	550

Areas of Water and Water Resources

Groundwater resources of the country have not been extensively studied, although in some areas, they are being exploited by sinking wells etc. A significant percentage of the rural population obtains water from surface sources including streams and pools.

Because of the favorable climate and water resources in Sierra Leone, monitoring of these resources for efficient use has not been accorded the priority it deserves.

1.1.6 Soils

Soils in Sierra Leone have been grouped into 12 soil associations by the Land and Water Department Division (LWDD) each with different attributes. Most soils in Sierra Leone are acidic (p^H 4-5). The soils of Sierra Leone, like most tropical soils are ferralitic and excessively leached as a result of the humid tropical conditions. This is particularly true for the upland soils, with such common minerals as koalinite, aluminum and iron. Organic matter content is low, making the soils less suitable for cropping. Top soil organic carbon levels ranges between less than 1 per cent in soil under annual burnt savannah in the north and 2-4 per cent in the secondary regrowth and forest in the south, to 3-10 per cent in the seasonally flooded swamps which are relatively fertile and suited for rice cultivation. Exchangeable aluminum exceed 1 meg./100 g in some or all horizons. It usually increases with dept. soil containing 2-6 meg/100g in the surface are not uncommon. Available plant nutrients and effective cation exchange capacity are low (less than 4meg/100g). The most important soils are the Ultisols, Ox sols, Inceptisols and intergrades. The soils are generally infertile and there is a lack of proper management practices. The estimated soil losses due to erosion vary

from 14.0 to 109 tons/ha/year depending on the soil type, slope, vegetation and landuse.

1.1.7 Vegetation

The vegetation of Sierra Leone is constantly being altered by the influence of man. The major part of Sierra Leone lies within the moist forest zone of West Africa, at low altitude is thought to be the climax vegetation of Sierra Leone. A smaller part lies within the moist savannah woodland zone and except in the south; there is a small mangrove zone along the coast. Within these zones, the vegetation varies considerably in composition depending on the edaphic conditions and to the degree of disturbance it has experienced due to human activity. Only limited areas of the country still have pure climax vegetation. Most of the country is a mosaic of forest regrowth, secondary forest and derived savannahh which now covers much of the upland areas of the country and inland swamp plant communities which occur in the moist forest zone and the forest savannah woodlands zone. In the coastal and inland swamps, specific vegetation patterns have developed due to the influence of influence of tidal and fresh water inundation respectively. Considerable modifications have also occurred in this vegetation type, primarily due to rice cultivation (Birchall et al. 1979; Gordon et al. 1979).

	VEGETATION TYPE	**PLANT COMMUNITY**	**AREA (KM^2)**	**PERCENT OF COUNTRY**
A	Tropical closed forest	Rain forests) Moist evergreen) Moist semi- deciduous) Secondary forest	358,700	5% 3.6%
B	Forest Regrowth	Farm bush		52.2%
C	Swamp forests (Wetlands)	• Mangrove swamps • Inland valley swamp • Fringing forests • Raphia swamp • Gallery forests		2.4% 1.5% 0.4% 0.5%
D	Savannah woodlands	• Moist, closed, Guinea • Savannah woodlands • Mixed-tree, open, sudan savannah woodland • Lophira tree savannah • Coastal park savannah woodland • Tall grass (3m) savannah		8.6% 10.1% 3.7% 1.5% 3.5%

E	Tropical Grassland (seasonal wetlands)	• Riverain grassland + ▪ Grassland (1-3m tall) • Boliland swamp + grassland (1m tall) • Montane grassland (1m short) • Lateritic pan grassland (very short)		2.5% 0.1%
F	Plantations, farmland and wetlands	• Rubber • Oil palm • Coffee and cacao • Fuelwood • Forest trees		0.1% 2.3%

Vegetation Types and plant communities in Sierra Leone

1.1.8 Forest Estate

Sierra Leone is essentially a forest as the climate conditions can support close high forest in about 80 percent of the country. Historical evidence, (cole, 1968) indicated that at the turn of the 20th century, 80 percent of the country was covered with tropical closed forests on the lowland and escarpment area and savannah woodland in the northern plateau region. Unwin (1922), Savill and Fox (1967) reported that it has been estimated that 70% of the country was at one time forested. Mann (1990) also indicated that the beginning of the country, an estimated 75 percent of the land surface was covered in forest, and the remaining area considered of 9 percent swamp, and 16 percent open savannah, forest regrowth and crop fields. Human impact on the vegetation, largely due to the rapid increase in population, demand for forest products (timber, fuel wood and building poles) and slash-and-burn agriculture, wild bush fires and urbanization has been so severe to the extent that, nowadays, the original forest cover has been decimated with just under 6 percent of the country under forest, another 4 percent is secondary forest and 52 percent is in various seral stages of regrowth (Gordon et al. 1979).

Forest Type	**Area (ha)**	**Percentage of Total**	**Percentage of National Area**
Closed High Forest	365,200	5.8	5.1
Secondary Forest	261,000	4.1	3.6
Forest Regrowth	3,774,400	59.9	52.7
Savannah Woodland	622,600	9.9	8.7
Mixed Tree Savannah	732,600	11.6	10.2
Lophira Tree Savannah	264,600	4.2	3.7

Coastal woodland	50,000	0.8	0.7
Mangrove	171,600	2.7	2.4
Fringing Swamp Forest	28,800	0.4	0.4
Raphai Swamp Forest	35,500	0.6	0.5
TOTAL	**6,305,800**	**100.0**	**88.0**

Vegetation Types and plant communities in Sierra Leone

SOURCE: Koroma, 1988 without percentages

Broadly classified, there are 6 vegetation types, and these include tropical closed forests (moist evergreen rainforest and moist semi-deciduous), forest regrowth (farm bush), swamp forests (wetlands- mangroves, inland valley swamps, fringing and gallery forests), savannah, and tropical grasslands (riverine, bolilands and montane) and plantations and wastelands. Farmbush arises from slash-and-burn agriculture and is becoming the dominant vegetation type in Sierra Leone. The savannah is restricted to the northern parts of the country and is increasingly being subjected to frequent fires. Most of the moist and semi-deciduous forests are located within protected areas, often on mountain tops and slopes.

Cole (1968) described in details 19 plant communities comprising the vegetation of Sierra Leone. This was supplemented by Gordon et al (1979). A summary of the various plant communities is given in Table 4 above.

The remnant moist closed forests are now confined to protected forests and reserves, mainly located in the Eastern and North-Eastern part of the country. Within a short period of time (less than a century) there has been a dramatic change in the area, structure and distribution of the forest resource in the country.

The Forest estate as at 1985 was 325,205 hectares or 5.6 percent of the forested area and 88 percent of the national area (Koroma, 1988). This made up as follows:

(i) Gazette Reserves (285,229 ha) fully under the protection and management of the Forestry Division. They are made up of different categories of wood vegetation, 83 percent in the closed high forest zones, 14 percent in the savannah woodlands and 3 percent in open areas and tall grasslands (Kingston, 1986)

(ii) Proposed Reserved (33,953 ha) fully under protection and control of the Forestry Division but not yet legally constituted.

(iii) Protected Forest 933,023) on chiefdom lands. They consist mainly of strips of plantations along road and the erstwhile railway tracts. They are protected and administered by the Forestry Division on behalf of the chiefdom owning the protected forest. The legal distinction with the forest reserves is the different ways

(iv) in which the revenue accruing from exploitation is distributed (shared). These protected forests are now known as community forests.

(v) Game Reserve (76,500 ha) mainly in savannah woodlands. They are fully under the protection and control of the Forestry Division. To date not all this area has been legally contribution. These are supplemented by non-hunting forest reserves which are mainly in closed forest areas.

(vi) Plantations (about 9,800) are mainly in small plots of both cash trees (rubber, oil palm, coffee, cocao) and forest trees species, scattered throughout the country. The total plantation area about 77 percent of that which was established before 1971.

Most reports (FAO, 1980, Allan, 1988) quote an original area of about 8,000 ha of which only 41,000 ha remain. The other 50 percent has been lost through encroachment and expanded agricultural activities. A survey of plantations in 1982 (Koroma, 1988), out of 7,600 ha planted before 1972, 5,775 ha have been planted. Most of the country's productive forest lies in the east while about half (1/2) of the estate in the North is savannah and most of the forest in the Western Area are Protection Forest Reserves. By 1990 it was estimated that about 100,000 ha of forest reserve and 65,000 ha outside of the reserve make up the exploitative forests in Sierra Leone. Plantations comprise about 1-2% of the total forest estate and are scattered all over the country. Estimates of yield are about $33m^3$ /ha in the reserves and $21m^3$ /ha outside reserves.

Location	**Area planted (ha)**	
	Before 1971	**After 1971**
Eastern Region	2198	108
Northern Region	1221	465
Southern Region	3822	1556
Western Area	365	138
Total	**7604**	**2267**

Plantation Area (ha) by regions

Forests in Sierra Leone provide most of the wood products for local consumption. They provide 95% of the country's domestic energy in the form of fuel wood for over 98% of the population. About 1.5% of the round wood removals from the forest comprise sawlogs; 4% of construction poles and 95% of fuel wood. There are about 300 carpentry and joinery workshops in the Western area alone utilizing over $4000m^3$ of roundwood (1995). The utilizing industries contributed 0.6% to 0.8% to the GDP (1988). Most of the timber is utilized locally and in 1986 only $7,300m^3$ of sawn was exported. The annual per capital firewood consumption in the 1990s was $1.63m^3$/yr. Apart from providing fuel wood and sawn timber; to majority of the population forests also provide food, medicine, job opportunities

and income. The coastal mangrove forests in addition protect the coastal and river banks against erosion and are important natural habitat and breeding grounds for various aquatic life and sanctuary for migratory birds. Forests are therefore ceitical for biological diversity conservation and sustainability.

1.1.9 Wildlife

Philipson (1978) listed 102 large and small mammals of which 23 species were antelopes, gazelles and buffaloes (Bovidae), 7 species of large cats (felidae) and 18 species of primates (monkeys, chimps and gorillas). A more recent survey by Stuart and Adams (1990) for whole of sub-Saharan African Countries, gave Sierra Leone a total of 178 species of animals of which 15 were primates and 18 species were in the antelope class. The same Survey recorded 614 species of birds in Sierra Leone, of these six forest interior birds are threatened with extinction (IUCN, 1992), whilst the number of amphibians and reptiles was stated as unknown. Lebbie (2002) listed 25 species of amphibians 17 species of reptiles.
A major source of protein in Sierra Leone is from the hunting of wild life, generally called "bush meat". About 55% of animal protein consumed in Sierra Leone is from bush me