Workforce Development Authority

Environmental and Social Management Framework (ESMF) of the Skills Development Programme (SDP) in Rwanda

Final Report

Prepared by
Dr. Fabien TWAGIRAMUNGU &
Richard NGENDAHAYO

Cell: +250 78 830 6105/+78 874 3985

rich_ngenda@hotmail.com/fabynetbe@yahoo.fr
EXECUTIVE SUMMARY

The Workforce Development Authority (WDA) working under the Ministry of Education (MINEDUC) wants to implement the Skills Development Programme (SDP) in alignment with the Government of Rwanda (GoR) Human Capital and Skills Development Strategy, the intended investment expects to support Government’s efforts to: (a) equip workers with improved skills by providing short-term training in priority areas; (b) improve the capacity of the education and training system to equip students and workers with appropriate and market-relevant technical and catalytic skills; and (c) strengthen the institutional framework through which science, technology and innovation accelerate the transition to knowledge-based economy.

The programme will be implemented through three main components:

- Strengthening the TVET System that aims to strengthen the TVET system;
- Systems Development with aim to strengthen the capacity of WDA; and,
- Skills Fund/Grant that seeks to increase the output of skills in short supply using a competitive grant facility to stimulate and finance high quality service provision

Through the above mentioned components, typical classrooms, workshops and other complementary facilities will be constructed or rehabilitated on existing school grounds as an addition to existing school buildings, or, in some cases, as a self-standing new building. The schools facilities will be typically constructed or rehabilitated from locally sourced materials, with concrete slab foundations, concrete floors, clay brick walls, and corrugated metal roofing on wood frames...etc. Walls and window frames will be painted with oil paints. In most cases, Classrooms are typically connected to the power grid and water supply of RECO-RWASCO. Water supply is provided from stand pipes and sanitation is provided by pit latrines. Workshops, multi-purpose halls and teacher houses will be constructed.

This Environmental and Social Management Framework (ESMF) is meant to ensure the provision of infrastructure under the SDP program complies with the Rwandan Environmental Legislation and World Bank Safeguard Policies. This report outlines the mechanisms to determine and assess environmental and social impacts arising
from SDP implementation, and sets out appropriate mitigation measures, and institutional arrangements for monitoring.

This framework is needed since the specific locations of schools that will receive physical facilities (classrooms, teachers’ houses, workshops, dormitories, multi-purpose halls, kitchens, restaurants and waste water treatment plants) under the proposed World Bank Operation are yet to be determined program. However, the coverage of the SD program is countrywide. The targeted schools are evenly spread throughout the districts. This is guaranteed by the existing Government policy, which requires that every sub-county should have at least a Technical and Vocational Education and Training (TVET). Even the non-SDP participating Government schools are evenly spread in regions and districts. This framework will guide in program screening and in determining the extent of required ESIA once program activities during construction phase and specifications are known. The report has a detailed program background, reviews the environmental legislative framework, and identifies potential social and environmental impacts and their mitigation, and an environmental and social management plan for SDP programs.

**The draft ESMF report is structured as follows:**

Chapter 1: Introduction
Chapter 2: Description of SDP program
Chapter 3: Policy, Legal and Institutional Framework
Chapter 4: Biophysical and Socio-Economic Environment of Rwanda
Chapter 5: Environmental and Social Impacts of SDP Program
Chapter 6: Environmental and Social Screening Process
Chapter 7: Environmental and Social Management Plan for SDP
Chapter 8: Conclusion and Recommendations
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Environmental and Social Management Framework (ESMF)

REMA: Rwanda Environmental Management Authority
RWASCO: Rwanda Water Supply Company
SDF: Skills Development Facility
SDP: Skills Development Programme
SOE: State of Environment Report and Outlook
SWAP: Sector wide Approach
TVET: Technical and Vocational Education and Training
UN: United Nations
UPE: Universal Primary Education
VTC: Vocational Training Center
WB: World Bank
WDA: Workforce Development Authority
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I. INTRODUCTION

I.1. Project Background
The mission of the Ministry of Education is to transform the Rwandan citizen into skilled human capital for socio-economic development of the country by ensuring equitable access to quality education focusing on combating illiteracy, promotion of science and technology, critical thinking and positive values.

The Workforce Development Authority (WDA) being an institutional framework under the Ministry of Education (MINEDUC) that is set to provide a strategic response to the skills development challenges facing the country across all sectors of the economy, was given in September 2010 the mandate to lead the preparation of the Skills Development Programme.

The project will support systemic changes that aim to reduce future skills constraints and prevent that Rwanda will repeatedly find itself developing rapid response strategies to meet short term skills needs.

The programme’s environmental assessment being an important part of the project’s technical design and the will of WDA to incorporate all practical cost effective measures for avoiding and minimizing negative environmental impacts, for capturing environmental benefits and for ensuring sound environmental management, WDA contracted a team of consultants to prepare an ESMF for the Skills Development Programme.

This ESMF was conducted by Dr. Fabien Twagiramungu and Richard Ngendahayo, Environmental Assessments Experts. The study was commissioned by Workforce Development Authority (WDA), the client, in order to fulfill the requirements of Rwanda Environment Management Authority (REMA) and the Word bank. The ESMF assesses the impacts of the proposed development and proposes mitigation measures as well as an Environmental and Social Management Plan and Monitoring.

The proposed assessment is consistent with the Bank’s safeguard policy OP 4.01 Environmental Assessment. This policy requires that all Bank-financed operations and their investments are screened for potential environmental and social impacts, and that the required environmental work be carried out on the basis of the screening results.
I.2. Overall Approach and Methodology

I.2.1 Approach
The ESMF study has been prepared in accordance with applicable World Bank safeguard policies and Liberian environmental assessment guidelines. The distinct phases of the study include:
- Data Gathering;
- Consultations and discussions with WDA and the World Bank;
- Literature review;
- Environmental screening and scoping;
- Identification of potential impacts;
- Identification of impact mitigation measures;
- Preparation of an Environmental and Social Management Plan; and

I.2.2 Methodology
A scoping study was undertaken at the beginning of the study. This stage involved consultation with the client, and all the relevant key stakeholders who were identified through Stakeholder Identification Process. Through the scoping study which entailed an initial and broad assessment of the programme, policies, regulations and baseline data, the team generated a scope for the study including geographical coverage, stakeholders (interested parties), significant impacts (areas of study) and the levels of detail in each particular impact study.

The scoping exercise in addition involved review of literature based on review of available project literature and other strategic planning documents at the national and sector level.
The consultants proceeded to assess the environmental context and generic baseline data within which the programme is to be set and implemented. Parameters that were examined were varied and included physical environment, biological environment and socio-cultural environment.

Physical environment
It includes relief, climate, temperatures, rainfall, hydrology and land uses.

Biological environment
It includes the fauna and flora that were observable on the seven study sites as well as the surrounding lands.
Socio-cultural environment
The design of the survey instrument was driven by the objectives of the Environmental and Social Management Framework (ESMF). As such, the BLS sought to determine socioeconomic characteristics, land use, awareness about the project, and perceptions of the potential impacts that may arise from the implementation of the programme.

Impact identification
For impact identification a checklist was employed to identify possible impacts from the project development and the matrix to determine the significance of each identified impacts. Expert opinion was vital to interpret the acquired information.

Environmental and Social Management Plan
The ESMF proposed an example of Environmental and Social Management Plan that includes a monitoring schedule. The management plan highlights all anticipated significant impacts and their areas of occurrence. It also provides the mitigation measures to be undertaken and the duration within which such measures are to be instituted. The plan proposes the personnel or institutions responsible for implementing particular action plans as well as gives an indication of the approximate budget of these activities. The Monitoring Plan on the other hand entails the various biophysical and social attributes. Under each there are data sets which provide the monitoring data and benchmark values.
Under the data sets the plan provides a set of indicators which focus on the aspects that indicate the presence or absence of an impact.

I.3 Presentation of the consultants
This ESMF was undertaken by Dr. Fabien Twagiramungu and Richard Ngendahayo, both being Environmental Assessment Experts, authorized by the Government of Rwanda to work on ESIA and ESMFs of different projects. Dr Fabien Twagiramungu has PhD in Applied Analytical Chemistry in Environmental Science and Sanitation and long experience in environmental impact assessment. He has carried out EIA studies for different projects in Rwanda and in the region.
Mr. Richard NGENDAHAYO is an Environmental Expert with a Master’s Degree and specialized in Environmental Science and Technology. He has experience in environmental planning and has undertaken various consultancy works related to environmental impact assessment, hydrological surveys especially to identify impacts on water resources, biological/ecological baseline, identify impacts on ecology.

I.4 Presentation of the Developer
The Workforce Development Authority (WDA) is working under the Ministry of Education (MINEDUC). It was given the mandate to lead the preparation of the SDP. WDA is an institutional framework that is set to provide a strategic response to the skills development challenges facing the country across all sectors of the economy. WDA’s intervention in skills development programmes will be hands-on (demand driven and competence based training methodology) other than the traditional theoretical knowledge passed on by most educational institutions.

I.5. Project objectives
The objectives of the project are:
1. The main objective of the projects is to have in place appropriate facilities, equipments and materials in pilot institutions at reasonable cost as needed to deliver competence based training in the following ten (10) occupations;

   **Hospitality and Tourism**
   - Cook (Culinary Arts)
   - Waiter (Food and Beverage Services)
   - Receptionist (Front desk operation)
   - Room Attendance (Housekeeping)
   - Tailoring

   **Building Services**
   - Mason
   - Carpenter
   - Plumber
   - Domestic Electrical Installation
   - Welding and tailoring

2. To provide long term planning policy and guidelines in the area of infrastructure planning and development in TVET school development in terms of facilities and related itemized costs in selected training areas as listed above.
3. To establish equilibrium between the employment requirements and the number of trainees, through a demand and competence based training methodology.

4. Put in place a school management system which enables an efficient and effective delivery of CBT curriculum and training in the seven selected VTC.

5. To put in place a structured process and appropriate assessment tools to evaluate vocational trainees’ acquisition of key curricular competencies in the selected occupations (10) piloted in 7 VTCs

6. Implement new Competency-Based, Demand-Driven (CB-DD) curricula in the Building Servicing as well as the Hospitality & Tourism Sectors

7. Achieve relevance of TVET training to industry needs with the new curricula, in keeping with the new CB-DD approach to CD & Training

8. Attain full cycle on-the-job training of facilitators, didactic specialists, pedagogues & entrepreneurial specialists in new CB-DD curriculum development

9. To establish a structured, systematic, and functional industrial attachment program to improve employability skills of TVET students participating on the scheme

10. The objective of the SDF is to minimize skills gaps by rapidly increasing the supply of skills in high demand in the labor market. To achieve this objective, the SDF will aim to expand the number of individuals with the relevant skills in critical sectors and improve the quality of individual’s skill sets in key occupations and sectors. The SDF has the following subsidiary objectives:

   • Stimulate competition and delivery of innovative program offerings;
   • Promote collaboration between enterprises and training centers and institutions;
   • Increase skills acquisition among disadvantaged groups; and
   • Improve the efficiency of training provision.

11. The SDF is designed as a pilot intervention to test whether the grant facility mechanism can be an effective instrument to rapidly reduce skills gaps and promote employment. A thorough review of the pilot will be carried out towards the third year of implementation, prior to mid-term review, to inform
possible implementation adjustments and options for medium to long-term sustainability

**I.6. Objective of ESMF**
The objective of this ESMF is to determine the extent and potential environmental and social impacts likely to be caused by the planned activities. It is intended to be used as a practical tool during project implementation. It explicitly describes the environmental steps to be undertaken in the implementation of the planned subprojects under SDP investments and activities. The ESMF is to ensure that the implementation of the SDP will be carried out in an environmentally and socially sustainable manner. It also provides a framework to enable communities/beneficiaries screen sub-projects and institutional measures to address adverse environmental and social impacts.

The specific objectives of the ESMF are:

1) To establish clear procedures and methodologies for taking into consideration environmental and social issues during the planning, review, approval and implementation of subprojects to be financed under the project;
2) To prescribe project arrangements for the preparation and implementation of subprojects in order to adequately address World Bank safeguard requirements;
3) To assess the potential environmental and social impacts of envisaged subprojects.
II. DESCRIPTION OF SDP PROJECT

II.1. Overview of the education sector structure in Rwanda

II.1.1 Central Government
The education sector comprises those educational activities that take place currently under the governance of the four ministries. Of these, MINEDUC has the major responsibility and has been designated in the national Economic Development and Poverty Reduction Strategy (EDPRS) as the lead ministry for the education sector and is responsible for policy formation.

There are four ministries, each with specific responsibilities, which have significant involvement in education provision and development:

- **Ministry of Education (MINEDUC):** sets policy, norms and standards for the education sector; MINEDUC also undertakes planning, monitoring and evaluation at the national level.

- **Ministry of Local Government, Social Affairs and Good Governance (MINALOC):** oversees decentralisation functions of education; administers FARG and community development funds. Monitors performance at decentralized levels (provinces and districts including performance contracts).

- **Ministry of Public Service, Skills Development, and Labour (MIFOTRA):** Sets and administers salary levels and conditions of service for teachers

- **Ministry of Finance and Economic Planning (MINECOFIN):** Sets broad policy and planning frameworks, oversees financial planning, the MTEF, the EDPRS and LTIF.

A number of public, private and voluntary institutions provide formal education, ranging from pre-schools to universities. Figure 1 shows the broad structure of the education system in Rwanda.
Figure 1: Rwanda Education sector structure
II.1.2 Districts
With decentralization and public service reform currently being implemented across Government, responsibilities for programme and plan implementation and monitoring at the district levels lie with the district education offices. For the education sector the following service delivery responsibilities lie at district level:
- Implementation of policy and strategic plan (national and province)
- Prepare the strategic plan for district
- Prepare the budget and MTEF
- Monitoring and evaluation for activities in education
- Recruitment of teachers and giving information of teachers employed to MINEDUC through Teacher Service Commission;
- Monitoring of NGO activities and report back to provinces and MINEDUC
- Responsible for the transfer of teachers and students within the same district
- Monitoring of school financial reports and use of capitation grant also teacher’s salaries, capitation grants school feeding.

II.1.3 Schools
It is anticipated that as school management is strengthened, schools themselves will make more decisions and manage increasing amount of funds transferred directly to the school from the capitation grant. The implementation of policies including ensuring access and retention and quality of education primarily lie with schools. The main source of their finance is the Capitation Grant which in 2007 is RwF 3,500/= per child for school general development (school functioning) and for recruitment of contractual teachers at around for Frw 5000 per teacher per month and allowances for permanent teachers at the rate of RwF 12,500/= per teacher per month. Schools are expected to have functional and effective school boards and parent teacher associations. They are expected to report their financial resources and expenditures with the school board members, local community and districts.

II.1.4 Semi-Autonomous bodies
The following bodies have been tasked with specific responsibilities within the education sector:
- The Workforce Development Authority (WDA): institutional framework that is set to provide a strategic response to the skills development challenges facing the country across all sectors of the economy.
- The National Curriculum Development Centre (NCDC) is responsible for development and reviews of curriculum for pre-primary, primary and secondary schools.
- Rwanda National Examination Council (RNEC) is responsible for the running of the examination system.
- Inspection General of Education (IGE) carries out school inspection in primary and secondary schools.
- The Teacher Service Commission (TSC) is responsible for teacher development and management.
- Student Financing Agency for Rwanda (SFAR) is responsible for administrating the student loans and grants in the higher education system.
- The “UMWALIMU SACCO” is responsible for teacher cooperatives.
- The National Council for Higher Education (NCHE) is responsible for accreditation of higher learning institutions and
- The National Commission for UNESCO (NCU) is responsible for coordination of activities related UNESCO’s interventions.

II.1.5 Role of the Private and Civil Society
Private Sector and Civil Society role in education is now more crucial than ever. As the Government is taking education and training, human resource development as a priority now so that it can support others sectors, private sector and civil society need to do the same, Public Private Partnership (PPP) at all levels with special attention on (TVET and Higher Education).

II.2. Project background
In the framework of the Government of Rwanda (GoR) Human Capital and Skills Development Strategy, the Skills Development Programme (SDP) intends to support Government’s efforts to equip workers with improved skills by providing short-term training in priority areas;
- Improve the capacity of the education and training system to equip students and workers with appropriate and market-relevant technical and catalytic skills; and
- Strengthen the institutional framework through which science, technology and innovation accelerate the transition to a knowledge-based economy.

In September 2010, the Workforce Development Authority (WDA) working under the Ministry of Education (MINEDUC) was given the mandate to lead the preparation of the SDP. WDA’s intervention in skills development programmes will be hands-on (demand driven and competence based training methodology) other
than the traditional theoretical knowledge passed on by most educational institutions.

II.3. Project’s components
This project will have three components

II.3.1. Component 1- Strengthening the TVET System
The component seeks to strengthen the capacity of the TVET system to: (a) align training offerings with employer demands for skills; (b) improve the quality of service delivery; and (c) generate strategic information to adjust programs and monitor performance. The component includes interventions to improve the relevance and quality of training programs in a selected number of priority occupations (sub-component 1.1); and to strengthen the system to carry out strategic analyses to evaluate performance and introduce innovations in the system on a routine basis (sub-component 1.2).

II.3.1.1. Sub-Component 1.1 - Training Delivery
This sub-component will finance all essential elements for high-quality and relevant vocational training provision in a select number of occupations and targeted institutions. The selected occupations were chosen carefully, taking into consideration economic and social criteria, information on labor market demands, and potential for establishing industry partnerships to identify or update occupation standards to develop new curricula. The sub-component expects to finance an integrated package of inputs required for the successful implementation of training programs in the selected occupations. Detailed information on the achievement of outputs, outcomes, processes and impacts will be collected under sub-component 1.2 (below) to ensure performance is monitored periodically, particularly since the GoR has expressed a desire to learn and scale up successful service delivery interventions. Participating training institutions will be required to shift focus from a supply driven approach to aligning program offerings with employer demands and monitoring closely school-to-work transitions (formal or informal sector employment), particularly in pre-employment training programs.

This sub-component will: (a) pilot the delivery of 8 new Competency Based Training (CBT) curricula for 1587 trainees per annum at the vocational level in 7 public training institutions (Busogo, Kinihira, Kibari, Kibuye, Kabarondo, Kibungo, Kibuye, Kabarondo, Kibungo,
Kirehe); (b) demonstrate the value of an integrated set of interventions to raise the quality of skills delivery; and (c) raise the capacity of WDA and training institutions to develop and deliver high quality skills training in priority areas.

The component targets graduates of 9 years of basic education who will benefit from participating in short training programs (3 to 9 months, including industrial attachment period) that will increase their marketable skills, employability and income generation potential. Institutional beneficiaries include the WDA, IPRCs, and the institutions that deliver the training in the form of increased capacity to develop and deliver similar or expanded programs. The ultimate beneficiaries are individuals and informal or small and medium enterprises in the form of increased productivity, income and revenue.

The targeted training institutions are located in the Western, Eastern and Northern provinces, and will be coordinated by respective Integrated Polytechnic Regional Centers (IPRCs). The 8 targeted occupations fall under two main sectors: hospitality and tourism (cook, waiter, tour guide, receptionist); and construction (mason, carpenter, plumber, electrician).

The proposed project will provide an integrated package of inputs to develop and deliver the specified occupations at the targeted institutions. The package comprises a complete cycle of stages, steps and activities considered to be pre requisites for effective delivery of quality training, namely:

(a) Curriculum development: CBT curricula design; classroom trials and subsequent revision of curricula; design, validation and finalization of instructional/teaching materials.

(b) Assessment: design, test, and conduct summative assessment mechanisms of trainees, including the provision of feedback of testing results;

(c) Infrastructure, equipment, and materials: infrastructure rehabilitation; preparation of standard training equipment lists and consumables; preparation of bidding documents and overseeing procurement; rehabilitation of infrastructure, delivery and installation of equipment, and provision of consumables for pilot institutions.
(d) *Training of trainers:* analyze staffing requirements, staff training needs, design and deliver upgrading to approximately 70 trainers, and provide for continuous upgrading.

(e) *Institutional based management & development:* institution based management and leadership programs to equip staff with tools to carry out training needs assessments, identify training gaps and coordinate with local industry to establish partnerships; and design of management and professional development programs for TVET management and teaching staff.

(f) *Industrial attachment program:* menu of programs to promote trainee’s hands-on experience and exposure to a relevant work environment as a means to enhance employability; procedures to match the needs of employers with students; develop supporting material, including log-books; development induction program for students and employers; secure placements; and train the trainers and industry supervisors.

To take advantage of economies of scale and reduce transaction costs at the level of the institution, curriculum development, assessment and programs to improve the quality of trainer performance and institution management will be coordinated by WDA and designed by specialized staff, industry and key stakeholders with expertise in various aspects at the institutional level. Overall leadership will rest with the WDA management team.

**II.3.2. Component 2: Systems Development**

This component will strengthen the capacity of WDA to (a) carry out analytical and operational research and (b) monitor and evaluate the implementation of all three project components. The Government has identified these two functional areas in the TVET system as being of high priority to achieve national TVET objectives.

Although initially the monitoring and evaluation system will focus on tracking project components, it is expected that at Mid-term Review (MTR) actions will be identified and proposed to expand the system to cover a wider range of WDA projects and programs. M&E activities under this sub-component will include reviews of the integrated package of inputs to deliver TVET programs in selected occupations (sub-component 1.1) and of the Skills Development Facility (SDF, see Component 2, below) after 2 years of implementation to support decision-making
related to continuation of the SDF and/or adjustments in its priorities and funding mechanisms.

Analytical work will focus on two areas: identify of technical skills gaps that form particular bottlenecks to economic growth-, and TVET financing - to identify options that strengthen financial sustainability and transfer mechanisms that would provide financial incentives for the efficient delivery of high quality training.

**Results/outcomes**

**Outputs:** 8 sets of competency-based, demand-driven curricula delivered effectively to a total of about 1,680 trainees annually; assessment instruments recognized as valid by employers—designed, applied and results published; appropriate facilities, equipment and consumables supplied; sufficient trainers trained to deliver the programs effectively; institutional managers trained to use good practices for effective program delivery; and effective operation of the industrial attachment program; M&E indicators; analytical reports.

**Outcomes:** High quality and market relevant vocational training provided in all 10 targeted institutions for all 8 occupations. Government has started – or has firmly committed to – using the systems developed and lessons learned from the implementation for scaling up vocational training provision. Substantial capacity built within WDA, IPRC and training providers to design and implement CBT curricula in other occupations for the TVET system as a whole, using the seven integrated building blocks as targeted in sub-component 1.1. Substantial M&E and research capacity built within, particularly, the WDA.

**II.3.3. Component 3: Skills Fund/Grant**

This component seeks to increase the output of skills in short supply using a competitive grant facility to stimulate and finance high quality service provision. Subsidiary objectives are to increase skills acquisition among disadvantaged groups; and to test the cost-effectiveness of the grant mechanism in reducing skills gaps and promoting employment. Compared to sub-component 1.1, which finances interventions to systematically improve the quality of training in select occupations on the medium-term, the competitive grant mechanism aims to achieve a relatively quick expansion of the skills base. In addition, the competitive grant mechanism allows (1) a flexible response to changing priority skills needs; (2) the strengthening of training provision and the stimulation of grass-roots innovation through
competition; (3) the involvement of employers in allocation decisions; (4) the promotion of effectiveness through performance-based contracts; and (5) improvements in efficiency through competition.

Through this component, a Skills Development Facility (SDF) will provide small grants on a competitive basis to initiatives that encourage the provision of TVET with a high relevance to the private sector. All public and private providers would be eligible to compete. The SDF will contribute to the overall project development objective by providing individual and enterprise beneficiaries with market-relevant skills, greater productivity and improved economic opportunities and incomes. The three main target groups would be: (a) job entry training in critical skills for young adults (not enrolled and not gainfully employed); (b) upgrading of capacities for quality skills delivery by private and public vocational training centers; and (c) upgrading training for employers and employees.

The competitive grants will be administered by the SDF secretariat, located initially within WDA. Calls for bids will be done twice a year. The SDF will advertise, and provide assistance, to potential bidders. The applications will be evaluated by a technical panel of expert consultants according to three basic criteria: relevance, feasibility, and internal efficiency. Decisions on applications will be made by a Grants Committee of seven members, including three from the private sector, three from the public sector (education, labor and the Deputy DG of the WDA) and the association of private training providers. Once approved, a contract will be negotiated and signed between the SDF and the winning bidders specifying implementation/disbursement schedules, performance conditions and targeted outputs.

Eligible economic sectors include manufacturing and construction, commerce, transportation, hotel and food service and finance and administrative services. Farm production, health, public administration would be excluded. Eligible occupations are identified on WDA’s “National Priority Training Areas”. Other occupations will be considered based on compelling market evidence. The SDF will target occupational training at vocational levels. Private (both non-profit and for-profit) will be eligible to apply as well as enterprises, associations and cooperatives. The grants would finance only short term training, less than one year in duration. Support would not be provided for creation of new training institutions or for
existing training programs. Grant size would range from US$ 10,000 to US$ 100,000 equivalent, with an anticipated average of about US$ 60,000.

After 2 years of implementation, the SDF performance will be evaluated to determine whether to (a) expand the scope of financing using other sources, (b) redefine priorities and (c) institutionalize the SDF.

**Results/outcomes**

**Outputs**: It is expected that 60 grants (subprojects) will be financed during the first three years of the project benefitting approximately 10,000-12,000 trainees.

**Outcomes**: essential skills gaps reduced; lessons learned from subprojects analyzed, disseminated and used to improve TVET system; positive outcomes of SDF disseminated and used to attract additional funding from other development partners.

**II.4. Beneficiaries**

**II.4.1. Direct beneficiaries**
- Trainers and Trainees in the selected trades
- Technical and support staffs
- Selected Vocational training centres in the Northern, Eastern and Western Provinces as listed above,
- Employers and Industry players in the various sector,
- Successful bidders / contractors during implementation.

**II.4.2. Indirect beneficiaries**
- Government of Rwanda through increase of revenue collection base due to multiplier effect resulting from skill development.
- General Public and Private Sector through improved service delivery in related trades.
- Suppliers of training equipments and consumables

**II.5. Expected Outcomes**
- At the end of the five years implementation time frame, it is envisioned that all the pilot schools shall have fit for purpose classrooms, workshops
and equipments and classrooms conforming to the needs of the eight curriculums and industry.

- Standardization of training facilities in selected areas of trades in specific classrooms and workshops to be rehabilitated in the targeted geographical regions of project implementation.
III. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

This section of the ESMF outlines and reviews the existing legislations, policies and institutions and identifies requirements as well as gaps and conflicts of the relevant legal and institutional arrangements that would hinder or guide the development of the project in line with the national and international laws applicable to the Skills Development Project (SDP) in Rwanda. Rwanda being a signatory to various international conventions and laws, it’s important that national projects are in line with these laws and as such some of the relevant international conventions are reviewed in this section

III.1. Legal Framework
Rwanda is just revising and enacting new institutional, policy and legislative framework in all its sectors and sub sectors after operating with colonial framework until after 1994. Most of the government ministries have already developed the respective sector policies and strategic plans most of which are based on poverty reduction strategy.

III.1.1. The constitution of the Republic of Rwanda
Adopted by the Rwandans during the Referendum of 26th March, 2003, it stipulates through different wordings of law the following message:

- Article 29: Each person has right to hold a private property, individual or collective. The private property, individual or collective is in violable. No one can make prejudice on it unless there is a necessity of public interest, in the context and ways established by the law and in exchange of an equal and previous compensation.

- Article 30: The private property of soil and other real rights putting a strain to the soil granted by the government (state). An Act determines the acquisition, transfer and exploitation means.

- Article 31: The state property consists of the public sector and the private sector of the government together with the public sector and private sector of decentralized public communities. The properties of the public sector are inalienable except in case of their previous disuse in favor of the private concession of the government.

- Article 32: Each person is submitted to respect the public properties.
- Article 49: Each citizen has the right to healthy and satisfying environment. Each person has the right to protect to conserve and promote the environment. The government will take care of the environment protection. An Act defines the procedures of protecting, conserving and promoting environment.

- Article 190: The treaties and international agreements regularly signed and approved have since their making public within the official magazine, an authority superior to that of the organic laws and those of ordinary laws, under reserve, for each agreement or treaty of its execution by the other part.

**III.1.2. Organic Law on Environment Protection and Management**

The Organic Law on Environmental Protection, Conservation and Management seeks to achieve a number of objectives. These are:

1) to protect human and natural environment;
2) to establish fundamental principles of management and protection of environment against all forms of degradation so as to develop natural resources and to fight all kinds of pollutions and nuisances;
3) to improve the living conditions of the population while preserving ecosystems and available resources;
4) to ensure sustainable environment and resources as well as rational and sustainable use of resources, taking into account the equality between the present and future generations;
5) to guarantee to all Rwandans an economically viable, ecologically rational and socially acceptable development; and,
6) to establish the precaution principle in order to reduce the negative effects on Environment and ensure the rehabilitation of degraded areas.

The Act dictates that, the national environment protection, conservation and management policy is the responsibility of the Government of Rwanda. It will develop national strategies, plans and programs to ensure conservation and sustainable use of environmental resources.

It in addition highlights that every natural or legal person in Rwanda has the fundamental right to live in a healthy and balanced environment. They also have the
obligation to contribute individually or collectively in safeguarding the country’s natural, historical and socio-cultural heritage.

In specific, Article 67 of this act states that every project shall be subjected to environmental impact assessment prior to its commencement. It shall be the same for programs, plans and policies likely to affect the environment. The law also under Title 7 Chapter 1 gives a list of activities that are prohibited. An example is Article 103 which states;

Whoever shall have polluted inland water masses by dumping, spilling, disposing and deposit substances of any nature likely to cause or to increase water pollution within national borders shall be punished by a fine of two million (2,000,000) to five million (5,000,000) Rwanda francs and by imprisonment of two months (2) to two years (2) or one of these two penalties. The REMA Regulations under this act provide the requirements for an EIA study and report as well as provide a list of projects eligible for a full EIA and those subject to Limited EIA.

III.1.3. Environmental Impact Assessment Regulations
REMA has now developed the EIA regulations which provide a guideline and requirements for EIA in Rwanda. According to these new regulations Sub Article 1 makes it mandatory for all the projects listed under schedule I to be subjected to a full scale EIA.

Sub Article 1) No environmental authorization shall be granted by the Authority for any project in Schedule I to these Regulations if no environmental impact assessment has been submitted to the Authority in accordance with the provisions of these Regulations.

Sub Article 2) states any project listed under Impact Level III of Schedule I to these Regulations shall require a full environmental impact assessment by the preparation of an environmental impact report, unless the Authority refuses permission.

The general EIA guidelines give the EIA process in Rwanda, which consists of the following phases:

1) **Project Brief Submission and Registration**: As a first step in the EIA process, a developer proposing to start a project shall notify REMA in writing by submission of a Project Brief. The purpose of a Project Brief, which should be prepared as prescribed in this regulation, is to provide information on the
proposed activity so as to enable REMA and Lead Agencies establish whether or not the activity is likely to have significant impact on the environment, and thus determine the level of EIA necessary. The project brief submitted to REMA by a developer will be registered as the formal application for an EIA.

2) **Screening:** Screening refers to the process by which REMA makes a decision as to whether an EIA is required or not, based on information in the Project Brief. It is through screening that REMA is able to classify proposed projects as either of impact level (IL) 1, 2 or 3. Note that **Impact Level (IL) 1, 2 or 3** are respectively equivalent to **category C, B or A.**

3) **Scoping and consideration of alternatives:** The responsibility for scoping shall be that of the developers (or their EIA experts) in consultation with Lead Agencies and all relevant stakeholders. Scoping is intended to establish important issues to be addressed in the environmental impact and eliminate the irrelevant ones. After scoping, REMA approves the terms of reference that would be used for carrying out the environmental impact study.

4) **Baseline data collection and Analysis of Initial State:** Baseline data describes status of existing environment at a location before intervention of the proposed project. Site-specific primary data on and around a proposed site should be collected by experts conducting the environmental impact study to form a basis for future environmental monitoring.

5) **Impact prediction and analysis of alternatives:** Impact prediction is a way of forecasting the environmental consequences of a project and its alternatives. This action is principally a responsibility of an EIA expert. For every project, possible alternatives should be identified and environmental attributes compared. Alternatives should cover both project location and process technologies. Alternatives should then be ranked for selection of the most optimum environmental and socio-economic benefits to the community. Once alternatives have been analysed, a mitigation plan should be drawn up for the selected option and is supplemented with an Environmental Management Plan (EMP) to guide the developer in environmental conservation.

6) **EIA Report:** An environmental impact study culminates into preparation of a report by the EIA expert(s). An EIA report should provide clear information to the decision-maker on the different environmental scenarios without the project, with the project and with project alternatives. The developer is also required to produce an environment management plan (EMP). Any modifications made by a developer to the EIA report should be presented in form of an Environmental Impact Report Addendum. All these three documents should then be submitted to REMA by the developer.

7) **Public hearing:** After completion of EIA report the Organic Law requires that the public must be informed and consulted on a proposed development. REMA
may, if it deems necessary, conduct a public hearing before EIA reports are appraised by its Technical Committee. Any stakeholders likely to be affected by the proposed project are entitled to have access to unclassified sections of the EIA report and make oral or written comments to REMA. REMA shall consider public views when deciding whether or not to approve a proposed project.

8) **Decision-making:** During the decision-making and authorization phase, EIA documents submitted to the Authority shall be reviewed by two decision-making committees: a Technical Committee and an Executive Committee constituted by REMA. If the project is approved, the developer will be issued with an EIA Certificate of Authorization, which permits implementation of the project in accordance with the mitigation measures in the EIA Report and any additional approval conditions.

9) **Environmental Monitoring:** Monitoring should be done during both construction and operation phases of a project. It is done not just to ensure that approval conditions are complied with but also to observe whether the predictions made in the EIA reports are correct or not. Where impacts exceed levels predicted in the environmental impact study, corrective action should be taken. Monitoring also enables REMA to review validity of predictions and conditions of implementation of the Environmental Management Plan (EMP). During implementation and operation of a project, monitoring is a responsibility of the developer and REMA.

Figure below summarises the EIA procedure in Rwanda and duration (working days) corresponding to each stage.
Figure 2: EIA procedure in Rwanda
III.1.4. Rwanda Building Control Regulations
The Building Control Regulations which have been adopted by the cabinet in February 2009 is a nationally recognized document, which serves as a standard reference for the regulation of building design and construction. The major benefits to be gained in applying those regulations are the harmonization of professional practice in the building construction industry in Rwanda and curtailment of informal developments so as to ensure well-planned, well-maintained, safe, cost effective and decent building developments and housing settlements throughout the country.

III.2. Policy Framework

III.2.1. Education Sector Policy
This policy has been adopted in 2003 with aims to achieve certain international development targets, notably Universal Primary Education (UPE) and Education for All (EFA), and a great need to develop other levels of education which remain at a low point. Furthermore, the education system must also fit in the guidelines defined in Vision 2020, the Poverty Reduction Strategy, the Decentralization policy and the Information and Communications Technology policy.

III.2.2. Education Sector Strategic Plan (ESSP) 2008-2012
This ESSP has been developed in order to guide development of Sub sector plans, District education plans as well as School improvement plans as well as other partners’ interventions in education. The priorities of nine year basic education and the promotion of science and technology in education with special attention on ICT remain at the core of the Strategic Plan, recognizing their role in human resource development for Rwanda. The concepts of universal access and equity of quality provision underpin the ESSP. These will always occupy the most important place in the sector’s planning and implementation activities. The ESSP states the key targeted educational outcomes towards which all levels from Ministry to schools should strive.

The Sector Wide Approach (SWAP) continues to guide the ESSP. This forward-looking plan is an instrument to make education sector policies operational and fully incorporates the GoR aims of economic development and reducing poverty based upon the productive application of skills and technology.

This ESSP aims at improving education, particularly skills development, to meet the labour market demand, increasing the coverage and the quality of nine year basic education, strengthening Post Basic Education (PBE) and Technical and Vocational Education and Training (TVET), and improving the quality of Tertiary Education and fast tracking the 9 year Basic Education Program.
III.2.3. Nine Year Basic Education
Nine Year Basic Education is nine years of free compulsory education for all Rwandese school children. It consists of seven years of primary education and the first three years of secondary school (Tronc Commun). It is defined as: “All children to be able to get education in nine years, this is made up of seven years of primary education and three years of general cycle of secondary education without paying school fees.”

III.2.4. Technical and Vocational Education and Training (TVET) Policy in Rwanda
The overall objective of the TVET policy is to provide the economy with qualified and competitive workers and to train citizens able to participate in sustainable growth and poverty reduction by ensuring training opportunities to all social groups without discrimination. To achieve the goals of democratization and social, cultural and economic development, the empowerment of people to contribute to environmental sound sustainable development is decisive.

The specific objectives of TVET policy are to:
- Assure guidance and counseling, planning, coordination, monitoring and evaluation of TVET activities;
- Provide theoretical and practical trainings in all sectors matching with the needs of enterprises and international standards;
- Satisfy quantitative and qualitative needs of priority sectors by training required manpower for the relevant qualification areas;
- Provide the graduates with required skills for profession i.e. ensure their employability and develop their ability to learn with autonomy during their professional life without any forms of discrimination and prepare them to self-employment; and
- Develop work values and attitudes of individuals towards professionalism expressed in quality, efficiency, creativity, adaptability and commitment,

III.2.5. Girls’ Education Policy
The Government of Rwanda National Gender Policy outlined the following strategies for the education sector:
- Introduce measures that aim at ensuring that gender issues are mainstreamed in the educational system in areas of curriculum, policy and all educational programmes;
- Introduce measures that aim at enhancing opportunities for boys and girls at all levels of education and in all institutions of higher learning and training;

- Introduce special measures to improve girls enrolment in the non-traditional fields of study particularly in Science and Technology, to increase their performance,

- Introduce measures to promote and enhance vocational skills and functional literacy for women and men taking into consideration gender role and responsibility.

The overall objective of the Girls’ Education Policy is to guide and promote sustainable action aimed at the progressive elimination of gender disparities in education and training as well as in management structures

**III.2.6. Rwanda Employment Policy**

The main purpose of this Policy is to enable people to choose fully productive employment in accordance with the dignity and respect of fundamental human rights. One of the five general objectives of this Policy is to improve work productivity by delivering a better synergy between education and employment. This is reflected in the TVET Policy

**III.2.7. Rwanda Environmental Policy**

The overall objective of the Environmental Policy is the improvement of man’s well-being, the judicious utilization of natural resources and the protection and rational management of ecosystems for a sustainable and fair development. The policy seeks to achieve this through improved health and quality of life for every citizen and promotion of sustainable socio-economic development through a rational management and utilization of resources and environment, integrating environmental aspects into all the development policies, planning and in all activities carried out at the national, provincial and local level, with the full participation of the population, conservation, preserve and restoration of ecosystems and maintenance of ecological and systems functions, which are life supports, particularly the conservation of national biological diversity, optimum utilization of resources to attain a sustainable level of resources consumption, awareness creation among the public to understand and appreciate the relationship between environment and development, ensuring participation of individuals and the community in the activities for the improvement of
III.2.8. Poverty Reduction Strategy
The National Poverty Reduction Strategy identifies the transformation of the subsistence agriculture, into a modernized agriculture, which is market oriented as one of the priority sectors. Other priority areas include human development which covers the actions of improving living conditions of the poor, economic infrastructure, governance, development of the private sector and the institutional reinforcement.

III.3. International Regulations
Rwanda is a signatory to a number of conventions on sustainable development and is a member of various bilateral and multilateral organizations. Some of the relevant development partners in this project are the World Bank and a number of United Nations agencies.

III.3.1. World Bank Safeguard Policies
This ESMF has been designed so that all investment under the SDP will comply with the relevant laws of Rwanda and the Environmental and Social Safeguard Policies of the World Bank. In this section, the Bank's safeguards policies and their applicability are discussed. The World Bank Safeguard Policies are:

1. Environmental Assessment (OP 4.01)
2. Natural Habitats (OP 4.04)
3. Forestry (OP 4.36)
4. Pest Management (OP 4.09)
5. Physical Cultural Resources (OP 4.11)
6. Indigenous Peoples (OP 4.10)
7. Involuntary Resettlement (OP 4.12)
8. Safety of Dams (OP 4.37)
9. Projects on International Waters (OP 7.50)
10. Projects in Disputed Areas (OP 7.60)

The World Bank requires environmental assessment of the construction of new buildings and assessment and mitigation of environmental impacts of rehabilitation works.
On the basis of the activities financed by this project and on the expected environmental impacts, the only following World Bank Policy is applicable: “Operational Policy 4.01 on Environmental Assessment”.

In accordance with the World Bank’s OP4.01, the Environmental classification of the project is B – Partial Assessment at the level of an environmental management plan. The project is not expected to have any large scale or irreversible negative environmental impacts.

A complete description of the bank safeguards and their triggers for applicability can be found on the World Bank’s official web site www.worldbank.org

III.3.1.1. Environmental Assessment (OP/BP 4.01)

This policy requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed investments under the SDP. The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) and transboundary and global environmental aspects.

The environmental and social impacts of the SDP will come from the proposed investment activities that will receive financing under the SDP in Rwanda.

Operational Policy 4.01 further requires that the ESMF report must be disclosed as a separate and stand alone document by the Government of Rwanda and the World Bank as a condition for bank appraisal of the SDP. The disclosure should be both in Rwanda where it can be accessed by the general public and local communities and at the Info shop of the World Bank and the date for disclosure must precede the date for appraisal of the program.

The World Bank system assigns a project to one of three project categories, as defined below:

**Category "A" Projects**

An EIA is always required for projects that are in this category. Impacts are expected to be ‘adverse, sensitive, irreversible and diverse with attributes such as pollutant discharges large enough to cause degradation of air, water, or soil; large-scale physical disturbance of the site or surroundings; extraction, consumption or conversion of substantial amounts of forests and other natural
resources; measurable modification of hydrological cycles; use of hazardous materials in more than incidental quantities; and involuntary displacement of people and other significant social disturbances.

**Category "B" Projects**

Although an EIA is not always required, some environmental analysis is necessary. Category B projects have impacts that are 'less significant, not as sensitive, numerous, major or diverse. Few, if any, impacts are irreversible, and remedial measures can be more easily designed. Typical projects include rehabilitation, maintenance, or upgrades, rather than new construction.

**Category "C" Projects**

No EIA or other analysis is required. Category C projects result in negligible or minimal direct disturbance of the physical environment. Typical projects include education, family planning, health, and human resource development.

The SDP has thus been screened and assigned an EA Category B. This category of projects is defined as follows:

**Category B projects** are likely to have potential adverse environmental impacts on human populations or environmentally important areas including wetlands, forests, grasslands, and other natural habitats and are less adverse than those of category A projects. The EA process for category B projects examines the potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

Therefore, this ESMF sets out to establish the EA process to be undertaken for implementation of project activities in the proposed SDP when they are being identified and implemented.

This process requires that SDP and its implementing partners screen their activities to identify their potential adverse impacts and thereby determine the corresponding mitigation measures to incorporate into their planned activities.

**III.3.2. International Conventions**

Rwanda being a signatory to some of the international conventions that are relevant to the SDP, it’s imperative that we review some of the conventions within which the study and the project is carried out.
III.3.2.1. United Nations Convention on Biological Convention

The three goals of the CBD are to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. Rwanda being a signatory of this convention it’s supposed to work towards the achievement of the three goals.

The convention calls for the adoption of national strategies, plans and programmes for the conservation and sustainable use of biological diversity into their relevant sectoral and cross-sectional plans, programmes and policies. One of the tools that are prescribed for the management of biodiversity is environmental assessment. Article 14 of the convention deals with impact assessment and minimizing of adverse impacts of activities that are likely to cause significant adverse effects on biological diversity.

III.3.2.2. Ramsar Convention on Wetlands

The Convention on Wetlands is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

There are presently 146 Contracting Parties to the Convention, with 1508 wetland sites. The Convention calls for governments to provide framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Though none of the wetlands of Rwanda are designated Ramsar site, many could qualify as potential candidates.

III.3.2.3. Convention on the Conservation of Migratory Species

The convention on migratory species (CMS) was adopted to conserve migratory species of wild animals given that migratory species are seen as an international resource. Such species may be terrestrial or marine. The conventions agreement on the conservation of African-Eurasian migratory water birds is specific on the need to protect the feeding, breeding and wintering habitats, the main ones being wetlands and open water bodies. The convention is relevant due to presence of migratory bird species and other aquatic organisms within some of the subproject areas.
III.3.2.4. United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) provides the basis for global action "to protect the climate system for present and future generations".

The Convention on Climate Change sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention enjoys near universal membership, with 189 countries having ratified.

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

Table 1: International agreements ratified by Rwanda

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<tr>
<th>Agreement</th>
<th>Date of signature</th>
<th>Date of ratification</th>
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<tbody>
<tr>
<td>Agreement on the biological diversity</td>
<td>10/06/1992</td>
<td>18/03/1995</td>
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<tr>
<td>Agreement related to the fight against desertification</td>
<td>10/06/1992</td>
<td>22/10/1998</td>
</tr>
<tr>
<td>The agreement Vienna on the protection of the ozone layer</td>
<td></td>
<td>6/12/2002</td>
</tr>
<tr>
<td>Agreement of Ramsar related to humid zones of international importance particularly the wild housing</td>
<td>1971</td>
<td>6/6/2003</td>
</tr>
<tr>
<td>International Agreement for the trade of the species in the process of disappearance (IATSPD)</td>
<td>20/10/1980</td>
<td>18/01/1981</td>
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### III.4. Institutional Framework

- **The Workforce Development Authority (WDA)** is the main SDP implementing agency in close collaboration with the Ministry of Education (MINEDUC), Ministry in charge of Skills Development.

- **The Ministry in charge of education** is responsible for the coordination of general education and TVET in order to ensure that well prepared youth enter TVET institutions. It is also responsible for achieving the designed TVET outcomes. The Ministry shall also ensure high TVET quality by creating an enabling environment for teachers and learners.

- **The Ministry in charge of skills development/labour (MIFOTRA)** shall coordinate the national employment policy. It shall also be in charge of the vocational training, both initial and at work. This Ministry is also responsible for facilitating graduates’ integration in the world of work.

- **The Ministry in charge of economic planning (MINECOFIN)** as well as key sector ministries shall ensure TVET development in accordance with intended economic growth and poverty reduction. The Ministry in charge of economic planning shall ensure the corresponding financing. The key sector ministries are responsible for contributing actively to TVET’s responsiveness to labour market needs.

Other following institutions (MINELA, REMA, RDB and concerned districts) will intervene in this ESMF implementation:

- **Ministry of Environment and Lands (MINELA)** is responsible for the development of policies, laws and regulations as well as coordination of the all activities in the management environment and land, as well as their follow up and evaluation. MINELA is also responsible for promoting private sector investments in natural resource protection activities; developing research for

<table>
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<tr>
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<tbody>
<tr>
<td>Conservation Agreement of the animals of the migrating wild species (CMS)</td>
<td>23/06/1979</td>
<td>06/06/2003</td>
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<tr>
<td>African Agreement on the nature conservation and natural resources</td>
<td>15/09/1968</td>
<td>20/05/1975</td>
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These treaties and international agreements are relevant for the protection and the conservation of the environment and in particular the biodiversity in Rwanda together with the mobilization of funds as well at the bilateral and multilateral level.
improved knowledge of the wealth of the country’s subsoil and appropriate exploitation technologies.

- **Rwanda Environment Management Authority (REMA):** In 2002, Rwanda Environment Management Authority (REMA) was established to act as the implementation organ of environment-related policies and laws. REMA is also tasked to coordinate different environmental protection activities undertaken by environmental promotion agencies; to promote the integration of environmental issues in development policies, projects, plans and programmes; to coordinate implementation of Government policies and decisions taken by the Board of Directors and ensure the integration of environmental issues in national planning among concerned departments and institutions within the Government; to advise the Government with regard to the legislation and other measures relating to environmental management or implementation of conventions, treaties and international agreements relevant to the field of environment as and when necessary; to make proposals to the Government in the field of environmental policies and strategies.

- **Rwanda Development Board (RDB):** RDB was created by Organic Law No 53/2008 of 02/09/2008. It has a mission of improving the well-being of all Rwandans by fast-tracking development, catalyzing sustainable economic growth, and creating prosperity for all.

The structure of RDB is

1. Business Operations and Services (RDB BOS) which is made up of Rwanda Investment & Export Promotion Agency (RIEPA), Centre for Support to Small and Medium Enterprises (CAPMER), Rwanda Commercial Registration of Service Agencies (RCRSA), Environmental Impact Assessment (EIA) unit and Privatisation Secretariat
2. Information Technology (RDB IT) which is made up of Rwanda Information and Communication Technology Authority (RITA)
3. Tourism and Conservation (RDB T&C) which is made up of Rwanda Office of Tourism and National Parks (ORTPN)
4. Human Capital and Institutional Development (RDB HCID) made up of a Unit of Human Resource and Institutional Capacity Development from HIDA
5. Corporate Services which is in charge of Finance and Administration of RDB (RDB CS)
IV. BIOPHYSICAL AND SOCIO ECONOMIC ENVIRONMENT OF RWANDA

IV.1 Geophysical Environment

IV.1.1 Location
Rwanda is located in Central Africa between latitudes 1°04’ and 2°51’ south and longitudes 28°45’ and 31°15’ east. It is bounded by Uganda to the North, the Democratic Republic of the Congo to the West, Tanzania to the East and Burundi to the South. Its surface area is 26,338 km2. The average population density in 2002 was 321 people per km2 (SOE, 2009) and the physiological density (people per area of arable land) was in excess of 500 people per km2 (SOE, 2009).

IV.1.2 Relief
The Rwandan relief is hilly and mountainous with an altitude varying between 900 m and 4,507 m. The elements of that relief are:
- Congo-Nil Ridge overhanging lake Kivu with an altitude ranging between 2500 m and 3000 m. It is dominated in the Northwest by the volcanoes range made of five volcanic massifs of which the highest is Karisimbi with 4507 m.
- The central plateau presents a relief of hills with an altitude ranging between 1500 m and 2000m.
- The lowlands of the East are dominated by a depression characterized by hills with more or less round top and 1000 to 1500m of altitude.
- The lowlands of the South-West in Bugarama plain with an altitude of 900m are part of the tectonic depression of the African Rift Valley.

IV.1.3 Soils
Rwanda’s soils are naturally fragile, derived from the physical and chemical alteration of schistose, quartzite, gneiss, granite and volcanic rocks which form the surface geology of the country. Soils are generally acidic (typically with a pH of less than 5), have low levels of plant nutrients, high levels of aluminum and iron oxides that may create toxicity problems and are highly erodible.

The most fertile soils are those of volcanic origin in the northwest, and the alluvium and colluviums that have accumulated in the larger river valleys and extensive marshlands. Exploitable mineral resources are limited to deposits of cassiterite (tin), coltan (columbium and tantalum), wolframite (tungsten) and gold.
IV.1.4 Climate
Rwanda enjoys a tropical temperate climate due to its high altitude. The average annual temperature ranges between 16°C and 20°C, without significant variations. Rainfalls are abundant although they present some irregulararities. Winds are generally around 1-3 m/s.
In the high regions of the Congo-Nil ridge, average temperatures ranges between 15 and 17°C and the rainfall is abundant. The volcanic region has much lower temperatures that can go below 0°C in some places.
In areas with intermediary altitude, average temperature varies between 19 and 21°C and the average rainfall is around 1000 mm/year. Rainfalls are less regular, which sometimes causes periods of drought.
In the lowlands (East and Southest), temperatures are higher and the extreme can go beyond 30°C in february and july- august. The absolute maximum of 32.8°C was recorded in the Southest by Karama-Plateau station on the 4th of September 1980. Thermic contasts are there more considerable than in the remaining part of the country. Rainfalls are less abundant in that region (700 to 970 mm/year).
Rwandan seasons are determined by the rhythm of rainfalls. Thus, the climate of the country is characterized by an alternation of four seasons of which two are rainy and the other two are dry.

IV.1.5 Rainfall
We note that rainfalls more generally cover the whole year, despite some irregularities. Estern and southeastern regions (Umutara, Kibungo, Bugesera, Mayaga) are more affected by proplongued droughts while the northern and western regions (Ruhengeri, Gisenyi, Gikongoro and Byumba) experience specially abundant rainfalls that cause erosion, flooding, collapses and landslides. As it is shown by the map of annual distribution of average rainfalls recorded during the period 1961-1990 (Figure 3), the quantity of total annual rainfalls varies between 800 mm in the Northeast of Rwanda (Estern Umutara) and 1600 mm in the natural forest of Nyungwe (Wisumo) and in the high lands of the Northwest (Kinigi). The decrease of rainfalls is observed in the region of Bugesera (900 mm) and in the Western part of Gisenyi Province (1200 mm). The increase of rainfalls is observed in some regions like Kibungo (Gahororo, 1200 mm); in the Southwest (Mibirizi, 1450 mm) and in the natural forest of Gishwati (1350 mm). The region that is characterized by the highest level of rainfalls (over the average isohyete of 1200 mm) is located in the western half of the country, from Byumba to Kibeho and from Kinigi to Mibirizi including the region bordering Lake Kivu.
VI.1.6 Hydrology
Rwanda’s hydrology is characterized by a dense network of lakes, rivers, and wetlands that feed into two major drainage basins: the Nile to the east and the Congo to the west. Approximately eight percent of the entire country (210,000 ha) is under water: lakes occupy about 128,000 ha, rivers about 7,260 ha, and water in wetlands and valleys accounts for about 77,000 ha.

Rwanda is located on the eastern rim of the Albertine Rift, where two major drainage basins are located: the Nile to the east and the Congo to the west. The Congo River basin, which covers 33 percent of Rwanda, receives 10 percent of all national waters. The Nile River Basin, which covers 67 percent of Rwanda, receives 90 percent of the national waters. Nyungwe National Park is Rwanda’s major watershed for both the Nile and the Congo basins. The waters of the Nile basin flow out through the Akagera river system, which contributes between eight and ten percent to the Nile drainage system. Wetlands (large permanent swamps) and marshlands (seasonal grass swamps, marais) occupy about 10 percent of the country and comprise three large and numerous small marais interspersed among the country’s many hills. The main swamps are Akanyaru (125.46 km²), on the border with Burundi; Kagera, along the Tanzania border to the east (122.27 km²); and the Nyabarongo (246.98 km²) and Rugezi wetlands.
(62.94 km²) to the north. Rwanda’s wetlands are important as buffers in flood or overflow plains. They reduce maximal flow rates during the rainy season and maintain a relatively high flow rate during the dry season. Arable land in Rwanda is approximately 1,385,000 ha (52 percent of total land), 8,250 km² of which is cultivated.

Figure 4: River and Lake Systems in Rwanda

Figure 5: Wetlands in Rwanda
IV.2 Biological Environment

IV.2.1 Vegetation
Vegetation can best be described as a regional mosaic that includes segments of Guineo-Congolian and Sudanian plant life. The biome is subdivided into secondary grass mosaics and east African bush land, which is in turn divided into shrub savannah with trees under four meters high and acacia-wooded savannah with taller trees. Secondary forest mosaics produced by human activity have replaced natural vegetation in several part of Rwanda. Savannas, which occur mainly in the east, comprise five distinct natural zones: Mutara, Buganza, Mubari-Migogo, Gisaka, and Bugesera. These are dominated by xerophyllous vegetation in which Acacia senegal, Albizia petersiana, and Lannea humilis are dominant. The Mutara consists largely of open savannahs in which Themeda spp., Hyparrhenia spp. and Cymbopogon spp. predominate. The Buganza subregion is an undulating plateau covered by Combretum spp. and Acacia siberiana. The Gisaka region is wetter than the other zones; vegetation there consists of a mosaic of mesophyllus forest and woodland savannahs. Vegetation in the Bugesera subregion in southeast Rwanda is dominated by woodland and shrubbery savannah consisting mainly of Acacia spp and Combretum spp.

IV.2.2. Biodiversity in Agriculture Systems
The natural ecosystems that covered the country before the colonial period have been modified by the demographic pressure on more than 90% of the national territory. Human settlement, diversified agro-pastoral practices, consumption of forest products, bush fires and urbanization have caused the disappearance of that climatic formation. Those changes caused secondary formations consisting essentially of graminaceous plants, numerous seasonal or perennial species alternating with crops. Agricultural lands presently cover around 52% of the total surface of the country and are permanently cultivated. The time between two growing seasons is the only period of respite. Those lands carry various crops that play an essential role in the national economy. Those crops are usually grouped in two categories: food producing crops and industrial crops. Among the food producing crops, we can mention sorghum, beans (Phaseolus vulgaris), eleusine (Eleusine corocana), Colocases (Colocasia antiquorum), maize (Zea mays), rice (Oryza sativa), wheat (Triticum sp), barley (Hordeum vulgare), peas (Pisum sativum), soja bean (Soja hispada), peanut (Arachis hypogea), sweet potato (Ipomea durscis), potato, cassava (manihot esculanta) and banana (Musa). The importance of each crop varies according to regions. Some crops, like bananas, potatoes, different varieties of wheat, sorghums and beans are subject to
a very big scale trade. Potatoes, beans, cassava and bananas are present everywhere in the daily diet of the population.

The industrial crops are very few. They are limited to coffee, tea and pyrethrum. The agriculture production systems are also associated to a lot of wild species.

IV.2.3 Forestry and tree cultivation

Tree cultivation in Rwanda was limited to some plants around homes such as Ficus Thoningii, Euphorbia Tirucalli, Erythrina abyssinica, Vernonia amygdalena, Dracaena afrormontana, etc., but the cultivation of woody perennials for timber, energy generation or other services was not part of their customs. That resulted in a massive exploitation that quickly proved its limits.

The first wood plantations were created in 1920 and 1948 and only consisted of Eucalyptus. Later on, other species were introduced. These were namely Pinus spp, Callistris spp, Grevillea robusta, Cedrella spp, Cupressus. The Arboretum of Ruhande (ISAR Station) has 206 species among which 146 feuillus, 56 resinous and a species of bamboo. Thoses species are considered as dangerous for the biological patrimony because they used to drain and acidify places that are already acid, what caused the reduction or even the extermination of the undergrowth. Then planting those species would lead to erosion. The covered surface was estimated at 256,300 hectares in 1998. Despite efforts of diversifying tree species, we estimate that 99% of woods consist of Eucalyptus.

A replacement of those woods by agro-forestry species such as Grevillea, Cedrella, Maesopsis, Calliandra, Leucena proves to be urgent. That is how agro-forestry practices have to be developed even in agricultural zones.

IV.2.4 Pastoral zones

In Rwanda, the essential part of animal breeding is limited to the family scale and to a small number of animals by family. As agriculture occupies the biggest portion of lands, the cattle graze in fallows, on road borders, and in some parts of marginal lands. This obliges farmers to adopt the semi-permanent stabling and to grow fodder crops such as Tripsacum laxum, Setaria spp, Desmodeum spp, Pennisetum purpureum, Mucuna pruriensis, Cajanus cajan, Calliandra calothyrsis, Leucaena diverifolia, Sesbania sesban, etc. However, we can notice the development of ranching in Umutara and Gishwati. Other pastoral species are very limited and are disseminated all over the country.

Those spaces are prone to bush fires, trampling and sometimes overgrazing. The latter is the main cause of reduction of the biological diversity as it exterminates the most precious species along with pyrophyle species with small bromatologic value such as Eragrostis spp, Sporobulus spp and Digitqria spp.
IV.3 Socio-Economic Environment

IV.3.1 Population and Demography
Rwanda’s population growth over the last four decades has been unprecedented – from approximately 2.6 million in 1960 to 8.2 million in 2002. In 2007, it was estimated at 9.3 million, and is likely to reach 10.8 million in 2012. Annual population growth rate was 3.1 percent in 2002, one of the highest in Sub-Saharan Africa, but declined to about 2.6 percent in 2007. The population density is about 343 people per km2, the highest in Africa, but in some districts it exceeds 500 people per sq km. About 56.9 percent of the population lives below the poverty line and cannot meet their basic human needs. The gender difference nationally is 53 percent female and 47 percent male. The 2002 census data reveals that almost half the Rwandan population (48.6 percent) is under the age of 16. The youthfulness of the population combined with its high population growth rate and density has had a significant impact on the use of natural resources, the environment, and all public services from health care to education. Population movement has also seriously affected the quality of life for Rwandans. Almost 3.5 million of them have been displaced or have only recently returned.

Figure 6: Density of the population and poverty

IV.3.2 Health
There have been significant improvements in health service delivery in recent years. Since 2003, new health centers have been constructed to reduce travel time, and the mutual health insurance coverage has increased. The infant mortality rate
declined by 19 percent (from 107 per 1,000 live births to 86 per 1000 live births) and the under-five mortality rate fell by 22.4 percent (from 196 per 1000 to 152 per 1000); yet the rural mortality rates are one and a half times those in urban areas. The fertility rate has slightly increased from 5.8 children per woman in 2000 to 6.1 children in 2005. Also, the percentage of women using modern family planning methods increased from 4 percent to 10 percent. Despite these improvements, the health status is comparable to 1992 pre-genocide levels.

The overall HIV/AIDS prevalence in the country is estimated to be 3 percent (NISR 2005), which implies a considerable decline from 5.1 percent in 2004 and 13 percent in 2000. According to 2005 data from the Rwanda Demographic and Health Survey, there is wide disparity between rural and urban areas. The HIV prevalence in rural areas is 2.2 percent and 7.3 percent in urban areas. Of those infected, 2.3 percent are men and 3.6 are women. Rwanda remains a high risk country for HIV/AIDS, despite commendable efforts of the GOR and other partners.

The greatest cause of morbidity (illness) is malaria, followed by diarrhea and respiratory infections. The causes of ill health are highly complex; among them are low incomes, limited information about prevention methods, low levels of literacy and education, and inadequate access to clean water and health services. The very low use of health services has improved slightly in recent years. The main deterrent is cost, followed by accessibility (though the government has recently made efforts to increase health facilities and offer health insurance coverage as noted above).

Collecting water imposes burdens on the time of women and girls due to the distances involved, and the water itself often affects health because its quality is poor. In rural areas, access to safe water is around 40 percent and in urban areas, RECO-RWASCO provides drinking water to about 60 percent of the population.

**IV.3.3 Education**

As for education, literacy has slightly improved in the past five years from 63 percent to 64.7 percent of women and from 75 percent to 76.3 percent of men (70 percent of the total population). Gender disparities have also improved in primary school, with a higher enrolment rate for girls (87 percent) than for boys (85 percent). In secondary school, girls are still lagging behind boys in completion.
rates and exam scores. There are still disparities between income and age groups in enrolment in secondary schooling.

As a part of the government’s goal to become a knowledge-based and technology-driven society, an Education for All Plan was conceived to provide primary education and the first three years of secondary school free. This is in line with the Dakar Framework of Action on Education for All (EFA) and the Millennium Development Goals (MDG), and is motivated by the relative success of the fee-free basic education for all introduced by President Paul Kagame. At the university level, science and technology programs are being developed through ICT educational programs for undergraduate and graduate students. Over 4,000 computers were provided to institutions, and the Centre for Innovation and Technology Transfer (CITT) at the Kigali Institute of Science and Technology (KIST) was created. Only 7.1 percent of the population has post-primary education, and only 0.4 percent has tertiary education. Moreover, there are concerns about the quality of education, particularly given the lack of books and facilities, and the challenges posed by the introduction of English and French throughout primary education without the necessary resources.

**IV.3.4 Infrastructure**

**IV.3.4.1 Water and sanitation**

Collecting water imposes burdens on the time of women and girls due to the distances involved, and the water itself is often harmful to health. The 2005/06 Integral Survey on Households’ Living Conditions survey concluded that 64 percent of the population had access to safe drinking water in 2005, while access by the urban and rural population to safe water was estimated at 66 per cent and 57 percent, respectively. With respect to improved sanitation services, the rate of access in 2005 is estimated at 8 percent for rural areas and 10 per cent for urban areas. The estimation of the volume of potable water in 2005 was 85 million m³ per year and the needs estimated for the year 2020 were estimated respectively at 139 millions de m³ per year.

More than 80% of the population uses latrines; those which meet hygienic conditions are still too few. Owing to inadequate infrastructure (systems for collection of solid waste and waste water, rain water harvest) sanitation conditions are still wanting. Consequently only about 5% of the population is connected to piped water, and the rest depend on nature for domestic and other uses. For this reason, the Government intends to raise the percentage of the population with access to potable water from the current national average of 54% to 66% by 2010, 85% by 2015 and 100% by 2020.
These estimates take account of population estimates based on an average growth rate of 3.1% per year.

**IV.3.4.2 Energy and transport**

In Rwanda, the biomass constitutes the main source of energy as it covers 94% of national needs. Woody fuels and vegetal wastes are sources of energy used in households, industries and handcrafts.

However, the country has also other sources of alternative energy which are not yet exploited namely peat estimated at 155 millions of tones, methane gas of the Lake Kivu representing 57 billion m$^3$ and solar energy.

Combined with entropic factors (agriculture, drainage of marshes, deforestation and overexploitation of river basins), the hydrous deficit is considered to be the main factor of vulnerability of the hydro-electricity sub-sector of the energy sector. It is evident that the pluviometric deficit leads to the reduction of offer in water resource and, consequently, in hydro-electricity. That was the case for the power plants of Ntaruka and Mukungwa on lakes Bulera and Ruhondo, two main interior sources of electric energy of Rwanda.

Globally, the energy sector is essentially of the traditional type as only wood (15% wood charcoal, 71% fire wood and 8% harvest wastes) covers about 94% of the total energy needs of the country, against only 5% for the contribution of petrol products and 1% for electric energy.

Moreover, the hydroelectricity infrastructure is still weak and the present production does not exceed 27 MW while the demand is more than 40 MW; However, the electricity from diesel thermal sources was recently produced at Jabana and Gatsata, and the mobilization of funds and investors is underway for other hydro-electric projects:

- 28 MW on Nyabarongo river in Bulinga;
- 60 MW (three countries) on Akagera at Rusumo;
- Rusizi II; Mukungwa III; Rukarara and various other microplants.

The transport sector is generally dominated by road transport that totals 14000 Km of roads and tracks. In the sub-sector of air transport, the country has two international airports (Kigali and Kamembe) and aerodromes (Huye, Rubavu and Ruhengeri, etc) used in internal transport. Lake transport is used mainly on Lake Kivu for connecting districts of the Western Province. But the construction of certain roads was done without studying the environmental impact, which caused landslides, collapses, gullies and sandbanks in depressions (example: Road Gitarama- Ngororero-Mukamira).
IV.3.4.2 Telecommunication
Telephony services through provision of landlines and a variety of wireless telephone networks are available in Rwanda. The existing telephony and internet service providers MTN, Rwandatel, Tigo...etc have not been able to connect the whole country.

IV.3.5 Agriculture
Agriculture is the most important sector of the Rwandan economy with a contribution of 47% to the GDP (12% for livestock) and contributes 71% of export revenues. Coffee and tea are the main export crops, with about 62 millions US$ of export revenue in 2005, of which 38 million US$ for coffee and 24 million US$ for tea.

The existing telephony and internet service providers MTN, Rwandatel, Tigo...etc have not been able to connect the whole country.

The agriculture production system is based on small family exploitations whose production is consumed by owners at more than 80 %. The systems of crops are complex, based on the diversification of productions and the association of crops. Seven main crops, namely banana, bean, sweet potato, cassava, sorghum and potato, of which the first five are present in 90 % of production units and constitute the common basis for all the regions of Rwanda. The little use of chemical fertilizers (see appendix 1.12) and pesticides, the low level of equipment and the very limited use of research based technologies result in small yields which are also very vulnerable to climatic changes.

Research and popularization should normally contribute to growth by the promotion of modern inputs and appropriate technologies, but it was noticed that during the PRSPI, there was no clear strategy concerning research and popularization. That is the reason why the MINAGRI has put in place RADA, RARDA and restructured ISAR.

The extensive agriculture practiced by the Rwandan population contributes to the degradation of environment. The agricultural intensification at the level of projects was often realized without taking into account environmental drawbacks of used inputs (mineral fertilizers, pesticides, herbicides and used techniques).

IV.3.6 Animal Husbandry
Animal husbandry, essentially formed of cattle, is mainly extensive. Average milk production is 1 litre / cow / day for 180 days of lactation (MINAGRI, 2001).

The pastures consist mainly of family fallows and marginal lands considered as inappropriate to agriculture such as the undergrowth. The demographic pressure progressively leads to the semi-intensification or intensification of
fodder resources used to feed animals.

Data from MINAGRI (2006) show that the number of cattle increased by 60% between 2000 and 2005 (see appendix 1.13): the number of cows increased by 43%, goats 67%, sheep 195%, porcs 93%, poultry 44% and rabbits 67%.

The limited subsisting pastoral surfaces are badly used because farmers do not master the rotative management of pastures. That is showed by the overgrazing and overexploitation causing trampling, degradation and disappearance of vegetal cover. The permanent stabulation, the semi-stabulation and extensive farming constitute the three main types of animal husbandry. We should note that today in MINAGRI through RARDA, there is a programme called «One Cow to Every Poor Family in Rwanda» that will cover all the districts of the country in order to contribute to poverty reduction and food security.

**IV.3.7 Fisheries**

Lakes with proven potential for commercial fisheries include lakes of southern Rwihindia and Cyohoha, Rweru, Kazingiri, Gaharwa, Kirumbi and Bugesera located in the southern floodplain, Ihema, Kivumba and Rwanyakizinga located in Akagera National Park, and Bulera and Ruhondo found in Ruhengeri close to the border with Uganda. Riverine fish is being exploited for subsistence purposes. The fisheries of Lakes Rweru, Ihema and Muhazi can be commercially redeveloped as these lakes had commercial fisheries that collapsed during the civil strife in 1994.

Threats from overfishing appear minimal. Most fishing in Rwanda is confined to lakes; there is very little in rivers and streams. Fishing remains more or less at the artisanal level; the contribution of the fishing industry to GDP is negligible (less than 1 percent in 1998). There are reports of the use of small-mesh nets on Lake Kivu and elsewhere. Local officials in Gisenyi have suggested that most fishermen be grouped together into associations and are in general respecting GOR-stipulated net dimensions. This is confirmed by USAID/GoR (2003). In fact, several past projects have contributed to both the production and the environmental aspects of fisheries in Rwanda (UNDP/WFP’s Project for Developing Fish in Lake Kivu), and appear to have left local fishermen with a sense of responsibility.
Figure 7: Freshwater Fish Catch & Aquaculture Production, Rwanda
V. ENVIRONMENTAL AND SOCIAL IMPACTS OF SDP PROGRAM

An impact is any change to the existing condition of the environment caused by human activity or an external influence. Impacts therefore may be positive (beneficial) or negative (adverse). They may also be direct or indirect, long-term or short-term, and extensive or local in effect. Impacts are termed cumulative when they add incrementally to existing impacts. Both positive and adverse environmental impacts could arise during the rehabilitation and the operation phases of WDA Skills Development Programme.

Using a number of tools and methodologies, the team identified the potential impacts of the proposed project, both positive and negative, and analyzed each to understand their magnitudes, extent and significance. The method of undertaking this exercise identified the impacts and their mitigation measures that are described below.

V.1 Environmental and social Impacts

V.1.1 Positive Impacts

Overall, Skills Development Programme (SDP) is likely to have a positive impact on the social issues in community development in Rwanda in the short, medium and long term. SDP will benefit future economic growth; ensure more skills acquisition for boys and girls, and poverty reduction. It should result in closing the gap between Rwanda and other countries in the proportion of labour.

V.1.1.1 Improved Infrastructure

Improved infrastructure will result in an increase in population, particularly the student population and working class hence increasing demand of the same facilities. Demand of infrastructure guides local development and the increase in population will eventually lead to an increase in demand and subsequent provision of the same.

V.1.1.2 Employment

The present WDA programme is expected to take off in 2013. Programme activities will run for a period of 36 months. During this period, there will be requirement of labour, both professional and non-professional. This is a positive impact of the WDA Skills Development Programme. The magnitude of the programme will require a substantial number of employees.
V.1.1.3 Flow of income-or wealth-enhancing activities
The acquisition of raw materials and necessary fitting and components as well as employment for this programme will have an impact on economic flows within the areas and the districts. The trading of goods and services will contribute to the income generation and development. The proposed project will contribute to supporting education and skills development opportunities in Rwanda as a whole. During the rehabilitation phase of the programme, there will be acquisition of various raw materials such as sand, cement, bricks, timber, paint, metal strips, reinforcement bars, nails, roofing materials, door frames, doors, hinges and ceramics as well as fittings such as pipes, sinks, shower installments, WCs etc. Some of these items will be sourced locally.

The rehabilitation of schools facilities as well as required infrastructure such as wastewater and sewage management facilities will provide a significant source of market for locally produced goods as well as a market for dealers dealing with such items. The effect of this project on markets is bound to be felt to a limited number of people within the country depending on the items acquired or produced locally.

V.1.1.4 Improved techniques to foster innovation
It is expected that an added human capital will be acquired by students who enroll or are trained at those technical schools and that improved techniques and discovery activity will foster innovation. Business education is an essential ingredient in promoting a science entrepreneurial environment.

V.1.1.5 Enhanced investment
Qualified and competent human resources from TVET will help to improve the business climate, enhance the country’s attractiveness for foreign and/or national investors, and thereby promote economic growth and poverty reduction. The technical labour will support the emerging industrial sectors and the country’s economic growth. Indeed, poverty is less severe among household heads having benefited from technical and vocational education compared to the other types of education. By broadening access to TVET and improving the quality of training services, more students will gain access to TVET with a reduction in gender disparities in accordance with the objectives of the project.
V.1.2 Adverse Impacts

V.1.2.1. Biodiversity loss
Depending on planned activities, if new facilities are to be constructed, the clearing and removal of trees and vegetation during rehabilitation and construction will result in the loss of a part of the vegetative cover and, as a consequence, a reduction of arboreal habitat. However this impact is not seen significant as the project is about rehabilitation, no much vegetation will be cleared to pave way to new facilities.

V.1.2.2 Increased Runoff
During operation phase, the roof catchment of the schools facilities will lead to increased runoff. Surface runoff is also an agent of pollution and it will therefore contribute to the pollution of water bodies particularly because it will flow through zones that are bound to have a lot of solid wastes.

V.1.2.3 Microclimate Modification
The paving and concrete used the rehabilitation will reflect heat from the sun, thus modifying the area microclimate. Shortwave rays from the sun are converted into long wave rays on reflection from the ground surface. These are not able to leave the atmosphere hence creating increased heat. As a result, increased in paved regions also leads to increased long wave occurrence and hence increased microclimate modification. The paved areas will also retain heat that will be released at night when the land cools.

This impact will be felt during the operational phase of this programme. The scope of the impact will be within the immediate programme implementation sites.

V.1.2.4 Soil erosion
During construction and rehabilitation phases, soil erosion will occur as a result of removal of vegetation cover. But again this impact is not seen significant for the whole programme. Areas experiencing loss of topsoil will be restored to original condition.

V.1.2.5 Solid and liquid waste
The programme implementation will generate solid wastes during rehabilitation, operation and decommissioning phases. The types of wastes that are anticipated to emanate from the programme activities are as follows:
Rehabilitation phase
- Timber
- Metal
- Reinforcement bars
- Sand
- Cement
- Packaging material and containers e.g. paint pails, cement bags and metallic straps.
- Nails
- Glass
- Plastic piping
- Excavated soil and rocks
- Paint

Operation phase
- Waste paper
- Food and other material packaging (wrappings)

Decommissioning Phase
- Debris (concrete)
- Nails
- Metal scrap and cut-off
- Building blocks/bricks and concrete rubble
- Waste timber
- Wire
- Piping
- Plastic
- Roofing tiles
- Reinforcement bars

If not properly disposed, these wastes will result in the pollution of soil, wetland, groundwater and air. Materials consisting of chemicals e.g. paints, cement and thinners will alter the chemical composition of these regimes. Though there is no water body or wetland in the immediate areas or surroundings of the six sites, Poor management of solid wastes and wastewater from the site could lead to contamination of surface waters further away. Inadequate treatment of sewage and wastewater emanating from the project could lead to contamination of water resources including groundwater resources. Assuming a modest consumption rate of 10 metric tons per day from each site, this is a substantial amount and where treatment is not adequate, it could result in contamination of water resources from effluent directed to river channels and groundwater.
V.1.2.6 Hazardous wastes
During the rehabilitation, it is possible to find hazardous wastes such as Asbestos Containing Materials (ACM) used as roofing material. In the case of inappropriate handling of asbestos, this material might be a real health concern for the construction workers and the general public in the vicinity of the rehabilitated premises in particular when it is inhaled.

V.1.2.7 Water pollution
The programme implementation shall have a potential to affect water quality mostly during operation phase. Poor handling and management of solid and liquid wastes could result in contamination of water sources. Such a scenario would especially occur where indiscriminate disposal is done during rainy spells and the wastes are washed together with surface runoff. During the operation phase, a number of factors could contribute to the deterioration of both surface and ground water regimes. Poor construction of sewage management structures could lead to spillage and contamination of the surface waters in the nearby river and wetlands. Leaching through rainwater seepage could also lead to contamination of sub surface water regimes.

V.1.2.8 Water supply
The programme implementation will require a large amount of water during rehabilitation and operation phases. Where water is fetched from the springs, water points or supplied by RECO-RWASCO, this may cause a shortage of water in the surroundings.

V.1.2.9 Air pollution
Air quality is expected to be affected during the rehabilitation and decommissioning phases of the programme. Excavation and earth movement activities will be bound to raise dust levels around and in the project area. Extent of this impact will be more determined by the wind characteristics in the area. Increased dust levels are bound to affect students and personnel moving around as well as affect vegetation as the dust film on the leaves of plants will reduce their capacity to effectively undertake photosynthesis and therefore affect their growth. The magnitude of these emissions will not be significant, as they will lie below the mean concentration limits set by the World Health Organization. Poor management of solid waste through burning could also contribute to negative impact on air quality.
V.1.2.10 Noise
The implementation of SDP will result in increased ambient noise levels. Preferred noise levels as per World Bank Standards should be 70 decibels during daylight hours and 50 decibels during night time in order to reduce negative impacts on surroundings especially during sleeping hours.

V.1.2.11 Security
Influx of new people in the programme implementation sites, especially those arriving in the morning and leaving in the evening could result in introduction of people with bad intent. Though security is quite good in Rwanda as a whole, such a scenario could lead to security problems such as theft during rehabilitation and operation phases. The impact is however not viewed as very significant.

V.1.2.12 Use of electricity
At present it is intended that the SDP will supply power for the development sites from RECO-RWASCO. The incremental demand will not cause supply shortages to the rest of the system. There should be at each project site a standby generator to be used in the event of a shortage of RECO power supply. But this implies the production of noise, vibrations, and storage of diesel fuel and the related disturbances and nuisances.

V.1.2.13 Accidents and hazards
During rehabilitation and proper construction activities, workers are exposed to risks of hazards. Use of machineries and heavy works could lead to injury or loss of life where management of their movement is poor.

V.1.2.14 Fire hazards
In absolute terms, the possibility of fire outburst at any place in the school blocks scattered over the premises always exists. Such an occurrence will then inevitably have an environmental bearing on the atmosphere. While in absolute terms, a fire hazard always exists in everyday life, yet measures will be taken at the design and operational phases of the project to minimize this risk, and concurrently to provide security to the project and its users.

V.1.2.15 Electricity installations
Electricity supply to the site where the additional blocks, sport facilities and wastewater treatment plant will be constructed present a potential environmental hazard if not properly addressed. This applies for electric installations within and outside the facilities.
V.1.1.16 Sexually Transmitted Diseases
The spread of HIV/AIDS is identified as a key public health issue. Concern has been expressed that the already high prevalence of HIV found in Rwanda could be exacerbated by the interaction of schools high population of students between them.

V.1.1.17 Involuntary settlement
The project will not require large, medium or small plots during the rehabilitation of different schools. There is no expected involuntary displacement and resettlement that may cause social disruption and economic loss for affected individuals and families.
VI. ENVIRONMENTAL AND SOCIAL SCREENING PROCESS

The section below illustrates the steps involved during environmental and social screening process leading to the review and approval of SDP sub-components activities. The screening process intends to:

- Determine repercussions of selected projects as to whether they likely to cause potential negative environmental and social impacts;
- Determine appropriate mitigation measures for activities with adverse impacts;
- Incorporate mitigation measures into project design;
- Review and approve programme proposals,
- Monitor environmental parameters during programme implementation.

The assignment of the appropriate environmental category will be based on the provisions of the World Bank Operational Policy (OP 4.01). The environmental and social screening of each proposed sub-project will be classified into categories A, B and C, depending on the type, location, sensitivity and scale of the project and the nature and the magnitude of its potential environmental and social impact. The categories are:

- **Category A:** Any project which is likely to have significant adverse environmental and social impacts that are sensitive, diverse or unprecedented. The impacts under this category affect broader area than the sites or facilities subjected to physical works. This category is equivalent to Impact Level 3 (IL3) in Rwanda’s General Guidelines for EIA (2006).
- **Category B:** Any project which is likely to have significant adverse on human populations or environmentally important areas including wetlands, forests, grasslands and any other natural habitat. Generally, they are less adverse than those of category A projects, the impacts are sites specific and few or any of them are irreversible and most of them are mitigated rapidly than category A. This category is equivalent to Impact Level 2 (IL2) in Rwanda’s General Guidelines for EIA (2006).
- **Category C:** Any project which is likely to have minimal or-any adverse environmental and social impact. Beyond screening no further EA action is required. This category is equivalent to Impact Level 1 (IL1) in Rwanda’s General Guidelines for EIA (2006).
The extent of environmental work that might be required for sub-projects prior to construction will depend on the outcome of the screening process described below:

VI.1. Step 1: Screening of SDP activities and Sites
The programme screening will be based on a project brief prepared by WDA in consultation with MINEDUC.

The initial environmental and social screening will be carried out through the use of the Project Screening Criteria Form (PSCF) used by RDB (Annexe-1). This form will be completed by the Environmental Analyst from RDB. Completion of PSCF will facilitate the identification of potential environmental and social impacts, determination of their significance, assignment of the appropriate environmental category, proposal of appropriate environmental mitigation measures, or recommend the execution of an Environmental Impact Assessment (EIA), if necessary.

VI.2. Step 2: Assigning of Environmental Categories
The assignment of the appropriate environmental category to a particular activity will be based on the information provided in the environmental and social screening form that will have been administered by Environmental Analyst from RDB. There is no SDP activity envisioned to require a full EIA given the fact that the construction is a small scale expansion program, school based and using mostly local produced materials by communities.

With regard to the SDP, it is likely that most projects will be categorized as B (IL2) meaning that of the potential adverse environmental impacts on human populations or environmentally important areas including wetlands, forests, grasslands, and other natural habitats to just mention few if any will be irreversible, and can be mitigated.

Some projects might be categorized as C (IL1) if the environmental and social screening results indicate that the projects will have no significant environmental and social impacts and therefore do not require additional environmental work. Thus, if the screening form has only "No" entries, the project will not require further environmental work, and the Environmental analyst will recommend approval of the project to RDB and implementation can proceed.

VI.3. Step 3: Carrying out Environmental Work
After analyzing the data contained in the environmental and social screening form and after having identified the right environmental category and thus the scope of the environmental work required, the Environmental Analyst will make a recommendation to the WDA establishing whether: (a) no EIA will be required;
(b) the implementation of simple mitigation measures will be required; or (c) a separate environmental impact assessment EIA will be carried out (such activities are not anticipated).

The EIA will identify and assess the potential environmental impacts for the planned activities, assess alternative solutions and will design the mitigation, management and monitoring measures to be adopted. These measures will be quoted in the Environmental Management Plan (EMP) that will be prepared as part of the EIA for each sub-program.

The preparation of the EIA and the EMP will be done in consultation with all relevant stakeholders, including the people likely to be affected by the sub-program. The EIA will follow the national EIA guidelines and consistent with the WB OP 4.01.

**VI.4. Step 4: Review and Approval**

RDB will review the environmental and social screening results as well as the environmental checklists that were completed in the course of project preparation to ensure that all environmental and social impacts have been identified and successfully addressed.

That is, if the screening form has any "Yes" entries, or unjustified "No" entries, the application would need to adequately explain and demonstrate that the issues raised have been addressed appropriately. The WDA National must ensure that the project designs include adequate monitoring and institutional measures are to be taken during implementation and operation.

If RDB finds that the submitted design is not consistent with the requirements of the environmental screening form and the environmental checklist, then the project implementer would be requested to re-design (e.g. make additional modifications and/or choose other sites). Any proposed projects that do not comply with the requirements of Rwanda and the World Bank Safeguards policies will not be cleared for implementation.

**VI.5. Step 5 - Public Consultation and Disclosure**

In line with transparency principles, the public will be consulted on the proposed SDP activities. Public consultations will be held as part of the environmental and social screening process. The purpose of these consultations is to allow for the identification of the main issues and how the concerns of all parties should be taken into account in deciding whether or not to issue a permit for the SDP activities.
The EIA reports of projects will be disclosed to the public by presenting the findings and recommendations to the village assembly and disclosing the document at the offices of the concerned districts. NGO’s and other civil society organizations in the village and the district will be informed of the meeting, and copies of the EIA report will be made available before the meeting, in a language that is understood by the recipients.

VI.6. Step 6 - Environmental Monitoring and Follow-up

The purpose of environmental monitoring is to check the effectiveness and relevance of the implementation of the proposed mitigation measures. Monitoring will be done by WDA in collaboration with REMA, RDB and Districts.

Monitoring will be carried in accordance with the Environmental Management Plan (EMP) prepared for each sub-project, which shall include the monitoring indicators for the project. Environmental Indicators may include but need not be limited to the following:

- Loss of biodiversity
- Runoff
- Types of machinery used,
- Land degradation,
- Uncollected solid wastes
- Untreated liquid wastes,
- Routine maintenance checks
- Legislative Compliance;
- Amount of water recovered,
- Etc..

Social Indications may include but need not be limited to the following:

- Population Incomes
- Environmental and Social Awareness
- Effect of Programme/Sub-project implementation on local household economies.
VII. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR SDP

The Environmental and Social Management Plan outlines a plan of action to be instituted by the project to ensure that environmental quality is maintained and improved throughout the life of the project. This project bears the potential for a number of negative impacts on the environment. However, if proper environmental management procedures are in place and adhered to then there would be very minimal negative impact of concern emanating from it. Areas that require significant mitigation measures include water, soil and air pollution, safety and waste management.

VII.1 Policy
The management policy of this development is ensuring a clean and safe environment within the sites and support environmental management initiatives both within and outside the project through proactive and responsible activities.

VII.2 Objectives
The objectives of this ESMP are to:
- Ensure environmental conservation and sustenance to ensure a balanced approach between the development and the ecosystem.
- Ensure and enhance safety within the development both within the construction and operation phases.
- Promoting environmental ethics within concerned parties and users.

These measures should be implemented under the following framework.

VII.2.1 Land
- Ensuring vegetative cover on unpaved surfaces to maintain the integrity of soil structure within the project area;
- Proper waste management (both solid and liquid) to avoid polluting the soil and unsightly environment.

VII.2.2 Biological Diversity
- Maintaining all trees and larger flora;
- Planting of more trees at sites during and after the rehabilitation phase of the development;
- Creation and maintenance of a buffer between the project and other land uses to mitigate micro climate modification.

VII.2.3 Water
Ensure conservation of water in the operation and rehabilitation phases through wise and only necessary use as well as recycling where applicable and appropriate.
Management of any liquid and solid wastes to ensure that they do not contaminate the surface water in the stream and the underground waters;

Employing water catchment measures such as roof catchments where water harvested this way can be used for cleaning or lawn maintenance purposes;

Maintaining vegetative cover within the non-paved area so as to reduce direct surface evaporation and enhance stream recharge.

VII.3 Mitigation measures
The following mitigation measures will be considered for the respective negative impacts.

Table 2: Mitigation measures

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological environment</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Biodiversity Loss             | - Landscaping of project site is important to restore vegetative cover and should also use native flowering plants to provide habitat and host plants for some species.  
- Vegetation planted for landscaping and for aesthetic appeal should be maintained and a maintenance programme should be established and implemented.  
- Vegetation selected should be based on: suitability, habitat, flowering plants and shrubs. |
| **Physical environment**      |                                                                                     |
| Increased runoff              | - The project will contribute towards minimizing the cumulative effects of storm runoff and therefore reducing sedimentation and erosion along the rivers which currently are facing similar problems.  
- Mitigation activities will contribute to ensure that storm water is contained near source and that as much as possible is allowed to percolate.  
- The project will in addition undertake roof catchment where the water is stored and used for landscaping activities. Such stored water may also be utilized as a reserve for cleaning activities. |
| Microclimate modification     | - The whole project area should not be paved. Landscaping of the area will reduce the effect of heat reflection thus reducing microclimate modification  
- On the onset of the project, ideal zones where there will be little movement should be identified and trees planted in these zones. The project proponent should ensure as many indigenous species are planted as possible. |
| Soil erosion                  | - Earth movement and excavation activities will be done in small sections at a time so that at any given time minimal areas are excavated with loose soils. It may be done in a... |
### Environmental and Social Management Framework (ESMF)

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>manner that areas that are excavated are immediately embarked on building. This will reduce the period within which any excavated region will remain open.</td>
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<tr>
<td></td>
<td>o Control of storm water movement through adequate and correctly constructed storm drains will be undertaken so as to reduce the impact of soil erosion. This will be a core requirement due to the fact that the roads are of loose surface type.</td>
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<tr>
<td>Solid and liquid wastes</td>
<td><strong>Rehabilitation phase</strong></td>
</tr>
<tr>
<td></td>
<td>o At the project site there will be refuse pits distributed at all blocks where all solid waste will be deposited. The pit will be constructed in such a way as to segregate paper wrappings, plastic, metal cans and other waste such as timber off-cuts. The items deposited will be examined to identify those that can be re-used and the rest sold off or given away for re-use elsewhere or recycling.</td>
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<tr>
<td></td>
<td>o Clean up exercises will be regularly undertaken every end of business day so as to retain cleanliness within the site.</td>
</tr>
<tr>
<td></td>
<td>o Employees and students at site will also be clearly briefed on proper disposal of solid waste and the disposal area will be clearly marked.</td>
</tr>
<tr>
<td>Operation Phase</td>
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<td></td>
<td>o The project management will ensure that central refuse depository areas are evenly and appropriately distributed within the AHS premises. Common areas will also be provided with waste disposal areas.</td>
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<td>o The management will also ensure that a refuse handling company is appropriately appointed to regularly collect refuse for disposal.</td>
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<tr>
<td></td>
<td>o The management will ensure that the company contracted to undertake this task is reputable and monitoring is undertaken to ensure that disposal of the refuse is done at council appointed locations.</td>
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<tr>
<td></td>
<td>o The project entails a wastewater treatment system for managing wastewater and sewage from the new and existing facilities. The project proponent will ensure that there are persons responsible for the monitoring of efficient operations of the treatment plants as well as have an effective risk management plan specified by the plant supplier.</td>
</tr>
<tr>
<td>Water pollution</td>
<td>o Sewerage facilities will be constructed to meet approved standards to ensure that they effectively contain sewage material without leakage or spillage.</td>
</tr>
</tbody>
</table>
## Impacts Mitigation measures

| Water supply | o Wastes (solid and liquid) will be properly managed to ensure that they do not contaminate water bodies through wind or water erosion into these regimes.  
| Water supply | o Pressure on the water supply will be reduced at maximum, all rainwater shall be harvested in underground storage tanks and be used for cleaning activities;  
| Water supply | o The project will optimize the quantity of water used for different needs.  
| Air pollution | o Dust rising during the rehabilitation process will be kept down by sprinkling water on the site.  
| Air pollution | o Surrounding vegetation should also be maintained on the site for as long as possible before it is cleared to act as a windbreak and to keep dust from spreading long distances.  
| Air pollution | o Workers on the site should be issued with dust masks during dry and windy conditions.  
| Noise pollution | o The construction activities will be undertaken with minimal heavy machinery and rock blasting with pneumatic pressure drills reduced to a minimum.  
| Noise pollution | o Where necessary, the rehabilitated area will be surrounded with a buffer screen of sheets and screen meshes to reduce the impact of noise from the project site.  
| Noise pollution | o Rehabilitation activities will only be undertaken during daylight hours so as to mitigate noise production during the sleeping/night hours. This should be restricted between 7.00 am and 7.00pm.  
| Socio-economic environment Security | o The project proponent will closely monitor the workforce to the project area and site. In any event of security concerns arising, the proponent will engage a service to assist in ensuring that the same is maintained.  
| Socio-economic environment Security | o If the project premises are not fenced, they will be at risks on security issues. The seven project sites should be fenced to ensure the safety of personnel and students.  
| Use of electricity | o Power generator should be in enclosed sound proofed room.  
| Accidents and hazards | o Workers at site will all be fitted with the appropriate safety gear depending on their duty station. Personal Protective Equipment (PPE) will include the following (see table 5).  
| Fire hazards | o The architecture of the school blocks (classes, dormitories, multipurpose halls, kitchen, restaurant, workshops, and laboratories) will be such as to ensure |
### Impacts | Mitigation measures
--- | ---
 | speedy evacuation in the eventuality of a fire.  
 | o The entire water supply reticulation network will be provided with easily-accessible fire hydrants from which water in the mains can be used for the purpose of fire fighting  
 | o Firefighting equipment such as fire extinguishers, exit signs, will be provided within the blocks.  
 | o Procedures to follow in emergency cases such as fire-outbreak will be displayed along corridors of the dormitories and other blocks where necessary to ensure safe and speedy evacuation of students.

### Electric installations
- General precautions should be taken in the installation of the electric network within the schools facilities. Those precautions are outlined below:
  - All conductors, wires and cables will be of copper
  - All fire pump feeder cables and service feeder cables will be fireproofed
  - All aboveground conduits will be resistant to distortion from heat and sunlight while those for below ground use will be resistant to moisture and corrosive agents.
  - All equipment and devices will be grounded, using a continuous ground fire
  - Circuitry will be routed in a service duct to protect electrical conductors from high temperatures.

### Sexually transmitted diseases
The risk of an increase in STDs/HIV/AIDS should be minimized as a result of the project. For this reason, the following human resource management policies should be adopted:
- An STD/HIV/AIDS awareness and prevention program will be incorporated into the training package for all students. The measures outlined above are intended to minimize the risk of an increase in STDs as a result of the project.
- In coordination with the Rwandan health authorities, a program designed specifically for promoting safe sex for the students will be developed.

### VII.4. Asbestos Containing Material Management
The general approach while handling this material is that constructors avoided crushing/destruction of asbestos plates from the roofs deposited them in an organized manner on the construction sites. Also the constructors should avoid releasing asbestos fibers into the air from being crushed. It is also imperative
while working with asbestos plates the workers have to wear special closing, gloves and respirators.

VII.4.1. Minimizing the risk
Construction workers should avoid creating asbestos dust from scraping, brushing, rubbing or cutting damaged material containing asbestos and these workers should determine whether asbestos is present before beginning work and take appropriate precautionary measures.

VII.4.2. Removal, transportation and disposal of asbestos products
All the people involved in the removal, transportation and disposal of asbestos materials shall be sensitized on the health risks and the safety handling procedures of the material. The objective of the sensitization shall be to prevent exposure to waste containing asbestos and to ensure that the storage, collection, transport and disposal of these wastes do not represent a health hazard to humans or a threat to the environment. There shall be a team of experts to supervise, removal, transportation and disposal of asbestos material.

VII.4.2.1. Removal
Before proceeding to the removal of asbestos containing materials, the general public shall receive instruction on asbestos awareness, recognition and procedures to eradicate asbestos-containing materials in accordance with the regulation that will be set by Rwanda Environment Management Authority regarding the disposal of asbestos wastes. The following steps are to be taken:

• People shall know in advance (such as neighbours/occupants), that asbestos will be removed;
• Operators shall wear disposable coveralls, disposable respirator or a half-face respirator mask fitted with dust cartridges; power tools shall not be used, other than to remove roofing screws or fastenings;
• The area below or adjacent to the work zone to 10 meters distance where possible shall be sealed off;
• Windows and doors on the building shall be closed to prevent the entry/exit of any dust released during the removal work;
• The materials shall be wetted down with water before beginning to remove them in order to reduce dust by making sure that they are not in contact with electricity.
• Roof sheets shall be removed by taking care that wet sheets may create a risk of slipping and falling from the roof;
• Materials shall be handled carefully to ensure minimal breakage;
• Asbestos cement sheets shall be carefully lowered without dropping them to the ground;
When stacking sheets, care shall be taken to not skid one sheet over another, as this can cause release of fibers;

- The work area shall be cleaned using a damp cloth;
- All used disposable coveralls and masks shall be placed in bags with the other asbestos wastes;
- Asbestos waste shall be clothed and sealed in a dust tight bag
- After finishing the job, operators shall have a shower.

VII.4.2.2. Strategy of Collection
- Asbestos waste must be packaged according to risk of flight fiber
- Plates, slates and product plans asbestos cement must be palletized,
- Pipes and asbestos cement pipes must be packed in racks,
- Items in bulk (with the exception of debris and dust) should be collected in a specific bin (before to avoid mixtures with inert waste) and packaged in large bulk container (LBC) in order to be immediately identified upon arrival at the storage facility.

The transport of such waste requires a covered truck before the flight to avoid any fiber. A schedule of monitoring of waste asbestos cement must accompany the shipment.

- Waste and dust from the cleaning, dismantling of equipment (filters), asbestos removal, as well as protective equipment and cleaning must be enclosed in a double bag. This double bag should be transported in an overpack Special (double bag or airtight container IBC).

The transport of such waste must follow specific provisions. These are hazardous waste and must be a slip up.

VII.4.2.3 Transportation
The following steps should be taken during transportation:
- The truck used shall be lined with impervious sheeting along the body of the truck. The sheeting shall be wide enough to fully cover the material after loading.
- The asbestos materials to be transported shall be wetted to saturation with water first.
- Operators shall wear disposable coveralls, disposable respirator or a half-face respirator mask fitted with dust cartridges.
- The asbestos material must be wrapped in disposable leak-tight sheeting and sealed with tape. Loose asbestos wastes shall be wetted completely and packaged in leak-tight sheeting. Friable Asbestos waste must be presented in two (2) sealed, heavy duty bags made from low density polyethylene at least 0.2mm thick. These sealed bags must be placed on the ground in a manner which prevents their rupture. Bonded Asbestos waste must be presented for disposal and unloaded in a manner which avoids the creation of dust.
- The loading of the asbestos material shall be done very carefully without breaking them.

VII.4.2.4 Disposal
People shall receive instruction stating that it is illegal to dump/discard or otherwise dispose of asbestos waste in any area which is not an approved waste disposal site.
Local authorities at City/District level shall select an appropriate landfill area where asbestos wastes shall be disposed off.
City/District authorities shall make sure that the designated Area is not disturbed in future.

The following procedure for the disposal of asbestos wastes is aimed at ensuring operations at the site of disposal; comply with the requirements of the regulation:
- The waste hauler informs the landfill operator that the waste contains asbestos and sets out how the waste should be covered.
- Asbestos waste loads shall be directed to a designated area of the landfill’s active face. Vehicles delivering asbestos wastes should therefore be capable of safely traversing the landfill area.
- Unload sealed bundles at the area identified by landfill staff in a manner which prevents the rupture of bundles. There shall be no tipping of the asbestos material by the trucks.
- It is the responsibility of transporters to deposit waste on the ground at the correct location and with bundles intact.
- Loads shall be deposited in a compact pile at the identified location to allow the wastes to be covered by operators without the need to first “push-up” the asbestos waste.
- Asbestos waste shall be backfilled with a minimum 0.75m of compacted fill material on the day of disposal and the site operator shall ensure that backfilled asbestos is not disturbed in the future.
- The backfilling material shall be compacted to prevent erosion of backfill material.
### Table 3: Example of Environment and Social Management Plan (ESMP)

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Mitigation measures</th>
<th>Monitoring</th>
<th>Responsibility for implementing Mitigation Measures and period</th>
<th>Responsibility for monitoring implementation of the mitigation measures</th>
<th>Costs Estimation (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological environment</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Biodiversity loss</td>
<td>Revegetation of bare areas</td>
<td>Revegetated areas</td>
<td>Contractor / during rehabilitation and operation</td>
<td>Concerned District, RDB and REMA</td>
<td>7,000</td>
</tr>
<tr>
<td></td>
<td>Planting indigenous trees</td>
<td>Number of trees planted</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Physical environment</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Increased runoff</td>
<td>Roof catchment</td>
<td>Runoff</td>
<td>Contractor / during construction</td>
<td>Concerned District, RDB and REMA</td>
<td>To be accurately calculated</td>
</tr>
<tr>
<td></td>
<td>Minimize paved surface</td>
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<tr>
<td></td>
<td>Landscape the open areas</td>
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<tr>
<td>Compaction</td>
<td>Use of light machinery</td>
<td>Type of Machinery use</td>
<td>Contractor / during rehabilitation</td>
<td>Concerned District, RDB and REMA</td>
<td>To be accurately calculated</td>
</tr>
<tr>
<td></td>
<td>Restriction to prescribed access routes</td>
<td>Vehicular use of routes</td>
<td></td>
<td></td>
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<tr>
<td>Soil erosion</td>
<td>Installation of soil traps on lower edges</td>
<td>Installed soil traps</td>
<td>Contractor / rehabilitation</td>
<td>Concerned District, RDB and REMA</td>
<td>3,500</td>
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<tr>
<td></td>
<td>Installation of traps for stored loose construction materials such as sand.</td>
<td>Securing of construction materials</td>
<td></td>
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<tr>
<td>Solid and liquid wastes</td>
<td>Refuse pits distributed at all blocks where all solid waste will be deposited. Retain cleanliness within the sites. An appropriate waste water treatment plant on different sites.</td>
<td></td>
<td>Contractor and Project manager / during rehabilitation and operation</td>
<td>Concerned District, RDB and REMA</td>
<td>To be accurately calculated</td>
</tr>
<tr>
<td>Impacts</td>
<td>Mitigation measures</td>
<td>Monitoring</td>
<td>Responsibility for implementing Mitigation Measures and period</td>
<td>Responsibility for monitoring implementation of the mitigation measures</td>
<td>Costs Estimation (USD)</td>
</tr>
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<td>----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Asbestos Containing Material (ACM) management</td>
<td>- If asbestos is located on the project site, mark clearly as hazardous material.</td>
<td>Hazardous waste types expected from demolition and construction activities</td>
<td>Contractor and Project manager during rehabilitation, REMA</td>
<td>Concerned District, RDB and REMA</td>
<td>- The associated cost of these line items will be determined in the architect’s supervision contract</td>
</tr>
<tr>
<td></td>
<td>- When possible the asbestos will be appropriately contained and sealed to minimize exposure.</td>
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<td>- The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to</td>
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<td>minimize asbestos Dust.</td>
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<td>- Asbestos will be handled and disposed by skilled &amp; experienced professionals</td>
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<td>- If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed</td>
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<tr>
<td></td>
<td>containments and marked appropriately</td>
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<tr>
<td>Water pollution</td>
<td>Wastewater treatment treatment plant. Regular maintenance checks on treatment plant</td>
<td>Wastewater/sewage treatment plant. Routine maintenance checks of wastewater/sewage treatment plant</td>
<td>Project manager, RDB, REMA and Kigali City/during rehabilitation and operation</td>
<td>Concerned District, RDB and REMA</td>
<td>To be accurately calculated</td>
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</tr>
<tr>
<td>Impacts</td>
<td>Mitigation measures</td>
<td>Monitoring</td>
<td>Responsibility for implementing Mitigation Measures and period</td>
<td>Responsibility for monitoring implementation of the mitigation measures</td>
<td>Costs Estimation (USD)</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Water supply</td>
<td>Treatment and recycling of water. Installation of water meters to monitor amount used</td>
<td>Amounts of water recovered. Installed water meters</td>
<td>Project manager and site supervisor/during rehabilitation and operation</td>
<td>Concerned District, RDB and REMA</td>
<td>To be accurately calculated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air pollution</td>
<td>Installation of dust screens. Regular watering of areas being rehabilitated to reduce dust. Provision of dust masks to workers.</td>
<td>Installed dust screens. Watering of areas being rehabilitated. Dust masks provided</td>
<td>Contractor and Kigali City/during rehabilitation and operation</td>
<td>Concerned District, RDB and REMA</td>
<td>3,500</td>
</tr>
<tr>
<td>Noise pollution</td>
<td>Operation during daylight hours. Only Provision of ear muffs to site workers.</td>
<td>Ear muffs provision and numbers</td>
<td>Project manager, site supervisor and Kigali City/during rehabilitation and operation</td>
<td>Concerned District, RDB and REMA</td>
<td>700</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>Fencing off the project site during rehabilitation and limiting movement and attraction of unwanted characters.</td>
<td>Fence and restricted entry. Strict monitoring on movement of personnel and materials to and from site</td>
<td>Project manager and site supervisor/rehabilitation</td>
<td>Concerned District and Rwanda National police</td>
<td>To be accurately calculated</td>
</tr>
<tr>
<td>Accidents and hazards</td>
<td>Installation of appropriate safety signs. Training of site staff Provision of PPE</td>
<td>Safety signs installed. Training undertaken PPE. Provided to site staff</td>
<td>Project manager and site supervisor/during rehabilitation</td>
<td>Concerned District, RDB and REMA</td>
<td>14,000</td>
</tr>
</tbody>
</table>
### Impacts

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Mitigation measures</th>
<th>Monitoring</th>
<th>Responsibility for implementing Mitigation Measures and period</th>
<th>Responsibility for monitoring implementation of the mitigation measures</th>
<th>Costs Estimation (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hazards</td>
<td>Ensure speedy evacuation in the eventuality of a fire. Provide firefighting equipment such as fire extinguishers and exit signs. Display procedures along corridors to ensure safe and speedy evacuation of students.</td>
<td>Speed of evacuation in the eventuality of a fire. Quantity of firefighting equipment such as fire extinguishers, exit signs, provided within the blocks. Number of fire safety signs and devices existing.</td>
<td>Project manager, site supervisor, Kigali City and Ministry of Education/ during operation</td>
<td>Concerned District, RDB and REMA</td>
<td>7,000</td>
</tr>
<tr>
<td>Sexually transmitted diseases</td>
<td>An STD/HIV/AIDS awareness and prevention program will be incorporated into the training package for all students. In coordination with the Rwandan health authorities, a program designed specifically for promoting safe sex will be developed.</td>
<td>Number of students and staff successfully completing HIV/AIDS awareness training. Number of prophylactics distributed.</td>
<td>School management/ during operation</td>
<td>CNLS, Ministry of Health and Ministry of Education</td>
<td>21,000</td>
</tr>
<tr>
<td>Electric installations</td>
<td>General precautions should be taken in the installation of the electric network within the schools facilities</td>
<td>(100%) conductors and wires in copper. (100%) fire pump feeder cables and service feeder cables fireproofed. (100%) electrical conductors protected from high temperatures.</td>
<td>Contractor/ during rehabilitation</td>
<td>Concerned District, RDB and REMA</td>
<td>To be accurately calculated</td>
</tr>
</tbody>
</table>
VII.5. Monitoring Plan

VII.5.1. Objective of Monitoring Plan

The objective of monitoring is:

1) to alert project authorities by providing timely information about the success or otherwise of the environmental management process outlined in this ESMF in such a manner that changes can be made as required to ensure continuous improvement to SDP environmental management process (even beyond the project's life).

2) to make a final evaluation in order to determine whether the mitigation measures incorporated in the technical designs and the EMP have been successful in such a way that the pre-project environmental and social condition has been restored, improved upon or is worst than before and to determine what further mitigation measures may be required.

This section sets out requirements for the monitoring of the environmental and social impacts of the SDP. Monitoring of environmental and social indicators will be mainstreamed into the overall monitoring and evaluation system for both projects. In addition, monitoring of the implementation of this ESMF will be carried out by REMA, RDB and the key implementing institutions of SDP.

VII.5.2. Monitoring of Environmental and Social indicators

Two opportunities will be taken to build a simple system for the monitoring and evaluation of environmental and social impacts:

The Natural Resource Management officer should consider the environmental and social criteria that require measurement. A list of initial proposals is given below. Using this list of criteria, a set of indicators can be integrated into the screening forms used in the project approval process in each district; (this will ensure flexibility at the project design stage, integration of monitoring considerations throughout the project cycle, as well as a participatory approach to environmental and social monitoring).

VII.5.2.1. Initial proposals

The key issues to be considered in the SDP include monitoring of runoff, land degradation, uncollected solid wastes, biodiversity loss, untreated liquid waste, etc., income generation, health and population influx. The goals of monitoring are to measure the success rate of the project, determine whether interventions have resulted in dealing with negative impacts, whether further interventions are needed or monitoring is to be extended in some areas.
VII.5.2.2. Monitoring of participation process

The following are indicators for monitoring of the participation process involved in the project activities.

- Number and percentage of affected households consulted during the planning stage;
- Levels of decision-making of affected people;
- Level of understanding of project impacts and mitigation;
- Effectiveness of local authorities to make decisions;
- Frequency and quality of public meetings;
- Degree of involvement of women or disadvantaged groups in discussions.

VII.5.2.3. Evaluation of Results

The evaluation of results of environmental and social mitigation can be carried out by comparing baseline data collected in the planning phases with targets and post-project situations.

VII.5.2.4. Monitoring of ESMF Implementation

In addition to the project reports required, an annual audit on ESMF implementation will be prepared by WDA and delivered to REMA.

VII.5.2.5. Monitoring Roles and Responsibilities

**Rwanda Environment Management Authority (REMA):** REMA will play the leading oversight role of monitoring the activities of this project. The REMA will carry out this role by ensuring that the environmental management plans (EMPs) contained in the cleared design package is being implemented as specified therein. REMA will monitor the reports on a regular basis. They will rely on a bottom up feedback system to them from the ground by going through the monitoring reports and making regular site visits to inspect and verify for themselves the nature and extent of the impacts and the success or lack of the mitigation measures.

The REMA will prepare brief consolidated periodic monitoring reports for submission to the World Bank.

**Project Steering Committee (PSC):** There should be a Monitoring and Evaluation Officer who will be primarily responsible for ensuring compliance to the monitoring framework. The SDP steering committee will also provide overall coordination in monitoring including training coordinating of training in collection and analysis of monitoring data for data collectors.
Critical role of the SDP Steering Committee will include data analysis, as well as maintenance of management information systems and all baseline data. Lastly other than preparation of periodic reports the PSC will implement all the necessary modifications in the monitoring framework.

**SDP implementing partner institutions:** All the SDP implementing agencies identified under this project will monitor the specific components of the SDP that they are targeted to execute. They will be required to prepare periodic monitoring reports for submission to the SDP Steering Committee.

**VII.6. Capacity Building for Environment and Social Management of SDP**

In order to ensure smooth environment mainstreaming, all technical staff and school authorities involved in SDP implementation will need training in the use of the tools for environmental management. The experience of the MINEDUC in implementation of various development programs can be tapped. The lessons learnt include:

- The need to consolidate capacity of environment mainstreaming at the district level, and in this case the School level;
- The need to strengthen capacity of environment management at sub-county and division levels, and in this case at the school level.

The following environmental training would be necessary to ensure that SDP activities will be implemented in an environmentally and socially sustainable manner:

**(i) Environmental and Social Management process**

- Review of Environmental and Social Management Process.
- Assignment of environmental categories
- Use of Screening form and Checklist
- Preparation of terms of reference for carrying out EMP
- Design of appropriate mitigation measures.
- How to review and approve EIA and EMP reports
- The importance of public consultations in the ESMF process.
- How to monitor project implementation and mitigation measures.
- How to embed the Environmental and Social Management process into the works.

**(ii) Environmental and Social policies, procedures and guidelines**

- Review and discussion of Rwanda’s national environmental policies, procedures and legislation.
- Review and discussion of the World Bank’s safeguards policies.
- Strategies for consultation, participation and social inclusion
- Collaboration with institutions and stakeholders at all levels

(iii) Selected topics on environmental protection
- Hygiene and security during the works
- Maintenance of school and training infrastructures
- Support to student environmental and health clubs

**Cost Estimates of Capacity Building**
The Training program is to be implemented by the Work Development Authority (WDA) in collaboration with MINEDUC. The costs estimates, including travel expenses and training modalities will be prepared by the WDA. Qualified trainers will be recruited by WDA in collaboration with REMA. The total cost of capacity building should not exceed 30,000 USD

**VII.7. Budget for the Environmental and Social Management of the SDP**
The budget for environment and social management depending on the nature of environment mitigating measures will not exceed 0.5% of the total program. For this reason, the cost estimate for environment and social management of SDP will be about 150,000 USD.
The infrastructure and services environmental management costs should be determined for each sub-program and built into the program costs.
WDA has cleared the estimated projected costs (see table 4), and these will be included in the detailed costing of the project. MINEDUC and WDA will support REMA, RDB and other stakeholders to undertake the following capacity building activities.

**Table 4: ESMF Implementation Budget for SDP in Rwanda**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Units costs (USD)</th>
<th>Total cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitization workshops (4) for stakeholders at central level</td>
<td>5,000 per workshop</td>
<td>20,000</td>
</tr>
<tr>
<td>Capacity building</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Monitoring of project implementation and environmental impacts</td>
<td>20,000 (lump sum)</td>
<td>20,000</td>
</tr>
<tr>
<td>Support to student environmental and health clubs (7 schools)</td>
<td>5000 per one technical school</td>
<td>35,000</td>
</tr>
<tr>
<td>Drafting the environmental section of a manual for the maintenance of schools and training infrastructures</td>
<td>5,000 (lump sum)</td>
<td>5,000</td>
</tr>
<tr>
<td>Developing EMPs for 7 technical schools</td>
<td>5000 per EMP</td>
<td>35,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>150,000</strong></td>
</tr>
</tbody>
</table>
VIII. CONCLUSION AND RECOMMENDATIONS

This ESMF presents the Skills Development Programme characteristics, identifies likely social and environmental impacts and proposes mitigation measures and practices to ensure the planning, design, construction and operational stages of the programme cause no significant impact to the environment. The ESMF is meant to guide future screening of the various subprograms whose impact will be determined by location, design and implementation. Predicted significant environmental impacts that should be considered include:

- Loss of vegetation which could lead to increased soil erosion and siltation of water sources or water bodies;
- Surface runoff that may contribute to the pollution of water bodies particularly because it will flow through zones that are bound to have a lot of solid wastes.
- Solid and liquid wastes that if not properly disposed will result in the pollution of soil, wetland, groundwater and air.
- Air pollution as excavation, earth movement activities will be bound to raise dust levels around and in the project area.
- Accidents and hazards as machineries and heavy works could lead to injury or loss of life where management of their movement is poor.
- Fire hazards as it could occur at any place in the school blocks scattered over the premises
- Sexually transmitted diseases as the already high prevalence of HIV found in Rwanda could be exacerbated by the interaction of schools high population of students between them.

This ESMF has proposed measures to mitigate adverse impacts that are summarized in a comprehensive environmental management and monitoring plan. This once implemented will either eliminate the negative impacts or minimize them to insignificant levels.

It is thus recommended that for each sub-program, an EMP should be developed and implemented based on which the program should go ahead. Involvement of existing local governance structures in the screening process is highly encouraged.

Capacity building should as well be undertaken to ensure efficacy of the proposed ESMF. This will include sensitization and actual training of stakeholders at central, district and local levels. Synergies with other existing government programmes and structures should be encouraged to avoid duplication of activities.

The ESMF that was developed should be seen as indicative and the general safety, health and environmental regulations provided in the annex 3 should be followed during the whole programme implementation.
REFERENCES

5. California State University, 2001. Draft Environmental Impact Report. Faculty and Staff Housing
18. Journal Officiel de la République du Rwanda, mai 2005,
24. Republic of Rwanda, City of Kigali, Kigali City Environmental Sanitation Program (Not published)
26. Republic of Rwanda, MININFRA, National Urbanization Policy, April 2007 (Draft)
27. Republic of Rwanda, MINITERRE, National Land Policy, February 2004 (Draft)
ANNEXES

Annex 1: Public Consultation Report on the ESMF of WDA SDP

1.1 Rationale for public consultation and selection of participants
Public consultations were organized as a way to collect first-hand accounts of benefits and grievances from the people directly interested and assumed to be impacted by the SDP. They involved discussions with purposively selected individuals/stakeholders to gain information on their attitudes, perceptions, experiences, reactions and experiences of changes brought as a result/consequence of SDP. Discussions provided multiple views within the programme context and were particularly useful in exploring the level of consensus on a given felt impact.

Plate 1: Public consultation at Sport’s View
The consultation programme was organized so as to get concerns of each stakeholder and build alternatives analysis based on information collected. It provided indirect opportunities for stakeholder input and involvement. Careful attention was made to the various national and international principles/policies/guidelines as they relate to consultation.

Participants were a wide range of representatives specifically targeted because of the great likelihood for them to possess sufficient information and commanding knowledge about the socio-economic and environmental conditions of the programme.

Discussions involved stakeholder representatives from the following institutions and communities:

- WDA: the implementation institution
- Rwanda Environment Management Authority (REMA), in charge of monitoring and enforcement for environmental protection and conservation.
- RDB representative
- Selected technical schools representatives,
- Districts representative,
- MINEDUC representative
- Consultants

1.2. Agenda
The agenda of the meeting was the following:
- Introductory remarks and background of the Skill Development Programme (SDP),
- Presentation of Environmental and Social Management Framework (ESMF) of SDP,
- Concerns, Comments and Ideas from stakeholders
- Discussions

The meeting was held at the SPORT VIEW HOTEL on February 9th 2011 from 10am to 12h30. The meeting started by an introduction of participants followed by the introductor

The deputy DG of WDA addressed her thanks to all participants for positively responding to the WDA invitation. Then she detailed the background of the Skills Development Programme and briefly indicated the components and planned activities under the sub components.

After that presentation, she gave an opportunity to participants to ask for more clarifications. Related and appropriate responses were given by the Deputy Director General of SDP and other technical staff of WDA.

As indicated on the agenda, Richard Ngendahayo gave a brief presentation on the ESMF of SDP by stressing its potential environmental and social impacts and suggested mitigation measures.

1.3 Public issues and concerns

This section gives the issues and concerns as well as response given during the public consultative meeting. The extract below was not edited for clarity and objective reporting. The section captures the issues and comments contributed by stakeholders in response to the invitation to comment on the Environmental and Social Management Framework of the Skills Development Programme. Comments by stakeholders were made verbally during discussion sessions. Concerns and issues raised during this consultation meeting are indicated in the following table:

**Table 1: Concerns and issues raised by stakeholders**

<table>
<thead>
<tr>
<th>Concerns and Issues</th>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETO Kibungo representative raised concerns about the roof tiles in asbestos.</td>
<td>Consultants and REMA representative advised him to follow guidelines given in this ESMF about asbestos management during the rehabilitation phase. Appropriate mitigation measures are proposed in the ESMF and the</td>
</tr>
<tr>
<td>ETO Kibuye representative raised concern about the lack of collaboration between Contractors and the school administration.</td>
<td>The deputy Director of WDA ensured the participants that the selected school management will be involved in implementing the to be proposed EMP and Environmental Monitoring Plan checklists.</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>ETO Busogo representative expressed the need that Schools administration, contractors and WDA should meet many times and as required in order to inform every stakeholder about his responsibilities.</td>
<td>All participants agreed on the necessity of holding these kinds of meetings which should contribute to the implementation of Environmental mitigation measures of SDP particularly during construction/rehabilitation phase.</td>
</tr>
<tr>
<td>Concerns of ETO Kibali representative was about adapting school infrastructures to different disabilities.</td>
<td>All participants agreed that rehabilitation and new constructions project under SDP should take into consideration this issue.</td>
</tr>
<tr>
<td>REMA representative commended the use of biogas that should be combined with improved cooking stove equipment in the objective to reduce the pressure on forests and reduce wood consumption.</td>
<td>Participants agreed with her and recommended the Programme implementers to take note of this issue.</td>
</tr>
<tr>
<td>RDB representative raised the need of training for beneficiaries about biogas utilization and the need of insurance for every contractor before starting construction / rehabilitation works</td>
<td>Participants agreed on this type of training for the sustainability of biogas utilization in VTC. Participants agreed also that contractors should provide insurance to employees during construction/ rehabilitation works.</td>
</tr>
<tr>
<td>RDB representative insisted on long term benefits of biogas utilization and rainwater harvesting systems in VTC</td>
<td>Participants agreed on that issue and recommended the use of biogas and installation of rain water harvesting system.</td>
</tr>
<tr>
<td>ETO Kibuye representative raised concerns about sanitation and other facilities that should be availed to workers to avoid the use of the school</td>
<td>Consultants recommended that environmental guidelines for contractors should be respected during construction in order to avoid that kind</td>
</tr>
</tbody>
</table>
sanitation facilities. of inconvenience.

<table>
<thead>
<tr>
<th>ETO Kabarondo representative raised the problem of the separation of classrooms and workshops in VTC to mitigate possible noise pollution and nuisance.</th>
<th>WDA technical staff ensured that architectural designs for the rehabilitation and construction works will take into consideration the sound proof system and the required distance between workshops and classrooms/dormitories.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerns of Musanze Representative about the quality of the report that should consider all particular issues of the programme were raised</td>
<td>RDB representative gave the clarification about the process followed by RDB in order to issue Environmental Certificate. Participants found out that the process was clear to ensure the quality of the ESIA report.</td>
</tr>
</tbody>
</table>

**Outcomes**

These consultations targeted different stakeholders that may have different feelings from the project. The concerns and wishes raised during the consultation are well addressed through the ESMF and the prepared EMP checklists have taken them into consideration.

This Skills Development Programme through its components bears a certain number of negative environmental and social impacts that were not raised during public consultation. The team has however proposed adequate mitigation measures to make sure that impacts resulted from the project are addressed through an adequate Environmental and Social Management Plan and a Monitoring Framework.
Attendance list of the participants to the consultation on February 9th 2011

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Institution</th>
<th>Address</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mutangana Frederic</td>
<td>Eto Kibuye</td>
<td>0738 602684</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Kagamba Dennis</td>
<td>WDA</td>
<td>0783 555805</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Barigye Sam</td>
<td>WDA</td>
<td>+256 78548216</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Mbatubwinka Samuel</td>
<td>WDA</td>
<td>0783 555986</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Nyangabo Eric</td>
<td>Min 20 C</td>
<td>0783 463788</td>
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<tr>
<td>6</td>
<td>Kamuhanga Gerard</td>
<td>0783 543574</td>
<td></td>
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<tr>
<td>7</td>
<td>Hanyirwimana James</td>
<td>WDA</td>
<td>0783 435486</td>
<td></td>
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<tr>
<td>8</td>
<td>Charles Sekanyambo</td>
<td>WDA</td>
<td>0785 464513</td>
<td></td>
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<tr>
<td>9</td>
<td>Twimamatsiko Francis</td>
<td>WDA</td>
<td>0783 667068</td>
<td></td>
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<tr>
<td>10</td>
<td>Mukarage John</td>
<td>0784 375850</td>
<td></td>
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<tr>
<td>11</td>
<td>Kanyamugabe Justine</td>
<td>0784 758346</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Musabu Theresia</td>
<td>0785 435324</td>
<td></td>
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<tr>
<td>13</td>
<td>Bemon Kabera</td>
<td>0788 669018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Kaumahasa Justin</td>
<td>EST B</td>
<td>0788 407700</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Nguyinahana Ahmad</td>
<td>0788 498278</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Ndira Leon</td>
<td>0785 259837</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Bigarima Aggie</td>
<td>Infrastructures</td>
<td>0785 435287</td>
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<tr>
<td>18</td>
<td>Kpangagama Theogene</td>
<td>WDA</td>
<td>0786 612604</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Rukaramera Mathilde</td>
<td>MINEO</td>
<td>0788 667473</td>
<td></td>
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<tr>
<td>20</td>
<td>Rugumira Roger</td>
<td>END Milenge</td>
<td>0788 688289</td>
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</tr>
<tr>
<td>Name</td>
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<td>Tel</td>
<td>Email</td>
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<tr>
<td>Muneeruto Bizuli</td>
<td>WDA</td>
<td>0788803216</td>
<td><a href="mailto:jiligho.chichi@yahoo.co.uk">jiligho.chichi@yahoo.co.uk</a></td>
<td></td>
</tr>
<tr>
<td>KABERU Juliet</td>
<td>RENA</td>
<td>0788514177</td>
<td><a href="mailto:julichtech@yaho.co.uk">julichtech@yaho.co.uk</a></td>
<td></td>
</tr>
<tr>
<td>Jacqueline Musoni</td>
<td>RDB</td>
<td>0788577831</td>
<td><a href="mailto:mariamchidzayo@yahoo.co.uk">mariamchidzayo@yahoo.co.uk</a></td>
<td></td>
</tr>
<tr>
<td>Fatima Mukanuveni</td>
<td>WDA</td>
<td>0788305297</td>
<td><a href="mailto:fatimachidzayo@yahoo.co.uk">fatimachidzayo@yahoo.co.uk</a></td>
<td></td>
</tr>
<tr>
<td>Karanganwa Jean Bosco</td>
<td>Gwimbi District</td>
<td>0788449257</td>
<td><a href="mailto:karanganwa.jeanbosco@jnc.ltd.co.uk">karanganwa.jeanbosco@jnc.ltd.co.uk</a></td>
<td></td>
</tr>
<tr>
<td>SATAEL Jerue</td>
<td>TCT</td>
<td>0788667355</td>
<td><a href="mailto:filetejadikich@uk.co.uk">filetejadikich@uk.co.uk</a></td>
<td></td>
</tr>
<tr>
<td>Mungandikidza J. Bosco</td>
<td>Rudienda Training</td>
<td>0788806740</td>
<td><a href="mailto:mungandikidza@yahoo.co.uk">mungandikidza@yahoo.co.uk</a></td>
<td></td>
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<tr>
<td>Fatima Two Rugame</td>
<td>WDA</td>
<td>0788707935</td>
<td><a href="mailto:farzine2ruga@yahoo.com">farzine2ruga@yahoo.com</a></td>
<td></td>
</tr>
<tr>
<td>NAMPETE SEITA</td>
<td>Mutare District</td>
<td>0783264455</td>
<td><a href="mailto:sandviper@gmail.com">sandviper@gmail.com</a></td>
<td></td>
</tr>
<tr>
<td>Ndagikana Bizir</td>
<td>Mutare District</td>
<td>0783264455</td>
<td>yaahoo.com</td>
<td></td>
</tr>
</tbody>
</table>
## Annex 2: Important contact details during the process

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<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Function</th>
<th>Phone number</th>
<th>E-mail</th>
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<tbody>
<tr>
<td>WDA Staff</td>
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<tr>
<td>1</td>
<td>Albert Nsengiyumva</td>
<td>Director General</td>
<td>0788350038</td>
<td><a href="mailto:ansengiyumva@wda.gov.rw">ansengiyumva@wda.gov.rw</a></td>
<td>WDA Headquarter</td>
</tr>
<tr>
<td>2</td>
<td>Didier Munezero</td>
<td>Appointed Programme Manager</td>
<td>0788303726</td>
<td><a href="mailto:didier@wda.gov.rw">didier@wda.gov.rw</a></td>
<td>WDA Headquarter</td>
</tr>
<tr>
<td>3</td>
<td>Soita Wambete</td>
<td>Programme Architect</td>
<td>0783384454</td>
<td><a href="mailto:soita@wda.gov.rw">soita@wda.gov.rw</a></td>
<td>WDA Headquarter</td>
</tr>
<tr>
<td>4</td>
<td>Innocent Harelimana</td>
<td>Procurement Officer</td>
<td>0788351558</td>
<td><a href="mailto:iharelimana@wda.gov.rw">iharelimana@wda.gov.rw</a></td>
<td>WDA Headquarter</td>
</tr>
<tr>
<td>5</td>
<td>John Bosco Ruzibuka</td>
<td>WDA Consultant</td>
<td>…………………</td>
<td><a href="mailto:johnbosco.ruzibuka@gmail.com">johnbosco.ruzibuka@gmail.com</a></td>
<td>WDA Headquarter</td>
</tr>
<tr>
<td>6</td>
<td>Faustin Niyibizi</td>
<td>Director of VCT Busogo</td>
<td>0788447678</td>
<td>-</td>
<td>Busogo, Musanze District</td>
</tr>
<tr>
<td>7</td>
<td>Hakizimana J. Damascène</td>
<td>In charge of studies, VCT Busogo</td>
<td>0788514849</td>
<td>-</td>
<td>Busogo, Musanze District</td>
</tr>
<tr>
<td>8</td>
<td>Ruzindana Eugène</td>
<td>Director of VTC Kibali</td>
<td>0788589349</td>
<td>-</td>
<td>Gicumbi District</td>
</tr>
<tr>
<td>9</td>
<td>Mukarage John</td>
<td>Kabarondo Vocational Training Center</td>
<td>0788475580</td>
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<td>Kayonza</td>
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<tr>
<td>10</td>
<td>Rugamba Roger</td>
<td>Kibungo Official Technical School</td>
<td>0788689891</td>
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<td>Ngoma</td>
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<td>11</td>
<td>Mugabo Theogene</td>
<td>Kirehe VTC</td>
<td>0788553924</td>
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Annex-3: Project Screening Criteria Form (PSCF)

Once a Project Brief has been received and reviewed by the Authority, a proposed project is exempted from further compliance with EIA requirements if all of the following conditions are satisfied:

1. The project will not substantially use natural resources in a way that pre-empts use or potential use of that resource for any other purpose.
2. Potential residual impacts on the environment are likely to be minor, of little significance and easily mitigated.
3. The type of project, its environmental impacts and mitigation measures are evident and well understood.
4. Reliable means exist for ensuring that impact management measures can and will be adequately planned and implemented.
5. The project will not displace significant number of people, families or communities.
6. The project is not located in, and will not affect, environmentally-sensitive areas such as:
   (a) National parks
   (b) Wetlands
   (c) Productive agricultural land
   (d) Important archaeological, historical and cultural sites
   (e) Areas protected under legislation
   (f) Areas containing rare or endangered flora or fauna
   (g) Areas containing unique or outstanding scenery
   (h) Mountains or developments on or near steep hill-slopes
   (i) Forests
   (j) Lakes or their shores
   (k) Areas important for vulnerable groups such as fishing communities
   (l) Areas near high population concentrations or industrial activities where further development could create significant cumulative environmental problems
   (m) Groundwater recharge areas or drainage basins
7. The project will not result in and/or:
   (a) Policy initiatives which may affect the environment
   (b) Major changes in land tenure
   (c) Changes in water use through irrigation, drainage promotion or dams, changes in fishing practices.
8. The project will not cause:
   (a) Adverse socioeconomic impact
   (b) Land degradation
   (c) Water pollution
   (d) Air pollution
   (e) Damage to wildlife and habitats
   (f) Adverse impact on climate and hydrological cycle
(g) Creation of by-products, residual or waste materials which require handling and disposal in a manner that is not regulated by existing authorities.

9. The project will not cause significant public concern because of potential environmental changes. The following are guiding principles:
   (a) Is the impact positive, or harmful?
   (b) What is the scale of the impact in terms of area, numbers of people or wildlife affected?
   (c) What is the intensity of the impact?
   (d) What will be the duration of the impact?
   (e) Will there be cumulative effects from the impact?
   (f) Are the effects politically controversial?
   (g) Have the main economic, ecological and social costs been quantified?
   (h) Will the impact vary by social group or gender?
   (i) Is there any international impact due to the proposed projects?

10. The project will not necessitate further development activity, which is likely to have a significant impact on the environment.
Annex 4: General Safety, Health and Environmental Regulations

1. Introduction

1.1. The prevention of injury and/or illness to site personnel and the public, damage to the Works and to public and private property, protection of the environment, and compliance with applicable laws, are primary objectives of the Employer, and because of the importance the Employer places on meeting these objectives, selected minimum requirements are outlined in these Safety, Health and Environmental Regulations with which Contractors shall comply while working on Government contracts. Given that these Regulations cannot cover every eventuality, the Contractor shall be expected to exercise good judgment in all such matters, even though not mentioned in these Regulations, and shall take any and all additional measures, as required or necessary, to meet his responsibility for safety, health and environmental matters during the period of the Contract.

The Employer and its representatives shall not be held liable for any actions taken by the Contractor that are attributed to following the minimum requirements stated hereinafter.

1.2. The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

(i) Have full regard for the safety of all persons on the Site and keep the Site and the Works in an orderly state appropriate to the avoidance of danger to any person;

(ii) Know and understand all laws governing his activities along with any site requirements and work site hazards. Such information shall be communicated by the Contractor to his personnel and subcontractors;

(iii) Take all necessary measures to protect his personnel, the Employer’s personnel, other persons, the general public and the environment;

(iv) Avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of carrying out the Works.

2. Compliance with Regulations

2.1. The Contractor shall comply with the requirements of these Safety, Health and Environmental Regulations and all other applicable regulations or requirements under Rwandese laws, laid down by relevant authorities or issued by the Employer or the Engineer concerning safety, health and the environment, in force or introduced or issued from time to time during the period of the Contract. In so far as these Regulations are applicable, they shall apply to sites and personnel outside the Site associated with the performance of the Contract.
2.2. The Regulations equally apply to subcontractors and all other parties engaged by the Contractor and their personnel. The Contractor shall ensure all such parties are fully aware of and comply with the Regulations.

2.3. The Contractor shall comply with all notifications and written or verbal instruction regarding safety issued pursuant to these Regulations by the Employer, Engineer or relevant authorities within the time specified in the notification or instruction. Whenever the Contractor is required to obtain the approval, agreement, permission, etc of the Engineer, such approval, agreement, permission, etc shall not relieve the Contractor of his responsibilities and obligations under these Regulations or the Contract.

2.4. The Contractor shall adopt a positive approach, awareness and responsibility towards safety, health and the environment, and take appropriate action, by:
   (i) Ensuring the Regulations are enforced and followed by the Contractor’s personnel. Any failure by the Contractor’s personnel to follow the Regulations shall be regarded as a failure by the Contractor.
   (ii) Paying attention to possible injury to unauthorized persons entering the site, particularly children.

2.5. Whenever in these Regulations the Contractor is required to provide test certificates for equipment and personnel or to comply with the relevant authorities’ requirements and no independent test facilities are available or no relevant authorities exist in Lebanon, the Contractor shall provide:
   a) In lieu of independent test certificates:
      - For equipment – details of the tests and the date of the tests that have been carried out by the Contractor and a written statement that the Contractor has satisfied himself that the item of equipment is fit and safe for use;
      - For personnel – details of the training and experience and a written statement that the Contractor has satisfied himself that the person has the required level of competency;
   b) In lieu of relevant authorities’ requirements – details of the Contractor’s own rules, regulations, requirements and procedures regarding safety, health and the environment. If the Engineer is dissatisfied with the details provided by the Contractor, the Contractor shall provide further details or carry out further tests or provide further written statements as may be reasonably required by the Engineer. When the Engineer has satisfied himself regarding the Contractors own rules, regulations, requirements and procedures provided in accordance with (b) above, such rules, etc should be deemed to form part of these Regulations and to which Clause VII.3 shall equally apply.
3. Failure to Comply with Regulations

3.1. General

3.1.1. Should the Contractor fail to comply with any of the Regulations or requirements:

(a) The Engineer may suspend the Works or part of the Works until the Contractor has taken necessary steps, to the satisfaction of the Engineer, to comply with the regulations or requirements.

(b) The Employer may, following written notice to the Contractor, carry out themselves or arrange for another contractor to carry out such measures, as they consider appropriate on behalf of the Contractor. Any such actions by the Employer shall not affect or diminish the Contractors obligations or responsibilities under the Contract.

(c) The Engineer may, following written notice to the Contractor specifying the breach or breaches of these Regulations by the Contractor, impose the fines stipulated in Sub-Clause VII.3.2. All deductions for fines by the Engineer will be subject to the approval of the Employer.

(d) The Engineer may, by written notice of suspension to the Contractor, suspend all payments to the Contractor under the Contract if the Contractor fails to rectify any breach of the Regulations within the period specified by the Engineer, provided that such notice of suspension:

(i) Shall specify the nature of the failure or failures; and

(ii) Shall request the contractor to remedy each such failure within a specified period after receipt by the Contractors of such notice of suspension. Such suspension of payment will remain in force until such time as the Contractor has rectified the breach or breaches to the satisfaction of the Engineer. No interest shall be paid on the suspended payments.

3.1.2. Failure to comply with the Regulations or requirements shall be considered a breach of contract by the Contractor and may result in termination of the Contract by the Employer.

3.1.3. In the event of the Employer or Engineer taking action based on Sub-Clause 3.1.1(a) or (b) or 3.1.2, the Contractor shall not be entitled to any additional costs or extension to the Contract Completion Date.

3.1.4 All costs incurred by the Employer pursuant to Sub-Clause 3.1.1 (b)and the fines imposed on the Contractor by the Engineer under Sub-Clause 3.1.1 (c) shall be deducted from amounts otherwise due to the Contractor.

3.2 Fines

3.2.1 Failures by the Contractor to comply with the Regulations or requirements will be determined by the employer.
4. General Requirements

4.1 Preamble

4.1.1 All references to safety shall be deemed to include health and the environment.

4.2 Safety Officer

4.2.1 The Contractor shall appoint a competent Safety Officer who shall be responsible for safety, health and the environment. The Safety Officer shall be given sufficient time by the Contractor to carry out his duties; minimum requirements shall be as follows:
- Workforce on Site of over 250 - full time Safety Officer;
- Workforce on Site of 100-250 - 50% of Safety Officer’s time;
- Workforce on Site below 100 - as required for the Works but a minimum of 5 hours per week of Safety Officer’s time where more than 20 workers.

4.2.2 The Contractor shall provide the Safety Officer with appropriate identification, including a white hard hat with Red Cross symbol and an identification badge. The appointment of the Safety Officer shall be in writing and copied to the Engineer. The appointment shall include specific instructions to enforce these Regulations and delegated authority to take any action, measure or to issue instructions regarding their enforcement. All persons on Site shall be made aware of the name and authority of the Safety Officer and instructed to comply with any instruction or direction on safety matters, verbal or in writing, issued by the Safety Officer.

4.2.3 The Safety Officer shall be provided with a mobile phone or other similar means of communication. The Safety Officer shall be accessible and available at all times including outside normal working hours.

4.3 Safety Training

4.3.1 The Contractor shall provide safety induction training for all site personnel upon starting on site.
4.3.2 The Contractor shall provide safety refresher/reinforcement training at regular intervals for his staff.

4.4 Safety Meetings

4.4.1 The Contractor shall hold regular safety meetings to provide safety instructions and receive feedback from site personnel on safety, health and Environmental matters. A weekly Safety Meeting shall be chaired by the Safety Officer and minutes shall be taken of the meeting. The meeting/minutes shall cover all relevant issues including actions to be taken. A copy of the minutes shall be given to the Engineer. The Safety Officer should attend the Contractor’s weekly site meetings and "Safety" should be an item on the agenda.
4.5 Safety Inspections
4.5.1 The Safety Officer shall make regular safety inspections of the work site. The Safety Officer shall prepare a report of each inspection. This report shall include details of all breaches of these Regulations and any other matters or situations relating to safety found during the inspection, instructions issued by the Safety Officer and actions taken by the Contractor. A copy of the Safety Officer’s inspection reports shall be given to the Engineer.

4.6 Control of Substances Hazardous to Health
4.6.1 Hazardous materials shall be stored in approved safety containers and handled in a manner specified by the manufactures and/or prescribed by relevant Authorities (see Sub-Clause 2.5).
4.6.2 Only properly trained and equipped personnel shall handle hazardous materials.

4.7 Potential Hazards
4.7.1 The Contractor shall inform employees of potential hazards, take appropriate steps to reduce hazards and be prepared for emergency situations.
4.7.2 The Contractor shall make an assessment of every operation involving hazardous substances. The assessment shall be recorded on a Hazardous and Flammable Substances Assessment Method Statement, which shall be submitted to the Engineer prior to the delivery and use of the substance on Site.

4.8 Accident Reporting
4.8.1 The Contractor shall report all accidents and dangerous occurrences to the Engineer. The Contractor shall prepare a report on each accident or dangerous occurrence and a copy of the report, together with witness statements and any other relevant information shall be submitted to the Engineer. A reportable accident or dangerous occurrence shall include any accident to any person on Site requiring medical attention or resulting in the loss of working hours or any incident that resulted, or could have resulted, in injury, damage or a danger to the Works, persons, property or the environment.

4.8.2 In the event of an accident or dangerous occurrence, the Contractor shall be responsible for completing all statutory notifications and reports. Copies of all statutory notifications and reports shall be passed to the Engineer.

4.8.3 All accidents and dangerous occurrences shall be recorded in a Site Accident Book. The Site Accident Book shall be available at all times for inspection by the Engineer.
4.8.4 The Contractor shall immediately rectify any situation or condition that could result in injury, damage or a danger to the Works, person, property or the environment. If the situation or condition cannot be corrected immediately, the Contractor shall provide temporary barriers and appropriate warning signs and devices and/or take other appropriate action necessary for the protection of persons, property and the environment.

4.9 Notices, Signs, Etc
4.9.1 All safety, health, environmental and other notices and signs shall be clearly displayed and written in both Arabic and English. All requirements, instructions, procedures, etc issued by the Contractor concerning these Regulations shall be printed in both Arabic and English and displayed and readily available to Contractor’s personnel.

4.10 First Aid and Medical Attention
4.10.1 The Contractor shall have comprehensive First Aid Kit(s) on Site at all times. First Aid Kits shall be conveniently located and clearly identifiable.

4.10.2 The Contractor shall have one employee on site trained in first aid for every 25 employees. Such persons shall be provided with appropriate identification, including a red hard hat with a white "red cross" symbol and a identification badge.

4.10.3 The Contractor shall make contingency arrangements for calling a Doctor and transporting injured persons to hospital. The telephone numbers of the emergency services and the name address and telephone number of the Doctor and nearest hospital shall be prominently displayed in the Contractor’s site office.

4.11 Employee Qualifications and Conduct
4.11.1 Contractor’s personnel shall use the toilet facilities provided by the Contractor.

4.11.2 The Contractor shall ensure:
   (a) That no firearms, weapons, controlled or illegal substances or alcoholic beverages are brought onto the Site and that no personnel under the influence of alcohol or drugs are permitted on Site.
   (b) That all personnel obey warning signs, product or process labels and posted instructions.
(c) That drivers or operators of vehicles, machinery, plant and equipment follow the rules for safe operations. Drivers shall wear seat belts and obey all signs and posted speed limits.

5 Safety Requirements

5.1 Personal Protective Equipment

5.1.1 The Contractor shall provide personal protective equipment, including hard hats, safety glasses, respirators, gloves, safety shoes, and such other equipment as required, and shall take all measures or actions for the protection and safety of Contractor’s personnel.

5.1.2 Non-metallic hard hats shall be worn at all times by all personnel at the worksite with the exception of those areas where the Engineer has indicated it is not necessary to do so.

5.1.3 Safety glasses shall meet international standards and be available for use and worn in specified worksite areas. As a minimum, safety glasses shall be worn for the following types of work: hammering, chipping, welding, grinding, use of electrically powered or pneumatic equipment, insulation handling, spray painting, working with solvents, and other jobs where the potential of an eye injury exists. Face shields and/or mono-goggles shall be worn where possible exposure to hazardous chemicals, cryogenic fluids, acids, caustics, or dust exists and where safety glasses may not provide adequate protection.

5.1.4 When handling acids, caustics, and chemicals with corrosive or toxic properties, suitable protection, such as acid suits or chemical resistant aprons and gloves, shall be worn to prevent accidental contact with the substance.

5.1.5 Personnel shall not be permitted to work whilst wearing personal clothing or footwear likely to be hazardous to themselves or others.

5.1.6 The wearing of safety shoes with steel reinforced toes is recommended for all contractor’s personnel on site. In all cases, Contractor’s personnel shall wear substantial work shoes that are commensurate with the hazards of the work and the worksite area.

5.1.7 Hearing protection, including muff, plugs or a combination thereof, shall be provided for all personnel operating in areas where the noise level exceeds 90 decibels. Such protection shall also be provided for operators working with equipment exceeding such a level. This may include equipment such as excavators, shovels, jackhammers, saws, drills, grinders, and the like are being used.
5.1.8 The Contractor shall encourage employees to wear substantial work gloves whenever practical and safe to do so.

5.2 Fire Protections and Prevention

5.2.1 The Contractor shall comply with fire protection instructions given by the Authorities having jurisdiction in regard to fire protection regulations.

5.2.2 The Contractor shall, upon moving on site, provide to the Engineer and the Authorities a fire prevention and evacuation plan. This shall include drawing(s) showing the fire assembly points. The fire prevention and evacuation plan and drawing(s) shall be updated from time to time as the Works progress. The Contractor shall ensure all personnel are fully informed on escape routes and assembly points and any changes thereto.

5.2.3 Fuel storage will not be permitted in construction work areas. Contractors may establish fuel storage tanks in special areas set aside for the purpose and approved by the Engineer. Storage tanks shall be adequately bonded to control spillage. Fire extinguishers shall be provided and installed in a suitable nearby location.

5.2.4 Highly combustible or volatile materials shall be stored separately from other materials and as prescribed by relevant authorities and under no circumstances within buildings or structures forming part of the permanent Works. All such materials shall be protected and not exposed to open flame or other situations, which could result in a fire risk.

5.2.5 No combustible site accommodation shall be located inside or within 10 meters of a building or structure forming part of the permanent Works. Where units have to be used in these circumstances, they shall be constructed of non-combustible materials and have a half-hour fire rating inside to outside and outside to inside. Non-combustible furniture shall be used where practical.

5.2.6 All temporary accommodation and stores shall be provided with smoke detectors and fire alarms.

5.2.7 Smoking shall be banned in high-risk areas.

5.2.8 Expanded polystyrene with or without flame retarding additive, polythene, cardboard and hardboard shall not be used as protection materials.
5.2.9 Plywood and chipboard shall only be used as protection on floors. Vertical protection shall be non-combustible. Debris netting and weather protection sheeting shall be fire retardant.

5.2.10 When using cutting or welding torches or other equipment with an open flame, the Contractor shall provide a fire extinguisher close by at all times. All flammable material shall be cleared from areas of hot works, or work locations prior to welding or oxy/gas burning operations. All hot works shall cease half an hour before the end of a work shift to allow for thorough checking for fires or smoldering materials. Where appropriate, areas of hot works are to be doused in water before the shift ends.

5.2.11 An adequate number of fire extinguishers of types suited to the fire risk and the materials exposed shall be provided. These shall be placed in accessible, well marked locations throughout the job site. Contractor’s personnel shall be trained in their use. Extinguishers shall be checked monthly for service condition and replaced or recharged, as appropriate after use.

5.2.12 Only approved containers shall be used for the storage, transport and dispensing of flammable substances. Portable containers used for transporting or transferring gasoline or other flammable liquids shall be approved safety cans.

5.2.13 Fuel burning engines shall be shut off while being refueled.

5.2.14 Adequate ventilation to prevent an accumulation of flammable vapors shall be provided where solvents or volatile cleaning agents are used.

5.2.15 Flammables shall not be stored under overhead pipelines, cable trays, electrical wires, or stairways used for emergency egress.

5.2.16 Paints shall be stored and mixed in a room assigned for the purpose. This room shall be kept under lock and key.

5.2.17 Oily waste, rags and any other such combustible materials shall be stored in proper metal containers with self-closing lids and removed every night to a safe area or off site. Every precaution shall be taken to prevent spontaneous combustion.

5.3 Electrical Safety
5.3.1 All temporary electrical installations, tools and equipment shall comply with current regulations dealing with on-site electrical installations.

5.3.2 The Contractor shall establish a permit-to-work system for work on or in proximity to energized circuits of any voltage. Contractor’s personnel shall not
commence work on such circuits unless a permit to work has been issued and adequate safety measures have been taken and the work operation has been reviewed and approved by the Engineer.

5.3.3 Only authorized personnel shall be allowed to work or repair electrical installations and equipment.

5.3.4 All static electrically powered equipment, including motors, transformers, generators, welders, and other machinery, shall be properly earthed, insulated, and/or protected by a ground fault interruption device. In addition, the skin of metal buildings and trailers with electric service shall be earthed. Metal steps, when used, shall be securely fixed to the trailer.

5.3.5 Lamp holders on festoon lighting shall be molded to flexible cable and be of the screw in type. Clip on guards shall be fitted to each lamp unit.

5.3.6 All tungsten-halogen lamps shall be fitted with a glass guard to the element. These lamps must be permanently fixed at high level.

5.3.7 Electrical equipment shall be periodically inspected and repaired as necessary by competent persons.

5.3.8 Any work on electrical equipment and systems shall be made safe through locking, tagging, and/or isolation of the equipment before work commences. Prior to the start of the work, the equipment or systems shall be tested to insure that they have been properly de-energized and isolated.

5.3.9 Electrical repair work on energized systems shall be avoided whenever possible.

5.3.10 Electrical trouble hooting shall be conducted only after getting written approval of the Engineer.

5.3.11 Unauthorized personnel shall not enter enclosures or areas containing high voltage equipment such as switchgear, transformers, or substations.

5.4 Oxygen/Acetylene/Fuel Gases/Cartridge Tools
5.4.1 Compressed oxygen shall never be used in the place of compressed air.

5.4.2 Flash-back (Spark) arresters shall be fitted to all gas equipment.
5.4.3 Liquid Petroleum Gas (LPG) cylinders shall not be stored or left in areas below ground level overnight. Cylinders must be stored upright.

5.4.4 The quantity of oxygen, acetylene and LPG cylinders at the point of work "shall be restricted to a maximum of one day’s supply. Cylinders shall be kept in upright vertical rack containers or be safely secured to a vertical support.

5.4.4 Cartridge tools shall be of the low velocity type. Operators must have received adequate training in the safe use and operation of the tool to be used.

5.5 **Scaffolding/Temporary Works**

5.5.1 No aluminum tube shall be used, except for proprietary mobile towers, unless otherwise agreed with the Engineer.

5.5.2 Drawings and calculations shall be submitted to the Engineer, prior to commencement of work on site, for all Temporary Works, including excavations, false work, tower cranes, hoists, services and scaffolding. Design shall conform to international standards.

5.5.3 The Engineer will not approve Temporary Work designs but the Contractor shall take account of any comments on such designs made by the Engineer.

5.5.4 The Contractor shall inspect and approve all Temporary Works after erection and before access, loading or use is allowed. Completed and approved Temporary Works shall be tagged with a scaff-tag or similar safety system and the Safe Structure insert displayed. For scaffolding, one tag shall be displayed every 32 m2 of face area. A central record system shall be kept on all Temporary Work. Temporary Works shall be inspected weekly and similarly recorded.

5.5.5 All mobile scaffold towers shall be erected in accordance with the manufacture’s instructions and a copy of these shall be submitted to the Engineer prior to any use on site. Additionally, all towers shall be erected complete with access ladder, safety rails and kick boards whatever the height.

5.5.6 The Contractor shall repair or replace, immediately, any scaffold including accessories, damaged or weakened from any cause.

5.5.7 The Contractor shall ensure that any slippery conditions on scaffolds are eliminated as soon as possible after they occur.
5.5.8 All scaffolds used for storing materials, for brick or block laying, for access to formwork or for any other purpose where materials may accidentally fall, shall be provided with wire mesh guards or guards of a substantial material, in addition to kick boards.

5.6 Use of Ladders
5.6.1 Manufactured ladders shall meet the applicable safety codes for wood or metal ladders. Metal ladders shall not be used where there is any likelihood of contact with electric cables and equipment. All metal ladders shall be clearly marked: "Caution- Do not use around electrical equipment".

5.6.2 Job made ladders shall not be permitted.

5.6.3 Extension or straight ladders shall be equipped with non-skid safety feet, and shall be no more than 12 m in height. The maximum height of a stepladder shall be 2 m. Ladders shall not be used as platforms or scaffold planks.

5.6.4 Ladders rungs and steps shall be kept clean and free of grease and oil.

5.6.5 Extension and straight ladders shall be tied off at the top and/or bottom when in use. Only one person shall be allowed on a ladder at a time.

5.6.6 Defective ladders shall be taken out of service and not used. Ladders shall not be painted and shall be inspected for defects prior to use.

5.7 Elevated Work
5.7.1 The Contractor shall provide all personnel, while working at an elevated position, with adequate protection from falls. Details of such protection shall be submitted to and approved by the Engineer.

5.7.2 The Contractor shall carry out daily inspections of all elevated work platforms. Defects shall be corrected prior to use.

5.7.3 Roofing & Sheet Material Laying
(a) A Method Statement detailing the procedures to be adopted shall be submitted to and agreed with the Engineer prior to commencement of work on site.
(b) Mobile elevating work platforms or the equivalent shall be used to install roofing and sheet materials wherever practicable and a suitable base is available.

5.7.4 Erection of Structures
(a) A Method Statement detailing the procedures to be adopted shall be submitted and agreed with the Engineer prior to commencement of work on site.
(b) Safety harnesses and lines shall be provided by the Contractor for use by the erection personnel and worn at all times.
(c) Mobile elevating work platforms or the equivalent shall be used to erect structures wherever practicable and a suitable base is available.

5.7.5 Mobile Elevating Work Platforms
Operators shall be trained in the safe use of such platforms and hold a current Certificate of Competence (see Sub-Clause 2.5).

5.7.6 Hoists
(a) A copy of the current Test Certificate (see Sub-Clause 2.5) shall be submitted to the Engineer before any hoist (personnel or material) is brought into operation on the site. Where the range of travel is increased or reduced a copy of the revised Test Certificate shall be submitted.
(b) Each landing gate shall be fitted with a mechanical or electrical interlock to prevent movement of the hoist when any such gate is in the open position.
(c) Safety harnesses must be worn and used by personnel erecting, altering and dismantling hoists.

5.7.7 Suspended Cradles
(d) Suspended cradles shall be installed, moved and dismantled by a specialist contractor.
(e) Suspended cradles shall comply with local regulations.
(f) All powered suspended cradles shall incorporate independent safety lines to over speed braking devices and independent suspension lines for personal safety harness attachment.

5.8 Use of Temporary Equipment
5.8.1 The safe design capacity of any piece of equipment shall not be exceeded, nor shall the equipment be modified in any manner that alters the original factor of safety or capacity.

5.8.2 Mobile equipment shall be fitted with suitable alarm and motion sensing devices, including backup alarm, when required.

5.8.3 The Contractor shall ensure that the installation and use of equipment are in accordance with the safety rules and recommendations laid down by the manufacturer, taking into account the other installations already in place or to be installed in the future.

WDA-Skills Development Programme
5.8.4 The Contractor shall inspect Equipment prior to its use on the Works and periodically thereafter to ensure that it is in safe working order. Special attention shall be given to such items as cables, hoses, guards, booms, blocks, hooks and safety devices. Equipment found to be defective shall not be used and immediately removed from service, and a warning tag attached.

5.8.5 Natural and synthetic fiber rope made of material such as manila, nylon, polyester, or polypropylene shall not be used as slings unless approved by the Engineer.

5.8.6 Only trained, qualified and authorized personnel shall operate equipment. All drivers and operators shall hold a current Certificate of Training Achievement for the equipment being used (see Sub-Clause 2.5).

5.8.7 A safety observer shall be assigned to watch movements of heavy mobile equipment where hazards may exist to other personnel from the movement of such equipment, or where equipment could hit overhead lines or structures. The observer shall also ensure that people are kept clear of mobile equipment and suspended loads.

5.8.8 When mobile or heavy equipment is traveling onto a public thoroughfare or roadway, a flagman shall insure that traffic has been stopped prior to such equipment proceeding. While the mobile or heavy equipment is traveling on a public roadway, a trailing escort vehicle with a sign warning of a slow-moving vehicle that is dangerous to pass shall be provided.

5.8.9 Cranes:
(a) The Contractor shall give a minimum of 48 hours notice to the Engineer prior to bringing a mobile crane on site.
(b) No cranes shall be erected on the site without the prior approval of the Engineer. The Engineer may direct the Contractor as to locations where cranes may not be located. The Contractor shall take such directions into account when submitting his proposals for crane location points, base footings pick up points and swing radius. Compliance with any such direction shall not entitle the Contractor to any extension of the Period of Completion or to any increase in the Contract Price.
(c) Safety harnesses shall be worn and used at all times by personnel engaged on the erection, alterations and dismantling of tower cranes.
(d) The Contractor shall provide a copy of the current Test Certificate (see Sub-Clause 2.5) to the Engineer before any crane (tower or mobile) is brought into operation on the Site.
(e) All lifting tackle must hold a current Test Certificate (see Sub-Clause 2.5). All lifting tackle must be thoroughly examined every 6 months and an inspection report to be submitted.
(f) All fibrous/Webb slings shall be destroyed and replaced 6 months after first use.
(g) All crane drivers/operators shall hold a Certificate of Training Achievement for the class of crane operated (see Sub-Clause 2.5).
(h) All banksman /slingers shall hold a Training Certificate from a recognized training agency (see Sub-Clause 2.5).
(i) Only certified slingers/banksmans shall sling loads or guide crane/load movement.
(j) The maximum weekly working hours of a crane driver or banksman shall be restricted to 60 hours.

5.9 Locking-out, Isolating, and Tagging of Equipment
5.9.1 Equipment that could present a hazard to personnel if accidentally activated during the performance of installation, repair, alteration, cleaning, or inspection work shall be made inoperable and free of stored energy and/or material prior to the start of work. Such equipment shall include circuit breakers, compressors, conveyors, elevators, machine tools, pipelines, pumps, valves, and similar equipment.

5.9.2 Where equipment is subject to unexpected external physical movement such as rotating, turning, dropping, falling, rolling, sliding, etc., mechanical and/or structural constraints shall be applied to prevent such movement.

5.9.3 Equipment which has been locked-out, immobilized, or taken out of service for repair or because of a potentially hazardous condition shall be appropriately tagged indicating the reason it has been isolated and/or taken out of service.

5.9.4 Where safety locks are used for locking out or isolating equipment, the lock shall be specially identified and easily recognized as a safety lock

5.10 Installation of Temporary or Permanent Equipment
5.10.1 During installation and testing the Contractor’s specialist engineer shall be in attendance.

5.10.2 All control mechanism panel and wiring diagrams shall be available and printed in both Kinyarwanda and English.

5.11 Laser Survey Instruments
5.11.1 Details of the types and use of laser instruments shall be submitted and agreed with the Engineer.
5.12 Working in Confined Spaces
5.12.1 Confined spaces, including tanks, vessels, containers, pits, bins, vaults, tunnels, shafts, trenches, ventilation ducts, or other enclosures where known or potential hazards may exist, shall not be entered without prior inspection by and authorization from the Site Safety Officer and the issuance of a Hazardous Work Permit.

5.12.2 Prior to entering the confined space, the area shall be completely isolated to prevent the entry of any hazardous substances or materials, which could cause an oxygen deficient atmosphere. All equipment that could become energized or mobilized shall be physically restrained and tagged. All lines going into the confined space shall be isolated and/or blanked.

5.12.3 Personnel working in a confined space where emergency escape or rescue could be difficult shall wear a safety harness attached to a lifeline.

5.12.4 A qualified attendant(s), trained and knowledgeable in job-related emergency procedures, shall be present at all times while persons are working within the confined space. The attendant shall be capable of doing a rescue, have necessary rescue equipment immediately available, and be equipped with at least the same protective equipment as the person making entry.

5.12.5 All equipment to be used in a confined space shall be inspected to determine its acceptability for use. Where a hazard from electricity may exist, equipment utilized shall be of low voltage type.

5.12.6 The atmosphere within the confined space shall be tested to determine it is safe to enter. Acceptable limits are:
- Oxygen: 19.5% lower, 22% higher;
- Flammable gas: not to exceed 10% of lower explosion limit;
- Toxic contaminants: not to exceed the permissible exposure limit.

Subsequent testing shall be done after each interruption and before re-entering the confined space, as well as at intervals not exceeding 4 hours. Continuous monitoring is preferable and may be necessary in certain situations.

5.12.7 Adequate ventilation shall be provided to ensure the atmosphere is maintained within acceptable limits.

5.13 Demolition
5.13.1 A detailed Method Statement detailing the demolition procedures/techniques to be used shall be submitted to and approved by the Engineer prior to commencement of
work on site. The Method Statement must include full details of measures to be taken to ensure that there are no persons remaining in the building/structure and to distance members of the public and Contractor’s personnel from the building/structure prior to demolition.

5.14 Use of Explosives

5.14.1 The Contractor shall not use explosives without the written permission from the Engineer and relevant authorities (see Sub-Clause 2.5).

5.14.2 The Contractor shall observe all regulations regarding proper purchasing, transportation, storage, handling and use of explosives.

5.14.3 The Contractor shall ensure that explosives and detonators are stored in separate special buildings. These secured buildings shall be constructed, located and clearly marked in Kinyarwanda and English: "DANGER-EXPLOSIVES" All as approved by the Engineer and relevant authorities (see Sub-Clause 2.5).

5.14.4 The Contractor shall ensure that all possible precautions are taken against accidental fire or explosion, and ensure that explosives and detonators are kept in a proper and safe condition.

5.14.5 The Contractor shall ensure that explosives and detonators are always transported in separate vehicles and kept apart until the last possible moment and that metallic tool are not used to open boxes of explosives or detonators.

5.14.6 Blasting Procedure: the Contractor shall carry out blasting operations in a manner that will not endanger the safety of persons and property. The Contractor shall, along with other necessary precautions:

(a) Clear all persons from buildings and the area affected by the blasting. All such persons shall be given adequate notice of the actual time and date of blasting,

(b) Ensure that police and other local authorities are kept fully informed, in advance, of the blasting program so that they may be present when blasting takes place if they so require,

(c) Erect warning notices around the area affected that blasting operations are in progress,

(d) Carry out a thorough search of buildings and the area affected prior to blasting,

(e) Ensure that blasting is only, carried out by experienced shot firers. Priming, charging, stemming and shot firing shall be carried out with greatest regard for safety and in strict accordance with the rules and regulations of the relevant authorities (see Sub-Clause 2.5).
(f) Ensure that explosive charges are not excessive, charged boreholes are properly protected and proper precautions are taken for the safety of persons and property.

5.14.7 The Contractor shall maintain an up-to-date inventory of all explosives and explosive devices and shall submit a monthly report to the Engineer, detailing the use of all explosives by date and location.

5.15 Excavation and Trenching

5.15.1 The Contractor shall obtain an excavation permit from the relevant local authority before commencing excavation in any public place and he shall observe any restrictions imposed by the authority. He shall produce any such permit for the Engineer’s inspection when requested to do so. If he fails to produce the permit, the Engineer shall have the right to order cessation of the relevant work.

5.15.2 The side of all excavations and trenches exceeding 1.3 meters in depth which might expose personnel or facilities to danger resulting from shifting earth shall be protected by adequate temporary supports or sloped to the appropriate angle of repose.

5.15.3 All excavations, slopes and temporary supports shall be inspected daily and after each rain, before allowing personnel to enter the excavation.

5.15.4 Excavations 1.3 meters or more in depth and occupied by personnel shall be provided with ladders as a means for entrance and egress. Ladders shall extend not less than 1 meter above the top of the excavation.

5.15.5 The Contractor shall provide adequate barrier protection to all excavations. Barriers shall be readily visible by day or night.

5.15.6 Excavated or other materials shall not be stored at least 0.65 meters from the side of excavations

5.16 Concrete Reinforcement Starter Bars

5.16.1 The Contractor shall ensure concrete reinforcement starter bars are not a danger to personnel. Where permitted by the Engineer, starter bars shall be bent down. Alternatively, the starter bars shall be protected using either hooked starters, plastic caps, plywood covers or other methods agreed with the Engineer.
6 Environmental and Health Requirements

6.1 Protection of the Environment
6.1.1 The Contractor shall be knowledgeable of and comply with all environmental Laws, rules and regulations for materials, including hazardous substances or wastes under his control. The Contractor shall not dump, release or otherwise discharge or dispose of any such material without the authorization of the Engineer.

6.1.2 Any release of a hazardous substance to the environment, whether air, water or ground, must be reported to the Engineer immediately. When releases resulting from Contractor action occur, the Contractor shall take proper precautionary measures to counter any known environmental or health hazards associated with such release. These would include remedial procedures such as spill control and containment and notification of the proper authorities.

6.2 Air Pollution
6.2.1 The Contractor, depending on the type and quantity of materials being used, may be required to have an emergency episode plan for any releases to the atmosphere. The Contractor shall also be aware of local ordinances affecting air pollution.

6.2.2 The Contractor shall take all necessary measures to limit pollution from dust and any windblown materials during the Works, including damping down with water on a regular basis during dry climatic conditions.

6.2.3 The Contractor shall ensure that all trucks leaving the Site are properly covered to prevent discharge of dust, rocks, sand, etc.

6.3 Water Pollution
6.3.1 The Contractor shall not dispose of waste solvents, petroleum products, toxic chemicals or solutions in the city drainage system or watercourse, and shall not dump or bury garbage on the Site. These types of waste shall be taken to an approved disposal facility regularly, and in accordance with requirements of relevant Authorities. The Contractor shall also be responsible to control all runoffs, erosion, etc.

6.4 Solid Waste
6.4.1 General Housekeeping
   (a) The Contractor shall maintain the site and any ancillary areas used and occupied for performance of the Works in a clean, tidy and rubbish-free condition at all times.
   (b) Upon the issue of any Taking-Over Certificate, the Contractor shall clear away and remove from the Works and the Site to which the Taking-Over Certificate
relates, all Contractor’s Equipment, surplus material, rubbish and Temporary Works of every kind, and leave the said Works and Site in a clean condition to the satisfaction of the Engineer. Provided that the Contractor shall be entitled to retain on Site, until the end of the Defects Liability Period, such materials, Contractor’s Equipment and Temporary Works as are required by him for the purpose of fulfilling his obligations during the Defects Liability Period.

6.4.2 Rubbish Removal and Disposal
(a) The Contractor shall comply with statutory and municipal regulations and requirements for the disposal of rubbish and waste.
(b) The Contractor shall provide suitable metal containers for the temporary storage of waste.
(c) The Contractor shall remove rubbish containers from site as soon as they are full. Rubbish containers shall not be allowed to overflow.
(d) The Contractor shall provide hard standings for and clear vehicle access to rubbish containers.
(e) The Contractor shall provide enclosed chutes of wood or metal where materials are dropped more than 7 meters. The area onto which the material is dropped shall be provided with suitable enclosed protection barriers and warning signs of the hazard of falling materials. Waste materials shall not be removed from the lower area until handling of materials above has ceased.
(f) Domestic and biodegradable waste from offices, canteens and welfare facilities shall be removed daily from the site.
(g) Toxic and hazardous waste shall be collected separately and be disposed of in accordance with current regulations.
(h) No waste shall be burnt on Site unless approved by the Engineer.

6.4.3 Asbestos Handling and Removal
The Contractor shall comply with all local regulations regarding the handling of asbestos materials. In the absence of local regulations, relevant International standards shall apply.

6.4.5 Pest Control
The Contractor shall be responsible for rodent and pest control on the Site. If requested, the Contractor shall submit to the Engineer, for approval, a detailed program of the measures to be taken for the control and eradication of rodents and pests.

6.5 Noise Control
6.5.1 The Contractor shall ensure that the work is conducted in a manner so as to comply with all restrictions of the Authorities having jurisdiction, as they relate to noise.
6.5.2 The Contractor shall, in all cases, adopt the best practicable means of minimizing noise. For any particular job, the quietest available plant/and or machinery shall be used. All equipment shall be maintained in good mechanical order and fitted with the appropriate silencers, mufflers or acoustic covers where applicable. Stationary noise sources shall be sited as far away as possible from noise-sensitive areas, and where necessary acoustic barriers shall be used to shield them. Such barriers may be proprietary types, or may consist of site materials such as bricks or earth mounds as appropriate.

6.5.3 Compressors, percussion tools and vehicles shall be fitted with effective silencers of a type recommended by the manufacturers of the equipment. Pneumatic drills and other noisy appliances shall not be used during days of rest or after normal working hours without the consent of the Engineer.

6.5.4 Areas where noise levels exceed 90 decibels, even on a temporary basis, shall be posted as high noise level areas.

7 Additional Requirements for Work in Public Areas
7.1 General
7.1.1 These additional requirements shall apply to all works carried out in Public Areas.

7.1.2 Public Areas are defined as areas still used by or accessible to the public. These include public roads and pavements, occupied buildings and areas outside the Contractor’s boundary fencing.

7.1.3 All work in Public Areas shall be carried out to minimize disturbance and avoid dangers to the public.

7.1.4 Before commencing work, the Contractor shall ensure that all necessary resources, including labor, plant and materials, will be available when required and that the works will proceed without delays and be completed in the shortest possible time. Periods of inactivity and slow progress or delays in meeting the agreed program for the works, resulting from the Contractor’s failure to provide necessary resources or other causes within the control of the Contractor, will not be accepted. In the event of such inactivity, slow progress or delays, the Contractor shall take immediate action to rectify the situation, including all possible acceleration measures to complete the works within the agreed program. Details of the actions and acceleration measures shall be submitted to the Engineer. If the Engineer is dissatisfied with the Contractor’s proposals, the Contractor shall take such further actions or measures as required by the Engineer. All costs incurred shall be the responsibility of the Contractor.
7.2 Method Statement
7.2.1 The Contractor shall submit to the Engineer a method statement for each separate area of work in Public Areas. The Method Statement shall include:
   (a) A general description of the Works and methodology of how it will be carried out.
   (b) Details of the measures and temporary works to minimize disturbance and safeguard the public. These shall include temporary diversions, safety barriers, screens, signs, lighting, watchmen and arrangements for control of traffic and pedestrians and advance warning to be given to the public.
   (c) Details of temporary reinstatement and maintenance of same prior to final reinstatement.
   (d) For works involving long lengths of trenches or works to be completed in sections, the lengths or sections of each activity (ex up to temporary reinstatement, temporary reinstatement, final reinstatement) to be carried out at anyone time.
   (e) Details of the availability of necessary resources (labour, plant, materials, etc) to complete the work.
   (f) A program showing start and completion dates and periods for all activities of each length or section, including temporary works, and the works overall.
   (g) Such further information as necessary or required by the Engineer.

7.2.2 The Contractor shall not commence work, including temporary works, until approval of the Contractor’s Method Statement by the Engineer.

7.2.3 Method Statements shall be updated based on actual progress or as and when required by the Engineer.

7.3 Closure of Roads, Etc
7.3.1 The closure or partial closure of roads, pavements and other public areas will only be permitted if approved by the Relevant Authorities and the relevant closure permit has been issued by the Authority. The Contractor shall detail for each closure the extent of area to be closed, the reasons and duration of the closure and, where appropriate, proposed diversions. The Contractor shall produce the Closure Permit for inspection by the Engineer if requested. The Engineer shall have the right to order cessation of the relevant work if the Contractor does not produce the Closure Permit.

7.4 Trench and Other Excavations
7.4.1 The requirements covering trench and other excavations will depend on the location and type of the excavation and the potential risks to the public.
7.4.2 The following guidelines apply particularly to trenches but shall also apply to other types of excavations:

(a) Before commencing work the Contractor shall:
- Notify the Engineer on the location and duration of the work. An excavation permit signed by the Engineer must be issued in accordance with Sub-Clause 5.15.1 before excavation proceeds in any work location.;
- Obtain permission from relevant authorities including the police when required;
- Erect all temporary works such as barriers, warning signs, lighting, etc.,
- Have available adequate materials for temporary supports to sides of excavations and necessary labour, plant and materials to complete the work within the shortest possible time;

(b) In carrying out the works the Contractor shall, unless otherwise permitted or required by the Engineer:
- Not open more than one excavation within a radius of 250 meters;
- Limit the length of trench excavation open at one time to 150 meters;
- Maintain and alter or adapt all temporary works including supports to sides of excavations;
- Remove all surplus excavated material the same day it is excavated;
- Complete the works, including final reinstatement within ten days;
- Where final reinstatement is not achieved within the required time, to carry out temporary reinstatement;
- Ensure that any temporary reinstatement is maintained at the correct level until final reinstatement is achieved.

7.4.3 The above guidelines shall not relieve the Contractor of his obligations and responsibilities.

7.5 Safety Barriers
7.5.1 Safety barriers shall be provided to the perimeter of work areas and to trench and other types of excavations and to existing openings such as manholes, draw pits and the like. When exposed to the public, safety barriers shall be provided to both sides of trenches and around all sides of openings.

7.5.2 The Contractor shall provide details of the type or types of safety barriers for each excavation for the approval of the Engineer prior to commencing work. No work shall commence until the safety barriers are in place.

7.5.3 The type of safety barrier used shall be appropriate to the particular location and the potential risks to the public. Examples of different types of safety barriers are given below:
- Type 1 - excavated material;
- Type 2 - non-rigid barrier of rope or fluorescent tape strung between metal rods driven into the ground;
- Type 3 - rigid barrier of timber, steel or concrete. Such barriers could be in the form of horizontal rail(s) or sheet material secured to posts driven or concreted into the ground.

7.5.4 The following are guidelines on the type of safety barriers that could be used in differing situations. They apply particularly to trenches but also apply to other types of excavations, existing openings and to the perimeter of work areas:
- Areas not subject to vehicular traffic - Types 1 or 2;
- Roadways (low traffic speed) - Types 1 or 2;
- Roadways (high traffic speed) - Types 1 or 3.

7.5.5 The above examples of the types of barriers and the guidelines on situations in which they could be used shall not relieve the Contractor of his obligations and responsibilities.

8 Contractor’s Site Check List
8.1 A sample Contractor’s Site Check List is included in Annex 1. This is included to assist contractors should they wish to introduce such a system as part of their site management procedures. The list is not exhaustive and further items will need to be added by the Contractor.

8.2 The list is issued for guidance only, and does not, in any way, revise or limit the requirements covered elsewhere in these Regulations.

9. Sample Contractor’s Site Check List Safe Access:
- Arrangements for visitors and new workers to the site
- Safe access to working locations
- Walkways free from obstructions
- Edge protection to walkways over 2m above ground
- Holes fenced or protected with fixed covers
- Tidy site and safe storage of materials
- Waste collection and disposal
- Chutes for waste disposal, where applicable
- Removal or hammering down of nails in timber
- Safe lighting for dark or poor light conditions
- Props or shores in place to secure structures, where applicable
Ladders:
- To be used only if appropriate
- Good condition and properly positioned
- Located on firm, level ground
- Secure near top. If not possible, to be secured near the bottom, weighted or footed
- to prevent slipping
- Top of ladder minimum 1 meter above landing place

Scaffolding:
- Design calculations submitted
- Proper access to scaffold platform
- Properly founded uprights with base plates
- Secured to the building with strong ties to prevent collapse
- Braced for stability
- Load bearing fittings, where required
- Uprights, ledgers, braces and struts not to be removed during use
- Fully boarded working platforms, free from defects and arranged to avoid tipping
- or tripping
- Securely fixed boards against strong winds
- Adequate guardrails and toe boards where scaffold 2m above ground
- Designed for loading with materials, where appropriate
- Evenly distributed materials
- Barriers or warning notices for incomplete scaffold (i.e. not fully boarded)
- Weekly inspections and after bad weather by competent person
- Record of inspections

Excavation:
- Underground services to be located and marked and precautions taken to avoid them
- Adequate and suitable timber, trench sheets, props and other supporting materials
- Available on site before excavation starts
- Safe method for erecting/removal of timber supports
- Sloped or battered sides to prevent collapse
- Daily inspections after use of explosives or after unexpected falls of materials
- Safe access to excavations (ex sufficiently long ladder)
- Barriers to restrict personnel/plant
- Stability of neighboring buildings
- Risk of flooding
- Materials stacked, spoil and vehicles away from top of excavations to avoid
- collapse
- Secured stop blocks for vehicles tipping into excavations
Roof work:
- Crawling ladders or boards on roofs more than 10 degrees
- If applicable, roof battens to provide a safe handhold and foothold
- Barriers or other edge protection
- Crawling boards for working on fragile roof materials such as asbestos cement
- Sheets or glass
- Guardrails and notices to it
- Roof lights properly covered or provided with barriers
- During sheeting operations, precautions to stop people falling from edge of sheet
- Precautions to stop debris falling onto others working under the roof work

Transport and mobile plant:
In good repair (ex steering, handbrake, footbrake)
Trained drivers and operators and safe use of plant
* Secured loads on vehicles
* Passengers prohibited from riding in dangerous positions
Propping raised bodies of tipping lorries prior to inspections
* Control of on-site movements to avoid danger to pedestrians, etc
* Control of reversing vehicles by properly trained banksmen, following safe system of work

Machinery and equipment:
* Adequate and secured guards in good repair to dangerous parts, ex exposed gears, chain drives, projecting engine shafts

Cranes and lifting appliances:
* Weekly-recorded inspections
* Regular inspections by a competent person
* Test certificates
Competent and trained drivers over 18 years of age
* Clearly marked controls
* Checks by driver and banksmen on weight of load before lifting
* Efficient automatic safe load indicator, inspected weekly, for jib cranes with capacity of more than one ton.
* Firm level base for cranes
* Sufficient space for safe operation
* Trained banksmen/slinger to give signals and to attach loads correctly, with knowledge of lifting limitations of crane.
* For cranes with varying operating radius, clearly marked safe working loads and corresponding radii
* Regularly maintenance
* Lifting gear in good condition and regularly examined

**Electricity:**
* Measures to protect portable electric tools and equipment from mechanic damage and wet conditions
* Checks for damage to or interference with equipment, wires and cables
* Use of the correct plugs to connect to power points
* Proper connections to plugs; firm cable grips to prevent earth wire from pull out
* "Permit-to-work" procedures, to ensure safety
* Disconnection of supplies to overhead lines or other precautions where crane, tipper lorries, scaffolding, etc might touch lines or cause arcing

**Cartridge operated tools:**
* Maker’s instruction being followed
* Properly trained operators, awareness of dangers and ability to deal with misfires
* Safety goggles
* Regular cleaning of gun
* Secure place for gun and cartridges when not in use

**Falsework/formwork:**
* Design calculations submitted
* Method statement dealing with preventing falls of workers
* Appointment of false work coordinator
* Checks on design and the supports for shuttering and formwork
* Safe erection from steps or proper platforms
* Adequate bases and ground conditions for loads
* Plump props, on level bases and properly set out
* Correct pins used in the props
* Timberwork in good condition
* Inspection by competent person, against agreed design before pouring concrete

**Risks to the Public:**
* Identify all risks to members of the public on and off site, ex materials falling from scaffold etc., site plant and transport (access/egress) and implement precautions, ex scaffold fans/nets, banksmen, warning notices etc
* Barriers to protect/isolate persons and vehicles
* Adequate site perimeter fencing to keep out the public and particularly children
* Secure the site during non-working periods
* Make safe specific dangers on site during non-working periods, ex excavations and openings covered or fenced, materials safely stacked, plant immobilized ladders removed or boarded
Fire-general:
* Sufficient number and types of fire extinguishers
* Adequate escape routes, kept clear
* Worker awareness of what to do in an emergency

Fire-flammable liquids:
* Proper storage area
* Amount of flammable liquid on site kept to a minimum for the day’s work
* Smoking prohibited; other ignition sources kept away from flammable liquids
* Proper safety containers

Fire-compressed gases, ex oxygen, LPG, acetylene:
* Properly stored cylinders
* Valves fully closed on cylinders when not in use
* Adopt “hot work” procedures
* Site cylinders in use outside huts

Fire-other combustible materials:
* Minimum amount kept on site
* Proper waste bins
* Regular removal of waste material

Noise:
* Assessment of noise risks
* Noisy plant and machinery fitted with silencers/muffs
* Ear protection for workers if they work in very noisy surroundings.

Health:
* Identify hazardous substances, ex asbestos, lead, solvents etc and assess the risks
* Use of safer substances where possible
* Control exposure by means other than by using protective equipment
* Safety information sheets available from the supplier
* Safety equipment and instructions for use
* Keep other workers who are not protected out of danger areas
* Testing of atmosphere in confined spaces; provision of fresh air supply necessary.
* Emergency procedures for rescue from confined spaces

Manual handling:
* Avoid where risk of injury
* If unavoidable, assess and reduce risks
Protective clothing:
* Suitable equipment to protect the head, eyes, hands and feet where appropriate
* Enforce wearing of protective equipment

Welfare:
* Suitable toilets
* Clean washbasin, hot/warm water, soap and towel
* Room or area where clothes can be dried
* Wet weather gear for those working in wet conditions
* Heated site hut where workers can take shelter and have meals with the facility for boiling water
* Suitable first aid facilities

Work in Public Areas:
* All risks to the public identified
* Method statement approved
* Road closures approved
* Temporary diversions in place
* Safety barriers erected/maintained
* Safety signs and lighting installed/maintained
* Labor, materials, plant and other resources sufficient to meet program
* Temporary reinstatement completed and properly maintained
* Permanent reinstatement completed at earliest possible date.