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REPUBLIC OF MOZAMBIQUE

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MINISTRY OF HEALTH

National Directorate of Public Health

Environmental and Social Management Framework for the Southern Africa Health Systems and TB Support Project (P155658) –DRAFT

Maputo, Mozambique

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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
CDC	Centre for Disease Control and Prevention
CONSAMI	Inter-ministerial National Technical Committee on Health and Mining
DDH (DDSs)	District Directorates of Health
DI	Department of Infrastructure (Ministry of Health)
DPCA	Provincial Directorate of Environmental Affairs
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GAP	Gender Action Plan (GAP)
HCWM	Hospital Waste Management Plan (HCWM)
HIV	Human Immunodeficiency Virus
ICWMP	Infection Control and Waste Management Plan.
IDA	International Development Agency (World Bank)
INS	National Institute of Health (Instituto Nacional de Saúde)
MDR-TB	Multidrug Resistant Tuberculosis
MIREME	Ministry of Mining Resources and Energy (Ministério dos Recursos Minerais e Energia)
MITADER	Ministry of Land, Environment and Rural Development (Ministério da Terra, Ambiente e Desenvolvimento Rural)
MITESS	Ministry of Labour, Employment and Social Security (Ministério do Trabalho, Emprego e Segurança Social)
MoH	Ministry of Health (Ministério da Saúde)
NICP	National Infection Control Program
PCNT	National Tuberculosis Control Program (Programma Nacional de Controlo da Tuberculose)
PDH (DPSs)	Provincial Directorates of Health
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
PR AIA	Provincial Unit for MITADER
RAP	Resettlement Action Plan
SADC	Southern African Development Community
SES	Simplified Environmental Study
STI	Sexually Transmitted Infection

TB	Tuberculosis
ToR	Terms of Reference
VCDP	Vulnerable Community Development Plan
XDR-TB	Extremely Drug Resistant TB
WHO	World Health Organization

EXECUTIVE SUMMARY

The World Bank is supporting the Southern Africa Regional Tuberculosis and Health Systems Support Project. Mozambique is one of the four participating countries and the others are Lesotho, Malawi and Zambia. The project is important for the region as Southern Africa contributes significantly to the global burden of tuberculosis (TB). A highly preventable and curable disease, the communicable disease is claiming a lot of lives. Southern Africa has some of the highest TB/HIV co-infection rates in the world, which is tricky to treat; and there is an increasing threat of the Multidrug-Resistant TB (MDR-TB) to the sub region's health and development gains. In addition, the region faces the challenges of a disease burden tied to movement within and across borders among miners. Drivers of TB in mining among others include poor accommodation facilities, poor nutrition, poor ventilation and dust in the mines.

Project Development Objectives

The project seeks to help ease the TB burden in the Southern Africa region by achieving the following overarching goals: (i) increase utilization of key TB control and occupational lung diseases services in targeted geographic areas of the four participating countries (Lesotho, Malawi, Mozambique and Zambia) and (ii) strengthen the sub-region's capacity to address such conditions.

Specifically the project seeks to address the following in the sub-region:

i) Improve TB detection and care;
ii) Improve treatment of TB and MDR-TB;
iii) Improve cross-border care and within country referral between mining areas and labour sending areas.

The main components of the Mozambique project are:

i) Prevention, detection and treatment of TB;
ii) Regional capacity for disease surveillance, diagnostics and management of TB and occupational lung diseases;
iii) Learning, knowledge and innovation.

Project Areas of Influence

The project will involve the establishment of community sputum collection points, transportation of samples to microscopy sites, gene expert services, refurbishment of laboratories, refurbishment of a one-stop shop service contractor, renovation of MDR-TB contractors, installation of mobile X-ray machines, refurbishment of TB isolation rooms and construction of quarantine/treatment contractors.

The activities under renovations, refurbishments and construction have potential negative environmental and social consequences. Therefore the project has triggered OP/BP 4.01 Environmental Assessment and has been assigned to the World Bank environmental category B.

Other consequences will arise during the sputum collection and transportation, operation of microscopy sites and the mobile X-ray machines. Medical waste, which will be hazardous and will have to be treated adequately (e.g. by incineration) are also expected to be

generated from the laboratories. Therefore project will require the establishment or expansion of incineration plants, which requires an Environmental and Social Impact Assessment (ESIA), according to the decree 45/2004 (regulation on Environmental impact assessment and the regulation on management of biomedical waste).

Potential safeguard issues and areas of influence will be on the environmental components of soil, air and water. Safeguard issues on social components will relate to safety of workers and potential for spread of HIV and AIDS, as well as potential TB infection. The areas to be affected include public places where people gather in large numbers; poorly ventilated public places and laboratories; points or places of collection, transportation, storage and analysis of specimens; as well as places for disposal of laboratory and hospital waste. To ensure that measures to address these consequences or impact is implemented, this Environmental and Social Management Framework (ESMF) has been prepared to conform to and to be in line with the legal requirements of Mozambique and the World Bank's Operational Policies.

Objectives of the ESMF

This ESMF is prepared to ensure that activities for the project are carried out in an environmentally and socially sustainable manner. It covers environmental and social issues related to refurbishment of laboratories and TB isolation rooms. Issues related to management of community sputum collection points, transportation and the operation of the mobile x-rays, management of medical waste, and infection prevention and control are covered in the Infection Control and Waste Management Plan (ICWMP) which has been prepared as a separate document.

Among other things, the ESMF outlines an environmental and social screening process. It includes a generic Environmental and Social Management Plan (ESMP), guidelines for monitoring and development of appropriate monitoring indicators, capacity building measures for environmental management and cost estimates for the environmental work. It also includes guidelines for contractors, a summary of the World Bank's Safeguard Policies, an Environmental and Social Checklist and Generic ESIA Terms of Reference (ToR), to be used in the event that the screening results indicate the need for preparation of an ESIA report. The ESIA recommendations will be incorporated into the design and cost estimates of the Southern Africa Regional TB in mining project.

Justification for the ESMF

The ESMF is in line with the World Bank's Operational Policies for environmental management of projects where specific details are not yet known. For the Southern Africa Regional TB in Mozambique Project, the precise type and location of proposed project activities are not known at this time. Therefore, the potential social and environmental impact of the project activities cannot be identified and mitigation measures cannot be determined in the context of a traditional ESIA, for the specific sub-projects.

Once the exact locations and project activities for the project are known, the National Tuberculosis Control Program (PCNT) will help prescribe the conduct for Environmental Impact Assessment. However the ESMP and Environmental Impact Assessment (EIA) guidelines may not sufficiently provide and support the screening process for identification, assessment and mitigation of potential localized impact as required by the World Bank. This ESMF therefore provides mechanisms to complement Mozambique's EIA procedures for meeting the environmental and social management requirements.

Mozambican Legal and Institutional Framework on Social and Environmental Aspects

In Mozambique the Environmental Law defines the legal bases for the use and management of the environment as a means of safeguarding the sustainable development of the country. According to this Law, EIA is an instrument that supports the decision-making on the allocation of environmental license. The environmental licensing should precede any other license legally required in all public and private activities that can be directly or indirectly affected by the environment. The Environmental Impact Assessment Process is regulated by Decree No. 45/2004 while Environmental Auditing and Environmental Inspection are regulated respectively by Decrees no. 32/2003 and 11/2006.

The EIA Regulation defines all the stages of the EIA Process – screening, scoping, content of the EIA studies, public participation process, revision and approval by the environmental authority. The first stage of the environmental assessment process is the screening, to define the extent and type of required environmental assessment. As in World Bank Operational Policy, Mozambican regulation on EIA considers three categories of project to identify the appropriate level of environmental assessment: Category A (full EIA required), Category B (Simplified Environmental Study (SES) required) and Category C (exempt from an EIA and SES).

Other relevant legal aspects comprise legislation on: solid waste management, air emissions, air quality and noise, water resources, water quality, pesticides, coastal management, ownership of land, land use planning, cultural heritage, protected and conservation areas, involuntary resettlement.

Relevant policies, strategies, programs and plans include the infection control policy, TB national strategy, TB baciloscopy guidance.

The institutional framework for the ESMF is the Ministry of Health (MoH), Ministry of Mining Resources and Energy (MIREME) and Ministry of Labour, Employment and Social Security (MITESS).

World Bank's Safeguard Policies

There are ten safeguard policies in the World Bank, created to inform decision-making, ensuring that projects financed by the Bank are environmentally and socially sustainable. These Operational Policies include: Environmental Assessment (OP 4.01), Natural Habitats (OP 4.04), Forestry (OP 4.36), Pest Management (OP 4.09), Cultural Heritage (OP 11.03), Indigenous People (OP 4.10), Involuntary Resettlement (OP 4.12), Safety of Dams (OP 4.37), Projects on International Waterways (OP 7.50) and Projects in Disputed areas (OP 7.60).

The regional program triggers only one of the World Bank's Safeguard Policies: OP 4.01 Environmental Assessment. OP 4.01 Environmental Assessment categorizes the projects in Categories A, B, or C depending on the significance of its potential adverse environmental and social impact. The project is classified B under World Bank operational policy. Since the sub-projects investments and their potential negative localized impact will not be firmed up before appraisal, the appropriate safeguard document to comply with OP 4.01 at appraisal is an Environmental and Social Management Framework (ESMF).

Approach and Methodology for Preparation of the ESMF

In the development of this ESMF consultation with various key stakeholders was employed (listed in annex VII). The rationale of these consultations was to solicit views from key officials of Government Departments and clinical staff in health facilities involved in the project and the EIA process. Information for the preparation of the ESMF has been collected through a number of research methods, which include review of related literature from published and unpublished documents, field investigations and consultation with key stakeholders.

Summary of ESMF Features

The ESMF provides a general overview of TB in Africa and Southern Africa Region and the effects of TB combined with the HIV/AIDS, according to recent WHO statistics. It has also stresses the problem of inadequately treating TB in Southern Africa, which creates resistance to first-line drugs or MDR-TB and the challenge of treating TB among miners. The ESMF has given the legal, regulatory and administrative framework to support environmental management of the Southern Africa TB in Mining in Mozambique.

The ESMF presents typical environmental and social Impact in the project phases of construction and demobilization. The impact in the operation and maintenance phase, related to health-care wastes and infection control, are covered in the ICWMP. The planning phase is expected to have no significant impact. The decommissioning phase is also expected to have no significant impact, since the facilities are likely to continue operating after the end of the project. The identified typical impact include:

1. Soil erosion;
2. Soil contamination;
3. Impeded water flow and creation of stagnant water pools;
4. Water pollution;
5. Surface water siltation;
6. Air pollution;
7. Temporary obstruction of walkways and access to services during construction;
8. Disturbance of traffic and movement of people on the hospital premises;
9. Temporary loss of services such as water, electricity and telephone services;
10. Accidents to staff and the public on construction sites and project activity areas;
11. Noise & vibration disturbances.

Management of these environmental and social impact will be through ESMP, which will details mitigation measures for the impact and responsible institutions for carrying out these measures.

In general, the civil works elements of the project would not normally require an EIA (as the type of project activities would be considered minor). However discharge of medical wastes would attract some strict environmental control and therefore, in this respect, preparation of an EIA may be a necessity.

This ESMF should assist officials in determination of the level of environmental and social work required for the sub-projects. The principle and process of carrying out this determination are very well described and would be applicable to any situation in the project areas, especially in view of the fact that the project activities would basically be the same. Minor differences might occur where the project sites are not environmentally similar and in these cases, the screening (Annex I) would assist in determining the area or sub-project specific environmental impact and their mitigation measures. The World Bank environmental

policy insists that all projects whose exact activities and locations are not known should be subjected to the screening process.

Key Recommendations of the ESMF

This ESMF recommends that for successful implementation of the project, there is need to ensure that the existing environmental regulations are adhered to. Specifically, the recommendations made in this ESMF should be implemented and for its successful application, involvement and participation of all stakeholders and local communities is very important. The ESMF further recommends that:

- The screening process and the screening forms should be used for all the sub-project activities of the Southern Africa Regional TB in Mozambique Project;
- The Ministry of Health should be adequately supported to strengthen the PNCT to oversee the implementation of this ESMF as well as the ICWMP;
- Environmental and social awareness and training, as presented in the capacity building proposal, for the key stakeholders and communities should be implemented;
- Regular updating of this ESMF, to respond to changing designs and local conditions in all the project districts is very important and should be done as appropriate;
- Building of capacities at the district level, for appropriate information management, to facilitate the environmental and social management process should be supported by the project;
- At the district level, the necessary resources and equipment for producing the required documentation and completing the screening forms, as well as preparing reports for the implementation of the ESMF, should be provide; and
- Staff at all levels should be empowered to adequately administer the ESMF throughout the project implementation.

1. INTRODUCTION

1.1 Project Background

The Government of Mozambique, with support from World Bank, is implementing the Southern Africa Regional Tuberculosis (TB) in Mining Project. The project is being implemented in the four Southern Africa countries of Malawi, Lesotho, Mozambique and Zambia.

Southern Africa contributes significantly to the global burden of TB. According to the World Health Organisation (WHO), (2015), out of the 22 high TB burden countries, about 25% are in Southern Africa. A highly preventable and curable condition, TB remains one of the world's deadliest communicable diseases. In 2014, 9.6 million people in the world developed the infection (28% from Africa) out of which 1.5 million people died (1.1 million HIV-negative and 0.4 million HIV-positive).

The TB cases are also related to the HIV pandemic and in Southern Africa the TB/HIV co-infection rates are more than 50%. TB/HIV co-infection is extremely tricky to manage and presents many challenges for the traditional approach of combating TB. As a result TB is inadequately treated and this creates resistance to first-line drugs or MDR-TB. Inadequate treatment of MDR-TB leads to a highly lethal form of extremely drug resistant TB or XDR-TB. Resistant forms of TB require the use of much more expensive drugs, which have higher levels of toxicity, fatality and treatment failure. Individuals who are treated inappropriately continue to transmit TB, and Southern Africa countries are ill equipped to respond efficiently to such outbreaks. With the growth in regional migration, global travel, and the emergence of lethal forms of the disease, TB poses a major regional and global public health threat. The cost-effectiveness of addressing drug-responsive TB is therefore unquestionable.

The sub-region also faces challenges of a disease burden tied to movement within and across borders among miners. Migration often disrupts TB detection and care. Miners often have multiple treatment episodes, with inappropriate therapy and high default rates which can lead to multidrug resistant TB. Cross-border care and within country referral between mining areas and labour sending areas is often inadequate or non-existent, contributing to significantly greater rates of extensive and multi-drug resistance in miners, ex-miners, their families, and communities.

A substantial number of Mozambicans, in particular from southern Mozambique are employed in the South African mining sector. The TB infection rates in mines are high and linked to cross-border movements in the region thus making disease control a significant challenge.

The Protocol on Mining in the Southern African Development Community[1] provides a framework for regional cooperation in the regulation of the mining sector and health and safety issues at work. In August 2012, the Heads State of the Southern African Development Community (SADC) member states signed the Declaration on Tuberculosis in the Mining Sector, one of the foundations for the World Bank to support the strengthening of regional and national efforts of the participating countries.

In March 2014, Lesotho, Mozambique, South Africa and Swaziland stepped forward in the adoption of a regional framework for the harmonized management of TB in mining. The

[1] The Protocol on Mining in the Southern African Development Community was signed in 1997 and went into force in 2000.

framework seeks to introduce common standards and clinical processes. To support the framework the SADC Health Ministers approved the Code of Conduct on Tuberculosis in the Mining Sector in October 2014.

1.2 Project Objectives

The Southern Africa Regional TB in Mining Project has the following overarching objectives:

i) Increasing utilization of key TB control and occupational lung diseases services in targeted geographic areas of the four participating countries (Lesotho, Malawi, Mozambique and Zambia);
ii) Strengthening the sub-region's capacity to address such conditions.

Specifically the project seeks to:

i) Improve TB detection and care;
ii) Improve treatment of TB and MDR-TB;
iii) Improve cross-border care and within country referral between mining areas and labour sending areas.

The project seeks to ultimately contribute to reducing detection and treatment gaps of TB and hence significantly reducing the TB burden in Southern Africa. This is in line with goal number 3 of the Sustainable Development Goals: *"Ensure healthy lives and promote well-being for all at all ages."* One of the targets of this goal is the ending of tuberculosis by 2030 (UN, 2015) and the activities in this project will make significant contribution toward achieving it.

1.3 Description of the Project

The project will complement the on going investments by the World Bank and other development partners to support countries in their responses to TB/HIV epidemics. The regional project of the World Bank seeks to ensure coordination between regional and national initiatives, at the technical and governance levels, to avoid duplication and enhance synergies in order to maximize the impact for patients. The comparative advantage of the World Bank in institutional and systems strengthening, innovation, intermediation with regional partner institutions, political dialogue and analytical work in multiple sectors will contribute significantly to the efforts to deal with the TB burden in the sub-region.

The Southern Africa Health Systems and TB Support Project (P155658) will be financed by a credit of USD 120 million from the International Development Agency (IDA). Of this, financing to Mozambique is USD 45 million. The main implementation agencies will be the Ministry of Health (coordinating agency), Ministry of Mineral Resources and Energy, and Ministry of Labour, Employment and Social Security.

The World Bank plans to finance a project at a regional level in order to support the ongoing efforts to control TB in line with sustainable development objectives and the plan to eliminate TB by 2035[2], the most ambitious goal ever avowed.

The primary project beneficiaries will be individuals and households affected by TB. On the whole, the project will benefit the mining communities, regions with high incidence and

[2] The goal of sustainable development for TB is to reduce the number of deaths related to TB by 90% in 2035 compared to 2015.

prevalence of TB, with high prevalence of HIV/AIDS, transport corridors and border areas of the four countries. Miners, former miners, their families, areas of origin of workers and health workers will be the direct beneficiaries. The project will also benefit women, particularly in small-scale mining sector. Due to the infectious nature of TB the project will target the districts and will strengthen the national health service. It will also largely increase and improve the national health system regarding the detection, monitoring, treatment of TB and other lung occupational diseases, an improvement in the regulation in general and mining in particular, setting standards and standard methodologies for these issues.

The Southern Africa Regional TB in Mining Project has the following three components:

1. Prevention, detection and treatment of TB;
2. Regional capacity for disease surveillance, diagnostics and management of TB and occupational lung diseases;
3. Learning, knowledge and innovation.

The first component addresses the identification of gaps using innovative methods and improvement of the services of TB programs, including regular monitoring of health contractors with new quality assurance teams in four southern provinces that send workers to the mines, and development of an electronic information system and programmatic infrastructure to continuously monitor patients, their medical records and medication adherence for all the miners diagnosed with TB in the four provinces, who should return to work in South Africa before completion of their TB treatment.

Case detection will be supported by an improved system of sputum samples transport using motorcycles from the sites to the district collection points which in turn will be served by a private courier service hired to carry from the districts twice a week for expert tests or culture and drug susceptibility test. This same system will also be used to retransmit the results back to the reference health contractor.

The second component will focus on strengthening the internal human capacity to diagnose, manage and monitor the incidence of tuberculosis and occupational health diseases. This will be accomplished through a variety of training sessions focused on the Mozambican laboratory staff, health care providers and epidemiologists. The main candidates in each field will receive long-term training within the country or abroad. This component will also strengthen the regulatory capacity for occupational health and mining inspections. Surveillance, documentation and monitoring of occupational lung diseases of miners will be implemented through a new national electronic database containing a national record of silicosis, lung function and lung cancer.

The third component is focused on learning, knowledge and innovation. The first part of this component will establish a management team that will manage the funds and coordinate activities between the MoH, Ministry of Finance, MIREME, MITESS and Project Implementation Unit (PIU). This component will also support National Institute of Health (INS) to stabilize its team and help it grow in order to be self-sustainable and internationally acknowledged as a contractor of excellence for TB and pulmonary occupational health. This will focus on developing a culture of research, a national research agenda for TB and occupational health, and a mechanism to encourage young Mozambican investigators to become independent researchers.

1.4 Project Areas of Influence

It is anticipated that in upgrading, rehabilitation, construction and operation of laboratories, contractors will generate waste that will have negative environmental and social consequences. Sub projects are expected to, during operation, generate medical waste which requires careful handling, including incineration for the most hazardous waste. Therefore the project has triggered the World Bank's OP/BP 4.01 (Environmental Assessment) and has been assigned to the World Bank environmental category B.

Potential safeguard issues and areas of influence related to laboratory and treatment contractors refurbishment and operation will be on the environmental components of soil, air and water. These safeguard issues will mainly be related to contamination and pollution from construction, general and laboratory wastes. Safeguard issues on social components will relate to traffic accidents, safety of workers and potential for spread of HIV and AIDS as well as potential TB infection. The areas to be affected include public places where people gather in large numbers; poorly ventilated public places and laboratories; points or places of collection, transportation, storage and analysis of specimens; as well as places for disposal of laboratory and hospital waste.

Establishment or expansion of an incineration plant require the normal evaluation for classification and must follow the stipulations found in the Regulation of EIA (Decree Nr.45/04). Since some of the medical waste generated from the laboratories will be hazardous and will require incineration, an ESIA (for new incinerator installations) or an ESMP (for refurbishment of existing incinerators) will be required.

1.5 Objectives of the ESMF

This ESMF is prepared to serve as a safeguard framework to examine the environmental and social impact of the components of the Southern Africa Regional TB in Mining Project in Mozambique. The objectives of the ESMF are:

i) To establish clear procedures and methodologies for the environmental and social review, approval and implementation of the activities under the project;
ii) To specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to the project;
iii) To determine the training and capacity building needs;
iv) To establish the budget required for implementation of the ESMF.

The ESMF outlines an environmental and social screening process, focusing on the following steps:

(i) Completion of the Environmental and Social Screening Form;
(ii) Carrying out the appropriate level of environmental work;
(iii) Review and clearance of the screening results;
(iv) Preparation of EIA reports, where this may be necessary;
(v) Preparation of an ESMP.

The ESMF includes a draft ESMP (Annex VI), guidelines for monitoring and development of appropriate monitoring indicators, and capacity building measures for environmental management and cost estimates for the environmental work. It also includes Environmental and Social Screening Form (Annex I), Environmental and Social Checklist (Annex III), TOR for EIA consultants (Annex V) and Summary of World Bank's Safeguard Policies (Annex IX).

A comprehensive ICWMP has been prepared as a separate document. The ICWMP has identified all possible impact of project activities, and defined mitigation measures for all the

impact within operating facilities, highlighting where possible improvements can be implemented.

1.6 Justification for the ESMF

For the Southern Africa Regional TB in Mining Project, the precise type and location of proposed project activities are not known at this time. Therefore the potential social and environmental impact of the project activities cannot be identified and mitigation measures determined in the context of a traditional EIA, for the specific sub-projects. Once the locations for development activities are known the National Tuberculosis Control Program (PNCT) must work with the Ministry of Land, Environment and Rural Development (MITADER) to determine potential impact and determine additional analysis to identify localized impact as instructed through the procedures in this ESMF.

The ESMF provides mechanisms for ensuring that potential environmental and social impact is identified, assessed and mitigated as appropriate, through the environmental and social screening process. The ESMF complement Mozambique's EIA procedures for meeting the environmental and social management requirements. The ESMF was prepared in line with the World Bank Operational Policies for environmental management of projects where specific details are not yet known. Any reports prepared as sub projects must be in compliance with the World Bank's Operational Policies.

1.7 Potential Users of the ESMF

The ESMF should be used as a reference manual for use by key stakeholders to be involved in the planning, implementation, management and operation of the proposed Southern Africa Regional TB Project. As reference material, the ESMF would be useful to the PIU and officials within MoH, MIREMA and MITESS, including:

- Participating Countries of the Regional Health Systems Strengthening and TB Support Project;
- Donors Agencies;
- Town & Country Planning Committees and District Executive Committees in the selected cities and districts of the participating countries;
- Politicians and Local Traditional Leaders;
- Senior government officials responsible for policy making and development planning;
- National Healthcare Waste Management Programmes for the participating countries.

1.8 Approach and Methodology for ESMF Preparation

One of the key objectives of the ESMF is to provide a screening process for potential environmental and social impact for planned future sub project activities of the Southern Africa TB regional Project and to recommend generic management and monitoring plans for addressing the potential negative impact. In the development of this ESMF consultation with various key stakeholders was employed. The rationale of these consultations was to solicit views from officials of government departments involved in the project and the environmental and social impact process.

The strategies for executing this assignment followed the six steps listed below:

- Review of documents for project concept and implementation processes for the proposed project activities;

- Review of other relevant literature and government regulations for environmental management and preparation of EIAs;
- Identification and analysis of potential generic environmental and social impact the project activities are likely to trigger and generate within and around the project sites;
- Identification of appropriate generic mitigation measures for the negative environmental and social impact;
- Development of the appropriate screening process for project sites and project activities;
- Compilation of a generic management and monitoring plan for addressing the impact during implementation, operation and maintenance of the project activities.

2. LEGAL FRAMEWORK

According to the Mozambican environmental legislation, this project is classified as Category C, being exempted from environmental impact assessment. However, an environmental permit must be obtained from MITADER. The licensing process will be initiated by the submission of the pre-feasibility form (Annex I) to be requested by the Provincial Directorates of Health from the Provincial Directorate of Land, Environment and Rural Development of the respective province where intervention will be carried out. It involves an agreement on the routine environmental management measures to be applied

According to the World Bank´s classification, this project is classified as a category B project and the TB control reinforcement project must fully take into account the requirements set out in the environmental and social safeguard policies of the World Bank, aligned with the applicable legislation of Mozambique.

This section provides a general overview of the applicable legal frameworks in Mozambique, including the laws and regulations for environmental management and related sector laws and requirements for environmental impact assessment studies.

The Constitution of the Republic of Mozambique defines the right of all citizens to live in a balanced natural environment and their obligation to protect it (Article 90). Furthermore, the State is required to promote initiatives that ensure ecological balance and preservation of the environment and implement policies to prevent and control pollution and integrate environmental objectives in all public sector policies to guarantee citizens the right to live in a balanced environment under a sustainable development framework (Article 117 of the Constitution).

2.1 Environmental Framework

The National Environmental Policy, approved by Resolution No. 5/95 of December 6, 1995, laid the foundations for all ancillary environmental legislation. As per its Article 2.1, the main purpose is to ensure sustainable development by way of an acceptable compromise between the country's socioeconomic development and environmental protection. Such policy shall ensure the management of the country's natural resources, and of the environment in general, to preserve resources for present and future generations.

Environmental Law No. 20/97 of 1 October: The purpose of this law is to establish a legal basis for proper use and a viable management of the environment and its components in order to establish a sustainable development system in Mozambique. This law prohibits the storage or disposal of toxic pollutants in the soil, subsoil, water and the atmosphere. It is also recommended that the government should establish environmental quality standards to ensure the sustainable use of resources in the country. This law contains chapters on

environmental pollution and environmental quality standards. It focuses on the need for the EIA for projects and programs that have negative effects on the environment or public health. In this field, MITADER has developed guidelines for EIA, including the main component of the study and the approval process.

Relevant core principles for environmental management contained in the Law include:

- Management of the environment so that it improves citizens' quality of life and protects biodiversity and ecosystems;
- Recognition and valuing of local communities' traditions and knowledge;
- Prioritization of systems that prevent environmental degradation;
- A holistic and integrated perspective of the environment;
- The importance of public participation;
- The principle of "polluter pays";
- The importance of international cooperation in ensuring appropriate environmental management.

As per Article 8 of the Law, the Government of Mozambique is required to create adequate mechanisms for public participation in environmental management, from the drafting of environmental policies and legislation to implementation.

Article 9 of proscribes the production and deposit of any toxic or polluting substances in the nation's soils, sub-soils, water, or the atmosphere, and prohibits the undertaking of activities likely to accelerate erosion, desertification, or any other form of environmental degradation beyond the legally established limits.

2.1.1 EIAs in Mozambique

Decree No. 45/2004 of 29 September on the EIA process: This Decree covers the following points: categorization of projects and subprojects (A, B, C); Skills in the EIA field; EIA procedure; Initial assessment; Rating criteria; Technical Evaluation Committee (Members, working, etc.); Summary terms of reference; Public participation process; evaluation modalities of EIA; environmental agreement; consultation procedures.

MITADER, which has its offices at the central and provincial levels, is responsible for regulating the EIA in Mozambique. The main entity in this process is the National Directorate of Environment. MITADER also has a mandate to monitor EIA compliance during construction and implementation of the project, where appropriate. However, it remains the project proponent's responsibility to ensure that standards and identified mitigation measures are met. In the context of the tuberculosis project, this means that the MoH is the main proponent that must comply with the standards established by EIA regulation.

The EIA process involves the following steps:

a) *Project Registration***:** The applicant is required to register the project with MITADER.
b) *Screening***:** The project is classified to determine the level at which the environmental assessment should be carried out. The selection is performed by MITADER.
c) *Conducting an EIA*: this involves three main stages of EIA process (scope, preparation of ToR and preparation of an environmental impact statement). This is where the decision is made whether to perform the EIA or not.
d) *EIA Review***:** The technical review committee established by MITADER reviews the EIA and decide if the EIA is acceptable or not.
e) *Issue of relevant authorizations*: if the EIA is approved, MITADER issues the necessary environmental license confirming that the EIA has been completed

satisfactorily and the project can proceed.

f) *Decision-making***:** The decision is given by MITADER on whether the proposal was approved or not and there will be a record on the decision explaining how environmental issues were addressed.
g) *Monitoring of Project Implementation***:** The proponent prepares and implements an appropriate monitoring program (i.e., an environmental management program).
h) *Importance of public participation*: Public participation is required during the project design phase and upon compliance with the ToR for the impact assessment of the EIA process. The proponent is responsible for identifying interested and affected parties and to ensure that all interested parties have an adequate opportunity to participate in the process. If it launched a public information program and issued public notices during the EIA phase and project design. Whenever a strong public concern about the proposed project is indicated, and impact is significant, MITADER should organize a public consultation. The results of the public consultation should be considered in making the decision whether the license can be issued or not.

Based on the analysis of the exercise above MITADER decides whether an EIA is required or not. Projects are classified as category A (full EIA required, with supervision by MITADER at the national level), category B (single EIA required, under the supervision of MITADER at the provincial level) or C (a specific EIA is not required). According to Annex III of Decree 45, both the management of hospital solid waste from health contractors and small-scale land licensing (of the magnitude required for the construction of a health Contractor type II) are activities of category C. For the purposes of the licensing process of this type of health facility, an environmental and social pre-feasibility form (Annex I) will be filled out and submitted in the Provincial Environmental Directorates for review and license issuance. The period legally established for approval is about eight business days. Once the form is analysed, MITADER will issue along with the permit recommendations to be implemented by the project. It is anticipated that the measures already drawn up in this plan (which were prepared in accordance with the existing national regulations) are acceptable in full to MITADER but in the unlikely event that some additional measures are recommended, they will be incorporated.

2.1.2 Regulation of Waste

Regulations on environmental quality standards and waste discharge (Decree No. 18/2004).

The Health Service Delivery Project adopted in 2002 the Hospital Waste Management Plan (HCWM) developed by the previous project of the World Bank to support the HIV/AIDS program, which specifies the steps to be followed to strengthen the national system for medical waste management. Since 2002, in line with HCWM, new policy documents have been developed:

- *Regulation on biomedical waste management (2003) defines* the basic responsibilities including the requirement of each health institution to draw up a simple plan for the management of hospital waste, waste separation principles, acceptable transport requirements and disposal and fines for offenses.

- *Standards and biomedical waste management procedures in health facilities* (2010) specifies additional details of the rules for the handling of HCWM and treatment, including Personal Protective Equipment (PPE) that should be available, and the minimum standards for waste storage areas. The document indicates that health contractors should ideally include a simple incinerator, but also allows to be installed in rural areas for the disposal of small quantities of all types of medical waste.

- *National Plan for the Management of Biomedical Waste (2010)* analyses and gives a description of the current weaknesses of the medical waste management system based on the survey carried out in 2007 and specifies a number of actions for improvement most of which focused on the provision of equipment and training and strengthening of the monitoring system.

The Department of Environmental Health at the MoH has the overall responsibility for policy coordination on issues of management of medical and biomedical waste. However, there are departments that provide health services, which have the primary responsibility for implementing HCWM management standards through training of health personnel. In practice, both departments should collaborate to provide training as part of the preventive health department infections program, and with the MoH at the provincial level to conduct periodic performance audits. Quarterly progress reports must be produced by the provincial health units and report the performance of HCWM.

2.1.3 Water Resources

Water resources management in Mozambique is defined by the National Water Policy, approved by Resolution No. 7/95 of August 8, 1995, and by the Water Law (Law No. 16/91 August 3). As per Article 18 of the Water Law, Regional Water Administration bodies are responsible for managing the water resources in the river basin for which they are regionally responsible.

The Water Law defines the basis for water resources management, the “user pays” and “polluter pays” principles, and the regime governing water use concession and licenses. These factors are defined based on environmental sustainability principles.

Article 54 of the Water Law foresees the enactment of a regulation on effluent quality standards for receiving water bodies, treatment technologies, systems, and methods. This regulation is also addressed in the Environmental Law.

The Emissions Standards Regulations govern water quality standards for agricultural use and recreational purposes as well as emissions standards for industrial and domestic effluent.

Water standards for human consumption are contained in the Regulations on Water Quality for Human Consumption, approved by Ministerial Statute No. 180/2004 of September 15, 2004. These Regulations apply to potable water supply systems for human consumption, including surface and ground water used for direct consumption or for the production of water for human consumption. MoH is the authority responsible for ensuring quality control of water for human consumption.

2.1.4 Atmospheric Emissions and Air Quality

Article 9.1 of the Environment Law prohibits the release of any polluting and toxic substances to the atmosphere beyond legally established limits. The Emissions Standards Regulations define the pollutants’ threshold parameters as well as core parameters that characterize air quality.

2.1.5 Solid waste management

The Environment Law prohibits the disposal of pollutants in soils or sub-soils and the release of pollutants to the atmosphere or in water bodies beyond legally established limits. Article

9.2 of said law also prohibits the import of hazardous waste to Mozambican territory. In addition, the Water Law prohibits the accumulation of solid wastes or any substances that contaminate or are likely to contaminate water resources (Article 53).

2.2 National TB Policy

The 2008-2012 National Policy for TB Infection Control (MISAU, 2007) was formalized with the main aim of establishing minimum standards and activities in order to reduce the risk of transmission of TB.

The Policy has four general objectives:

1. Establish infection control for TB in health facilities and conglomerate environments as a matter of national emergency;
2. Promote and improve measures to prevent and control tuberculosis acquired in health facilities;
3. Check the transmission of multidrug-resistant tuberculosis;
4. Ensure that health facilities are safe and healthy environments for health workers, users, families and the general population.

The Policy is in line with what is recommended for this issue at the level of the different international bodies on the subject. In regards to the control measures the provisions for management, administrative, environmental measures and personal respiratory protection should be highlighted. Specifically, operational features in the health facilities managing tuberculosis:

- The management measures are detailed and full implementation will be of great value in everyday application;
- Administrative measures requires a discussion process to set the maximum time for each procedure and development of standard procedures within the health system, as well as screening models among others;
- Environmental measures are general and does not specify the importance of good ventilation, air targeting, negative pressure created in units that deal with TB.[3]

However, detailed procedures based on the policy have yet to be approved. The procedures and the list of possible approaches for each of the management measures will facilitate the health facilities in defining their priority plans in order to improve the conditions and preventing infections.

2.3 Biomedical Waste Management Regulation

The Biomedical Waste Management Regulation clearly states that each health facility or company handling biomedical waste must have a minimum of conditions for packaging five groups of waste:

1. Infectious waste;
2. Cutting and/or perforating waste;
3. Anatomical waste;
4. Common waste;
5. Another type of waste.

[3] Very few health facilities in Mozambique have rooms that meet the minimum WHO standards.

According to the draft of the biomedical waste strategy, the choice of the treatment method must be based on the following factors:

- Disinfection efficiency, environmental and health considerations, mass reduction and volume;
- Health and biosafety considerations, system capacity depends on the quantities produced, types of waste to be treated, maintenance and operation, availability of operators;
- Space, public acceptance, risk of toxic / hazardous emissions and legal issues.

Among the most appropriate techniques for treating biomedical waste, the following should be stressed:

- Pyrolytic incinerator;
- Municipal Incinerator or single chamber;
- Autoclaving, moist treatment;
- Encapsulation for quantities and specific situations;
- Discharge into a sewer system;
- Inerting;
- Tissue digesters;
- Burying within the hospital limits.

In most cases, health facilities face significant challenges in implementing the regulation. Medical waste is typically burned at landfills at health facilities.

Medical waste management for the Project will be discussed in the separate Infection Control and Waste Management Plan.

2.3 World Bank Safeguard Policies

The World Bank Safeguard Policies are intended to help ensure that projects proposed for bank financing are socially and environmentally sustainable and thus facilitate decision-making. These operational policies include OP 4.01 Environmental Assessment; OP 4.04 Natural Habitats; OP 4.09 Pest Management; OP 4:11 Cultural Heritage; OP 4.12 Involuntary Resettlement; OP 4.10 Indigenous peoples; OP 4.36 Forest; OP 4:37 Dam safety; OP 7.50 Projects in international waters; OP 7.60 Projects in disputed areas. In addition, there is a disclosure policy BP 17.50 in which the World Bank requires that all safeguard documents be disclosed in the respective countries and in the World Bank Info Shop before evaluation.

Safeguards policies triggered by the project	**Yes**	**No**
OP/BP 04.01 Environmental Assessment	**X**	
OP/BP 04.04 Natural Habitats		**X**
OP/BP 4:36 Forests		**X**
OP/BP 4.09 Pest Management		**X**
OP/BP 4.11 Physical and Cultural Resources		**X**
OP/BP 4.10 Indigenous peoples		**X**
OP/BP 4.12 Involuntary Resettlement		**X**

OP/BP 4.37 Dams Safety		**X**
OP/BP 7.50 Projects on international rivers		**X**
OP/BP 7.60 Projects in disputed areas		**X**

The project by its characteristics operates one of the Bank's safeguard policies, namely OP 4.01: Environmental Assessment. OP 4.01 is triggered if a project is likely to present some potential risks and adverse environmental impact in its area of influence.

OP 4.01 Environmental Assessment: OP 4.01 aims to ensure that projects financed by the Bank are socially and environmentally sustainable and that the decision process is improved through a proper analysis of actions including their potential environmental impact. EIA is a process whose breadth, depth and type of analysis depend on the nature, scale and potential environmental impact of the proposed project. EIA takes into account the natural environment (air, water and land); health and safety; social aspects (involuntary resettlement, indigenous peoples and cultural property); and transboundary and global environmental aspects. EIA considers natural and social aspects in an integrated manner.

3. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACT

With the improvement of diseases detection (TB, HIV and other lung diseases) improved prevention and treatment is expected, creating conditions for the treatment to be more assertive. The use of harmonized package will improve the monitoring, detection of cases, which will lead to a better response and will avoid the spread of TB. The regional focus and improvement of the analysis transport system that will not only improve the quality of results, but will also increase the geographical area and service coverage. With the use of health and safety packages in the mines, the quality of the conditions will improve and consequently the possibility of reduction of TB cases by the miners.

The project furthermore envisages an improvement in the response and management of epidemics. By providing for training of human resources and improving the procedures and legislation for the mining sectors, this will positively contribute to greater control and support for mine workers, and indirectly to their families and communities.

Individual sub projects will have four phases including the planning, construction, operation and maintenance, and closing phase. When an analysis is carried out in the planning phase significant impact is not expected.

Significant impact is not expected in the closing phase given that the project is aimed at strengthening the capacity within the health facilities that will still continue to operate after project completion.

The construction phase will present localized and moderate to low significance impact, with the possibility of mitigation.

The operation and maintenance phase will be the one that will need special attention given that it is in this phase that normal processes of infection control and production of biomedical waste that require attention will occur.

Table 1 summarizes the potential expected impact and the affected components.

Table 1 Impact and the Affected Components

Environmental components	Project activities			
	Planning and design	Construction	Operation and maintenance	Closing
Soils		X	X	
Surface waters		X		
Underground waters		X	X	
Air quality		X	X	X
Livelihood activities			X	X
Existing infrastructure		X		
Health and safety		X	X	X

3.1 Environmental Impact

From the overall analysis, negative environmental impact is expected to be short-term in nature, with low magnitude and localized as compared to the positive impact, which are of long-term nature, with regional coverage.

After the analysis regarding the project management procedures, other impacts were identified in relation to three components: air, water and soil. These impacts are due to the fact that the health facility generally presents an incomplete waste management system.

Some health facilities have access to incinerators but these operate below capacity due to malfunctions, lack of fuel or at times, the incinerators are obsolete. There are no other waste management components leading to the construction of landfills within the units in the so-called “sanitary landfills” that have no environmental protection against pollution of air, soil or groundwater. Generally, collection by the municipal authorities does not exist or is deficient. The challenge of medical waste handling will be addressed in the separate Infection Control and Waste Management Plan.

3.1.1 Impact on Air

In the construction phase the main sources of air pollution will be dust and emissions from mobile equipment, including vehicles, bulldozers and during the rehabilitation process strong smells from paints and solvents, dust will also be produced and these elements will cause nuisance on workers as well as on the vegetation located in the impact area. The Infection Control and Waste Management Plan will address impact on air in relation to waste handling.

The impact of the first phase (construction) is expected to be of short-term nature with low magnitude, localized and can be mitigated by the following measures:

- Maintenance of equipment according to the supplier's brochure;
- Use of PPE by workers;
- Active control of odours and dust.

3.1.2 Impact on Water Quality

During the construction and demolition of walls, the resulting waste must be properly managed to avoid its interference with drainage and natural runoff water systems, which can result in water accumulation and even in the formation of pools of water, thus resulting in the proliferation mosquitoes and other insects.

The expected impact is of short-term nature and moderate since the works are of small dimension. It can be mitigated by through management of construction waste and identifying disposal sites and water drainage.

Mismanagement of the remaining waste (cement, oil, fuel) can deteriorate the quality of surface water bodies.

The absence or deficient collection of solid waste in health facilities leads to the use of "landfill" pits made within the health facilities for waste management. Due to the fact that there is no waterproof protection of the foundation, there is immerse possibility that various leached products can pollute the quality of the groundwater table.

Other additional impact is expected to be localized and of short-term nature:

- Waterproofing of places where there is fuel supply, change of oils, paints and cement, it should be ensured that there are oil retention boxes, respect for the waste disposal standards and the locations identified by the authorities.

- Silting of water bodies is another expected impact in case there are no measures to control erosion issues by moving vehicles. The expected impact is moderate, localized and can be mitigated by avoiding the removal of unnecessary vegetation and use of water sprinklers to increase compaction of roads.

- Spills of substances may endanger the quality of groundwater as well as of materials from the latrines. The impact can be mitigated if there is compliance with the security measures for the material handling sites as well as latrines and toilets installation rules.

3.1.3 Impact on soil

A possible impact is soil erosion, resulting from the movement of machines and removal of vegetation. The impact is localized, moderate and manageable. The movement of vehicles should be in defined areas, reducing the compaction of soil to a minimum.

Sub projects should avoid or mitigate removal of native vegetation to prevent erosion.

Disposal of solid waste mixed with some other materials from both the treatment and the laboratory whose characteristics are not burnable, is done in "landfills" whose composition can impact on soil quality.

Due to the fact that not all types of waste can be incinerated, there is a need to ensure that the tuberculosis treatment units have, in addition to the combustor, a crusher for grinding materials such as spittoons, empty bottles ampoules and others as well as a coated pit with $6m^3$ for the deposition of these materials, in order to prevent these materials often containing drug residues from being mixed up along with the municipal urban solid waste landfills or "landfill" open within the facility .

3.1.4 Potential Environmental Impact During Project Stages

Planning and design

No significant impact is expected in the planning and design phase, as most of the activities will be done at the client and consultant's offices. In addition, there will be minor or no rigorous surveying in the planning and design stage.

Construction

The construction and improvement of laboratories will take place within the existing health facilities. Potential environmental impact will be limited, localized and easily mitigated in accordance with the modest building scale (few, simple one-story structures), and the fact that only simple medical procedures will be performed (i.e. not requiring complex machinery or substantially the amounts of highly toxic chemicals. Potential construction impact (e.g., removal of vegetation, erosion, security, management of hazardous materials) will be addressed through the use of selection criteria specific to the site and a standard set of mitigation measures.

Impact during the operational and maintenance phase

During this phase the main impact will not linked to the construction process but to the routine work of the health facilities.

The following are among the expected impact:

- Accidents related to the handling of samples (collection, transport, analysis).
- Waste management (collection, storage, transportation, treatment and disposal)
- Accidents and risks in RX rooms and laboratories.

These issues are addressed in the ICWMP.

Impact during demobilization

At this stage adverse impact is not expected. The activities in this phase include cleaning and dismantling of the site, demolition of temporary infrastructure. Any potential impact is expected to be minor and of very short-term nature.

3.2 Social impact

The construction will take place at existing health facilities wherefore there will be no major impact on the need for resettlement. Where construction will take place, the local community will participate with the labour-work in the short term and simple dimension jobs. Negative social impact is expected to be minimal due to the small scale of construction.

The project will bring a great long-term positive impact on a large part of the population of the country in particular for communities along the corridors and border areas that have very high levels of TB, HIV/AIDS and TB/HIV co-infection.

The project is expected to improve service delivery and laboratory services, facilitate access to quality services as well as laboratory services, improve the conditions in the mining sector, improve the management of TB cases, TB-HIV and MDR-TB, improve coordination and collaboration internally and in the region.

The negative impact of the project will be mainly on the health workers, employees and users, and communities around the health facilities that have contact or work in areas where there the reception, processing and analysis of TB cases is. Accidents to staff, patients and the general public on construction sites and project activity areas could also be expected during the construction phase. The impact is anticipated to be minor, localised and short term and can be mitigated by the following:

- Providing appropriate protective equipment for staff and ensuring they use them;
- Providing appropriate directional and safety signs for staff and public;
- Providing first aid kit;
- Acquiring appropriate workman's compensation and liability insurance;
- Providing alternative routes and passages with adequate and appropriate directional signs;
- Transferring patients to rooms where there are no construction activities.

In addition, noise and vibration disturbances are expected during construction from activities such as breaking down walls, drilling and metal fabrications, concrete mixing, operating of machineries and vehicle movement. The impact is anticipated to be minor, short term and localised. The impact can be mitigated by the following interventions:

- Construction works must be done during official government working hours;
- Use machines that do not make a lot of noise;
- Vehicles, plant and machinery must be regularly maintained as recommended by dealers.

It is possible for personnel to have contact with patients before knowing they are TB patients, which puts personnel in jeopardy. Even attentive technicians can be exposed to it. Ventilation of health facilities (natural and mechanical), equipment placement and reception of patients, must be carefully designed to reduce the risk of transmission.

Procedures, in particular laboratories and waste, should be carefully reviewed to minimize risks of transmission at any sub project activity.

4. ADMINISTRATIVE FRAMEWORK

The National Health Service of Mozambique comprises the public sector, the private for-profit sector and the private non-profit sector. The public sector is the main health care provider and organized into four levels: Level I and II are the most peripheral ones, implementing the Primary Health Care strategy and receiving referrals to medical conditions that cannot be treated at level I (birth complications, etc.); Level III and IV are fundamentally designed for more specialized curative care, and can receive referrals from levels below.

Primary level (health contractors), secondary level (district, rural and general hospitals), tertiary level (provincial hospitals) and quaternary level (central and specialized hospitals).

4.1 Implementing Responsibility

The key implementing agencies will be the MoH, MIREME and MITESS. Overall responsibility for project coordination will rest with the MoH as the lead technical agency for the project. The PNCT will be the lead technical program reporting to the Director of Public Health. The existing PIU in the MoH for the Health Sector Development Project will lead project coordination and fiduciary oversight.

The key technical departments to be involved in project implementation include the PNCT, the General Inspectorate and Directorate of Migratory Work in the MITESS; and the General Inspectorate for Mining in the MIREME.

An inter-ministerial National Technical Committee on Health and Mining (CONSAMI) will be constituted for providing oversight to project implementation across the participating ministries. It will be responsible for reviewing and approving consolidated annual work plans and budgets, and providing technical guidance to implementing agencies. On a rotational basis, the committee will be led by a Permanent Secretary of each of the participating ministries. Members will include the Permanent Secretaries from key implementing ministries, senior official representatives of key ministry inspectorates, directorates, and departments and the head of the PNCT. In the MoH, this would comprise the Director of Public Health and the Deputy Director of Planning and Cooperation. In the MITESS, this will comprise a representative from the General Inspectorate and a representative from the Directorate of Migratory Work. In the MIREME, this would comprise a representative from the General Inspectorate for Mining.

The existing PIU in the MoH will lead project coordination and fiduciary oversight. The project will utilize the PIU arrangements already in place for managing the World Bank financed Health Service Delivery Project. The PIU, which is housed in the Department of Investments of the Directorate of Planning and Cooperation, will provide support to the National Tuberculosis Control Program in the day-to-day management of the project, including procurement and financial management functions, M&E and preparation of technical and financing reporting.

The composition of the PIU team will include a project manager, project coordinator, operations assistant, financial management specialist, project accountant, procurement specialist, and a procurement assistant. The PNCT Director will be the Project Manager of the PIU. The Project Manager will ensure the overall coordination of implementation of project activities at central level and will ensure that information related to project activities is shared across key central and provincial level units. The Project Manager will report to the National Director of Public Health who will provide technical and strategic oversight of the Project. The proposed PIU structure will be subject to the outcomes of the fiduciary assessments to be conducted the World Bank prior to project appraisal.

5. GUIDELINES FOR ENVIRONMENTAL AND SOCIAL ASSESSMENT PROCESS

The comparative analysis of the Mozambican national legislation as well as the environmental impact assessment process (EIA. - Decree No. 45/04) shows a good synchronization with the OP 4.01 of the World Bank on environmental assessment.
All the projects to be implemented under the TB project should be subject to the review and evaluation process given that at the moment there are no concrete sites and intervention in each of them, in order to determine the level of environmental and social assessment. During the evaluation phase, it should be taken into account the fact that the main objective of the project is the reduction and control of the burden that tuberculosis represents for the country.

The project will be implemented by the MoH, MIREME and MITESS with the World Bank support, as part of the regional health sector and tuberculosis support project in the Southern Africa, and will be subject to the same environmental assessment processes as any other project in the country. This plan describes the process in order to ensure that environmental and social issues are adequately addressed during project implementation.

The projects will be carried out by the national anti tuberculosis program under the supervision of a multi-ministerial committee, which was formed in order to implement the project. The project must comply with the national requirements on environmental and social management as well as OP 4.01.

The PCNT will follow all environmental and social screening process for individual projects. Environmental and social experts will be hired to support the sector during the screening process of individual projects, in the preparation of the ToR for EIA studies, facilitation, coordination and review of EIA and ESMPs before submission to the World Bank and MITADER for approval. Environmental and social experts will also assist in the monitoring and evaluation of all projects, PCNT will have the ultimate responsibility of verifying that the work carried out by the experts concerning both national legal requirements and OP 4.01 on environmental and social management.

5.1 Screening Phase

The projects´ screening will begin at the initial phase of the project as soon as the specificities and details of the project are properly defined and are known and they include among others: the nature and scope, proposed location and area and other parameters.

The environmental and social screening process helps to:

- Assess whether sub-projects are likely to have potential negative environmental and social impact;
- Determine appropriate mitigation measures for activities with significant adverse impact, for incorporating them into the sub project design;
- Review and approve sub-project proposals;
- Monitor environmental parameters during project implementation.

The extent of environmental and socials analysis, to mitigate adverse impact for the sub-projects, will depend on the outcome of the screening process. For the Southern Africa Regional TB in Mining Project, environmental screening will be done by completing the screening for prefeasibility in Annex I. This form must be completed for each sub project.

The pre-assessment form includes:

- Project name;
- Category of the area and land use;
- Identification of local communities;
- Identification of other activities in the area;
- Identification of agricultural activities in the area;
- Project description;
- Site location and environmental conditions;
- Environmental, social and cultural sensitivity in the area;
- Identification of potential environmental impact (based on Annex VI);
- Mitigation measures included (in Annex VI).

If the form is filled out appropriately it will facilitate:

- Identification of potential environmental and social impact as well as the risks to health and safety;
- Definition of the appropriate environmental category; and
- Determining the need or otherwise for an EIA/ESIA, ESMP, or determine that there is no need for any action.

Due to the fact that the project includes the construction or improvement of facilities within the health units or new infrastructure, there is a need to respect some measures in the choice of location to minimize or mitigate potential impact.

Generally, the new facility will be located close to the rural population contractors and existing access, but where the space is being used for other economic purposes or is required for access to other sites will be avoided. The criteria in Annex II provide an additional checklist to ensure the prevention of specific problems and environmental sensitivities.

The screening process will lead to four safeguard options:

- No further action, if the sub project has no significant impact on the environment;
- Simple Environmental Review to be carried out for sub-projects likely result in a few minor environmental problems that can easily be mitigated.
- Limited Environmental Review for sub-projects that may create minor environmental problems, requiring frequent site visit or construction modifications to minimize or eliminate impact.
- Full Environmental Impact Assessment for sub projects resulting in potentially significant direct or indirect adverse impact.

5.2 Incinerator Operation (see also Infection Control and Waste Management Plan)

Due to the fact that for proper operation and pollution reduction incinerators greatly depend on good programming, specific procedures as well as some technical aspects to respect will be enumerated in order to extend their life as well as reducing emissions.
The burning cycle consists of three phases namely:

- Preheating - starting the burning of non-infectious material such as wood, coconut shell, etc., for at least 20 to 30 minutes to reach temperatures of approximately 6000 C, if necessary with the addition of diesel or oil, these temperatures are reached due to the existence of such refractory layer equipment.

- Start the burning of biomedical waste incinerators boxes with syringe at a constant rate so as to maintain the burning at a constant grid however, 8 to 10 minutes after all the contaminants are loaded, add 1 to 2 kilos of non-hazardous waste to ensure complete burning.

- Burning between 600 and 9000C should be ensured since values over 9000C increase the speed and burning in the chimney resulting in the reduction of the gas residence time, and induce the production of black smoke despite reducing the emission of toxic gases and burning below 6000C results in increased emissions of dioxins and furans.

- Careful balance between loading speed (introduction of waste in the incinerator) and temperature will minimize the generation of black smoke and the emission of toxic gases.

- In no circumstances incinerators should be used for burning:
    1. Waste containing broken thermometers;
    2. IV fluid bags;
    3. PVC plastic bags;
    4. Ampoules and closed vials;

5. Wet common waste.

- Once the production of dioxins and furans is connected to burning of PVC and other plastic it should always be possible to ban or reduce the maximum burning of such material.

5.3 Preparation of Terms of Reference

Should the screening of sub activity require additional review, a ToR will be prepared for hiring a consultant to carry out the ESIA and the specific ESMP and conduct the public participation process. According to the EIA Regulations 42/2008, Article 21 only consultants registered with the Environmental Assessment Authority (MITADER) are allowed to carry out environmental assessment studies in Mozambique. Consultants must present a valid register certification issued by MITADER.

The ToR should take into account potential impact identified in the present ESMF, as well as other potential specific impact of the site where the activity will be executed.

The structure and content of the EIA must follow the stipulations found in the Regulation of EIAP (Decree Nr.45/04).

The Public Participation Process shall follow the General Directive of the Public Participation Process in the Process of Environmental Impact Assessment.

The ToR must be sent to the World Bank's Environmental and Social Safeguard specialist for no-objection and then to MITADER, for approval.

5.3.1 Recruitment of Consultant

The consultant team retained for the proposed project must present a valid register certification issued by MITADER, and have the required expertise in environmental sciences, sociology, economics, health, safety and security, cultural resources, and project management. The team should include a Team Leader with a comprehensive understanding on international best practices, and World Bank performance standards; knowledge of Mozambique's environmental and social issues and opportunities would also be beneficial. Local experts would be required in the environmental sciences and social disciplines, including someone with solid experience conducting stakeholder engagement and community consultation.

The proponent should request separate technical and financial proposals (submitted in a sealed envelope) and proposal evaluation should be weighed on technical approach and expertise independent of an evaluation of costs. The financial proposals should only be evaluated for consultant teams that are short-listed based on the technical proposals.

5.4 Stakeholder Engagement and the Public Participation Process

The environmental and social specialists would serve as focal points for the project and establish communication with the local community and other stakeholders, and be involved in the process of public participation. A Stakeholder Action Plan (SAP) and Stakeholder Engagement Plan (SEP) should be prepared early in the project and reviewed and approved by PCNT. The SAP and SEP must consider inclusion of women's groups and representatives of other vulnerable populations (elders, youth and disabled). It is important that consultation be initiated early in the project, which provides stakeholders, and members

of the public adequate time to comment, voice concerns, or share ideas that may enhance the project. A grievance mechanism should be developed during project inception, and shared with stakeholders and community members so they can share concerns without fear of reprisals.

The main objective of stakeholder engagement and public participation is to ensure that the concerns and issues raised by people potentially affected by the project, organizations or individuals are taken into account during the ESIA, allowing for the project affected population to discuss the proposed project and the results of the environmental and social studies. The public participation process grants an open channel of communication between the public, the consultants, MoH and MITADER, which will be of extreme importance in managing potential conflicts.

Although PR AIA (Provincial Unit for MITADER) does not require public consultation activities for Category B as a compulsory action (Category B under national legislation), this will be required by the present ESMF, in accordance with World Bank operational standard..

The PCNT shall be actively involved in the public participation process from an early stage in the Project, and shall support the local communities' involvement in the process. This will include the District Consultative Councils, any NGO´s health related working in the area, representatives from village councils or committees, representatives of women's groups, as well as other interested parties and environmental and development NGOs. With this in mind, the creation of local committees consisting of representatives of different participants, consultants and contractors as well as the parties directly affected by the proposed project, is encouraged.

The public participation process report should be included in the environmental assessment report and/or in the activity file folder.

5.5 Compilation of Environmental and Social Requirements for Tender Documents

The PCNT environmental assessment specialist will make a compilation of environmental and social requirements to be met by the project. This compilation will be based in the ESMP approved by MITADER (for Category A and B activities) or in the mitigation measures for Category C Activities (Annex VI).

The environmental and social requirements will be included in the Tender documents of the proposed projects, and may include preparation and implementation of a Resettlement Action Plan (RAP), for involuntary resettlement. A Gender Action Plan (GAP) or Vulnerable Community Development Plan (VCDP) will be developed as needed to address social, economic and cultural issues as they affect these groups, which in this specific case is remote once the intervention will occur within the health facility.

Tender documents shall indicate that before initiating a project on the ground, the Contractor shall obtain all permits necessary for carrying out the work under the contract.

Once the work is completed, the contractor or proponent shall: (i) remove temporary buildings, equipment, solid and liquid waste, leftover materials, fences, etc. (ii) rectify faults in drainage and treat all excavated areas; (iii) reforest areas initially deforested with appropriate species approved by MITADER; and (iv) protect the remaining dangerous works (wells, open ditches, slopes, projections, rehabilitate quarries, etc.). After the removal of all equipment, a report on the rehabilitation of the site must be prepared and attached to the minutes of the reception of the works. The rehabilitated land will be inspected by

representatives of the MITADER to ensure the rehabilitation work is suitable activities to commence.

5.6 Consultation and Disclosure

The finalization of the environmental and social documents must include a consultation process with key stakeholders, including NGOs directly supporting communities on community development areas, as well government environmental authorities (at national, provincial and district levels), community groups, including women's groups. Consultation must comply with WB OP 4.01, WB stakeholder consultation guidelines, and national requirements for stakeholder consultation.

5.6 Review and Approval

The PCNT environmental and social specialists will review the ESIA prior to submission to the Provincial Directorate of Environmental Affairs (DPCA). The DPCA will always be responsible for the review and final approval of environmental studies and environmental management plans and the accompanying environmental licensing.

All social and environmental reviews are subject to approval by the World Bank. Any proposed sub-projects that do not comply with the requirements of this ESMF, the completed screening form and the World Bank safeguards policies will not be cleared for approval.

6. FRAMEWORK FOR ESIA AND ESMP OF SUB-PROJECTS

After reviewing the completed Screening Form (Annex I), and the sub project environmental checklist, the District Environmental Management Sub-committee will determine the extent of environmental and social work required (i.e. whether application of mitigation measures outlined in the environmental checklist will suffice or not). Some design modifications can be incorporated in the project costs at this stage, in order to minimize or avoid environmental impact.

Depending on the magnitude of the environmental impact identified, the officer responsible for environmental matters at the district, in consultation with the officer responsible for health matters, will carry out an environmental review or limited environmental assessment.

Where results of the environmental and social screening process indicate the need to carry out an EIA, the procedure for preparation of the EIA, up to issuing of an EIA certificate shall be followed.

The Southern Africa Regional TB in Mining Project will pay for the EIA study, to be done by approved consultants and also pay for the review and approval costs charged by the institution responsible for environmental matters. EIA requires inputs from teams of specialists who will consult the relevant key stakeholders.

6.1 Environmental and Social Management Plan

Annex VIII provides a generic template for n ESMP for measures to be taken to ensure that environmental and social impact identified through the screening process are eliminated, mitigated, or controlled; through planned activities to be implemented in all the phases of the project. Basically the generic ESMP:

1) Is a list of the likely potential environmental impact;
2) Provides the mitigation measures against each impact;
3) Assigns the responsible institutions to carry out the mitigation measures; and
4) Gives an estimate of the cost for implementing the mitigation measures.

The ESMP was developed on the basis the potential environmental and social impact anticipated from the proposed Southern Africa Regional TB in Mining, Mozambique project activities. The impact was determined from the general project description, stakeholder consultations and professional judgment. Hence the list of potential impact however, is by no means exhaustive.

It is to be appreciated however, that the generic management plan may need to be adjusted to suit changes or emergencies that may occur in the project design and on specific sites at the time of project implementation. The plan therefore should be considered as the template to be followed to ensure that the key potential negative impact is kept minimal or under control. In this regard, flexibility should be allowed to optimize development and implementation of the ESMP.

Consultants hired to conduct sub-project ESMPs should ensure to set out:

- Actions or mitigation measures to be undertaken;
- A description or list of parameters to be measured and monitoring locations where appropriate;
- Indicators to measure and verify level or extent of implementation of the mitigation measures;
- Time schedule measuring and verifying the indicators;
- Institutions of persons responsible for carrying out the monitoring;
- Cost estimates for monitoring.

To complement the generic ESMP, an Infection Control and Waste Management (ICWM) Plan is also being developed as a separate document. The MoH, all other stakeholder institutions and personnel for the Southern Africa Regional TB in Mining Project will implement it together with the ESMP to ensure best results for environmental management and infection control.

6.2 Monitoring Indicators

The objectives for environmental and social monitoring are to:

- To help measure the level of success in the implementation of the mitigation measures, as provided in the ESMP;

- Alert the project developer and controlling authorities and to provide timely information about the environmental and social screening process as outlined in the ESMF. This will facilitate changes to be made in the implementation of the sub-projects where appropriate;

- Make a final evaluation, to determine whether the mitigation measures designed for the sub-projects have been successful. This evaluation compares the pre-sub-project environmental and social condition with that after completion of the sub-project, to determine whether the original environmental and social conditions have been restored, improved or made worse;

- Ensure that the project activities are being carried out in a manner that protects the environmental and social conditions as well as the health and social wellbeing of the workers including the general public;

- Ensure that changes if any, to the ESMF and additional training capacity building required to improve the performance of the framework are implemented.

To assess whether the goals of the ESMP are being met, the environmental monitoring plan will indicate parameters to be monitored, institute monitoring milestones and provide resources necessary to carry out the monitoring activities.

Monitoring indicators are a very important part of the monitoring plan. The indicators have to be:

1) Specific to avoid ambiguity of items being measured;
2) Measurable to facilitate quantification, and
3) Quantifiable to be easily translated into units of measurement and to facilitate verification.

Indicators can be measures in units of, for example, time (duration), frequency (how often), extent (distance, area or volume) and quantity or magnitude (how much, strength or how many) and quality (e.g. water or air quality).

Two main broad socioeconomic indicators, by which to evaluate the successful implementation of the environmental management plans are:

- The pre-subproject environmental state has been maintained or improved;
- The local communities are consulted with and remain supportive of the project.

The following are some of the general parameters and verifiable indicators that could be used to measure the overall project's success in terms of implementing the intended mitigation plans and achieving the desired environmental and social performance.

- Percentage of sub-projects adopted after screening as required by the ESMF;
- Number and types of the key benefits to the community from the project, as a result of using the ESMF and the screening process;
- Percent decrease in TB cases;
- Number of individuals trained and female percentage of trainees.

7. IMPLEMENTATION OF THE ESMF AND CAPACITY BUILDING

It is estimated that the implementation of the ESMF will require a budget of US$ 450,000 in order to adequately monitor environmental and social impact, and build capacity. Additional cost will be required where detailed EIAs or ESMPs will be required.

7.1 PIU Coordination

The PIU at MoH has the overarching responsibility to ensure that the ESMF is implemented. Specifically, the PIU must ensure:

a) That all environmental and social reviews (screening, planning and assessments) are implemented and submitted to MITADER and World Bank for approval;

b) Compliance with the relevant environmental standards set out by this ESMF;
c) Coordination of efforts between ministries, and institutions at regional and districts level;
d) Implementation of the Infection Control and Waste Management Plan (ICWMP).

The following arrangement should be used to manage the Environmental and Social Impact of the project in Mozambique:

LEVEL	RESPONSIBILITIES
National	• Provide overall guidance, coordination, and monitoring of the implementation of the ESMF • Supervise and monitor environmental management activities at health facilities
District	• Enforce and ensure compliance with statutory regulations and standards on environmental management; • Budget for the ESIAs at district level • Ensure ESMPs are developed for construction activities at specific sites; • Promote inter-sectoral and community collaboration and co-operation in the development and implementation of the ESMPs • Supervise and monitor implementation of the ESMPs
	• Create awareness about environmental health issues at district level; • Participate in the development of the ESMPs • Lead in the management of Environmental and Social impact for construction works at specific sites in the district; and • Monitor implementation of ESMPs in the sites.
Health facility	• Create awareness about environmental health issues in the communities; • Participate in the development of the ESMPs • Lead in the management of Environmental and Social impact for construction works at health centre level; • Monitor implementation of ESMPs in the health centres.

It is estimated that the cost of monitoring, over a five-year period, would be US$ 50,000. Please refer to Annex X for cost estimation.

7.2 Capacity Building

The key personnel that manage and monitor environmental and social impact for the Southern Africa Regional TB in Mining will receive adequate training to undertake the tasks required. Specifically, it is expected that training will be required to ensure that officers can adequately conduct screenings of sub projects and oversee environmental and social studies (ESIA or ESMP whether limited or full). Officers with such responsibilities should also be trained in the implementation and monitoring of the Infection Control and Waste Management Plan.

Specifically the district level staff should be trained to be able to:

- Discuss the role of the various players in implementation and monitoring of the ESMP and ICWMP
- Conduct or supervise the screening process;
- Carry out or supervise the Environmental Review process;
- Carry out or supervise Limited Environmental Assessments;
- Select, recommend and supervise appropriate contractors to conduct full ESIAs and/or EA;
- Monitor implementation of the EMP by the civil works contractor;
- Monitor implementation of laboratory environmental work and ICWMPs;

- Prepare sub-project interim and final environmental and ICWMP evaluation reports.

Members of the Village Health Committee, Volunteers, and community leaders (who will in turn relay messages to their communities) should also be sensitized on the implementation and management of the mitigation measures; and on their roles in achieving environmental and social sustainability; and to sensitize the committees on linkages between environmental and social impact and health; as well as on the ICWMP.

It is also important to sensitize top level management of the ministry and other stakeholders, on the importance of environmental management and Infection Control and Waste Management, so that they can appreciate and approve the needs and activities of front line staff, when implementing future environmental management activities and training programmes.

In addition to the above training, it is recommended that exchange visits to other participating countries be undertaken by staff representatives of the Ministry of Health, local government and the Environmental Affairs Department to learn and share how environmental and Infection Control and Waste Management of their project is handled and to draw lessons that can be applied in their own situation.

The proposed areas of training should be based on the topics outlined in the table below and the training material should be prepared to suit the three different levels at the indicated estimated costs. The total estimated cost of capacity building is US$ 400,000.

Type of training, target group and training duration	**Training topics**	**Estimated Cost (US$)**
Sensitization of top level management staff of the Ministry of Health Two days	• Introduction to the Southern Africa Regional TB in Mining Mozambique Project • Introduction to ESMF and ESMP for the Southern Africa Regional TB in Mining Project • Potential Environmental and Social (including Gender and Nutrition impact) of TB, MDR-TB, HIV and AIDS by the Southern Africa Regional TB in Mining Mozambique Project; • Relevant environmental legislation and World Bank Safeguards; and compliance requirements • Importance of environmental management, Infection Prevention and Control; and Waste Management • Importance of approving and supporting the needs and activities of front line staff to implement environmental management activities and training programmes	40,000
Sensitization of National Level staff of the Ministry of Health, Environmental Health Unit One day	• Introduction to the Southern Africa Regional TB in Mining Mozambique Project • Relevant environmental legislation and World Bank Safeguards; and compliance requirements • Importance of environmental management, Infection Prevention and Control; and Waste Management • Potential Environmental and Social (including Gender and Nutrition impact) of TB, MDR-TB, HIV and AIDS by the Southern Africa Regional TB in Mining Mozambique Project • Introduction to ESMF and EMP for the Southern Africa Regional TB in Mining Project ○ Roles of various players in developing, implementing and monitoring of ESIAs,	10,000

	EMPs, Laboratory and ICWMP; ○ Conducting or supervising the screening process ○ Carrying out and supervising the Environmental Review process ○ Selecting and supervising an appropriate contractor; ○ Monitoring implementation of the EMP by the civil works contractor; ○ Monitoring implementation of the Infection Control and Waste Management Plan; ○ Preparing sub-project interim and final evaluation reports; and ○ General coordination of environmental management and the infection prevention and control; and waste management activities	
Training district and health centre level staff of the Ministry of Health and other stakeholder ministries Two days	• Introduction to the Southern Africa Regional TB in Mining Mozambique Project • Relevant environmental legislation and World Bank Safeguards and compliance requirements • Importance of environmental management, Infection Prevention and Control and Waste Management • Potential Environmental and Social (including Gender and Nutrition impact) of TB, MDR-TB, HIV and AIDS by the Southern Africa Regional TB in Mining Mozambique Project • Introduction to the ESMF, ESIA and EMP processes for the Southern Africa Regional TB in Mining Mozambique Project • Roles of various players in implementation and monitoring of the ESMP; • Conducting and supervising the screening process (including practical sessions); • Carrying out and supervising the Environmental Review process (including practical sessions); • Selecting a contractor and supervising contractors' work; • Monitoring implementation of the ESMF and EMP by the civil works contractor • Preparing sub-project interim and final evaluation reports; and • Monitoring construction/refurbishments environmental work and Infection Control and Waste Management activities	150,000 (in all six implementation districts)
Sensitize representatives and leaders of community groups, village health committees and volunteers One day	• Introduction to the Southern Africa Regional TB in Mining Mozambique Project and Infection Control and Waste Management Plan • Community roles in achieving environmental sustainability • Linkages between environmental, health and social impact to socio-economic development; • Potential Environmental and Social (including Gender and Nutrition impact) of TB, MDR-TB, HIV and AIDS by the Southern Africa Regional TB in Mining Mozambique Project • Mitigation and enhancement measures for impact of the Southern Africa Regional TB in Mining Mozambique Project • Implementation and monitoring of the ESMP and the Infection Control and Waste Management Plan	200,000 (in all six implementation districts)

6.1 IMPLEMENTATION TIMELINE

The Environmental and Social Management Framework should be implemented in the five-year period for project implementation. The timeline for the activities is provided in table below.

Implementation timeline for the ESMF

#	Activity	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
1.	Formalizing the role of the PIU, responsibility and scope of the unit in carrying environmental activities for the project.																				
2.	Identification of inter-sectoral coordination measures and implementation and monitoring frameworks																				
3.	Finalization of Roadmap for implementation																				
4.	Training and capacity building for environmental management members at national, district and health centre level																				
5.	Carrying out environmental screening																				
6.	Hiring consultants and conducting limited ESIAs, full ESIAs and developing ESMPs for specific sites for construction activities																				
7.	Review of the ESMF, ESIA reports and ESMPs																				
8.	Enforce and monitor compliance to the ESMPs																				
9.	Midterm evaluation of ESMPs																				
10.	Independent final evaluation of ESMP																				

Q= Quarter

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ANNEX I: ENVIRONMENTAL AND SOCIAL PRE-FEASIBILITY FORM (ANNEX IV DECREE 45/2004)

The Screening Form has been designed to assists in the evaluation of sub projects for the Southern Africa Regional TB in Mining Project in Mozambique. The form is designed for assessment of environmental and social impact and mitigation measures, if any, so that requirements for further environmental analysis can be determined.

This form must be completed by the officer responsible for environmental management at the district or an appropriately trained representative in consultation with the affected communities as well as key stakeholders of the sub-project. The form will be part of the approval requirements for implementation of the sub-project activities of the Southern Africa Regional TB in Mining Project.

PART A: GENERAL INFORMATION

1. Name of sub-project: ……...……...

2. Sector: ……...…….....

3. Type of activity

New		Rehabilitation		Expansion	

4. Administrative Location:

4.1 Bairro (Municipal Area)……...…….……..…..

4.2 Village/City…….……..…..……

4.3 Locality…….……..……..…..

4.4 District…….……..…..

4.5 Province…….……..….

4.6 Geographic coordinates…….……..…..

Urban		Rural	

5. Identification of Proponent (s): ……... ……

6. Address/contact……... ……..... ……...……... ……

7. Name of the Approving Authority ……..

Details of the person responsible for completing this screening:

8. Name: ……..

9. Job title: ……...

10. Telephone number: ……...

11. Fax number: …….....

12. E-mail address: …….

13. Date: ……..

14. Signature: ……..

PART B: BRIEF DESCRIPTION OF THE SUB-PROJECT

Please provide information on the type and scale of the sub-project (area, required land and approximate size of total building floor area).

Provide information about the nature of activities during construction of the facilities including support/ancillary structures and activities required for construction, e.g. need to quarry or excavate borrow materials, laying pipes/lines to connect to energy or water source, access road etc.

1. Compliance with zoning

Living space		Industrial		Services		Green Area	

2. Activity infrastructure, location, siting, surroundings, dimensions and installed capacity: *(use whenever possible writings and drawings of activity)*

.....

....

…….....

3. Associated Activities:

.....

....

4. Brief description of the construction and operation technology:

.....

....

5. Type, origin and quantity of labour:

.....

....

6. Alternatives to location of activities: *(Reason for choice of the site of activity, indicating at least two alternative sites)*

.....
.....

7. Additional information through maps

- *Location Map (in an appropriate scale)*
- *Activity framework map in the location area (in an appropriate scale)*
- *Other information deemed relevant*

PART C. ENVIRONMENTALLY SENSITIVE AREAS OR THREATENED SPECIES THAT COULD BE ADVERSELY AFFECTED BY THE PROJECT				
No	Description	Yes	No	Not known
1	Intact natural forests			
2	Riverine forest and river banks			
3	Surface water courses, natural springs			
4	Wetlands (lakes, rivers, swamp, seasonally inundated areas)			
5	Distance to the nearest wetland (lakes, river, seasonally inundated areas) less than 30 km:			
6	Area is of high biodiversity			
7	Habitats of endangered/threatened species for which protection is required under participating countries' Laws.			
PART D. GEOLOGY, TOPOGRAPHY AND SOIL				
1	Direct cause or worsening of soil loss or erosion by the project			
2	Project will lead directly or indirectly to practices that could cause soil loss or erosion			
3	Need to consult a soil scientist on the project			
4	Modification of slopes is required by the project			
5	Project will affect stability of slopes directly or indirectly			
6	Project is located where existing unstable slopes could be a hazard			
7	Soil instability in the project area black cotton soil, earthquake, landslide, subsidence			
8	Project will cause substantial increase in soil salinity			
9	Increase in chances of floods, poorly drained, low-lying, depression or block run-off – water			
10	Soil contamination and pollution hazards will result from the project			
11	Risks of contamination and pollution from latrines, dump sites, industrial discharge etc.			
12	Need to consult a geo-technical engineer			
PART E. LAND, VEGETATION AND PROPERTY				
1	There are farm lands in the project area			
2	Project will reduce or damage farm land			
3	Project will cause loss of vegetation, crops and fruit trees animals and livestock			
4	Project will cause loss of houses, infrastructures (shed, toilets, granaries)			
5	Project will cause loss or interference with access, routes for people, livestock etc			
6	Land in the project area is intensively developed			
7	The project will increase pressure on land resources			
8	The project will result in decreased holdings by small land owners			
9	The project will result in involuntary land take			
10	A land use planner should be consulted			
PART F. SURFACE WATER QUANTITY AND QUALITY				
1	Project will increase demand or cause loss of available surface water			
2	Need to consult a hydrologist			
3	Project will lead to additional discharges into surface water			
4	Project could cause deterioration of surface water quality			
5	Need to consult a hydrologist and/or water quality expert			
PART G. GROUNDWATER QUALITY AND QUANTITY				
1	Project will increase demand or cause loss of available ground water resources			
2	Project will cause natural or man-made discharge into ground aquifer			

3	Project could cause deterioration of ground water quality			
4	Need to consult a hydrologist and/or water quality expert			
PART H. AIR QUALITY				
1	Project will pollute air directly			
2	Project will lead to practices that worsen air quality			
3	Project will lead to a change in engine or fuel use that could cause serous air problems			
4	Project will result in polluted and hazardous working environments for staff			
PART I. NOISE				
1	Noise is a problem in the project area			
2	Project will result in increase in noise generation			
3	Project could make people to move to high noise level locations			
4	Project could result in noisy working environments for staff			
PART J. AQUATIC ECOSYSTEMS				
1	Significant aquatic ecosystems (wetlands, rivers, streams, lakes or ponds) are in the project area			
2	Project will affect the condition and use of ecosystems for human consumptions			
3	Significant wetland ecosystems (marsh, swamp, flood plains, or estuary) are in the project area			
4	Project will affect the use or condition of such wetlands			
PART K. TERRESTRIAL ECOSYSTEMS				
1	There are significant terrestrial ecosystem (forest, savannah, grassland or desert) in the project area			
2	Project will affect the use or condition of such ecosystems			
PART L. ENDANGERED/ THREATENED/RARE/ENDEMIC/SPECIES				
1	Endangered species exist in the project area			
2	Project will affect the habitant and number of such species			
PART M. MIGRATORY SPECIES				
1	Migratory fish, birds, or mammals use the project area			
2	Project will affect the habitat and numbers of such species			
PART N. BENEFICIAL PLANTS, ANIMALS, INSECTS, PESTS AND VECTORS				
1	There are non-domesticated plants and/or animals, used or sold by local people in the project area			
2	Project will affect these species by reducing their numbers or habitant			
3	There are currently problems with pest (plants or animals) in the project area			
4	Plants or animals might become pests due to ecological changes brought by the project in the area			
5	There are known disease problems in the project area transmitted through vectors			
6	Project will increase vector habitat or population			
7	Need to consult a public health officer			
PART O. ENERGY SOURCE				
1	The project will increase demand for conventional energy sources			
2	The project will create demand for demand for other energy sources (wood and charcoal)			
3	The project will promote supply of conventional energy sources			
PART P. LAND ACQUISITION AND LIVELIHOODS				
1	Land will be acquired			
2	People's assets or livelihoods will be affected			
3	People will lose access to natural resources			
PART Q TOURISM AND RECREATION				
1	There is, at present, a significant degree of tourism in the area			
2	There is unexploited tourism or recreation potential in the area			
3	The project will adversely affect existing or potential tourist or recreation attractions			
PART R HAZARDOUS WASTES				
1	The project will produce hazardous wastes requiring special handling,			

	storage, treatment and disposal methods			
2.	The project will cause spread of infection within and outside the facility requiring adherence to standard precautions			

CONCLUSION:

If all the above answers are “No”, there is no need for further action.

If there is at least one “Yes”, a limited Environmental Impact Assessment or an Environmental and Social Management Plan may be required.

Guide on possible action to be taken

- No further action if sub-project has no impact on environment
- An Environmental Audit if the sub-projects may create a few minor environmental impact which can be easily mitigated.
- Simple Environmental Review and ESMP if sub-projects may create a few minor environmental impact which can be easily mitigated.
- Limited Environmental Review and ESMP if sub-projects may create minor environmental problems that require site visit or construction modifications to minimize or eliminate impact.
- Any other recommendation (explain):. ……

Summary of possible safeguard options:

.....

....

…….....

This form has been completed by:

Name: ……Title: ……

Date: ……..Signature: ……

Approved by District Executive Director

Name: ……Title: ……

Date: ……..Signature: ……

ANNEX II: CRITERIA TO PREVENT INAPPROPRIATE CHOICE OF SITES FOR TUBERCULOSIS TREATMENT

	Criteria
1	Location and access available without any resettlement and compensation
2	Sites without prior use that might have been contaminated (factories, dumps) that may leave harmful substances in the soil
3	Soil not prone to soil instabilities such as (rapid erosion, landslides or subsidence)
4	In case of need to build in cyclone zones or high winds, these must be naturally protected by the relief or by an arboreal curtain, avoiding large trees within the zone
5	Places with a history of flooding (including those resulting from coastal areas), intercepting important drainage lines or depressions
6	That are less than 30 meters from any river or watercourse
7	That are less than 100m from temporary or permanent wetlands, or stagnant water bodies
8	That are less than 50m from roads
9	With the water table less than 2 meters (in case the water table is less than 4 meters from wells and waste pits and others must be sealed base (concrete)
10	The site should not incorporate or affect natural forests or other natural inhabitants, if they have or are suspected to have importance or protection status for biodiversity.
11	That are located at least 100 m from forests or areas subject to regular fires
12	Location relatively flat, where there is no need to move large amounts of soil beyond the projected standard design
13	Do not exist or it is suspected of their existence in the room objects, cultural, archaeological or spiritual sites (e.g. cemeteries, sacred trees, etc.)

ANNEX III: SUB PROJECTS ENVIRONMENTAL AND SOCIAL CHECKLIST

This Environmental and Social Checklist can be used or adapted to the particular project activities on the different sites for the Southern Africa Regional TB in Mining Mozambique Project. The checklist will be completed by a member of the project facilitation team at the district level. The member would have received training in environmental assessment and use of the Screening Form. Members of Village Development Committee in the project area will also participate in filling the form and all parties participating will have to sign the form. The District Environmental Officer must also be present during the completion of this form.

Environmental Checklist for the TB in Mining Project in Mozambique

Impact	Mitigation Measures	Tick as Relevant	Responsible Person
During Construction			
Soil erosion	Control movement of vehicles, plant and equipment on earth roads and working sites		
	Regular use of water sprays and compacting soil on earth roads and around working areas		
Soil contamination	Store and contain rehabilitation and construction materials on lined surfaces, in covered areas.		
Impeded water flow and creation of stagnant water pools	Keep all drains clear of silt and debris		
Water pollution	Collect and dispose of wastes in designated disposal sites as required by the District Council		
	Store cement, paints, lubricants and fuels in covered areas		
	Mix cement in areas not connected to natural drainage systems		
Surface water siltation	Use water sprays on roads and construction sites and compact loose soils		
	Procure building materials from registered suppliers		
Ground water pollution	Line the surfaces of storage spaces and where construction activities e.g. painting, cement mixing are taking place;		
	Dispose wastes in designated place		
	Where possible, use the existing sanitary structures at the sites for renovations		
	Construct sanitary structures in areas where the water table will not be affected		
Air pollution	Maintain construction machinery regularly as recommended by dealers		
	Workers must be provided with breathing masks.		
	Enclose/shield work areas to prevent spreading of dust and smell		
Temporary obstruction of walkways and access to services	Provide alternative routes with adequate and appropriate directional signs around safety barriers to access services		

Impact	Mitigation Measures	Tick as Relevant	Responsible Person
Disturbance of traffic and movement of people on the hospital premises	Provide alternative routes and passages with appropriate directional signs.		
Temporary loss of services such as water, electricity and telephone services	Inform the Client well in advance (a week) before disconnecting services		
Accidents to staff and public on construction sites and project activity areas	Provide appropriate protective clothing for staff and ensure they use them		
	Provide appropriate signs for staff and public		
	Provide first aid boxes		
	Acquire appropriate workman's compensation and liability insurance		
	Provide alternative routes and passages with adequate and appropriate directional signs		
Noise & vibration disturbances	Construction and rehabilitation works to be done during normal working hours.		
	Use machines that do not make a lot of noise.		
	Vehicles, plant and machinery to be regularly maintained as recommended by dealers.		
Spread of TB, STIs, HIV and Aids and other communicable diseases	Conduct awareness meetings and provide condoms to staff		
Defacing and degradation of the appearance of the area	Remove and dispose waste regularly in appropriately designated disposal site.		
	Use shields to isolate and enclose construction sites		
During Demobilization			
Air pollution from dust and contaminated wastes	spray water in areas which are being swept and cleared		
Injuries may result from object falling on the workers and other accidents	Workers must wear protective gear		
	Sensitize workers to be following safety procedures when removing the structures.		

This form has been signed by:

Chairperson of the District Executive Committee (Full Name)..……

Signature. ……Date……

Chairperson for VDC (Full Name) ……..…

Signature. ……Date……

Member of Village Development Committee (Full Name) ……..……

Signature. ……Date……

ANNEX IV: ENVIRONMENTAL GUIDELINES FOR CONTRACTORS

1. General Provisions and Precautions

The contractor shall take all necessary measure and precautions to ensure that all the works and associated operations on or off the work sites are carried out in accordance with statutory and regulatory environmental requirement of the participating countries.
The contractor shall avoid and prevent any nuisance or disturbance associated with execution of work under this project. In the event of any soil, debris or silt from the work sites being deposited on any adjacent land, the contractor shall immediately remove all such spoil debris or silt and restore the affected area to its original state, to the satisfaction of the responsible authorities.

2. Protection of Water and other Public Services

The Contractor shall ensure that no public services are disrupted as a result of execution of the construction works. In particular, the Contractor shall:

- Not interfere with supply or abstraction of water for public or private use; and shall not pollution any water resources (including groundwater) as a result of execution of the works;
- Not disrupt power supply or telephone connections or any other public or private services including footpaths and walkways;
- Not discharge or deposit any waste or any material into any waters or any grounds except with the permission of the appropriate regulatory authorities;
- At all times ensure that all streams and drains within and adjacent to the work sites are kept safe and free from any debris and any material arising from the works;
- Protect all water courses (including ditches, canals, drains and lakes) from pollution, siltation, flooding or erosion as a result of the execution of the works;
- Assume all responsibility to locate or to confirm the details and location of all utility services on or in the vicinity of the site;
- Assume responsibility for any damage and \or interference caused by him or his agents, directly or indirectly, arising from actions taken or a failure to take action to protect pubic or private utilities. The Contractor shall be responsible for full restoration of any damage caused and for restoration of services;
- Water and waste products shall be collected, removed and disposed of at an approved location and in a manner that will not cause pollution or nuisance;
- The contractor shall not dispose of any surplus material on private land unless authorized in writing by the owner(s), authenticated before a notary public, and with previous authorization of the CSC.

3. Control of Air Pollution

- Open fires and burning of construction waste shall not be permitted;
- Blasting and quarrying shall be carried out using material and methods approved by the appropriate controlling authority and in a manner to avoid dust emission;
- Dust- generating operations shall not be permitted to affect any residential areas, pedestrians or any public or private property. Where dust generation is inevitable, appropriate measures such as use of water sprays and fencing shields or appropriate covering material shall be employed. All workers shall be protected from dust emissions by providing them with appropriate protective wear;
- All construction machinery, plant and equipment including all vehicles shall be regularly maintained to ensure that no smoke or obnoxious gas is discharged to pollute the air and affect the public or property.

4. Acquisition of Construction Material

- All mined areas shall be restored to original or better state in full compliance of environmental regulations, standards and according to contract specifications. Restoration of the borrow areas and their surroundings, shall be done according to environmental regulations and to the satisfaction of the consultant and client before approval of payment under the terms of contracts;

- Borrow pits shall be leveled and covered to facilitate natural drainage and scenic beauty, or to create functional water storage structures as appropriate;
- Only licensed quarrying operations and sites shall be used as sources of construction materials.

5. Prevention of Soil Erosion.

- The Contractor shall fence off construction sites, provide appropriate drainage and ram or compact soils where necessary to stabilize the soils and reduce erosion;
- All construction sites and sites used for mining materials shall be backfilled, leveled and re-planted with trees, vegetation and grass to restore them to the original state and to prevent soil erosion;
- As far as possible the contractor shall avoid or reduce construction activities and mining of construction material during the peak of rainy seasons.

6. Control of Social Impact

- The Contractor shall coordinate with all the neighbouring land users and respect their rights to a clean and safe environment. Written agreements with local landowners for temporary use of their sites or property shall be made and sites must be restored to original condition or conditions acceptable to the owner within an agreed time. Camp sites shall be maintained and cleaned up at all times and on completion of the works;
- Health and safety of workers shall be protected by providing basic emergency health and first aid facilities and awareness meetings aimed at the prevention of sexually transmitted diseases. Awareness meetings shall be conducted as a part of all construction employee orientation programs. Employees shall be provided with condoms for protection from STIs;
- The Contractor shall obtain all necessary written traffic control permissions including for use of flagmen, traffic cones or other devices such as barricades and/or lights which he must use to control traffic for safety of pedestrians, cyclists and all road users, particularly school children;
- The Contractor shall neither stockpile nor store any construction materials; nor park construction plant or vehicles in walk ways, pedestal routes or driveways. Stockpiles of material shall be covered with tarpaulins or sprayed with water where these materials pose risks of dust to the public or people's property.

7. Noise Control and Regulation

- The Contractor shall take all necessary measures to ensure that the operation of all mechanical equipment and construction processes on and off the site shall not cause any unnecessary or excessive noise to the public. In addition, the Contractor shall operate noisy equipment within government working times unless with prior arrangement and permission from the employer;
- Vehicle, plant and equipment exhaust systems shall be maintained in good working order, as recommended by the manufacturers, to ensure that no noise is unnecessarily generated to inconvenience the public;
- Construction works and operations shall be scheduled to coincide with periods when people would least be affected by noise, having due regard for avoiding any noise disturbances to local residents, hospitals, schools or any other public and private places in the work site neighbourhood;
- The contractor shall notify public (likely to be affected by the works) of impending construction operations and specify methods to receive and handle all public complaints.

8. Environmental Monitoring

- The Contractor shall be responsible for monitoring all his activities and ensuring that all environmental requirements and the above conditions are met at all times.

ANNEX V: GENERIC TERMS OF REFERENCE FOR PREPARATION OF AN ESIA

1. Provide a full description of the nature of the project with respect to the name of the proponent, the postal and physical address, the spatial location of the potential site for the project, the estimated cost of the project, and size of land for the project site, including water reticulation, waste disposal and access roads.

2. Provide a site-specific map of the area (Scale 1:50,000) showing the proposed project site and existing establishments in the area and surrounding areas. A site plan for the project should also be provided.

3. Examine the existing conditions of the proposed site identifying and analysing:
   - Geological and soil conditions of the area;
   - The scope of vegetative resources of the area;
   - Existing land uses within the area and within adjacent villages;
   - Ecologically important or sensitive habitats and resources e.g. water resources, biodiversity elements; and
   - Suitability of the site for the proposed development.

4. Describe the major activities to be undertaken for the construction and operation of infrastructure services. This should include the size and type of infrastructure, the type of equipment to be used, the method and duration of construction, nature and quantity of wastes to be generated, the facilities for appropriate disposal and management of waste, number of people to be employed and.

5. State the reasons for selecting the proposed site, the consequences of not undertaking the project at the proposed site and any alternative sites considered.

6. Predict the major short and long-term environmental impact of the project. Examine both the positive and negative impact as well as impact on the biophysical, social, economic and cultural components of the environment. The potential impact must include those related to:

   - Project location (e.g. resettlement of people, loss of forest land, loss of agricultural land, impact on flora and fauna);
   - Construction works (e.g. soil erosion, disposal of construction spoils, drainage and access roads);
   - Project operation (e.g. solid waste disposal, sewage disposal).

7. Prescribe measures to eliminate, reduce or mitigate the negative effects identified and the measures to enhance the positive effects in 6.

8. Propose an Environmental and Social Management Plan (ESMP) in tabular form by which all of the mitigation/enhancement measures prescribed will be carried out, specifying who will be responsible for implementing these measures and the schedule for implementation, cost of implementing the measures and the source of funding. An environmental monitoring plan should also be prepared including the indicators to be used for monitoring the impact and responsible persons and institutions that will conduct the monitoring.

9. Undertake public consultations to ensure that all interested and affected parties are involved in the ESIA process and incorporate their views into the ESIA. Evidence of consultation should be provided in the report.

10. Provide an account of all statutory and regulatory licenses and approvals obtained for the project to ensure that they are in line with sound environmental management practices and compliance with all relevant existing legislation. Reference should be made, but not limited to the Environment Management Act and other relevant and other relevant legislation.

ANNEX VI: POTENTIAL APPLICABLE ENVIRONMENTAL AND SOCIAL MITIGATION MEASURES

Generic Environmental and Social Management Plan				
Project Stage / Environmental Components	Impacts	Mitigation Measures	Responsible persons/Institution	Estimated Cost per Site (USD)
During Construction				
Soil and land	Soil erosion	Control movement of vehicles, plant and equipment on earth roads and working sites Regular use of water sprays and compacting soil on earth roads and around working areas	Contractor	N/A To be included in the Contractor's bill of quantities
	Land degradation and Soil Contamination	Store and contain rehabilitation and construction materials on lined surfaces and in covered areas. Dispose of waste as required by the Local Authority Use soils to rehabilitate eroded areas Enforcing the use of licenced construction materials suppliers through the civil workers contracts.	Contractor	To be included in the Contractor's bill of quantities
Water Resources	Impeded water flow and creation of stagnant water pools	Keep all drains and natural water ways clear of silt and debris	Contractor	To be included in the Contractor's bill of quantities
	Water pollution	Collect and dispose of wastes in designated disposal sites as required by the Local Authority Store cement, paints, lubricants and fuels in covered areas	Contractor	To be included in the Contractor's bill of quantities
	Surface water siltation	Use water sprays on roads and construction sites and compact loose soils. Enforcing the use of licenced construction materials	Contractor	To be included in the Contractor's bill

Generic Environmental and Social Management Plan				
Project Stage / Environmental Components	Impacts	Mitigation Measures	Responsible persons/Institution	Estimated Cost per Site (USD)
		suppliers through the civil workers contracts.		of quantities
	Ground water pollution	Line the surfaces of storage areas for materials and where construction activities e.g. painting, cement mixing are taking place; Dispose wastes in designated places Where possible, use the existing sanitary structures at the sites for renovations Construct sanitary structures in areas where the water table will not be affected	Contractor	To be included in the Contractor's bill of quantities
Air Quality	Air pollution	Maintain construction machinery regularly as recommended by dealers Workers must be provided with breathing masks to protect them from air pollution from paint smells, dust and particulates from refurbishment activities Enclose/shield work areas to prevent spreading of dust and smell	Contractor	To be included in the Contractor's bill of quantities
Existing infrastructure and services	Temporary obstruction of walkways and access to services	Provide alternative routes with adequate and appropriate directional signs around safety barriers to access services Provide alternative rooms to be used for temporary laboratory space and other services	Contractor	To be included in the Contractor's bill of quantities
	Disturbance of traffic and movement of people on the hospital premises	Provide alternative routes and passages with appropriate directional signs	Contractor	To be included in the Contractor's bill of quantities
	Temporary loss of services such as water, electricity and	Inform the Client well in advance (a week) before disconnecting services.	Contractor	N/A

Generic Environmental and Social Management Plan				
Project Stage / Environmental Components	Impacts	Mitigation Measures	Responsible persons/Institution	Estimated Cost per Site (USD)
	telephone services			
Health and Safety	Accidents to workers, staff and public on construction sites and project activity areas	Provide appropriate protective clothing for staff and ensure they use them Provide appropriate danger warning and other signs for staff and public. Provide first aid boxes. Acquire appropriate workman's compensation and liability insurance Provide alternative routes and passages with adequate and appropriate directional signs Transfer patients to rooms where there are no construction activities.	Contractor	To be included in the Contractor's bill of quantities
	Noise & vibration disturbances	Construction and rehabilitation works must be carried out during the official government working hours. Use machines that do not make a lot of noise. Vehicles, plant and machinery must be regularly maintained as recommended by dealers.	Contractor	To be included in the Contractor's bill of quantities
	Spread of TB, STIs, HIV and Aids and other communicable diseases	Conduct awareness meetings Provide condoms to staff at the work place	MOH	
	Increased pressure on sanitary structures	Ensuring that labour camps of construction workers contain own provisions for water supply and sanitation and waste management; Include stringent conditions on proximity of labour	Contractor and MoH	To be included in the Contractor's bill of quantities

Generic Environmental and Social Management Plan				
Project Stage / Environmental Components	Impacts	Mitigation Measures	Responsible persons/Institution	Estimated Cost per Site (USD)
		camps to communities, housing and wards in contracts with construction contractors. .		
Aesthetic and amenity values	Defacing and degradation of the appearance of the environment	Remove and dispose wastes regularly in appropriately designated disposal site. Use shields to isolate and enclose construction sites. Properly landscape the site after construction is completed.	Contractor	To be included in the Contractor's bill of quantities
During Demobilization				
Air quality	Air pollution resulting from dust and contaminated wastes	Spray water in areas which are being cleared and where vehicles are passing	Contractor	To be included in the Contractor's bill of quantities
Health and safety	Accidents to workers, staff and public on construction sites and project activity areas	Workers must wear protective gear. Sensitize workers to be following safety procedures when removing the structures.	Contractor	To be priced by the Contractor

ANNEX VII: LIST OF PEOPLE INTERVIEWED

National Tuberculosis Control Program (PCNT)

- Ivan Manhiça - PCNT Manager
- Elisabeth Coelho - Laboratory Focal Point PCNT
- Angela Mondlane - PCNT

Infection Control Program

- Dr. Olga Novela – Head of the PCI program

Maputo Central Hospital

- Dr. Elisabeth Nunes - Head of the Pulmonology Department
- Dr. Pereira Zindoga - Pulmonologist
- Dr. Suzete Peleve - Post-Graduate Pulmonologist
- Dr. Filipe Majuta - Head of HCM Laboratory

National Institute of Health

- Khalide Azam - Head of the National Tuberculosis Reference Laboratory
- Esmeraldo Ezembro - National Tuberculosis Reference Laboratory

General Hospital of Machava

- Dr. Lisete Mualeia - Medical doctor and Clinical Director of HGM

Development partners

- Dr. Zaina Cuna – Director of Challenge TB (FHI)
- Alfredo MacArtur - USAID
- Dr. Nidze Maiopue - CCS/CDC

ANNEX VIII: ENVIRONMENTAL AND SOCIAL MONITORING PLAN

Environmental components	Impact	Mitigation Measures	Monitoring indicator	Institution to monitor	Frequency (per year)
During Construction					
Soil and land	Soil erosion	Control movement of vehicles, plant and equipment on earth roads and working sites Regular use of water sprays and compacting soil on earth roads and around working areas	Number of vehicles moving in a time interval and speed. Number of times for spraying water Dust levels on roads	MoH, Contractor, District Environmental Office	Every two months
	Land degradation and soil contamination	Store and contain rehabilitation and construction materials on lined surfaces, in covered areas. Use soils to rehabilitate eroded areas	Presence and use of lined and covered areas for storage	MoH, Contractor, District Environmental Office	Every two months
Water Resources	Impeded water flow and creation of stagnant water pools	Keep all drains clear of silt and debris	Amount of silt and debris in drains	MoH, Contractor, District Water Department, District Environment Office	Quarterly
	Water pollution	Collect and dispose of wastes in designated disposal sites as required by the Local Authority Store cement, paints, lubricants and fuels in covered areas Mix cement in areas not connected to natural drainage systems	Number of times waste is collected and disposed of on designated sites Presence and use of lined and covered areas Water quality in natural drainage systems near the site	MoH, Contractor, District Water Department, District Environment Office	Quarterly

Environmental components	Impact	Mitigation Measures	Monitoring indicator	Institution to monitor	Frequency (per year)
	Surface water siltation	Use water sprays on roads and construction sites and compact loose soils. Procure building materials from registered suppliers	Volume of water that is sprayed Dust levels and number of complaints on dust. Number of registered suppliers used	MoH and Contractor, District Water Department, District Environment Office	Quarterly
	Ground water pollution	Line the surfaces of storage spaces and where construction activities e.g. painting, cement mixing are taking place; Dispose wastes in designated place Use the existing sanitary structures at the sites for renovations Construct sanitary structures in areas where the water table will not be affected	Presence and use of lined and covered areas Number of times waste is collected and disposed of on designated sites Number of times the sanitary structures are used Water quality in wells or surface water quality near the site	MoH and Contractor, District Water Department, District Environment Office	Quarterly
Air Quality	Air pollution	Maintain construction machinery regularly as recommended by dealers Workers must be provided with breathing masks. Enclose/shield work areas to prevent spreading of dust and smell	Vehicle maintenance record indicating adherence to recommended maintenance frequency Percent of workers using masks Total area enclosed with shield as compared to the total area that requires shield	MoH and Contractor, District Council	Quarterly
Existing infrastructure and services	Temporary obstruction of walkways and access to services	Provide alternative routes with adequate and appropriate directional signs around safety barriers to access services	Provision of alternative laboratory space area Number of posters and notices displayed in appropriate places	MoH and Contractor, District Council	Twice

Environmental components	Impact	Mitigation Measures	Monitoring indicator	Institution to monitor	Frequency (per year)
	Disturbance of traffic and movement of people on the hospital premises	Provide alternative routes and passages with appropriate directional signs.	Provision of alternative laboratory space Number of posters and notices displayed in appropriate places	MoH and Contractor, District Council	Twice
	Temporary loss of services such as water, electricity and telephone services	Inform the Client well in advance (a week) before disconnecting services	Number of complaints against loss of service	MoH and Contractor, District Council	Twice
Health and Safety	Accidents to staff and public on construction sites and project activity areas	Provide appropriate protective clothing (PPE) for staff and ensure they use them Provide appropriate signs for staff and public. Provide first aid boxes. Acquire appropriate workman's compensation and liability insurance Provide alternative routes and passages with adequate and appropriate directional signs Transfer patients to rooms where there are no construction activities.	Number of workers provided with protective clothes and using them Number of posters and notices displayed in appropriate places Number of first aid boxes in appropriate places Compensation clause in contracts and number of workers insured Provision of alternative routes Number of posters and directional signs		
	Noise & vibration disturbances	Construction and rehabilitation works to be during official government working hours. Use machines that do not make a lot of noise. Vehicles, plant and machinery to be regularly maintained as recommended by dealers.	Record of working hours marked on the time sheets Levels of noise from machines Number of times machines are serviced compared with the recommended times	MoH and Contractor, District Council	Quarterly

Environmental components	Impact	Mitigation Measures	Monitoring indicator	Institution to monitor	Frequency (per year)
	Spread of TB, STIs, HIV and AIDS and other communicable diseases	Conduct awareness meetings and provide condoms to staff	Number of awareness meetings conducted	MoH and Contractor, Department of labour	Quarterly
	Increased pressure on sanitary structures	Ensuring that labour camps of construction workers contain own provisions for water supply and sanitation and waste management; Include stringent conditions on proximity of labour camps to communities, housing and wards in contracts with construction contractors.	Number of sanitary structures, special for the workers Volume of water stored by contractor Distance between construction camp and wards or settlements	MoH and Contractor, District Council	Quarterly
During Demobilization					
Air quality	Air pollution resulting from dust and contaminated wastes	Spray water in areas which are being swept	Number of complaints against dust	MoH and Contractor, Local Government Authority	Once
Health and safety	Injuries may result from object falling on the workers and other accidents	Workers must wear protective gear. Sensitize workers to be following safety procedures when removing the structures.	Percent of staff wearing protective gear Number of awareness raising meetings conducted and level of awareness by workers	MoH and Contractor, District Council	Once

ANNEX IX: SUMMARY OF THE WOLRD BANK'S ENVIRONMENTAL SAFEGUARD POLICIES

OP/BP 4.01 Environmental Assessment	The objective of this policy is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impact. This policy is triggered if a project is likely to have potential (adverse) environmental risks and impact on its area of influence. OP 4.01 covers impact on the natural environment (air, water and land); human health and safety; physical cultural resources; and trans-boundary and global environment concerns.	Depending on the project, and nature of impact a range of instruments can be used: EIA, environmental audit, hazard or risk assessment and environmental management plan (EMP). When a project is likely to have sectoral or regional impact, sectoral or regional EIA is required. The Borrower is responsible for carrying out the EIA. Under the Southern Africa Regional TB in Mining Project, the Government is preparing an Environmental and Social Management Framework to guide the process of environmental screening, leading to preparation of the necessary and appropriate safeguard instruments assess the social and environmental impact of the program.
OP/BP 4.04 Natural Habitats	This policy recognizes that the conservation of natural habitats is essential to safeguard their unique biodiversity and to maintain environmental services and products for human society and for long-term sustainable development. The Bank therefore supports the protection, management, and restoration of natural habitats in its project financing, as well as policy dialogue and economic and sector work. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. Natural habitats are land and water areas where most of the original native plant and animal species are still present. Natural habitats comprise many types of terrestrial, freshwater, coastal, and marine ecosystems. They include areas lightly modified by human activities, but retaining their ecological functions and most native species.	This policy is triggered by any project (including any sub-project under a sector investment or financial intermediary) with the potential to cause significant conversion (loss) or degradation of natural habitats, whether directly (through construction) or indirectly (through human activities induced by the project). The policy is not triggered, as it is not expected that there will be significant conversion of natural habitats since the project is targeting smallholder farmers within their existing agricultural lands. Project activities that could negatively impact on protected areas will not be funded
OP/BP 4.36 Forests	The objective of this policy is to assist borrowers to harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development and protect the vital local and global environmental services and values of forests. Where forest restoration and plantation development are necessary to meet these objectives, the Bank assists borrowers with forest restoration activities that	This policy is triggered whenever any Bank-financed investment project (i) has the potential to have impact on the health and quality of forests or the rights and welfare of people and their level of dependence upon or interaction with forests; or (ii) aims to bring about changes in the management, protection or utilization of natural forests or plantations.

	maintain or enhance biodiversity and ecosystem functionality. The Bank assists borrowers with the establishment of environmentally appropriate, socially beneficial and economically viable forest plantations to help meet growing demands for forest goods and services.	The policy is not triggered, as it is not expected that there will be project activities impacting on forests. Project activities that could negatively impact on forests will not be funded.
OP 4.09 Pest Management	The objective of this policy is to (i) promote the use of biological or environmental control and reduce reliance on synthetic chemical pesticides; and (ii) strengthen the capacity of the country's regulatory framework and institutions to promote and support safe, effective and environmentally sound pest management. More specifically, the policy aims to (a) Ascertain that pest management activities in Bank-financed operations are based on integrated approaches and seek to reduce reliance on synthetic chemical pesticides (Integrated Pest Management (IPM) in agricultural projects and Integrated Vector Management (IVM) in public health projects. (b) Ensure that health and environmental hazards associated with pest management, especially the use of pesticides are minimized and can be properly managed by the user. (c) As necessary, support policy reform and institutional capacity development to (i) enhance implementation of IPM-based pest management and (ii) regulate and monitor the distribution and use of pesticides.	The policy is triggered if: (i) procurement of pesticides or pesticide application equipment is envisaged (either directly through the project, or indirectly through on-lending, co-financing, or government counterpart funding); (ii) the project may affect pest management in a way that harm could be done, even though the project is not envisaged to procure pesticides. This includes projects that may (i) lead to substantially increased pesticide use and subsequent increase in health and environmental risk; (ii) maintain or expand present pest management practices that are unsustainable, not based on an IPM approach, and/or pose significant health or environmental risks. Under the Project, the policy will not be triggered as it will not involve any Pest Management
OP/BP 4.11 **Physical Cultural Resources**	The objective of this policy is to assist countries to avoid or mitigate adverse impact of development projects on physical cultural resources. For purposes of this policy, "physical cultural resources" are defined as movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above ground, underground, or underwater. The cultural interest may be at the local, provincial or national level, or within the international community.	This policy applies to all projects requiring a Category A or B Environmental Assessment under OP 4.01, project located in, or in the vicinity of, recognized cultural heritage sites, and projects designed to support the management or conservation of physical cultural resources. The policy is not triggered, as it is not expected that physical cultural resources will be affected. Project activities that could negatively impact on physical cultural resources will not be funded.

OP/BP 4.10 Indigenous Peoples	The objective of this policy is to (i) ensure that the development process fosters full respect for the dignity, human rights, and cultural uniqueness of indigenous peoples; (ii) ensure that adverse effects during the development process are avoided, or if not feasible, ensure that these are minimized, mitigated or compensated; and (iii) ensure that indigenous peoples receive culturally appropriate and gender and inter-gene rationally inclusive social and economic benefits.	The policy is triggered when the project affects the indigenous peoples (with characteristics described in OP 4.10 para 4) in the project area. For this project, the policy is not triggered, as it is not expected that indigenous peoples will be affected. Project activities that could negatively impact on indigenous peoples will not be funded
OP/BP 4.12 Involuntary Resettlement	The objective of this policy is to (i) avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs; (ii) assist displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them; (iii) encourage community participation in planning and implementing resettlement; and (iv) provide assistance to affected people regardless of the legality of land tenure.	This policy covers not only physical relocation, but any loss of land or other assets resulting in: (i) relocation or loss of shelter; (ii) loss of assets or access to assets; (iii) loss of income sources or means of livelihood, whether or not the affected people must move to another location. This policy also applies to the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impact on the livelihoods of the displaced persons. The policy is not triggered, as no involuntary resettlement will take place under Project. Any investments involving involuntary resettlement will not be funded.
OP/BP 4.37 Safety of Dams	The objectives of this policy are as follows: For new dams, to ensure that experienced and competent professionals design and supervise construction; the borrower adopts and implements dam safety measures for the dam and associated works. For existing dams, to ensure that any dam that can influence the performance of the project is identified, a dam safety assessment is carried out, and necessary additional dam safety measures and remedial work are implemented.	This policy is triggered when the Bank finances: (i) a project involving construction of a large dam (15 m or higher) or a high hazard dam; and (ii) a project which is dependent on an existing dam. For small dams, generic dam safety measures designed by qualified engineers are usually adequate. The policy is not triggered, as no dams are involved under Project. Any investments involving dams will not be funded.
OP 7.50 Projects in International Waters	The objective of this policy is to ensure that Bank-financed projects affecting international waterways would not affect: (i) relations between the Bank and its borrowers and between states (whether members of the Bank or not); and (ii) the efficient utilization and protection of international waterways.	This policy is triggered if (a) any river, canal, lake or similar body of water that forms a boundary between, or any river or body of surface water that flows through two or more states, whether Bank members or not; (b) any tributary or other body of surface water that is a component of any waterway described under (a); and (c) any bay, gulf strait, or channel bounded by two or more

	The policy applies to the following types of projects: (a) Hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial and similar projects that involve the use or potential pollution of international waterways; and (b) Detailed design and engineering studies of projects under (a) above, include those carried out by the Bank as executing agency or in any other capacity.	states, or if within one state recognized as a necessary channel of communication between the open sea and other states, and any river flowing into such waters. The policy is not triggered as the Project will not have activities in international waters. Any investments involving international waters will not be funded
OP 7.60 Projects in Disputed Areas	The objective of this policy is to ensure that projects in disputed areas are dealt with at the earliest possible stage: (a) so as not to affect relations between the Bank and its member countries; (b) so as not to affect relations between the borrower and neighbouring countries; and (c) so as not to prejudice the position of either the Bank or the countries concerned.	This policy is triggered if the proposed project will be in a "disputed area". Questions to be answered include: Is the borrower involved in any disputes over an area with any of its neighbours. Is the project situated in a disputed area? Could any component financed or likely to be financed as part of the project be situated in a disputed area? The policy is not triggered, as no project activities will take place in disputed areas under Project. Any investments involving disputed areas will not be funded.

ANNEX X: COST CALCULATIONS

Environmental and Social Management Cost

Activity	Cost in USD
Awareness andsensitization meetings	250,000.00
Total for all sites	250,000.00

Environmental and Social Monitoring Costs

Description	Unit	QTY	RATE ($)	No of visits	TOTAL ($)
Officers	No	3	70.14	15	1052.10
Fuel	Litres	285	100	15	1500
Total per site per year					**1552.10**
Total for six sites					**46,563**

Capacity building

Total cost for Capacity Building National Level Structures

	Total Cost in USD
Sensitization of National level staff of Environmental Health Facility	150,000.00
Total	**150,000.00**