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FIPAG
FUNDO DE INVESTIMENTO E PATRIMÓNIO DO ABASTECIMENTO DE ÁGUA

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

The Greater Maputo Water Supply Project (GMWSP)
The Water Services and Institutional Support Project (WASIS II)

Prepared by: Eduardo Langa (Environmental and Social Specialist)

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EXECUTIVE SUMMARY

Program Outline

The Investment Fund and Water Supply Asset Holder (FIPAG) is in the process of preparing the second phase of the Water Services and Institutional Support Project (WASIS II) to be financed through a credit facility from the International Development Association (IDA) over a period of approximately 6 years. The objective of the second phase of the Project is to improve the performance, sustainability and coverage of water supply and related services in the major cities in Mozambique. The Project is to be implemented in the Cities of Beira, Dondo, Chimoio, Manica, Gondola, Tete, Moatize, Nacala and Pemba. The project is expected to directly benefit approximately 105,000 households (556,500 people) in the project Cities who will be directly connected to the formal water supply system have access to treated, piped water. It is expected that the project will immensely benefit residents of the project Cities.

The first phase of the WASIS Project, which began in 2008, as well as the Additional Financing Projects are coming to a close on 31 October 2015. There is still a chronic need for safe water and water infrastructure development to cater for the expanding populations in urban centers throughout the country. To address the water constraints, emphasis is being placed on the WASIS Phase II Project, which will result in part of the Greater Maputo Water Supply Project (GMWSP) funds being diverted to the preparation of the WASIS II Project.

The current document was prepared on the basis of extensive literature reviews in the proposed project areas; review of lessons learned from the implementation of the first phase of the WASIS Project and Additional Financing, as well as the related Greater Maputo Water Supply Project (GMWSP); synthesis of relevant provisions from the Mozambican legal framework related to the ESMF and World Bank Safeguard Policies and guideline documents; as well as feedback obtained from public consultation meetings carried out when preparing this document.

The potential environmental and social impacts associated with the Project have been highlighted, and suitable mitigation measures to offset the potential negative impacts have been recommended to the project proponent. Recommendations have also made with regards to the need to improve FIPAG's institutional capacity to continue integrating environmental and social considerations in the various water supply projects (planning, construction, operation).

Study Framework

This document forms part of an Environmental and Social Management Framework (ESMF) covering the proposed construction/rehabilitation and related works for the second phase of the Water Services and Institutional Support Project (WASIS). The environmental evaluation and reporting on this document has been carried out taking into cognizance the scope of the proposed works under WASIS II activities.

The specific nature of the works envisaged in the proposed WASIS II program will vary from city to city and will depend on the type and the prevailing physical conditions on existing sites.
The project will involve five components of which four will be implemented by FIPAG. Activities under these components include: **a) investment in water supply production system**, with a focus on the provision of goods and civil works in the project cities such as the

rehabilitation and construction of new wells, rehabilitation, expansion and construction of new water treatment plants for iron removal, amongst other works; **b) investment in water supply distribution system**, which will include works such as increasing storage capacity, rehabilitating and construction of distribution centers, and installation of additional new water networks; **c) the provision of technical assistance to FIPAG**, with the aim of strengthening its capacity to design and supervise the project works, as well as implement the Environmental Management Plans (EMPs) and Resettlement Action Plans (RAPs) and dam safety studies as needed, and to undertake hydrological and geophysical studies to identify new water sources, amongst others; **d) OBA for FIPAG cities including Maputo,** which will be managed and implemented by the Regulatory Water Council [1] (CRA). In general, it is envisaged that the works will involve construction and/ rehabilitation of water supply, which includes the storage, transportation and distribution components.

Applicable Legal Framework

This Environmental and Social Management Framework does not and will not replace the specific Environmental Impact Assessments of the WASIS II sub-projects, which need to be conducted for specific aspects of the overall Project, as per the provisions of the Decree 45/2004 of September 29, and its amendments stipulated under Decree 46/2008 of November 4.

Mozambique's Environmental Impact Assessment Regulations make provision for three categories of EIAs, i.e. A, B and C. (Category "A" concerns projects in which decisions are made at national level and applies to instances where a full EIA is required; Category "B" is for projects decided at provincial and local levels, where a simplified EIA can be conducted; and Category "C" is for small-scale projects that do not necessarily require an EIA, but ought to follow published regulations and standards in order to minimise environmental impacts. Based on the current understanding of the author, the exact nature of work required in each of the 9 cities has not been defined as yet, even though it is expected that most of the activities will fall under categories "B" and "C" depending on the sensitivity of the location or the extent of the proposed activity and the nature of the anticipated impacts on the biophysical and socioeconomic environments in the Project area. The type of construction process and/or rehabilitation works will also be a determining factor on the category of the EIA process to be followed in each city.

The current ESMF for the proposed WASIS II also triggers the World Bank Safeguard Policy OP 4.01 on Environmental Assessments, which stipulates measures to be taken into account to identify, avoid and mitigate potential negative environmental impacts on projects financed by the Bank.

Part of this study examined the potential need for compensation for any communities that may face resettlement in line with the World Bank OP and BP 4.12 on Involuntary Resettlements. Given the fact that the proposed civil works will mostly take place within the boundaries of existing cities, involuntary resettlements resulting from land acquisition as a result of the proposed developments are expected to be minimal. However activities associated with the

[1] *Conselho de Regulação de Águas* in Portuguese.

programme such as the construction of new water treatment plants, water distribution facilities and storage could potentially trigger the need for resettlement policies. In order to address possible involuntary resettlements as a result of the proposed WASIS II project activities, a Resettlement Policy Framework (RPF) will be prepared separately but parallel to this EMSF.

Public Consultation

Public consultation was carried out in 6 of the 9 WASIS II Cities (Nacala-Porto, Tete, Moatize, Beira, Chimoio, and Pemba), with the objective of gathering public perceptions of the proposed developments. The consultation process comprised two methods (i) consultation on a one-to-one basis with key stakeholders (FIPAG, officials of line ministries, national organizations, NGOs, the World Bank and technical staff of the selected Cities), and (ii) public meetings held in the above-mentioned cities.

The objective of the consultation process was to gather general perceptions and views of all relevant stakeholders on the proposed project. Among others, the Consultant sought to ascertain general conditions in the different city contexts, and determine specific impacts that would need to be addressed under the scope of the ESMF.

Environmental Impacts

The types of activities expected to be carried out during the implementation phase of WASIS II project include civil construction activities and/or the rehabilitation of infrastructure (i.e. transport, storage, treatment and distribution). It is envisaged that the bulk of the impacts associated with the proposed activities will occur during the construction/rehabilitation phases. These impacts will however be short to medium-term, localized and temporary, and will be dependent on the types of works necessary in each City. The operational phase of the water supply systems will also generate impacts that require continuous monitoring. The contractors carrying out the works will have a contractual obligation to mitigate and manage all environmental impacts, and will therefore be obliged to ensure proper mitigation of impacts through compliance with the existing regulations and an EMP that will be prepared for specific projects once they become known. On the other hand, FIPAG shall ensure that the Supervising Consultants monitor and supervise the work of the contractors and ensure that they comply with all contractual obligations. Additionally, FIPAG shall strengthen and capacitate its environmental team to ensure effective management of environmental and social issues associated with water supply projects at central, regional and local levels.

The anticipated impacts associated with the construction and rehabilitation activities will likely include soil erosion (resulting from vegetation clearance and excavations of soils for activities such as the rehabilitation and construction of boreholes), and the installation of pipelines and/or construction of distribution centers and water treatment plants. Additional impacts will include noise and dust emissions from vehicles and the movement of machinery during the construction phase. Pollution of soils and waterways may also result from spills and leaks of fuels as well as oils and any lubricants used on the machinery and vehicles involved in construction activities.
Soil erosion can be minimized by strictly restricting vegetation removal and excavations to areas where construction of infrastructures will take place. Vegetation disturbances in areas where no direct civil works are expected should be avoided. To avoid pollution of soils and waterways by

fuels and lubricants, refueling and repairs of vehicles and machinery must be conducted in appropriately designed areas. Any contaminated soils must be collected and placed in bags to ensure appropriate disposal in licensed areas or by registered licensed waste removal agents.

Secondary indirect effects will also result from both construction and rehabilitation works, especially the disruption of normal public access routes/paths, and safety issues arising from poor marking of alternative routes where normal access has been temporarily blocked due to construction works. In order to minimize the disruption of public access routes, the proposed civil works should be carefully planned, and use of the existing access routes should be emphasized/ promoted. Where the disruption of access routes is inevitable, adequate signage must be appropriately displayed to redirect traffic and pedestrians.

Operational impacts may result from lack of routine maintenance of water supply components. Water leakages, if unmonitored, can create permanent wet conditions and consequently result in the proliferation of malaria and dengue mosquitoes with negative impacts on human health in the project areas. This impact can be minimized through effective and regular monitoring and maintenance of water distribution components to ensure early identification of water leakages and repairs by system operators. Beneficiaries shall also be sensitized on adequate use and management of their water pumps and public standpipes to minimize this impact.

Other potential environmental impacts will be specific to the chosen sites. A summary table of perceived and anticipated potential environmental and social impacts as a result of the proposed development activities has been prepared. The table also includes suitable mitigation measures that need to be followed or taken into account.

Conclusions and Recommendations

It is expected that the negative environmental and social impacts associated with the proposed civil works will be medium to short-term, localized and fairly insignificant and can be mitigated through compliance with EIA Regulations and an Environmental Management Plan (EMP), as well as specific project's EMPs to be implemented by the Contractors. These factors should form part of the Contractors' EMP.

The key impacts that are anticipated from the proposed development activities are summarized as follows:

- Contamination of soils, ground and surface water as a result of chemicals (i.e. oils, fuels and lubricants from machinery and vehicles working on sites, residues of paints, etc.) particularly on sites located near waterways. This can easily be minimized through the adoption of and implementation of an EMP;
- Air and noise quality may be affected as a result of construction activities – This can be mitigated by following existing regulations as well as all the stipulations in the project EMP;
- The spread of HIV/AIDS during the construction phase of the development may perpetuate poverty in the urban and peri-urban areas by affecting the most productive members of society – suitable mitigation measures to offset this have been proposed in this document.

Given the type of civil and construction activities envisaged in this project, it is considered unlikely that the proposed works will require any land acquisition, but could have an effect on crop production and yields of the population in the targeted areas or those living close to them. In any case, a Resettlement Policy Framework (RPF) has been prepared to establish procedures that must be followed in case of the taking of land for the project resulting involuntary (economic or physical) displacement of people or damage to public or private assets.

In order to ensure effective implementation of the proposed mitigation measures, the following recommendations should be considered to guide site selection for the works:

- Identify environmental and social management priorities that are integral to the ToRs of the proposed construction/rehabilitation works;
- Conduct periodical monitoring to verify whether the proposed mitigation measures are fully implemented.

In order to address the above recommendations, the FIPAG Environmental and Social Specialist shall:

- Identify and train FIPAG personnel at all levels, from its headquarters in Maputo, to regional and city level representations, who will be responsible for monitoring of EMPs at the city level;
- Ensure effective intra-institutional coordination between the FIPAG personnel at the national headquarters, provincial delegations and at the levels of cities to certify that appropriate implementation of the proposed mitigation measures for continual improvement in environmental and social management

For an effective integration of the proposed mitigation measures into planning, implementation and operation of the program's activities, the implementation of Project's EMP is the responsibility of the project proponent (FIPAG), who will ensure compliance with all measures stipulated in the EMP by all Contractors. Furthermore, it should be mandatory that all contractors and supervisors employ experienced Environmental Specialists to ensure compliance with the EMP.

LIST OF ACRONYMS

ARA	Regional Water Administration
BP	Bank Procedures
CRA	Regulatory Water Council
DNA	National Directorate for Water
DPTADER	Provincial Directorate of Land, Environment and Rural Development
DPOPH	Provincial Directorate of Public Works and Housing
DUAT	Land Use Right/ Title
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EO	Environmental Officer
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FIPAG	Investment Fund, Water Supply and Asset Holder (i.e. *Fundo de Investimento e Património do Abastecimento de Água)*
GDP	Gross Domestic Product
GMWSP	Greater Maputo Water Supply Project
GOM	Government of Mozambique
IDA	International Development Association
INE	National Statistics Institute
INGC	National Institute for Disaster Management
MDP	Municipal Development Project
MINASA	Ministry of Agriculture and Food Security
MISAU	Ministry of Health
MITADER	Ministry of Land, Environment and Rural Development
MOPHRH	Ministry of Public Works, Housing and Water Resources
NGO	Non-Governmental Organization
OP	Operational Policy
PAP	Project Affected People
PDO	Project Development Objective
PDUT	District Land Use Plan
RAP	Resettlement Action Plan
ROW	Roads Right-of-Way
RPF	Resettlement Policy Framework
SDPI	District Services of Planning and Infrastructure
WASIS	Water Services and Institutional Support Project
WB	World Bank

Table of Contents

1. INTRODUCTION

1.1 Context

The Government of Mozambique (GoM) is implementing reforms in the urban water supply sector aimed at improving the coverage, quality and efficiency of services. The reform program has involved the reorganisation of sector governance mechanisms, which have facilitated a transition towards decentralised water supply operations and management, including service regulation, investment planning, and private sector participation in operations. The GoM is in the process of preparing a proposal for the second phase of the Water Services and Institutional Support (WASIS) Project.

More specifically, the GoM has taken steps to provide for: i) reduced operating costs and increased efficiency, particularly through involving the private sector in water supply services in 21 major cities (i.e. Maputo, Matola, Boane, Beira, Quelimane, Nampula, Pemba, Dondo, Chokwe, Xai-Xai, Inhambane, Maxixe, Tete, Moatize, Chimoio, Manica, Gondola, Lichinga, Cuamba, Angoche and Nacala); ii) tariff adjustments that support financial sustainability; and iii) the establishment of a Regulatory Board for the sector, which considers both service quality and financial performance. The program for urban water supply also includes investments in rehabilitation and extension of systems.

The GoM's implementation agency for the new urban water program is the *Fundo de Investimento e Património do Abastecimento de Água* – FIPAG (Investment Fund and Water Supply Asset Holder). FIPAG is the managing entity of the urban water supply system as a Delegated Management Board and is responsible for 21 urban water supply systems, which supplies clean water to Maputo City, the capital city of the country. The other urban areas of Mozambique are expanding at a faster rate with the incorporation of the districts around the city centres into the cities. The extension of the water services to these neighbouring areas will place substantial demand on the capacity of the existing water services. The Greater Maputo Water Supply Project (GMWSP), funded by the World Bank, is addressing the infrastructure development needs of the greater Maputo and Matola areas. In addition, FIPAG has been benefiting from support from the World Bank under the Water Services and Institutional Support (WASIS) and WASIS Amendment Projects, which were aimed at improving the performance, sustainability and coverage of water supply services in Beira, Dondo, Quelimane, Nampula, Pemba, Chimoio, Gondola, Nacala, Angoche, Tete and Moatize cities. This enabled poor families to also benefit from clean water supply services.

Undesirable environmental impacts are likely to arise from the proposed activities, albeit minor, and such impacts are expected to be construction-related and short-lived. It is expected that the exploration of underground water resources during the operational phase of the development will definitely result in impacts on underground water resources. It is possible that the region may experience a reduction in the level of underground water resources during specific periods of the year. To comply with World Bank OP/BP 4.01 on Environmental Assessment as well as to protect people and the biophysical environment from the negative impacts and minimize the potential damage of such impacts on the environment, this Environmental and Social Management Framework (ESMF) was prepared, which outlines the institutional arrangements

and related environmental training needs to guide the implementation phase of the project development as well as stipulate specific monitoring and suitable mitigation measures.

WASIS was classified as a category B project during the first phase and its ESMF provided environmental guidelines for contractors and qualified members of the FIPAG. This helped to ensure that the construction and subsequent operational and maintenance activities were carried out in an environmentally and socially sustainable manner.

The second phase of the program will involve infrastructure development activities farther away from the existing city centres than was the case for WASIS I, and hence the need for the present ESMF.

1.2 Background of the Greater Maputo Water Services Project (GMWSP)

The Greater Maputo Area is part of the northern areas of Maputo and Matola Municipalities, currently not supplied by the main system. These areas are also experiencing fairly rapid rates of development despite the unavailability of a water supply system. A detailed feasibility and preliminary design study was undertaken in 2012 to determine appropriate sites and the specifications of the water treatment works and related infrastructure. The main conclusions of the study were that: (i) the area will continue to grow, and (ii) future demand will exceed the capacity of the existing source of water supply by 2015. In order to address the shortfall, additional sources of water should be looked at.

The GMWSP Project comprises four components, which in total cost US$ 178 million, broken down as follows:

- **Component A: Investment in Water Supply Production (US$ 133 million)**
  This component includes works to construct the abstraction point of raw water from the Corumana Dam, a water treatment plant, transmission pipeline, reservoirs, pumping stations, and ancillary works.

- **Component B: Investment in Water Supply Distribution (US$ 27 million)**
  This component includes goods and civil works to install approximately 100,000 new connections and associated meters in Maputo and several peri-urban areas. In addition, the component will install up to 300 kilometres of network to serve the new connections.

- **Component D: Capacity Building and Operational Support to CRA (US$5 million)**
  This component will provide resources for operating expenses and technical assistance to CRA.

A sub-component of the GMWSP will assist to address the urgent water needs in the other areas of Mozambique. Furthermore, it is important to highlight that part of the funds of the GMWSP have been set aside for the preparation of the Environmental and Social Studies for WASIS II, which includes the preparation of the present ESMF.

1.3 Background of the Water Services and Institutional Support Project (WASIS I)

The original WASIS Component-A Project started in 2008. The WASIS extension project was approved in September 30, 2010 and became effective on 28th February 2011. The WASIS Component A project supports FIPAG in the implementation of water supply and distribution networks in Beira, Nampula, Quelimane and Pemba. These were the four cities supported under the IDA-funded National Water Development Project II, which financed water production facilities.

The WASIS extension project addresses existing shortcomings and backlogs in water demands faced by residents of the Cities of Beira, Dondo, Nampula, Quelimane, Pemba, Nacala, Angoche, Chimoio, Gondola, Tete and Moatize. The amended project improved access to water supply through the provision of about 25,150 new connections and the construction of 355 km of additional distribution networks in the selected cities. The project directly connected an additional 133,295 people to the network, including those living farther away in the peri-urban areas of the cities. The financing includes investments in groundwater development, transmission mains, distribution centers and the extension of water networks including mostly pumps, valves, pipes, fittings and water meters, equipment, parts, vehicles, chemicals and some consumables (fuel and electricity). The WASIS and its Amendment Projects are coming to a close on October 31, 2015, and with the existing water scarcities and poor water infrastructure, consideration has been given to a WASIS II Project to assist in this regard.

It is anticipated that these projects will bring a number of benefits to the populations that will use the water supply system in Maputo and the other cities under FIPAG's responsibility, such as: (i) additional coverage through an increase in the number of connections for users; (ii) improved access to clean water during the day and at affordable prices, (iii) improved business development opportunities in sectors and activities in which water supply is a major consideration.

It is expected that these developments directly benefits on health and improve the quality of life of the households and communities that are covered by the program. This will lead to reductions in the amount of time that people, especially women and girls, spend looking for water. The time that is saved can and should be dedicated to other productive activities for families leading to improved personal well-being. For this project to be successful, the potential negative environmental and social impacts must be addressed. It is in this context that the present Environmental and Social Management Framework (ESMF) has been prepared. The objective of this ESMF is to provide an environmental and social screening process to inform investments in the rehabilitation of infrastructure for which the exact locations are not yet known prior to appraisal, or for which appropriate mitigation measures might be required. During the implementation phase of the Project, it is recommended that the stipulations in the ESMF be followed to promote reasonable environmental management objectives.

This document presents the framework in which FIPAG will operate during the implementation phase of the proposed WASIS project. The document is in line with both the GoM and WB environmental and social sustainability regulations and guidelines on how facilities should be designed, implemented and operated, as well as measures that ought to be taken to avoid and

minimize harm to both the natural and social environments.

It is expected that fairly significant localized impacts may occur during the rehabilitation and construction of new infrastructure as part of WASIS II, which will require suitable and appropriate mitigation measures. Potential environmental impacts are addressed in the context of this ESMF, while potential social impacts associated with land acquisition such as the loss of livelihoods or loss of access to economic assets are addressed in the Resettlement Policy Framework (RPF). The RPF for the proposed second phase will be presented as a separate document which will outline the policies and procedures to be applied in the event of any land acquisition under the program.

This ESMF is structured as follows: i) introduction and overview of the Project; ii) the objectives of the Environmental and Social Management Framework (ESMF); iii) an overview of Mozambique's policy environment including the country's regulatory frameworks, as well as an overview of the World Bank Safeguard Policies; iv) description of the proposed Project components, including information gathered during public consultation sessions and experiences gleaned from the first phase of WASIS project, which will provide an indication of the potential environmental and social impacts that may result from the project; v) guidelines on how the environmental and social screening process should take place; and vi) recommendations on how the potential negative environmental and social impacts of the FIPAG Project can be mitigated .

2. PROJECT DESCRIPTION

2.1 Summary

The second phase of the Water Services and Institutional Support Project (WASIS II) is currently being proposed as part of the Government of Mozambique's (GoM) implementation of reforms in the urban water supply sector aimed at improving the coverage, quality and efficiency of services in Mozambique. . The proposed project will contribute to the provision of safe drinking water and sanitation as part of the MDG and lead to an increase in the quantity of water available, thus addressing water demand in the project cities. The additional water supplied to the cities will target the currently unserved and underserved areas, which are mostly low-income, peri-urban areas. The project will serve to attract the private sector by creating favorable conditions in the water supply business, with long-term prospects for profit generation. The project is expected to directly benefit approximately 105,000 households (556,500 people) in the targeted sites, with benefits accruing directly to the populations living in the project areas. This section provides a brief overview of the Project taking into account the prevalent water supply challenges and needs in the many cities in Mozambique.

The project proponent is the Investment Fund and Water Supply Asset Holder (FIPAG), who will be responsible for the preparation, implementation and monitoring of the Project. FIPAG will also be responsible for ensuring that the recommendations from the current document are taken into account during all phases of the WASIS II.

2.2 Project Location

The project will be implemented in Beira, Dondo, Chimoio, Manica, Gondola, Tete, Moatize, Nacala-Porto and Pemba.

2.3 Project Development Objectives

The development objectives (PDO) of the second phase of Water Services and Institutional Support Project (WASIS II) are the following to:

(i) increase safe, cost-effective water supply from groundwater or surface water sources to the applicable Cities of Beira, Dondo, Chimoio, Manica, Gondola, Tete, Moatize, Nampula, Nacala-Porto and Pemba, with due consideration of the impacts of seasonal fluctuations and resilience to climate change;
(ii) increase the network and coverage of the service through metered connections for residents in the poor peri-urban parts of the project Cities,
(iii) reduce the percentage of unaccounted for water and water losses by replacing old leaking transmission mains and networks;
(iv) improve water supply management and water loss management in order to make more water available to the residents by installing district water meters;
(v) strengthen the institutional and regulatory framework of the Regional Water Supply Utilities in the country;
(vi) make the water supply systems more cost-effective and sustainable by improving cost recovery measures, and to
(vii) strengthen the Regional Water Utilities in the Central and Northern regions under FIPAG by providing training and support to improve effectiveness in order to create private sector involvement/interest in the operation of these water schemes.

All the development objectives above do contribute directly towards the achievement of Higher Level Objectives, including reducing poverty and inequalities. The project is expected to directly benefit approximately 105,000 households (556,500 people) who will be directly connected to the formal water supply system in the beneficiary Cities. The residents will benefit by receiving treated and piped water.

2.4 Project Components

The project comprises five components, for a total cost of US$182 million. Four of the components (A, B, C and D) will be implemented by FIPAG, while the fifth will be implemented by CRA, and are summarized as follows:

2.4.1 Component A: Investment in Water Supply Production System (US$87 million)

This component includes goods and civil works in the project Cities to: (i) rehabilitate and construct new wells including electrical and hydraulic equipment, (ii) rehabilitate and expand existing and construct new water treatment plants for iron removal (iii) adding or replacing leaking Transmission Mains from the water source to the cities, and (iv) ancillary works, including telemetry systems to improve management of the systems. The footprint of this component will be minimal as all proposed civil works would be carried out on existing FIPAG property or within road rights-of-way (ROW).

2.4.2 Component B: Investment in Water Supply Distribution System (US$ 67.9 million)

This component includes goods and civil works to (i) add additional storage capacity of 11,850m^3, (ii) rehabilitate or construct additional Distribution Centers, (iii) install approximately 168 District water meters to monitor unaccounted for water, (iv) install approximately 390km of additional new water networks, (v) replace approximately 187 km of old leaking network pipelines and transfer existing connections, and (vi) install approximately 105,000 new connections and associated meters and fittings in the project Cities. In addition, the components will add goods, meters and equipment. The environmental and social impacts of this component will be minimal as all proposed civil works are expected to be carried out on existing FIPAG property or within pre-defined road rights-of-way (ROW).

2.4.3 Component C: Technical Assistance to FIPAG (US$18.5 million)

This component will serve to provide technical assistance to FIPAG, including: (i) design and supervision of project works as well as implementation of Environmental Management Plans (EMPs) & Resettlement Action Plans (RAPs), as well as dam safety studies as needed; (ii) hydrological and geophysical studies to identify new water sources; (iii) consulting services to support the preparation of a follow-on project to cover FIPAG cities, including master plans; (iv) consulting services to FIPAG to support project implementation, including support for the creation of the Water Regional Utilities; (v) financial and technical audits; and (vi) capacity building and training.

2.4.4 Component D: OBA for FIPAG cities including Maputo (US$6.0 million)

This component will subsidize connections to low-income people in cities under the responsibility of FIPAG, including Maputo.

2.4.5 Component E: CRA (US$3.0 million)

2.5 Anticipated sub-project types under the Project

The sub-projects under WASIS II have not yet been defined as the Project is still in the development phase. It is however anticipated that these sub-projects are related to the proposed activities under each of the above-mentioned components. These include:

- Rehabilitation and construction of new wells including electrical and hydraulic equipment;
- Rehabilitation and expansion of existing water treatment plants, and construction of new ones for iron removal;
- Adding or replacing leaking Transmission Mains from the water source to the cities;
- Rehabilitation or construction of additional Distribution Centres;
- Installation of District water meters to monitor unaccounted for water;
- Installation of a new distributions network including the installation of district meters; and
- Replacement of old leaking network pipelines and transfer of existing connections to the new lines.

3. OBJECTIVES OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

The objective of an Environmental and Social Management Framework (ESMF) is to identify potential negative environmental and social impacts of the proposed WASIS II activities in the project areas and on the populations that live in these areas in order to recommend suitable mitigation measures to eliminate or reduce the negative impacts, and to make recommendations to the project proponent that should be taken into account throughout all phases of the proposed Project. The objective of this report is therefore to provide an environmental and social screening process for future investments in the rehabilitation of existing infrastructure or construction of new ones. However, detailed project designs have not yet been finalized. Once such designs have been concluded, an ESMP will be prepared, which will include appropriate mitigation and management measures.

The screening process must be consistent with the World Bank Safeguard Policy OP/BP 4.01 Environmental Assessment. This policy requires that all Bank-financed operations are screened for potential environmental and social impacts, and that the required environmental work be carried out on the basis of the screening results. Thus, the screening results may indicate that:

- No additional environmental work would be required;
- The application of simple mitigation measures by qualified staff from FIPAG at all levels (as well as Contractors) would be sufficient;
- A separate Environmental and Social Impact assessment (ESIA) would be required;
- An appropriate Environmental and Social Management Plan (ESMP) ought to be in place.

Considering the expected investments in the rehabilitation of existing and construction of new infrastructure under the second phase of WASIS, significant localized impacts may occur, thus requiring appropriate mitigation measures. Potential environmental impacts are addressed in the context of this ESMF, while potential social impacts as a result of land acquisition such as loss of livelihoods or loss of access to economic assets are addressed in the context of the Resettlement Policy Framework (RPF).

This Environment and Social Management Framework (ESMF) of the project has been prepared to:

- integrate environmental and social aspects into the pre-feasibility and feasibility analysis of potential future sub-projects at the preparation and planning stages;
- promote transparency through the use of extensive stakeholder consultations and disclosure procedures;
- take into account possible uses of innovative and strategic environmental and social analyses;
- encourage consideration of technical alternatives based on possible environmental and social impacts; and to
- strengthen environmental and social management capacities within FIPAG.

During the preparation phase of the WASIS II Project proposal, this ESMF will assist project management in identifying and mitigating the potential negative environmental and social

impacts of potential future sub-projects. There is a need for the ESMF to be prepared for the civil works as it will subsequently result in the development of the ESMPs. The ESMF aims to ensure that the civil works of the project do not create or result in serious adverse impacts on the local community and local environment; that a mitigation plan is carried out effectively; and that possible complaints from the local government authorities and community are addressed and minimized. The ESMF therefore describes the steps and actions to be carried out by project proponent throughout all stages of the project.

Among other proposed activities, this ESMF proposes to strengthen the capacity of existing FIPAG staff and other relevant key stakeholders with an aim to deliver the required environmental and social support during the project implementation.

4. DEVELOPMENT CONTEXT IN MOZAMBIQUE AND IN THE PROJECT AREAS

4.1 Mozambique's Context

The land area of Mozambique covers a vast territory of 799,380 km^2 of which 2% comprises inland water bodies, 13% national parks, and 21% comprises forest cover. The country is located in sub-Saharan Africa east of the Continent, bordering Tanzania in the North, Malawi, Zambia and Zimbabwe in the West, South Africa and Swaziland in the South and the Indian Ocean in the Eastern part, which encompasses a 2,470 km coastline and an exclusive economic zone of 200 nautical miles. This geographic positioning of the country's ports has resulted, from the colonial period, in the development of three important corridors in the east-west direction and vice versa, meant precisely to serve neighboring countries. These are the corridors of Maputo, Beira and Nacala, which have railway lines as one of their main components. Other components of the corridors are highways, power transmission lines and communications. Mozambique has a population of approximately to 24 million inhabitants, of which 40% of the highest population density occurs in the interior (east-west direction). The country contains rich and diverse coastal and marine environs. Mozambique is also endowed with natural resources such as coal and natural gas.

In the last decade Mozambique has been considered one of the fastest growing economies in Sub-Saharan Africa, with a GDP growth rate at an average of 7% annually. Coal, gas and other mineral reserves have been discovered in the past few years and this resource boom is one of the major contributors to the national economic growth. There is no doubt that the natural resources sector has the potential of radically change the social and economic structures of Mozambique, but at the same time, these can also bring forth challenges for the country to achieve growth in an inclusive manner.

While on the one hand the country is experiencing an increase in domestic and foreign investments, on the other hand over half of the population (54%) lives below the poverty line on less than US$1.25 a day. As mentioned above, the main challenge is ensuring that all Mozambicans benefit from the economic growth equitably. Improving the living conditions of citizens and providing access to basic services such as education, health care, water and

sanitation remains priorities for the government of Mozambicans as clearly reflected in the government's policies and plans.

4.2 Biophysical Characteristics of Mozambique

Precambrian rocks underlie approximately half of Mozambique, mainly in the north and northwest parts of the country, with Karoo sediments occurring in small areas in the north and north-western parts. Mozambique is composed of variable soil types. Within the immature soils, the alluvial soils are characterized by having the greatest agricultural potential, and cover most of the Zambezi delta and along the banks of various rivers. The areas covered by alluvial soils include significant layers of hydromorphic and halomorphic soils. There are also immature soils which include the well-drained soils in the proximities of the coasts of Cabo Delgado, Nampula, Zambezia, Sofala and Maputo and in the interior of Gaza and Inhambane Provinces. Rovuma River to Ponta do Ouro, interspersed in places with alluvial and other soils from the depressions. These are usually soils of low fertility and characterized by poor water retention properties and poor texture.

On the other hand, lithoidal soils cover most of the Tete, Sofala, Manica, Gaza, Zambezia and Maputo provinces. These soils which occur in the transition zones between humid and semi-arid zones are poorly developed soils, coarse-grained and stony, with gravel occurrences, stones, and outcrops on the surface. The northern and some parts of the central and western areas have red soils of varying texture. These soils are usually good for natural pasture; however, they are highly susceptible to vegetation degradation and erosion. The semi-arid or dry sub-humid climates in the southern provinces and Manica, Sofala and Tete provinces are covered by greyish-red soils resulting from volcanic rock.

The laterite soils found in the Central and Northern provinces are medium and fine textured well drained and deep soils and they are the most widely represented and associated with the sub-humid sub-climates occurring in the series. Their color is depth dependent, with red being located near the surface and grey soils located lower down. The ferralitic soils are found in the humid climate and the upland in the rainy regions of Niassa, Manica and Zambezia provinces. They are well-drained, clayey and deep soils and are known for their fertility and great agricultural potential.

The distribution of land use in the country is highly influenced by climatic conditions. There is a general tendency for an increase in annual rainfall pattern from the coast to inland with major variation according to altitude. The average rainfall ranges from 350 mm at Pafuri (in Gaza) to 2348 mm in Tacuane (in upper Zambezia). The south of the country is a drought-prone area. Most of the coastline receives 750 to 1000 mm of annual rainfall and the semi-arid interior of Zambezi Valley in Tete province receives less than 600 mm average annual rainfall. In the central region of Mozambique, there are a number of humid pockets associated with Mt. Binga (Manica province), Mt. Gorongosa (Sofala province) and Mt. Namuli (Zambezia province), which receive more than 2,000 mm per year. The rainy season is between November and March and the dry season occurs between April and October. The country is vulnerable to natural disasters namely; floods, drought, and cyclones which tend to have negative impacts on livelihoods.

With regards to Mozambique's hydrology, the country includes thirty-nine major rivers which drain into the Indian Ocean. The seasonal nature of the rainfall regime, with a dry season up to five months long, and periodic and unpredictable droughts is a major limitation to water usage. The major perennial rivers of Zambezia province are the Licungo (Lugela), Raraga, M'lela, Molocue, Ligonha and Meluli. The most important River in Mozambique is the Zambezi, which enters Mozambique at Zumbo where it immediately swells to form the Cahora Bassa Lake.

Mozambique is a country with a high biodiversity comprising 5,500 plant species, 222 mammals, 580 birds, 167 reptiles, and 39 amphibians recorded to date. Certain areas have been designated as world heritage sites due to their unique biodiversity. About 25% of the land has commercial forestry potential, 12.5% constitutes state-protected areas and a further 22% comprises potential wildlife habitat. The country's 2,470 km of coastline is unique in the East African Marine Region in terms of the quality, diversity and species.

Generally, the country's environment constitutes a significant public asset and is the basis upon which much of its recent macro-economic development and poverty reduction has been achieved. All the principal sectors of the Mozambican economy (i.e. agriculture, mining, tourism, forestry, fisheries and wildlife) are based on natural resources. Mozambique's rich ecosystems, biodiversity and natural resources hold a significant exportable value and commercial potential. Despite the country's richness in terms of natural resources, the combination of a civil war with natural hazards has forced population migration to urban areas and coastal zones resulting in negative environmental effects, such as accelerated desertification, pollution of surface and coastal water environs. Furthermore, poor farming and mining practices as well as the unsustainable use of natural resources for energy have exacerbated deforestation, soil degradation and pollution of surface and groundwater in most areas of the country.

4.3 Climate Change and Implications

With the increase in the intensity and frequency of global natural hazards, mainstreaming sustainability and climate change have become important priorities on the global scale as far as environmental management is concerned. There is consensus that the increase in these factors is being exacerbated by human activity. There is also the general consensus that these disasters tend to impact adversely on vulnerable people in poor countries especially in the tropical and sub-tropical regions of Sub-Saharan Africa, and that these may hinder development and poverty reduction efforts.

Mozambique is highly susceptible to various disasters due to its geographic location, its climate conditions, as well as the lack of resources in the country to build enough resilience. The natural disasters the country is exposed to are floods, droughts, cyclones and epidemics. The Central provinces are more prone to floods, tropical cyclones and epidemics, followed by the Southern and Northern provinces. The South with its tropical dry Savannah climate is more prone to droughts than the other regions. And the North is dominated by a tropical rainy climate and a moderately humid climate modified by altitude.

According to the INGC, the climate will be more extreme with drought spells being hotter and longer and rains being more unpredictable, increasing risks of crop failure and droughts, floods

and uncontrolled fires. The Central zone is likely to be the hardest hit in terms of climate change, particularly those regions at lower altitude, which are already experiencing hot temperatures.

Debates on the possible negative impacts of climate change bring about opportunities for the promotion of sustainable development practices by adopting suitable mitigation and adaptation measures to deal with changes in climate. Of particular relevance to this ESMF is the phenomenon of flooding in urban areas as it is becoming increasingly severe and more frequent, affecting especially the most poor and vulnerable populations in urban areas. Climate change is altering rainfall patterns – with a tendency of increased frequency and intensity, and therefore increasing the potential for floods. Factors such as the ones already mentioned in previous sections – urban growth; occupation of floodplains, poor waste management and the low coverage in construction and maintenance of drainage systems – are aggravating the flooding problem. In Mozambique, the country's geographical location as well as developing socio-economic conditions place most of the urban population at risks of floods.

In areas where drought is the main concern and where there are cyclical shortages of water, the project equally offers the potential for the local population to have access to clean/ safe water during dry and drought seasons, and will reduce the amount of time that people would have used to fetch water, particularly women and children.

The proposed WASIS II Project offers an opportunity for improving the living conditions of the urban populations, in terms of providing access to water systems, and also in terms of raising awareness on climate change and the risks it poses on the lives and health of the population in the proposed project areas.

4.4 The Urban Context of Mozambique

In 2005, Mozambique was one of the least urbanized countries in Southern Africa. It is projected to be the fourth most urbanized country in the region by 2025 after Botswana, South Africa and Angola. Of the total population of the country, it is estimated that approximately 36% live in 43 of the urban municipalities. The population growth in 7 of 43 urban municipalities is at 10% annually.

Urbanization and the rapid growth in urban populations is a result of massive migration of people from rural areas in search of better living conditions. This has resulted in a drastic increase in the establishment of disorganized informal settlements within cities. Most of the cities are characterized by secondary cities in the form of unregulated informal settlements, with most of the urban populations (three quarters) living in suburban neighborhoods (*bairros*) with limited services such as drainage and sewage systems, waste management and collection and a road network in good conditions, and particularly with poorly organized or constructed houses.
Many of the cities of Mozambique are characterised by the spread of slums given the inability of the majority of people to find better housing conditions. These slums are generally poorly organized, with little or very poor sanitation and hygienic conditions. Basic services such as waste collection lack in most of these informal settlements and many of these slums experience a chronic shortage of water supply facilities making them prone to health issues such as acute and chronic diarrhea. As a result, all the cities in Mozambique experience major challenges

associated not only with disorderly settlements but also related to access to water and adequate sanitation. This leads to incidents of pollution, destruction of green spaces, environmental degradation, and waste management related problems, among others.

Notwithstanding the abovementioned challenges faced by the urban population in Mozambique, it is estimated that 80% of the referred population has access to healthcare, provided at four levels: health clinics, district hospitals, provincial hospitals and central hospitals in the case of Maputo, Beira and Nampula.

With regards to the economic side, the main issues of concern in urban areas are that income inequality and social exclusion are higher than in rural areas. The Mozambican urban population is reportedly worse off in comparison to their rural counterparts. Most of the poor in Mozambican cities do not have enough income to make their living through the formal market.

As is the trend in others areas in the world, about two thirds of Mozambique's population growth between now and 2050 is expected to be in urban areas. Access to improved water and sanitation services is already a challenge, and in the coming decades these are anticipated to increase exponentially unless measures are taken to address issues related to the demographics of Mozambique's urban areas. Although Mozambique's economic growth is strong, more needs to be done to ensure that cities have the capacity to accommodate the population growth in urban areas and to respond to the demands and needs of its inhabitants.

4.5 Context of Specific Project Areas and Current Water Supply Situation

4.5.1 Beira and Dondo

The City of Beira is the capital of the Sofala Province, located in central region of Mozambique and it is the second largest capital city in the country. Beira City is located below the sea level and as a result has serious issues related to erosion. During the rainy season the city's main issues become visible, and these are mainly related to drainage and its impact on the lives and health the population of the city.

Like most African and Mozambican cities, Beira is characterized by old colonial buildings built in the 19th century as well as an increase in the number of modern buildings and new residential areas. Having said this, one of the main challenges faced by the city is the emergence of suburban neighborhoods (*bairros*), which are usually disorganized and require formalization. Increasingly, the population of Beira continues to grow. According to the most recent data (INE 2006), the City of Beira has a population of over 550 000 people. The city comprises 26 neighborhoods (*bairros*) and 5 Administration Posts. In terms of the provision of health services, Beira has 16 health units. With regards to water, 74% of the city's population has been reported as having access to water.

Trade and commerce and economic growth continue to increase in Beira, while informal trade is also increasing exponentially. The Port, the Development Corridor and the Sena Railway Line, as well as the city's geographical location make Beira economically attractive given its strategic position in linking the central and northern regions of the country. This strategic location is

equally of importance to Mozambique's landlocked neighboring countries, which make use of both the Beira Corridor and the Port for communication and transportation of goods and services to and through the country.

As part of the consultation process undertaken in Beira for purposes of the elaboration of this report, the following issues of concern were raised that need to be taken into consideration during the development of the sub-projects:

- There are a number of expansion areas in Beira city characterized by disorderly settlements, which do not follow suitable urban planning principles. These expansion areas make the installation of suitable water distribution systems challenging.
- The existing water distribution networks in peri-urban areas of Beira are malfunctioning and require to be fixed. Of particular concern are old asbestos pipelines, which need to be removed and replaced with new lines.
- It is crucial that the WASIS II project be implemented in stages, beginning with rehabilitation activities and subsequently the construction of new network systems.

Dondo (district and city) on the other hand is located in the central-east of Sofala Province, within the Beira Corridor and is only 30km away from Beira, which facilitates its access to the different districts of the Province and neighbouring countries, as well as facilitates the movement of goods. The city has a surface area of 382 km_2, and it has 4 urban localities and 10 neighborhoods (*bairros*). According to the latest demographic data, Dondo has a population of 71,644 people. The age of population is very young, with 42% estimated to be under the age of 15.

Over a third of the population in Dondo has access to piped water. Only thirty per cent (30%) of households have access to sanitation drains and cesspit tanks, with most households making use of improved latrines. One of the main challenges of Dondo is related to retained stagnant water, which results in the proliferation of mosquitoes. It is expected that the city may also experience massive erosion in the near future, which may cause pressures on available land for the development of infrastructures and for agriculture activities.

In economic terms Dondo's geographical location along the Beira Corridor, offers the city access to a commercial network and markets. Dondo's economy is fundamentally based on the primary sector and informal commerce. The main economic activity is agriculture, particularly the production of rice, cassava and a variety of fruits and horticulture. In terms of industrial activities, Dondo is quite developed. Industries such as the production of cement and sawmills are examples. However, most of the local population is employed in the informal economy.

During the public consultation meeting in Beira the following issues of concern were raised in relation to Dondo:

- Dondo has access to a number of services including water and electricity supply even though these are in low-density areas, which could have resulted from the lack of coordination and communication between local structures. The involvement of the Municipality in all phases of the project is crucial to ensure the success of the project.

4.5.2 Chimoio, Manica and Gondola

Chimoio, Manica and Gondola are all located in the Manica province, west of central Mozambique. Chimoio is the capital city of the province and the fifth largest city in the country after Maputo. Manica Province is characterized by a tropical climate, with two distinct seasons: a rainy season from September to March and a dry season from April to August. Because of its altitude and relief, Manica in general has relatively high rainfall. The Province consists of three topographic areas, namely mountains, plateaus and plains. The mountains are located mainly in the far West, with generally higher altitudes of more than 1,000 m near the border with Zimbabwe. The soils in Manica Province are mainly brown and clayey soils and red clay-sandy soils. Manica is rich in water resources with the Zambezi River flowing in the far north, the Pungué and Buzi in the central region, and the Save River flowing in the south of the province. The estimated population size of Manica Province according to 2011 demographic statistics is estimated at 1,672,038. The population of the Province is predominantly rural, with only 25.3% of people who live in urban areas. The estimated population of the project target areas is 401.437 and it is estimated that 61% of the population has access to piped water.

In terms of health, the predominant issues amongst children are malaria, diarrhea, acute respiratory infections, conjunctivitis and malnutrition. In adults, malaria, tuberculosis, and STIs and AIDS are the health issues of concern. With regards to urban poverty in Manica this is manifested in violence, juvenile delinquency and prostitution. In urban areas, the average access rate to drinking water in the province is 41%, and sanitation is sanitation is characterized by the use of cesspit (septic) and improved latrines.

The key economic activities of the three cities are agriculture, focuses mainly on food and cash crops; commercial activities, which are dominated by the informal market, with entrepreneurs focused on consumables needed by individuals and households); fishing; and timber exploitation amongst others. Chimoio area is also the home of the major community producer of bananas, located in Gondola.

In Manica province, a public consultation was undertaken in Chimoio alone.
Some of the issues of concern identified during the consultation process included:

- In some areas pipes are superficial/ not installed at the required depth and leakages occur frequently in areas such as such as *7 de Setembro,* and often increase the risk of diseases associated with stagnant water from such leakages;
- Paved roads being destroyed for the installation of water conducts and/ or water supply systems but not being restored after the works have been concluded.

4.5.3 Tete and Moatize

Tete and Moatize are located in the Province of Tete in the central region of Mozambique. In terms of climate, the average temperature is 27.1^0C, the absolute maximum is 43.7^0C and the absolute minimum is 12.1^0C.The average precipitation monthly is 67 mm. Tete is one of the hottest parts of Mozambique as it lies on a plateau 500m above sea level. Tete and Moatize have a population of 267.179 and it is estimated that 79% have access of water.

Tete province has been well known for the hydropower dam Cahora Bassa. In the last few years, Tete province, with particular emphasis on Tete City and Moatize town, has become the center of attention as it possesses one of the largest and richest coal deposits in the world. Besides coal, the region has significant deposits of iron and rare metals. A number of mining projects have been developed in the last few years and the province has been denominated the 'chicken with golden eggs'. The expectation from Mozambicans in general is that the mining industry will stimulate economic growth in the country, stimulate growth in other sectors such as agriculture and industry, and subsequently translate into equitable distribution across all social-strata of the country. This has not been the case, and at present the mining industry in Tete is experiencing major challenges and investments are reducing substantially.

In Moatize agriculture is the predominant activity and is developed by local communities, with characteristics similar to the rest of the country: mainly subsistence farming, on less than 2ha, highly dependent on rain, and making use of little or no improved farming technologies and techniques. The main crops include maize, sorghum and beans. The main cash crops produced in the region are tobacco and cotton. Access to water remains a challenge for the inhabitants of both Tete and Moatize.

Investment in transport and other infrastructure in Tete is a result of the economic growth in the region, emerging particularly from the coal mining industry. As with the Beira and Nacala Corridors, the Tete corridor is strategically located in terms of provided access to Mozambique's landlocked neighbors Malawi, Zimbabwe and Zambia in terms of transportation of goods and services.

Issues raised by participants of the public consultations in Tete and Moatize included:
Land conflicts and water supply shortages are common both in Tete and Moatize, particularly in relation to agriculture and obstruction of fields.

- Once construction and rehabilitation works are concluded, particularly close for famer fields, efforts should be employed to restore the areas of work as they pose a threat to the production output of farmers.

4.5.4 Nacala-Porto

Nacala- Porto is a city located in the northern province of Nampula, at a distance of about 200 km from the city of Nampula. It has the third largest harbor in the country after the Maputo and Beira and is considered the deepest port on the east coast of Africa. Alike Beira and Manica, Nacala is a railway terminal that connects with Malawi, and is also located strategically in terms of providing aces to the port to landlocked neighboring countries. Nacala is located in a region with sub-humid dry tropical climate which is a tropical climate with a dry season. The dry and cold season is from May to November, hot and humid season is from December to April. Average annual temperatures are around 25.9 ^{o}C, and July is considered the coldest month, with an average temperature of 23.5 ^{o}C while the warmest month is December with an average temperature of 27.6 ^{o}C. In terms of extreme weather events, Nacala is influenced by the monsoon winds, with north winds prevailing from October to February, and south winds from March to September. The city is located in the area of influence of cyclones originating in the Indian

Ocean, but is not often hit by tropical cyclones, but by tropical depressions with heavy rains. Nacala is affected by severe soil erosion, particularly in the non-urbanized informal settlement areas.

In terms of demographic data, the total population is of approximately 254.624 of which over 90 000 live in slums and/or in informal settlements. Like other Mozambican cities, Nacala's population continues to grow rapidly. The most densely populated areas are located around the rail and port areas which are mainly unplanned settlements. It is estimated that 55% of the population in Nacala has access of water.

In terms of the economy, the Nacala Special Economic Zone, which was launched in 2009, has seen an increase in national and foreign investments have been flourishing in Nacala. The zone comprises the Nacala–Velha and the port districts including Nacala-Porto. Its position on the Mozambican coast, its natural conditions and the existence of a deep water port, determine the importance and functions of this urban center. The existence of the Port and railway infrastructure constitutes the Regional Transport Corridor, known as the Nacala Corridor, which gives to Nacala city great potential for economic development and which offer an opportunities for formal employment for the inhabitants of the city. Unfortunately that has not been the case to date. The majority of the population of Nacala-Porto depends on subsistence farming, fishing and informal trade for a living.

During the public consultation in Nacala-Porto the following issues of concern were raised:

- There is a major shortage/ lack of water supply in schools in Nacala;
- Nacala is seeing an expansion and its inhabitants are moving towards peri-urban areas which have limited access to water.

4.5.5 Pemba

Pemba is located in the northern region of the country, in the Province of Cabo Delgado on the southern peninsula of the Bay of Pemba. The Bay of Pemba is the closest natural deep water bay to the Rovuma offshore basin and supports existing terminal operations at the Port of Pemba. The Bay of Pemba is located 200 km north of the Port of Nacala. The shoreline within Pemba is well protected and characterized by intertidal mudflats, sandy beaches and extensive mangroves; whilst the shoreline on the seaward side is characterized by sandy beaches; and the shoreline within the bay is considered to be stable with no evidence of littoral movement within the bay. The temperatures in Pemba vary.

Agriculture and fishing are the dominant economic activity and the majority of the population is employed by the informal sector. Tourism is also big economic sector for the Cabo Delgado Province, and Pemba has become an important center for northern Mozambique's offshore natural gas industry.
Pemba City is divided into nine neighborhoods, with a mix of urbanized areas and informal high density settlements. The city has a population size of 162.726 and approximately 69% has access to water. As with most urban areas in Mozambique, more and more informal settlements

continue to grow in a disorganized manner in Pemba especially in fragile slopes and flood plains. Water supply in Pemba is still very low, and one of the major challenges the city faces is poor sanitation as well as poor storm water drainage.

The main issues of concern that were raised at the public consultation included:

- Apart from water supply, quality is a major issue in Pemba.
- Coordination with other local service providers/ structures is crucial.

5. OVERVIEW OF MOZAMBIQUE'S ENVIRONMENTAL POLICIES, LAWS, PROCEDURES, REGULATORY AND ADMINISTRATIVE FRAMEWORKS

5.1 Summary

As a consequence of the Rio Conference on Sustainable Development in 1992, Mozambique like other African countries has undergone major legal and institutional reforms in the environmental sector. The country has adhered to a number of international conventions and protocols for the protection of the environment, and as a result continues to improve the legislation on many sustainable development issues in the country to ensure that Mozambicans enjoy quality living conditions.

The Ministry of Land, Environment and Rural Development (MITADER) is the Government institution responsible for ensuring the preservation and responsible use of natural resources including land, the coordination of environmental activities and environmental licensing. The Provincial Directorates of Land, Environment and Rural Development[2] DPTADER) and in some cases District Services for Infrastructures and Planning (*Serviços Distritais de Planeamento e Infraestruturas* - SDPI) are the local representatives of MITADER.

This section provides a summary of environmental protection and related policies, laws and regulations in Mozambique, particularly those of relevance to the Project.

5.2 The Constitution

The 2004 Constitution of the Republic of Mozambique gives all citizens the right to live in a safe environment as well as the obligation to preserve it. The key objective of the clause related to the environment in the Constitution is to provide a legal framework for a proper use and management of the environment and its components, for the achievement of sustainable development in the country. This achievement involves proper management of the environment for the creation of conditions that guarantee health and well-being, socio-economic and cultural development of communities and the conservation of natural resources.

The state is also required by the Constitution to guarantee the sustainable use of natural resources and ecological stability for future generations and to promote land use planning in order to

[2] To date known as the Provincial Directorates for Coordination of Environmental Action (*Direcções Provinciais para Coordenação da Acção Ambiental),* however, a change in the designation is envisaged given the change in the name of the Ministry.

ensure that activities take place in the correct locations and that such activities contribute to balanced socio-economic development. The 2004 Constitution also creates an obligation on communities to protect the environment.

5.3 Environmental Legislation

The 1995 National Environment Policy in Mozambique, Resolution nº 5/95, establishes the basis of all environmental legislation in the country. According to its Article 2.1, the main objective of this policy is to ensure sustainable development in order to maintain an acceptable balance between socioeconomic development and environmental protection. To achieve the above objective, the policy must ensure, among other requirements, the management of natural resources in the country and the environment in general - in order to preserve their functional capacity and production for present and future generations.

The 1997 Environmental Law (Law nº 20/97) sets the environmental foundations for the policy and institutional framework for environmental management in Mozambique. The Law establishes the scope, institutions and appropriate management tools to deal with environmental management issues.

The Ministry of Land, Environment and Rural Development (MITADER) is the main government entity with the responsibility for coordination of government actions related to environment. With the recent changes in the designation of the Ministry, it is not yet clear what the new structure will comprise of based on addition of areas to its mandate. It is possible however, to ascertain that MITADER has the following competencies:

- Inter-sectoral coordination of environmental issues
- Wildlife, Forestry and Ecosystems protection and conservation
- Promotion of Rural Development
- Research planning and environmental management
- Territorial planning and land management
- Environmental impact assessments
- Environmental education and dissemination of information; and
- Inspection and control *inter alia.*

In terms of principles to be followed for sustainable development, the Environmental Law of 1997 establishes the following:

- the use and rational management of natural resources;
- recognition and value of community knowledge and traditions;
- environmental management based on preventive systems;
- integrative management;
- citizen participation; and
- responsibility.

At national level, MITADER has the responsibility to guide the implementation of environmental policies and to coordinate the sustainable planning and use of natural resources of the country. At the provincial level, MITADER is represented by the Provincial Directorates of Land, Environment and Rural Development[3] (DPTADERs). At district level MITADER's

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representation is rather diluted within the District Services for Infrastructure and Planning within the Ministry of Public Works, Housing and Water Resources (MOPHRH). This department is responsible for handling issues related to land use planning, as well as any issue related to environmental protection.

The Environmental Impact Assessment (EIA) is recognized to be a vital procedure for an effective development planning and is therefore a determinant watershed for environmental protection in the country. It includes provisions for EIA, Environmental Management Plans (EMP), and environmental auditing.

Mozambique's EIA is regulated by the Decree 76/98 (of 29 of December), revised in 2004 and updated by Decree 45/2004 (of 29 of September). The main changes involve the establishment of three EIA categories, namely:

- **Category A** - For projects with likely significant impacts decision making is reserved for the central level, in these instances a full EIA is required;

- **Category B** - For projects with impacts considered less significant or which require less complex mitigation measures decisions are made at provincial and local levels, for instance, when a simplified EIA is required;

- **Category C** - Is for small projects that may not require an EIA, but must follow the regulations for environmental impact. For these projects, decisions are also made at provincial level. The decree 45/2004 therefore has decentralized the levels of decision making in the EIA process, transferring decision powers from the national level to the *DPTADERs* which are the entry points for development projects applications (*Instrução do Processo*).

The Decree 45/2004 has been also updated by Decree 42/2008 (of 4th of November), with specific changes made to articles 5, 15, 18, 20, 21, 24, 25 and 28. One of the important changes made is the article 25, which under the Decree 42/2008 fixes a fee of 0.2% of the project's investment value for Categories A and B (against the 0.1% established by the Decree 45/2004), and an exemption fee of 0.02% of project's investment value for Category C projects (compared to the 0.01% established by the amended Decree 45/2004). The EIA process is further regulated by the General Directive for Environmental Impact Studies (Ministerial Diploma n º 129/2006 of July 19) which provides guidance on the assessment of the environmental and social effects of projects.

Environmental Audit and Environmental Inspection are regulated by Decrees No. 32/2003 (of August 20) and No. 11/2006 (of July 15) respectively. The Regulation on Environmental Audit Process indicates that public or private activities are subject to public environmental audits conducted by MITADER as well as private entities. According to this regulation, audited entities are required to provide to the auditors full access to the sites to be audited, as well as all information that may be required during the auditing process. Meanwhile, the Regulation on Environmental Inspections (Decree No. 11/2006 of July 15) regulates the mechanisms for inspection of public and private activities, which directly or indirectly are likely to cause negative environmental impacts. This law aims to regulate the activity of supervision, control and surveillance of compliance with environmental protection measures as recommended for development projects.

The Mozambican Environmental Law also establishes that an EIA must be undertaken for all development projects, policies, plans and programs that may have a significant impact on the environment, and recognizes the need to guarantee the participation of local communities and to utilize their knowledge and human resources in the protection of the environment.

Within the context of project EIA, a Ministerial Diploma no 130/2006 was introduced to stress the need for and importance of public participation process, which seeks to integrate non-experts' views into EIA decision-making process, by allowing individuals and civil society to voice their concerns with regards to environmental sustainability of proposed projects. For Category A Projects, Pubic Participation is a requirement, while it remains optional for Category B projects.

5.4 The Land Law

In Mozambique land issues are governed by the Land law 19/97 of October 1st, 1997 and its Decree 66/98 of December 8th, 1998. The country is said to have one of the most progressive land laws in Africa mainly because it safeguards the rights of its population over land and natural resources whilst promoting investments and sustainable use of resources. The Law clearly provides that "land is property of the state and cannot be sold or otherwise alienated, mortgaged or seized" (Art. 3 of the Land Law). Land is attributed in the form of a 50-year renewable lease known as a Land Title or DUAT (*Direito de Uso e Aproveitamento de Terra*) in Portuguese. The prerequisites for the acquisition of the DUAT differ for national and foreign subjects. According to the Land Law, the acquisition process requires the judgment of local administrative authorities, and a consultation with the corresponding communities to ensure that the area in question is free and unoccupied (Art. 13, 19/97).

5.5 Legislation on Water and Water Rights

The Mozambican Constitution of 2004 provides that all water resources are owned by the state. In terms of the actual management of water and water rights, the 1991 Water Law 16/91 of August 3rd 1991 is the key legal and regulatory framework. Similar to land, Water Law stipulates that water is of public domain, that it is inalienable and imprescriptible, and that rights to its use shall be conferred by the State (Art. 1 (3). In general terms the law makes provisions for the management of water and the acquisition of water rights. The objective of the Law is to provide a general legal framework governing the activities of protection and conservation, inventorying, use and appropriation, control and monitoring of water resources. Directives are provided for water management policy, which include the roles and responsibilities of the State in the promotion, creation of guidelines and regulation of the use of water in different sectors including agriculture.

Art. 21 of the Law makes a distinction between water for common use and water for private use. Common use includes household consumption as well as smallholder agriculture on up to 1ha of land (but excludes irrigation or usage of water with mechanical equipment). The use of water under this category is not subject to a license or concession. It is important to highlight that this group is prioritized. In terms of the second category, water for private use, the Water Act makes provisions which include compulsory licensing or concessions for use and appropriation which is accessible to any individual or collective person, public or private, national or foreign, duly

authorized to act in the national territory in terms of the law, and provided that they do not place the ecological equilibrium or the environment at risk.

The Water Licenses and Concessions Regulation (*Regulamento de Licenças e Concessões de Águas*) for the private use of this resource, is set out in Decree 43/2007 of October 30, and is applicable only to waters that lie outside the action of the tides and/or whose water bodies (lakes and lagoons) communicate with the sea only during spring tides. For water concessions, a set of documentation must be submitted to the Regional Water Administration [4](ARA), including a description of the proposed use, economic justification and technical description.

In terms of provisions on pollution management, the legal and regulatory framework concerning the prevention of pollution and the safe use of chemicals is broadly provided for under the Environmental Law 20/97 however, sector specific regulatory frameworks are also available in this regard. Article 52 of the Water Law for instance, stipulates that water in the public domain should be protected against contamination, and that the accumulation of toxic or hazardous compounds that may contaminate water should be prevented. Article 54 of the of the same Law stipulates that any activity with the potential of contaminating or degrading public waters, particularly the discharge of effluents, is subject to a special permit to be issued by the Regional Water Administration (ARA), and the payment of a fee. For water management, Mozambique has a specific regulation, Decree 13/2006 of 15 June, which lays down rules concerning the production, deposit on soil and subsoil, throwing to the water or to the atmosphere, of any toxic and polluting substances, as well as the practice of polluting activities which could accelerate impairment of the environment, in order to prevent or minimize their negative impacts on the health and environment. These articles although sector specific, are in conformity with the provisions around pollution and contamination of the environment stipulated in the Environmental Law.

5.6 Public Consultations Process

The Ministerial Diploma n^0 130/2006 and the Decree 45/2004 make provisions for the Public Consultation Process. The former defines the basic principles related to public participation, methodologies and procedures that should be used. It considers public participation an interactive process that begins in the design phase and continues throughout the lifetime of the project. Article 14 of Decree 45/2004 provides for the public consultation process in the context of the Environmental Impact Assessment process. Both of these documents establish the need for conducting public consultations with affected and interested persons that may be affected by an activity or project directly or indirectly.

For Category A activities public consultations are compulsory, whilst for Category B, these are optional unless the activities will result in *a)* temporary or permanent displacement of people or communities, and/ or *b)* if the activities will result in the displacement of assets or restrictions in the use of natural resources.

[4] *Administração Regional de Água* in Portuguese. There are 5 ARAs that serve the different regions of the country: ARA-Sul is responsible for the river basins in southern Mozambique; ARA-Centro, for the central region; ARA-Norte is responsible for the northern region; ARA-Centro Norte for the central and northern regions of the country; and ARA- Zambeze focuses on activities around the Zambeze Hydrographic basin.

6. OVERVIEW OF THE WORLD BANK'S SAFEGUARD POLICIES

6.1 Summary

The World Bank's Environmental and Social Safeguard Policies are considered a cornerstone of its support to sustainable poverty reduction. The objective of these policies is to prevent and mitigate undue harm to people and their environment in the development process. These policies provide guidelines for Bank and borrower staffs in the identification, preparation and implementation of programs and projects. The effectiveness and development impact of projects and programs supported by the Bank has substantially increased as a result of attention to these policies. Safeguard policies have often provided a platform for the participation of stakeholders in project design, and have been an important instrument for building ownership among local populations.

The World Bank's ten safeguard policies aims at ensuring environmental and social sustainability of actions proposed for financing, and to ensure better 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 People;
- OP 4.36 Forests;
- OP 4.37 Safety of Dams;
- OP 7.50 Projects on International Waterways;
- OP 7.60 Projects in Disputed Areas.

The WB, through its Disclosure Policy BP 17.50 requires that all safeguard documents are disclosed in the respective countries as well as at the WB's Infoshop prior to the appraisal or for Fast Tracking Initiatives prior to signing of a Grant Agreement.

6.2 Safeguard Policies triggered by the Project

The WASIS II Project will involve some civil works - construction and rehabilitation of water points, drainage and storage systems *inter alia* as mentioned in the Project Description, and therefore is likely to cause certain negative environmental and social effect. Consequently, WASIS II triggers the WB's Operational Policies, specifically the Environmental Assessment (OP/BP 4.01); and Involuntary Resettlement policies (OP/BP 4.12), as described below.

TABLE 1: SAFEGUARD POLICIES TRIGGERED BY THE PROJECT

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP 4.01)	**X**	
Natural Habitats (OP/BP 4.04)		X
Forests (OP/BP 4.36)		X
Pest Management (OP 4.09)		**X**
Physical Cultural Resources (OP/BP 4.11)		X
Indigenous Peoples (OP/BP 4.10)		X
Involuntary Resettlement (OP/BP 4.12)	**X**	
Safety of Dams (OP/BP 4.37)		**X**

OP 4.01 Environmental Assessment

The aim of OP 4.01 is to ensure that WB-financed projects are environmentally and socially sustainable, and ensure better decision making through integration of environmental and social impact considerations throughout planning and implementation of development actions. The main objectives of Environmental Assessment (EA) is to ensure the consideration of environmental aspects (air, water, and land), human health and safety, social aspects (involuntary resettlement, local communities and cultural heritage), as well as consideration of trans-boundary and global environmental effects such as climate change. OP 4.01 is applicable whenever a proposed project or actions have the potential to cause negative environmental effects to its surroundings.

The projects are classified into one of the following four categories depending on the type, location, sensitivity and scale of the project and the nature and magnitude of potential environmental impacts.

- **Category A**: A proposed project is classified as Category A if it is likely to result in significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect a more extensive area than the sites or facilities where physical activities take place. The Environmental Assessment for a Category A project examines the potential negative and positive environmental impacts, compares them with those of other feasible alternatives (including the situation without the project.) and recommends necessary measures to avoid, minimize, mitigate or compensate for adverse and improve the environmental performance impacts. For a Category A project, the proponent is responsible for preparing a report, usually an Environmental and Social Impact Assessment (ESIA) with its respective Environmental and Social Management Plan (ESMP) or environmental auditing as required.

- **Category B**: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas, including aquatic ecosystems, forests, grasslands and other natural habitats, are less adverse than those provided for Category projects A. These impacts are specific to the project site; few if any of them are irreversible, and in most cases the identification of mitigation measures is faster for projects of this Category than for Category A. Just as is the case for Category A projects, the potential negative environmental impacts are

examined recommendations made on measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance. For simple projects with minimal social and environmental impacts, the preparation of the Environmental and Social Management Plan based on the ESMF is sufficient. Likewise, the drafting of a Resettlement Plan based on QPR may also be sufficient.

- **Category C**: A proposed project is classified as Category C if the possibility of adverse environmental impacts is minimal or nonexistent. In addition to the preliminary environmental analysis, it does not require any additional action for a project to Category C.

- **Category FI**: A proposed project classified in Category FI engages investment funds from the World Bank through a financial intermediary, in subprojects that may result in adverse environmental impacts.

WASIS II is classified as **Category B** as it may result in significant adverse environmental impacts and sensitivity of the projects' sites, however these will be site specific and can be mitigated or avoided with an Environmental and Social Management Plan or through design. Potential negative environmental and social impacts are likely to result from the rehabilitation and construction activities which may include soil erosion, soil, surface and groundwater pollution, air pollution, loss of vegetation, public health impacts such as traffic hazards, noise, dust, and disruption of social and cultural practices. These impacts, if not mitigated have the potential of affecting a more extensive area, beyond the Project sites or the areas where physical activities will occur.

Once subprojects have been defined, an evaluation through simple environmental and social impact assessment (ESIA) and a Plan of independent Environmental and Social Management based on the results of the analysis / social and environmental screening will be prepared by experts in social areas, health and safety for specific areas of implementation of the Project. The costs for carrying out such evaluation will be included in the Project budget. The results of the selection and the determination of categories of sub-projects will be confirmed and approved by MITADER to verify compliance with the Mozambican Environmental Impact Assessment Policy. Hence the present ESMF is elaborated to focus on those potential environmental and social effects likely to occur during the rehabilitation/construction and operation activities under the WASIS II Project areas.

OP 4.12 Involuntary Resettlement

The key objectives of this operational policy are to:

(i) avoid or minimize involuntary resettlement scenarios, where possible and examine all viable alternative project designs;
(ii) support affected persons in restoring/improving their former living standards, income generation and production capacities, or at least in restoring them;
(iii) encourage community involvement in planning and implementing resettlement actions, and to
(iv) provide assistance to affected people regardless of the legality of land tenure.

The policy does not only cover physical displacement, but also any loss of land or other assets associated with the proposed actions resulting in:

- relocation or loss of shelter;
- loss of assets or access to assets; and
- loss of income sources or means of livelihood, whether or not the affected person is to reallocate to anew area.

This operational policy is also applicable to the involuntary restriction of access to legally demarcated conservation areas such as parks and other protected areas resulting in adverse impacts on the livelihoods of the displaced persons. For the purpose of the RFP prepared under the remit of the WASIS II, whenever land acquisition is necessary for the foreseen works, the Project proponent (FIPAG) shall comply with guidance established by the RPF which has been prepared separately and in parallel to the present ESMF.

World Bank Policy on Disclosure of Information

As part of the World Bank's recognition of the right to information, the institution has developed information disclosure policies which generally contain the following elements: principles of disclosure; exceptions to disclosure; routine disclosure; and request driven disclosure. Disclosure of documents (including a summary of the project, and a summary of Environmental Assessment) should be in the local language, at a public place accessible to project-affected groups and local non-governmental organizations. In-country disclosure of information is the responsibility of the borrower, in this case FIPAG. Disclosure in the InfoShop is the responsibility of the World Bank.

Document that need to be disclosed include:

- Integrated Safeguards Data Sheet
- All Safeguard mitigation plans:
  - Environmental Assessment/ Environmental Management Plan
  - Resettlement Action Plan, Policy Framework or Process Framework
  -

Timing of Disclosure and Consultation

- Draft documents should be made available to stakeholders well in advance of consultations;
- All required public consultations should be completed, and draft or final documents disclosed prior to the project Appraisal;
- Final documents (incorporating results of consultations) should be disclosed for the record.

For the present ESMF document, information disclosure was initiated with the advertisement of the public participation meetings held in the six of the nine provinces covered by the WASIS II project. The meetings provided an opportunity for stakeholders to provide comments and useful inputs to be taken into consideration when planning and implementing the proposed WASIS II project. As the EMSF has now been drafted, it is proposed that the disclosure process be through continued interaction with stakeholders using contacts gathered during public meetings. E-mail

contacts shall be used to inform that the ESMF document has now been drafted and it is available in the FIPAG Web Page (www.fipag.co.mz). The E-mail to stakeholders will also include the executive summary of the present ESMF (Portuguese version), and stakeholders shall be invited to provide further comments as needed. A pubic advert shall also be sent to *Jornal Noticias* (most widely distributed and read newspaper) to inform stakeholders of the availability of the ESMF document for review and comments. FIPAG shall appoint the contact person whom comments shall be sent to by stakeholders. Additionally, FIPAG shall ensure the availability of the full ESMF in Portuguese in its offices in all cities with FIPAG presence, including those not covered by WASIS II.

7. GAPS IN MOZAMBICAN LEGISLATION AND IN THE WORLD BANK SAFEGUARD POLICIES

The major gap in both related Mozambican legislation is related to the lack of clear procedures and norms for handling health, safety and security for both the local population of a particular project area and/ or the project workers. The Mozambican Labour Law touches broadly upon safety in the workplace, however falls short in terms of making specific provisions for projects such as WASIS II. In the case of the project, in accordance with World Bank OP 4.01, the World Bank Group Environmental Health and safety Guidelines (EHS) apply (these can be found on the IFC website: www.ifc.org) This section provides a description of the specific standard on health and safety to guide the project proponent throughout all phases of implementation of the project, and also provides some guidance on what mitigation measures should be taken.

Project activities, equipment, and infrastructure often bring benefits such as employment and access to services however, they also have the potential of increasing exposure to risks and impacts arising from equipment accidents, structural failures, and releases of hazardous materials. Local inhabitants of the project areas may also be affected by impacts on their natural resources, exposure to diseases, and the use of security personnel.

Among others the objectives of the EHS are to:

- avoid or minimize risks to and impacts on the health and safety of the local community during the project life cycle from both routine and non-routine circumstances; and to
- ensure that the safeguarding of personnel and property is carried out in a legitimate manner that avoids or minimizes risks to the community's safety and security

The risks and impacts to the health and safety of the affected community during the design, construction, operation, and decommissioning of the project should be identified and preventive measures to address them should be put in place. Where the project poses risks to or adverse impacts on the health and safety of affected communities, an Action Plan should be disclosed by the project proponent.

The following should be considered when assessing the potential risks related to health, safety and security:

- Infrastructure and Equipment Safety;
- Hazardous Materials Safety;
- Environmental and Natural Resource Issues (such as floods/ landslides etc);
- Community Exposure to Disease (such as water-borne illnesses etc);
- Emergency Preparedness and Response.

The project proponent (FIPAG) should assess the potential risks and impacts from project activities and inform affected local population of significant potential hazards in timely manner. It is also the responsibility of the project proponent to support and work with the project affected population and the local government structures to respond to any arising emergency.

For the purposes of implementation of this ESMF, potential health, safety and security impacts associated with the project have been identified, and mitigation measures have been recommended in the section that follows.

8. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

8.1 Summary

It is expected that potential negative environmental and social impacts associated with the proposed WASIS II Project will be of localized and short-term nature, and can be significantly minimized through adequate planning and a thorough implementation of the Environmental Management Plans by the Contractors responsible for conducting the construction/rehabilitation works, which are envisaged in Components 1 and 2 of the Project.

Any construction activities related to the building or rehabilitation of facilities for the improvement of water systems in cities may result in negative environmental and social effects (e.g. soils disturbances through excavations leading to soil erosion and compaction, land uptake resulting in conflicting land uses, soils and groundwater contamination by chemicals, etc.). Most direct impacts will be related to vegetation clearance and soil disturbances associated with the installation infrastructure, especially in cases where new infrastructure is necessary rather than a simple rehabilitation of the existing ones.

With regards to rehabilitation of existing infrastructures and pipelines, potential negative impacts are likely to be related to contamination of air and water sources which may pose impacts on the natural environment as well as human health.

Considering that the main activities of the proposed program will be conducted in urban areas/ cities, some of the indirect impacts will be related to public nuisance, which may include disruptions of public access, disruption of traffic, noise and dust emission, water shortages, public safety issues in excavated areas, disruption of access to public and private property including residential and commercial areas located in the proximity of the sites.

8.2 Negative Impacts

In general, it is expected that negative environmental impacts will involve temporary disturbances in smaller areas and with limited permanent effects that can be effectively be mitigated through the implementation of an ESMP at project level.

Negative impacts identified for the construction phase vary between low to moderate, both regarding physical environment. All potential biological impacts are low, except for the loss of vegetation cover and plant diversity which is considered to be of high importance dropping to moderate after implementing the mitigation measures. Most of the impacts can be mitigated to the greatest extent possible and will last only during the construction period.

The socioeconomic negative impacts identified are most low or insignificant, and can be reduced significantly after implementation of the proposed mitigation measures. The impacts will come up during construction phase. Assets will be impacted, business will be interrupted and some physical relocation actions will be necessary.

The main impacts related to health and safety during the pre-construction phase is mostly related to the design of buildings such as administration buildings, storage building, and workshops, amongst others. It is therefore necessary that the following safety measures be taken into consideration: availability of fire extinguishing equipment and/or fire alarm systems and appropriate storage areas for chemicals, hazardous and flammable materials to reduce risks. Local inhabitants and workers should be informed of the safety measures, and signals should be placed close to potential areas of danger. The key impacts likely to result from the proposed activities are summarized as follows:

Direct impacts of the construction phase:

- Contamination of soils, ground and surface water as a result of chemicals (oils, fuels and lubricants from machinery and vehicles working on site, remains of paints, etc.) particularly on sites located near waterways – can be minimized through adoption of an EMP that details suitable mitigation and management measures.
- Air and noise quality may be affected as a result of construction activities – these can be mitigated by following existing Regulations and the EMP.
- Public nuisance and health impacts resulting from inadequate disposal of solid wastes including demolition materials containing asbestos from degraded roofs or pipelines. It is It is normally recommended not to remove the old asbestos pipelines from the ground as their handling during disposal is more hazardous than leaving them in the ground
- Increased risk of work-related accidents as a result of lack of use of personal protective equipment by workers during the construction phase. Regarding health and safety aspects, the Project can be implemented without any significant risks and impacts, provided that the Health and Safety requirements stated are put in place.
- For the construction works, it is highly recommended to hire local workers wherever possible. This will raise the acceptance of the population to the project even if they do not benefit directly from the expanded drinking water supply and will help to improve livelihoods in the region.
- Water shortages in some areas during the rehabilitation or installation of new pipes, or other construction/ civil works.

- Spread of HIV/AIDS during the construction phase of administrative infrastructure may perpetuate poverty in the districts by affecting the most economically productive members of society who are active in the fight against poverty – This can be mitigated through an EMP.

Indirect impacts during and after construction works:

- The contractor should establish all the necessary means for waste water and solid waste collection, which should be available during and after the construction phase. This is to ensure that the water in the areas that benefitted from the project is not contaminated and does not expose risks to the health of the local inhabitants;
- It is anticipated that indirect impacts will be related to public nuisance and these will include disruption of public access, disruption of traffic (including pedestrians), noise and dust emission, public safety issues in excavated areas, disruption of access to public and private property including residential and commercial areas located in the proximity of the sites.
- Social conflicts resulting from land uptake as may be required for the foreseen water supply civil works in the project areas, causing negative impacts on the poor, especially households headed by single women and/ or children.
- Differences in the visual appearance of the area (as a result of the construction of new infrastructures such water treatment plants, water storage tanks, among others).
- Noise and dust emission which may lead to impacts on human health particularly in the communities living in the proximities of the projects;
- Disruption of public access affecting pedestrian and traffic during the construction activities particularly in the towns, and in sensitive locations such as schools, markets and health facilities;
- Poor sanitation in construction areas which can be mitigated/ avoided with the provision of adequate washing and toilet facilities close to the works.
- Involuntary resettlements resulting from the construction of new infrastructure which may affect particularly single women and households headed by children especially in peri-urban areas.

8.5 Summary Table of Potential Impacts of the Project and Mitigation Measures

Potential Negative Impacts		**Mitigation Measures**
Quality of water	During all types of construction and rehabilitation works, residual waters, chemicals and oils are discharged. These have the potential of adversely affecting underground water and soils in the areas where the project is implemented. ▪ Pollution of underground water ▪ Variations in water levels ▪ Pollution resultant from the lack of effective management in the water catchment areas ▪ Salt Intrusion	During construction works: Measures include: proper storage of hazardous chemical products at the Project sites. Other measures include adequate drainage of water and/or other liquid wastes used during construction and operation phases of the Project. All products used during the Project should be nontoxic and biodegradable. The use of chemical products such as oils, lubricants and fuels should be limited and controlled/ supervised. Drainage systems in the Project sites should be equipped with a water/ oil separator. During construction and rehabilitation works, superior soils should be separated/ removed and replaced/ placed back once the works have been concluded.
Vegetation and Soils	**Vegetation clearance and soil disturbances**	Reinstatement of vegetation cleared following completion of works; rehabilitation of site's disturbed soils immediately after completion of works
Water shortages	Resulting from construction work Contamination of water/ reduced quantities of water during replacement or construction of pipelines	

Air pollution	Dust/ toxic chemicals in the air	Mitigation measures watering surfaces to reduce dust and reduce usage of chemicals (toxic) Reduction of wind speed with the use of wind breaks and covering dirt roads with tar Some low cost mitigation measures include: ▪ Adequate preparation of construction material such as cement ▪ Reduction of speed limits and/ or access to roads that lead to the project areas ▪ Ensure regular maintenance of vehicles and equipment used on sites ▪ Avoid fires
Land conflict/ disputes	Disputes around land use rights/ titles	Public consultations prior to any works/ during project preparation and throughout all phases of the Project according to the provisions of Decree 45/ 2004 and Ministerial Diploma 130/2006 on the public consultation process, which should involve interested and affected people, directly or indirectly affected by the activities of the Project. If resettlement is unavoidable, the resettlement process has to be managed in accordance to the Law on Resettlement Decree n^0 31/2012 of August 8, and should also be in conformity with the World Bank Safeguard Policy on Involuntary Resettlement OP/BP 4.12 and the RPF which has been prepared for the project.
Social conflicts	Potential for social conflicts between workers (from other areas) at site and members of local community	Ensure that the proposed construction/rehabilitation works are carried out by members of the community residing in the district, and priority be given to local construction firms with knowledge of the local social norms
Noise and vibrations	Noise and vibrations are common during construction and rehabilitation works, and these can be exceeded	Mitigation measures include: Choosing less noisy equipment and make use of equipment in good conditions Usage of silencers to reduce vibrations of equipment during construction

		phases Where necessary, reduce construction time and the running speed of noisy equipment Planning and logistics should be appropriate – plan noisy activities for early hours of the day and inform local inhabitants of activities that will result in noise and vibrations Monitor noise and vibrations
Water treatment	Liquid and solid waste will be produced during the construction and rehabilitation phases of the project.	Solid and liquid waste should be managed adequately to reduce adverse impacts on water and soils and to ensure safety in the Project area Hazardous/ toxic waste should be disposed-of correctly The contractor should categorise all waste, and should adopt the practice of recycling whenever possible
Health of population in Project areas	Water borne illnesses resultant from still waters/ water treatment waste	If water/ oil leaks are constant, separators should be installed and cleaned regularly Solid waste should be covered to avoid contamination of water Guidelines and procedures on cleaning oil/ fuel/ chemical leaks should be made available Water leaks if unattended in the distribution systems can create permanent wet conditions, leading to the proliferation of mosquitoes in the beneficiary communities. FIPAG shall ensure that community sensitization is carried out on management of tap water in households. Regular monitoring and maintenance of water distribution network is also required for early identification of leaks and repairs.

Water reservoirs	Changes in the physical / visual appearance of areas of the Project	Make sure that reservoirs are built or constructed in areas that are not prone to erosion or where they will not cause visual intrusions or disturbances. .
Soil erosion	Increase in soil erosion and potential for landslides may occur; Soil erosion may as a result of the expansion of water distribution networks for urban areas	Implement appropriate soil erosion control measures such as minimising run-off, building terraces and diversions, etc. Combine civil construction, tree-planting and small earth movements to help stabilize soils, Establish protection zones in unoccupied areas or areas that become unoccupied when households are moved/ resettled; Mining of construction materials in borrow pits to be preceded by appropriate mining plan which identifies measures for site decommissioning and restoration plan
Climate change effects	Effects of climate change in the sustainability of agricultural systems, water supply and ecosystems management in districts	The District Environmental Commission shall identify and asses potential risks likely to result from extreme whether events such as flooding, droughts and their likely impacts on the district infrastructure and sustainable livelihoods, and take these into account during the planning and implementation of the small scale civil works in the districts.
Physical Cultural Resources	Rehabilitation and construction works may result in the alteration, damage or removal of any critical physical or cultural heritage	As part of the screening procedure required by the ESMP, the responsible project development team screens early for the existence of physical/cultural resources. Should they be identified or are likely to be existing in the site (chance-find): ▪ a decision will be made to either relocate the project to a different site or stop any further project development. ▪ Chance finds will not be disturbed until an assessment by qualified experts is made. ▪ Physical cultural resources includes archaeological, paleontological, historical, architectural, and sacred sites including graveyards, burial sites, and unique natural values.
Safety and Security	Incidents and accidents are bound to occur in the	Safety and security measures in the workplace should include:

	workplace	▪ Restrict access to construction sites and protect surroundings of project area ▪ Make provisions for security guards at entrances and exits of construction sites ▪ Ensure that workers know how to swim – where construction sites are close to water ▪ Make provisions for proper training on the use of equipment as well as training on health and safety procedures in the workplace to workers and provide safety equipment to workers (such as helmets, gloves, goggles, boots) etc ▪ Prepare and emergency response plan ▪ Make provisions for a health unit and first aid for small works, for larger works arrangements for the use of ambulances and local medical facilities should be made, as required by the World Bank standard contracts: *In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's Personnel. The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instruction".* ▪ Ensure that sufficient lighting is available for night works ▪ Establish speed limits at site areas to avoid accidents ▪ Distribute mosquito nets to project workers who remain on-site ▪ Liquid and solid waste should be disposed off-site ▪ Outbreaks of malaria, urinary infections and water-borne illnesses should be monitored ▪ Make provisions for access to potable water and washrooms during works and of water, sanitation and hygiene (WASH) programmes directed towards the local population of the areas covered by the project The WHO as well as the IFC Performance Standard 4 recommendations for health (in the case of the former), safety and security (in the case of the latter)

		in the workplace should be followed.
Socio-economic	Potential loss of land, interruptions in income generating activities	▪ Specific project areas or areas of work should be identified and chosen in a consultative and participative manner to avoid disturbances and negative social implications; ▪ Where possible, labour from local inhabitants of the project areas should be used to avoid/ reduce social conflict; ▪ Education and sensitization on the prevention against HIV/AIDS should be organized. Condoms should be distributed to workers, and health care should for workers should be made available ▪ Respect for local cultural habits and for religious and cultural areas.
Lack of coordination amongst local structures/ services providers	Damage to TDM optic cables Damage to paved road Destruction of electrical cables Investing in low density area, and not covering areas with greatest need	▪ Joint planning, early identification and opening (if required) of these services to prevent damage during construction, and coordination with local structures, Municipality and other service provides on location/ dates/ duration and extent of works to avoid increase in costs and investments with no direct benefits to urban population.

9. SCREENING PROCESS

9.1 Summary

The screening process described in this section is aimed at determining which activities (construction/rehabilitation works) are likely to result in significant negative environmental and social effects with a view to determine appropriate impact mitigation measures for those activities, and ensure environmental sustainability of sub-projects undertaken in the Project areas, through effective monitoring of impacts during the construction/rehabilitation phase of works in the cities. The outcome of the screening process will determine the extent of environmental considerations required preceding the carrying out of activities of the Project related to construction and rehabilitation works.

For the purpose of the construction/rehabilitation of civil works, the MITADER Environmental Screening Form (Appendix 2) has been considered. However, the form does not fully address some of the key environmental and social effects likely to result from the proposed activities. Thus, an Environmental and Social Screening Form (Appendix 3) has been devised to support environmental and social decision-making of the proposed works.

The form is also designed to be used by the persons involved in the implementation of the program, reviewers and relevant decision makers, in order to identify mitigation measures for the activities likely to have adverse environmental and social effects, and identify the need for advanced environmental assessment.

The Form covers information which will help reviewers describe the bio-physical aspects and social conditions of the proposed sites for installation of the infrastructure, in order to identify the potential impacts of the activity on the environment and on the social settings, and to identify the need for mitigation, resettlement or compensation measures.

Step 1: Site Screening

The District Environmental Commission will conduct a desktop study aimed at appraising the project's plans and activities. The officer will be trained by the provincial directorate of environmental affairs on identification of basic environmental and social issues associated with development projects. The Commission shall work in coordination with the representatives of the MOPRH and FIPAG to determine the likelihood of the project to cause negative environmental and social impacts. Where relevant, the officer, together with other members of the team shall conduct a site visit with a view to verify the site conditions and hence determine what the potential environmental and social impacts associated with the projects are.

Subsequent to the site visit, the District Environmental Commission will complete the Environmental and Social Screening Form presented in Appendix 4, in order to identify the potential environmental and social effects, determine their significance, categorize the activity and propose appropriate environmental impact assessment (EIA) by assigning the appropriate Category (A, B or C).

Step 2: Environmental Categories of the Activities

The criterion for categorization of the proposed rehabilitation/construction works for this ESMF is based on the World Bank's OP 4.01 for Environmental Assessment which is in many ways similar to the Mozambican EIA regulations as per the Decree 45/2004. Categorization will be preceded by filling the Environmental and Social Screening Form (Appendix 4) and the information gathered in this form will be used to assign appropriate environmental category A, B or C as described below. Environmental categorization of activities will be carried by the District Environmental Commission in consideration of the criteria below.

BOX 1: CRITERIA FOR ENVIRONMENTAL CATEGORIZATION OF THE PROPOSED ACTIVITIES

Category A: activities requiring an Environmental Impact Assessment;

Category B: activities requiring an Environmental Impact Assessment (EIA) or/and an Environmental Management Plan (EMP);

Category C: activities that are exempt from detailed environmental impact assessment, but which shall be implemented in observance of environmental management best practices.

Given the nature of the foreseen works, it is anticipated that most activities will fall under Categories B and C, given that the potential environmental and social impacts are site-specific, minimal, and which can be easily mitigated through a simple environmental management plan (for category B activities) and environmental management best practices for category C projects. FIPAG will be required to fill the environmental and social screening forms of the proposed construction/rehabilitation works, propose adequate environmental classification of the activities, and communicate the results of the screening to MITADER at the Provincial Directorate of Environmental Action (DPTADER) for decision-making.

Step 3: Carrying out Environmental Work

Following the analysis of the screening form and the categorization of the activity, and the determination of the level of environmental work required, the district environmental officer will make a recommendation on whether:

a) The Environmental Impact Assessment (EIA) is necessary;
b) A simple Environmental Management Plan is required; or
c) The project is exempted from environmental impact assessment but its implementation must be based on environmental management best practices.

As per the proposed screening process, the following environmental work can be conducted:
(a) Use of the environmental and social checklist (Appendix 4): The environmental and social checklist will be filled by the district environmental officer. This activity will take place in parallel to the preparation of plans and drawings of the proposed construction/rehabilitation works under WASIS II.

Category B activities may require only the application of mitigation measures indicated in the checklist. Where the checklist identifies the need for acquisition of land, a Resettlement Action Plan would be prepared by qualified personnel in line with the OP 4.12 for Involuntary Resettlements, and taking into account the Ministry Diploma 181/2010 of November 3 which outlines asset compensation methodology for involuntary resettlements.

(b) Requirements for Environmental Impact Assessment: In case the results of the environmental and social screening process indicates the need for environmental impact assessment as a result of the complexity of the proposed construction/rehabilitation activities of WASIS, EIAs will be carried out by an authorized consultancy firm, in line with the Decree 45/2004 (and its update as per the Decree 42/2008 of November 4) on Regulations for Environmental Impact Assessment Processes administered by MITADER, and in consideration of the Bank's OP 4.O1 for Environmental Impact Assessments.

Step 4: Review and Approval

The environmental and social screening forms as well as the EIA reports will be submitted to MITADER at provincial level (DPTADER) for review and decision-making. In summary, DPTADER will be responsible for the following:

- Review of the results and recommendations submitted by the district environmental officer based on the environmental and social screening form (Appendix 3);
- Review of the proposed mitigation measures presented in the Environmental Checklist (Appendix 4);
- Review the results of the conducted EIAs and EMPs to determine whether the relevant environmental and social issues have been properly addressed, and relevant mitigation measures have been put in place for the proposed civil works.

The Technical Review Committee of DPTADER will make recommendations for approval to the DPTADER Director in consideration of the results of the review process.

In the case of approval of an EIA Report, an Environmental License will be issued in conformity with the requirements of the Decree 45/2004 on Regulations for Environmental Impact Assessment Process, which also requires MITADER (through DPTADER) to explicitly state how the findings of the EIA Report were used to make the final decision.

Once the environmental and social screening form has been approved by DPTADER, the district and FIPAG environmental officer will be informed (in writing) and the construction/rehabilitation works can begin.

Step 5: Public Consultations and Disclosure

As per the EIA Regulations for Environmental Impact Assessment Process (Decree 45/2004) and the Ministerial Diploma 130/2006, public consultation is an integral part of the EIA activities and should be considered during scoping phase throughout the preparation of the EIA, in collaboration with relevant bodies and the Project Affected Persons (PAPs) and may include:

- Conducting one or more public (members of the community, government and non-government entities and other stakeholders) meetings with a view to present the proposed activities, and gather public views, concerns and expectations regarding the proposed project;
- Register all the issues raised and ensure that communication channels between the public and the project team are established with a view to gather public perception regarding the proposed project.

Public meetings must be preceded by a public announcement which clearly states where the meetings will be held, the date, and such notice must be publicized though the most circulated newspaper or the most used communication channel (e.g. radio, TV, newspaper) 15 days before the meeting date. In certain cases, members of the public may require baseline information to gain an understanding of the project prior to the meeting date, to allow them to participate actively during the public meetings.

Public consultation should contribute to the elaboration of the scoping report by identifying the key issues which should be addressed in detail during the environmental assessment of the project's activities. The results of consultations should be included into the EIA Report and it should be explicitly stated how these results have been used in the scoping report and in making the final decision of the EIA Report.

All relevant information necessary for the consultation should be provided to the public timely, prior to the consultation, and must be in a form and language understandable and accessible to the groups to be consulted. In terms of disclosure of information, all reports related to the consultation process, the environmental assessment and/or the ESIA and ESMP reports should be made available in a public place accessible to the affected and interested groups included non-governmental organizations. These reports should also be formally submitted to the World Bank in-country and subsequently the Bank makes them available in the InfoShop. Disclosure process for ESIA and ESMP should follow the same approach as proposed in chapter 6 of the present ESMF.

For the purpose of the civil works in the cities proposed for WASIS II, it is proposed that the consultation with public be carried out in the following two phases:

- During the completion of the environmental and social screening forms and the respective categorization of the activity
- During the detailed evaluation of environmental and social impacts.

MITADER (through DPTADER) may also provide copies of the completed EIA Reports to the public for review and comments prior to issuing of the final decision. MITADER (through DPTADER) will also involve other relevant bodies (provincial directorates of different line ministries, the district and the municipal governments, education and research institutions, NGOs, local associations etc.).

Step 6: Environmental monitoring and follow up

The Environmental Monitoring intends to verify how effective and relevant the proposed mitigation measures are, and ensure their updating where relevant for continual improvement. For the purpose of the WASIS II monitoring will be carried out by the FIPAG, Public Works and DPTADER appointed persons.

9.2 Responsibilities for the implementation of the screening process

Table below summarizes the key stages as well as the relevant institutional arrangements to carry out the screening process, preparation and evaluation of the proposed activities and the final decision making, to allow the initiation of works.

Table 2: Responsibilities for Implementation of the proposed screening Process

Screening phase	**Responsibility**
Environmental and social impact of the construction and rehabilitation works of WASIS II using the devised Form (Appendix 3)	**FIPAG**
Environmental Categorization of the activities (categories A, B, or C)	**MITADER (DPTADER)**
Carrying out Environmental Work: i.e. implementing simple mitigation measures (Table on section 7.5), or, carrying out a separate EIA	**FIPAG**
Review and Approval	The DPTADER Environmental Technical Review Committee will review the recommendations made by the District Environmental Commission and issue its recommendation to DPTADER for final decision making.
Approval of (i) the screening results; (ii) the assigned environmental category; and (iii) recommendations to FIPAG	**MITADER (DPTADER)**
Selection of the consultant in case of the need for a separate EIA	FIPAG will draft the EIA ToRs, and prepare criteria for hiring an authorized EIA Consultant, evaluate proposed candidatures, and select the most qualified consultant and submit the selected Consultant to the specific sector. Should the procurement be carried out through World Bank funds, appointments will be based on both quality (70%) and Cost (30%). The Proponent will make decision on the selection of the EIA Consultant, draft and award a Contract for the EIA Consultant.
Carrying out the Environmental Impact Assessment (EIA)	Authorized EIA Consultant

Approval of environmental assessment	MITADER (DPTADER)
Public Consultation and Disclosure	FIPAG will ensure that the results of the screening process and the EIA Reports are communicated to the public and made available to stakeholders including PAPs. All the environmental reports will be reviewed and cleared by the World Bank prior to disclosure.
Monitoring	**Category C activities:** FIPAG will oversee the implementation of environmental management best practices under Category C. **Category B activities:** DPTADER The Generic EMP foresees the position of Environmental Control Officer (ECO) who shall be appointed by the Project Supervisor to monitor, review and verify the implementation of the EMP (by the Contractor). However, in the case of this Project, this position is not warranted in terms of the potential negative environmental impacts of the Project. However, it is recommended that the responsibility for environmental compliance monitoring is vested in the Resident Engineer who shall be audited by the Environmental Engineer of FIPAG. The Resident Engineer may seek advice on environmental matters or delegate part of his environmental responsibilities to the Consultant.

10. ASSESSMENT OF THE INSTITUTIONAL CAPACITY OF FIPAG

For FIPAG to be able to undertake all the steps as indicated in the two previous chapters – identify/ confirm potential negative environmental and social impacts and mitigate them; undertake the necessary steps of the screening process, effectively monitor the implementation of the project, in particular the environmental management and the resettlement plans, trained human resources need to be available to undertake this work. Where these suffice, technical assistance and/ or training should be provided.

10.1 Capacity to Implement and Manage WASIS II

FIPAGs organizational chart was approved by the Ministerial Diploma number of 188/2013 of the Ministry of Public Works and Housing.

In terms of institutional organization, FIPAG is headquartered in Maputo, and has delegations representing it across the country. The establishment of FIPAG in municipal cities suggests water supply-related work should be carried out through strict cooperation and collaboration with the Municipalities.

FIPAG has three delegations across the country, one in the southern region, located in Xai-Xai; the second is located in the central region, in Beira; and the third is located in the northern region, in Nampula. In terms of the management of the recommendations of the present document, the lack of sufficient human resources in all targeted areas is of concern. The Supervising Consultants Team, through the Environmental Control Officer, with assistance from the FIPAG headquarters Environmental staff are therefore required to assure effective management and monitoring of environmental and social issues during the implementation of the project.

10.2 Staffing and Training Recommendations

Overall FIPAG have qualified personnel to lead with environmental and social issues, however the numbers are reduced and hence not sufficient to address the challenges that are imposed by the various projects being managed by them. The existing staff members include an Environmental Engineer assigned to the Project Implementation Office Area in the Greater Maputo; an Environmental Engineer assigned to the Central Services of Projects and Investments; and an Environmental Manager also in the latter service all based in Maputo. For WASIS II activities, FIPAG should consider the provision of additional support, with a focus on specialized technicians mainly related to hygiene issues, timelessness in work and social components near the FIPAG delegations. This support should also be coupled with the provision of Environmental Officers (EOs) for the project areas. It is further recommended that the latter, that is, the increase in the human resources is undertaken progressively, starting with the placement of 4 EOs in regional delegations.

Either as follows:

- 1 in Beira to support implementation in Beira and Dondo;
- 1 in Manica to support Manica, Chimoio and Gondola; and
- 1 in Tete to support Tete, and Moatize
- 1 in Pemba to support Nacala-Porto and Pemba;

The proposed Terms of Reference for FIPAG's Environmental Officer can be seen in Appendix 5.

Regional office

FIPAG's Regional Offices/ Delegations should manage the operational areas under their tutelage. The Environmental officers would also be based at these locations, to facilitate greater mobility, better assistance and download the inherent costs associated. The EOs would therefore be under the management of the Regional Delegations.

Should there be a need for further support in terms of human resources for the management of environmental issues during the implementation of the project, it is recommended that FIPAG expands the allocation of Environmental Officers to each city covered by the project gradually.

For trainings, it is recommended that FIPAG develop a training program and/ or a Capacity Development Plan. The training program should be designed to improve the effectiveness of the capacity of the local authorities in the management of environmental and social impacts during the planning, implementation and operation phases of the project in the selected cities, and should comprise of the following:

- Enhance knowledge of the technical staff in subjects related to environmental legislation in Mozambique;
- Improve the technical analysis of the screening and scoping processes of projects being proposed to take place in the districts and facilitate decision making regarding their environmental sustainability;
- Improve the technical analysis of the environmental impact assessment reports prepared by environmental consultants and contribute to better decision making on the quality of reports and the mitigation measures being proposed to minimize the potential environmental and social impacts; and
- Improve the technical capacity for monitoring the implementation of the environmental management plans as well as environmental audits
- Raise awareness of the participants on the relevance and the need for environmental management in the planning, implementation and operation of development projects.

The training should take place in two stages being **(1) Training of Trainers** – MITADER at national level conduct training to selected staff on the subjects outlined above, and **(2) Training of the provincial/ municipality staff** – The trained staff at national level will train the provincial/municipal staff who will be responsible for overseeing the integration of environmental and social aspects in all cycles of water supply projects in the cities.
The staff trained at provincial/municipality level should comprise all the key sectors such as the department of infrastructures and building, the agriculture sector, health, fisheries and industry and commerce amongst others.

Other recommended short training courses or learning platforms can involve either of the following areas which are of particular relevance to the project and country in general:

- Integrated Water Resources Management and Climate Change
- Sustainable Urban Development/ adapting cities to Climate Change
- Ecological Survey Techniques

And lastly, exchange visits and joint monitoring visits amongst officers from the project areas should be encouraged, particularly where there is evidence of good practices and success stories or where there are financial constraints for undertaken some of the above-recommended trainings.

10.3 World Bank Support

The World Bank Environmental Team in Mozambique is highly qualified, and has been providing technical support to the FIPAG Environmental Team through trainings and workshops in the implementation of Environmental Safeguards in Water Supply Projects. In order to systematically build institutional capacity in environmental and social management, FIPAG should request support from the World Bank environmental team to help identify FIPAG's

training needs and prepare annual training plan, targeting FIPAG's staff as well as other key government and municipal entities (MITADER, MOPRH, Municipalities) involved in the water supply projects decision making processes.

11. FIPAG'S ENVIRONMENTAL AND SOCIAL MANAGEMENT – LESSONS LEARNED

11.1 Generic Environmental Management Plan – WASIS I

In 2008 FIPAG developed a generic environmental and social management plan which guided the implementation WASIS activities. This ESMP is generic in nature and addresses basic environmental and social issues associated to water supply projects. The ESMP places more emphasis on management of environmental and social issues associated to construction activities, without any consideration of the operation phase of the projects. Similarly, the EMP does not fully address the health and safety issues associated to water supply projects, although in practice, FIPAG has been expanding actions towards addressing occupational health and safety issues as well as the need to protect communities living in the vicinities of the water supply projects.

In order to address the range of environmental and social impacts associated to water supply projects, it is recommended that the generic ESMP be updated and re-disclosed to reflect the need to address the environmental and social impacts during planning, construction, operation phases. The updated ESMP should also include the need to address occupational health and safety impacts of as well as the need to protect the health of communities living in the proximities of the water supply projects.

WASIS II projects will not involve the alteration, damage or removal of any critical physical or cultural heritage. However, provisions for any possible disturbances to physical cultural resources should be also included in the ESMP. When the proposed location of a project is in an area where tangible cultural heritage may possibly be found, chance-finds procedures are included in the ESMP. Physical cultural resources includes archaeological, paleontological, historical, architectural, and sacred sites including graveyards, burial sites, and unique natural values.

In recent contracts, FIPAG has made it a contractual requirement to request contractors to prepare their own Health and Safety Implementation Plans based on the approved ESMPs, which describe what measures the contractor will have in place to minimize occupational health and safety impacts as well as protecting communities and any possible sites of cultural heritage in the vicinities of the projects.

11.2 Reporting on Environmental Management Actions Implemented by FIPAG

FIPAG in its Mission Statement highlights the need to address environmental and social matters in line with the World Bank Environmental Safeguards. The FIPAG Annual Report of 2014, however, does not report on any specific actions implemented by FIPAG in developing water

supply projects. This lack of reporting on environmental management would lead to the perception that no measures are in place to address environmental and social issues of water supply activities. Such lack of documenting may also be used as a proxy indicator of how FIPAG's management views the environmental and social sustainability of the projects under its management.

In order to correct this lack of reporting on the implementation of environmental safeguard, FIPAG should include a specific chapter in all of its reports (monthly, quarterly and annual) in which environmental and social management issues are addressed. The reports should cover major highlights in environmental and social management as well as in health and safety issues related to the water supply projects being implemented by FIPAG. World Bank should advise FIPAG on this matter, and consider this topic for training the top FIPAG management and other key staff as needed.

12. CONCLUSION AND RECOMMENDATIONS

It is envisaged that FIPAG will take into account the need to ensure environmental protection in the use of natural resources. As per the World Bank's Operational Policies, the proposed civil works fall under category B projects, due to the nature of the impacts deemed to be low scale and site-specific, and which can be easily mitigated through an Environmental and Social Management Plan (ESMP).

Minimal negative impacts are expected in both construction and rehabilitation of infrastructure especially with regards to the potential need for land acquisition, disturbances and pollution of soils, and waste management, and should be dealt with through an Environmental Management Plan. In relation to the possible need for land acquisition, leading to population displacement and resettlement, an RPF has been prepared separately and parallel to the present ESMF.

In order to ensure an effective implementation of the proposed mitigation measures, the following recommendations should be considered prior to the site selection for the construction/ rehabilitation activities:

- Identify environmental and social management priorities to be integral to the ToRs of the proposed construction/rehabilitation works ;
- Conduct periodical monitoring to verify whether the proposed mitigation measures are fully implemented.
- Register, correct and report on all non-compliance issues identified during project implementation.

In order to address the above recommendations, the FIPAG Environmental and Social Specialist is recommended to:

- Identify and contract experienced Environment Officers for all levels as recommended, and make provisions for trainings;
- Identify and train personnel at the district/ municipality level specifically for FIPAG who will be responsible for monitoring of EMPs at district level, at the Municipality itself and from MITADER if deemed necessary;

- Effective inter-institutional coordination between the key ministries (MITADER and MOPRH) at national, provincial and district level, as well as coordination and collaboration with the Municipalities as they are responsible for the management of urban affairs, to ensure appropriate implementation of the proposed mitigation measures for continual improvement in environmental management.

For an effective integration of the proposed mitigation measures into planning and implementation of the program's activities, the implementation of the ESMP is the responsibility of the Proponent and the Proponent must ensure its compliance by the Contractors. Having said this, the Contractors are obliged to comply with the Environmental and Social Clauses provided for in the ESMP.

It is expected that the negative environmental impacts associated with the proposed civil works will be short-term, localized but significant; however these can be mitigated through compliance with EIA Regulations and an EMP.

12. BUDGET FOR THE IMPLEMENTATION OF THE ESMF

The table below provides an estimated budget for the preparation of the ESMF, as well as monitoring, evaluation, auditing and training/ capacity building that will be required for the project management unit, and specifically to be managed by the environment and social management unit.

TABLE 2: ESTIMATED BUDGET FOR THE IMPLEMENTATION OF THE ESMF

Item	Amount in (000 USD)
Implementation of the ESMF	
Initiation of Project Implementation	$20.00
Contracting of Service Providers and Mobilization	$1,500.00
Assistance for the identification, preparation and monitoring of sub-projects	$250.00
General Technical Assistance	$750.00
Specific Technical Assistance	$1,250.00
Monitoring	$450.00
Inspection	$200.00
Annual Review	$150.00
Audits (triennial)	$120.00
Training and Capacity Building	
Recruitment of 4 EOs	$168.00 (per years) *
Specialized short trainings for Eos	$60.00
Inter-region exchange visits	$50.00
Health, Safety and Security in the Workplace	
Safety and Security in the Workplace	$250.00

Hygiene and Sanitation	$75.00
HIV/AIDS prevention	$45.00
First Aid	$25.00
Preparation and Implementation of EIAs and EMPs	
Preparation and Implementation of EIAs and EMPs	$3,000.00
Total	**$7,880.00**

The total cost for the preparation and implementation of the ESMF as well as the ESIA/ ESMP that form part of this document is of USD 9,133,000.00.

* In order to meet the cost of recruitment of qualified 4 EOs, an annual total cost of 168,000.00 is proposed. It is proposed that FIPAG requests initial funding from the World Bank and potentially other donors and after FIPAG should integrate this cost to its sustainability plan to determine when FIPGAG shall develop its own financial capacity to meet this cost.

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APPENDIX 1 - PUBLIC CONSULTATION MEETINGS MINUTES

WATER SERVICES AND INSTITUTIONAL SUPPORT PROJECT (WASIS II) FOR FIPAG
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)
PRESENTATION

MINUTE OF PUBLIC PARTICIPATION MEETING
TETE CITY

Date: 18/05/2015
Place: Zambeze Hotel Conference Room
Hora: 09:00 – 11:00
Participants: 15 participants

POWERPOINT PRESENTATION

The consultant Juliana Come, as the facilitator of the meeting, held opening of the session, introducing herself and asking the registration of each participant. After that she started presenting the objectives of me meeting that included: (i) inform on the need to create the environmental and social management framework for the water supply and institutional support (WASIS II) project; (ii) discuss potential environmental and social impacts for water supply projects; (iii) register other environmental and social impacts that were not anticipated.

Then, Juliana Come explained that the creation of the environmental and social management framework for the WASIS II project is a requirement of the World Bank to fund water supply projects in the selected cities. She listed the selected cities, which includes the city of Beira, Dondo, Chimoio, Gondola, Tete, Moatize, Nacala-Porto, and Pemba. She explained that the WASIS II project aims to improve the existing water transmission network, changing the obsolete pipeline in cement zone (urban area), as well as providing counters to new users, increasing the number of consumers of this service.

Juliana Come passed then to the explanation of the legal aspects of the WASIS II project where she described briefly the need to follow the World Bank Operational Policies (OP) in water supply projects funded by the World Bank. These policies include the OP 4.01 for environmental assessment (regulates participation of the beneficiaries of projects, local government and non-governmental organizations in the public participation process); OP4.04 for natural habitats (regulates the protection, maintenance and rehabilitation of natural habitats); OP4.09 for pest management (relates to agriculture and public health); OP4.10 for indigenous people (land rights and use); OP4.11 for cultural heritage (sacred places, culture and values); OP4.12 for involuntary resettlement (displacement, compensation process); OP4.36 for forests (protection and rehabilitation); OP4.37 for safety of dams (related to water abstraction); OP7.50 for projects on international waterways (regulates procedures for international such as rivers and lakes); OP7.60 for projects in disputed areas (regulates coordination and agreements between different entities with interests and activities in the same area, p.eg. water transmission main located at the same

area as the optic cables of TDM[5] and passing through a paved road of ANE[6]). She also made reference to the Mozambican legislation, citing the decree 42/2008 of 4 November which regulates the environmental impact assessment; the decree 130/2006 for public participation processes; and the water law 43/2008 of 30 October.

It followed the explanation of the objectives of the public participation process, the environmental situation of the country and the positive environmental and social impacts of the WASIS II project. She said that, in terms of benefits, the project will provide more coverage through the increase of the number of connections by a diverse number of users; more security in the access to clean water during the day; and an increase in business development possibilities in sectors and activities in which water supply is a critical factor. With regard to the negative impacts, Juliana Come presented the impacts that occur in different phases of water supply projects. She described seven phases namely: (1) water abstraction from river or lake; (2) water abstraction from wells field; (3) water abstraction pump station; (4) water treatment works; (5) water transmission main; (6) water reservoirs; (7) urban water distribution. The main impacts presented in these phases included water pollution on surface and groundwater sources; ecological issues; saline intrusion; climate change issues; resettlement and compensation; vandalism; conflicting land use and ownership; impacts on groundwater levels; diseases associated with stagnant water from leakages; public nuisance; and visual impacts.

Juliana Come ended the presentation referring to the increased efficiency of services provided in urban areas; increased coverage in peri-urban areas, reducing water leakages and strengthen the institutional and regulator water supply regional chain. She added that the preparation of the ESMF does not replace the EIA and that it is important in this phase to collect contributions of the participants in the meeting in order to anticipate, minimize and mitigate negative impacts. Then she invited the participants to the debate session.

ISSUES AND RESPONSES SESSION

Issues (I) and Responses (R):
P - Osvaldo Miambo, accountant at Ara-Zambeze: I would like to suggest the inclusion of the noise as a sound impact that normally remains unnoticed and it is also pertinent. With regard to the sludge that is formed during the water treatment process, it is important to find a mode to reuse the sludge in agriculture as fertilisers and consider its ecological volume. What criterion was used to select the cities that will benefit from water supply projects? **R - Juliana Come, environmental consultant:** We thank you for your contribution. The case of reuse of sludge will be carefully analysed because in cases where is not possible to reuse such sludge, it is necessary to find the appropriate area for hazardous waste disposal to avoid soils contamination and pollution. The selected cities for the WASIS II project have critical water supply problems in the urban area and a growing demand of water in the peri-urban areas. With the approval of the ESMF and the funding from the World Bank, water supply projects will be developed in priority

[5] TDM stands for Telecommunications of Mozambique.
[6] ANE stands for National Roads Administration.

areas of the selected cities.

P - Manuel José, hydrologic technician at Ara-Zambeze:
I would like to have information about the water sources for our city and the volume of water that will be provided.

R - Juliana Come, environmental consultant:
Technical and detailed information about the specific type of water abstraction and volume of water in each city is not defined yet. At this stage, which is the project planning stage, we are holding public participation meetings in the selected cities to identify with the participants potential environmental and social impacts of water supply projects and record contributions with respect to existing water problems. Water sources and volumes will be defined during the design of the sub-projects and more public participation meetings will be conducted for environmental impact assessment studies of these sub-projects.

P - João Duarte, operations officer at TDM[7]:
I would like to know if, at the EIA phase, companies that wok with the underground as the case of TDM and EDM, will be contacted to coordinate the connection and replacement of water transmission mains. This is important to minimize the destruction and damage of cables and other underground equipment.

R - Juliana Come, environmental consultant:
When completed the planning phase and the Government receive the funds from the World Bank, water supply sub-projects will be developed in the cities selected for the WASIS II project. The Ministry of land, environment and rural development (former Ministry of environment) will categorize according with specific instructions of processes. In cases of projects category A and B, where public participation is required, will be invited all interested and affected parties of the sub-project including entities with different interests in the project area to collaborate and coordinate.

P - Jorge Real, Planning officer at DPS[8]:
What are the aspects that can be leveraged in the communication component in relation to conflicts of interest in the implementation of this project?
Still in the aspect of communication and sharing of family-run areas, I would like to suggest the Government/FIPAG to have attention to studies that will be done to consider values and perceptions mechanisms of local people. Even if social impacts are temporary, as normally occurs in water supply projects, the Government/FIPAG should take into account cumulative impacts that might occur after the conclusion of the activities.

R - Juliana Come, environmental consultant:
I appreciate your contributions, we will consider. Various interested parties are invited at an early stage of projects to interact in forums like this to coordinate different interests and activities occurring in the same area. The meetings will be both at the district and local level. When there is no coordination and conflicts are eminent, conflict management committees and

[7] Telecommunications of Mozambique.
[8] Provincial Directorate of Health.

members parties are established with the participation of the local government.

P - Wache Matavele, technician at FIPAG[9]:
We know about cases of land conflicts in the city of Tete where water abstraction in fields where agriculture is practiced. How to solve these cases of land conflicts? Tete has serious water supply problems especially in Moatize. I would like to know when the projects will start. Is the WASIS II an extension of the WASIS I?

R - Juliana Come, environmental consultant:
The normal procedure is the resettlement and compensation but there are also cases of redesign of the project in order to pass through certain zones. The government is seeking for funding to address water demand and solve problems related to it. I cannot anticipate dates because I do not have this information. We have only dates for submission of the ESMF which must be submitted in the first weeks of June. The World Bank will take its time to analyse and approve. Only after that will be designed specific projects for the cities covered by this program.
I would not say that the WASIS II is an extension of the WASIS I because WASIS I have its own extension. The WASIS II is another project. The name remains the same because it is also a water services and institutional support.

P - Arlindo Avelino, fiscal president of the farmers union for the Nhamatanda Valley:
There are many holes and we have many problems because our fields surround the holes. When there is water leakage we communicate FIPAG Picket and they take days to close and repair the leakage. This situation floods our fields and we lose our crops. We also have problems with the access and maintain the holes and destroy our crops. We agreed with FIPAG a way for holes maintenance and when the time for maintenance comes FIPAG do not obey and destroy our cultures with their vehicles. We spend energy and resources to grow our cultures and this should be considered.

R - Juliana Come, environmental consultant:
Thank you for your contribution.

Once the interviews were completed Juliana Come mentioned the comments registration sheet and asked the participants to take them with them, fill and send within a week to the address provided in it. The meeting ended at 10:30 hours.

WATER SERVICES AND INSTITUTIONAL SUPPORT PROJECT (WASIS II)
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)
PRESENTATION

MINUTE OF PUBLIC PARTICIPATION MEETING
CHIMOIO CITY

Date: 20/05/2015
Place: Vumba Room, Hotel Inter Chimoio
Hora: 12:15 – 13:30
Participants: 15 participants

POWERPOINT PRESENTATION

The consultant Juliana Come, as the facilitator of the meeting, held opening of the session, introducing herself and asking the registration of each participant. After that she started presenting the objectives of me meeting that included: (i) inform on the need to create the environmental and social management framework for the water supply and institutional support (WASIS II) project; (ii) discuss potential environmental and social impacts for water supply projects; (iii) register other environmental and social impacts that were not anticipated.

Then, Juliana Come explained that the creation of the environmental and social management framework for the WASIS II project is a requirement of the World Bank to fund water supply projects in the selected cities. She listed the selected cities, which include Beira, Dondo, Chimoio, Gondola, Tete, Moatize, Nacala-Porto, and Pemba. She explained that the WASIS II project aims to improve the existing water transmission network, changing the obsolete pipeline in cement zone (urban area), as well as providing counters to new users, increasing the number of consumers of this service.

Juliana Come passed then to the explanation of the legal aspects of the WASIS II project where she described briefly the need to follow the World Bank Operational Policies (OP) in water supply projects funded by the World Bank. These policies include the OP 4.01 for environmental assessment (regulates participation of the beneficiaries of projects, local government and non-governmental organizations in the public participation process); OP4.04 for natural habitats (regulates the protection, maintenance and rehabilitation of natural habitats); OP4.09 for pest management (relates to agriculture and public health); OP4.10 for indigenous people (land rights and use); OP4.11 for cultural heritage (sacred places, culture and values); OP4.12 for involuntary resettlement (displacement, compensation process); OP4.36 for forests (protection and rehabilitation); OP4.37 for safety of dams (related to water abstraction); OP7.50 for projects on international waterways (regulates procedures for international such as rivers and lakes); OP7.60 for projects in disputed areas (regulates coordination and agreements between different entities with interests and activities in the same area, p.eg. water transmission main located at the same

area as the optic cables of TDM[10] and passing through a paved road of ANE[11]). She also made reference to the Mozambican legislation, citing the decree 42/2008 of 4 November which regulates the environmental impact assessment; the decree 130/2006 for public participation processes; and the water law 43/2008 of 30 October.

It followed the explanation of the objectives of the public participation process, the environmental situation of the country and the positive environmental and social impacts of the WASIS II project. She said that, in terms of benefits, the project will provide more coverage through the increase of the number of connections by a diverse number of users; more security in the access to clean water during the day; and an increase in business development possibilities in sectors and activities in which water supply is a critical factor. With regard to the negative impacts, Juliana Come presented the impacts that occur in different phases of water supply projects. She described seven phases namely: (1) water abstraction from river or lake; (2) water abstraction from wells field; (3) water abstraction pump station; (4) water treatment works; (5) water transmission main; (6) water reservoirs; (7) urban water distribution. The main impacts presented in these phases included water pollution on surface and groundwater sources; ecological issues; saline intrusion; climate change issues; resettlement and compensation; vandalism; conflicting land use and ownership; impacts on groundwater levels; diseases associated with stagnant water from leakages; public nuisance; and visual impacts.

Juliana Come ended the presentation referring to the increased efficiency of services provided in urban areas; increased coverage in peri-urban areas, reducing water leakages and strengthen the institutional and regulator water supply regional chain. She added that the preparation of the ESMF does not replace the EIA and that it is important in this phase to collect contributions of the participants in the meeting in order to anticipate, minimize and mitigate negative impacts. Then she invited the participants to the debate session.

ISSUES AND RESPONSES SESSION

Issues (I) and Responses (R):
I – Eusebio Andrade, vereador at Conselho Municipal: It is a pity the way this public meeting was organized because it should reflect what the name says. I am not sure if these 5 or 6 participants will reflect the sensitivity and feeling of the residents of Chimoio. However, we will do our best to contribute. My understanding is that this meeting intends to understand if Chimoio is happy with the current situation of water supply. I must say that we are not happy with it. The urban area might have some considerable coverage and satisfaction but the peri-urban areas need expansion of the water supply system. In our presentation you referred that this program aims to rehabilitate the existing water supply system in urban areas and expand it to peri-urban areas. Many suburbs of Chimoio demand water supply services and I hope this program provides water supply for the residents in these areas. You also presented the cities that will benefit from the project and we heard that the Government is applying for funding from the World Bank. What was not clear was the temporal horizon of this project and the budget for it.

[10] TDM stands for Telecommunications of Mozambique.
[11] ANE stands for National Roads Administration.

R – Juliana Come, environmental consultant:
Thank you for your contribution. At this stage, the planning phase, we have to prepare the environmental and social management framework (ESMF) and we did not define yet the duration of it. We only identify the cities that will be benefited by the projects as part of the process to apply for funds. The World Bank required the creation of the ESMF and the identification of potential environmental and social impacts that occur in water supply projects. As you can noticed in the document of discussion there are some amounts presented on it and the whole program was budgeted at around 180 million dollar.

I - Daniel Chamussara, technician at the DPS[12]:
This program is welcome in Chimoio. In the urban area some of our water supply problems were minimized but not mitigated. In certain zones such as *7 de Setembro* suburb, the pipes are superficial and cases of leakages often occur and increases the risk of diseases associated with stagnant water from leakages. It is necessary to address these problems.

R – Juliana Come, environmental consultant:
Thank you for your contribution.

I – César Salika, municipal assembly member:
Within this funding from the World Bank is it included a dam construction? I am asking this because in the 1980s Chimoio had three dams supplying the city with water. Por example, the *Textafrica* dam still exists but FIPAG shut it down and now it is completely dry. *Chicamba* dam is intended to provide only electricity. *Gondola* dam has been used by the CFM[13] but I do not have information about the uses.
I would also like to comment on the deficient service of the maintenance sector at FIPAG as they take days to close wells and rehabilitate pipes with leakages.

R – Juliana Come, environmental consultant:
Thank you for your contribution. I am not sure if a dam construction will be included in the water supply project.

I – Filipe Mandava, technical staff at the DPOPH[14]:
Water supply at Chimoio city level is not efficient particularly among the peri-urban areas. Leakages are the major problem, followed by superficial digging made by contractors. FIPAG should find a way to supervise the excavations to ensure that the pipes will be place at the required depth.

R – Juliana Come, environmental consultant:
Thank you for your contribution.

I – Américo Muchate, Municipal assembly member:
I would like to contribute with an example of the problem many residents of Chimoio face. Often we do not have water supply for days but we always receive costly invoices. FIPAG has a deficient management system which requires the consumer to pay first and complain after.

[12] DPS stands for Provincial Directorate of Health.
[13] CFM is the Mozambique Railway Company.
[14] DPOPHRH stands for Provincial Directorate of Public Works, Housing and Water Resources.

Another problem is the fact that the new suburbs have no water supply. For example, at *7 de Abril* suburb the residents have access to water only few hours a day. FIPAG defend that this is due to the size of the diameter. At the *Heróis de Moçambique* suburb which is quite new, all residents have their own hole when the suburb has a big water conduct. At *25 de Setembro* suburb FIPAG destroyed the paved road to install a conduct and the area has not been rehabilitated yet. It is necessary to find a better approach.

R – Juliana Come, environmental consultant:
Thank you for your contribution**.**

I – César Salika, municipal assembly member:
I refer to the World Bank operational policy that states that the habits and costumes, I would like to comment on the following: I am resident at the Blue Building (*Prédio Azul*) and FIPAG changed the hole without consulting and requesting authorization. We were forced to pay for their services. After few months FIPAG removed the tanks, did not close the holes and also send us a costly invoice. Currently we are trying to reopen the hole and it is necessary 140 000, 00 Mt. I suggest, in the future, when removing their equipment, they have to leave the place in the same conditions as before their intervention.

R – Juliana Come, environmental consultant:
Thank you very much.

I – Arão Januário, head of the planning department:
This project should consider the coordination between institutions. Currently we are facing serious urbanization problems. Since we are talking about expansion of new suburbs, we have FIPAG, EDM, and TDM operation in same areas and is necessary an effective coordination in order to have good urbanization. What normally happen is that first we have the citizen building and only then the municipality provides the access road. The municipality has the policy to avoid occupation of concession spaces and often turn obstacles. When the time to install the conduct comes it is necessary to follow the same line designed by the municipality and, with curves we have leakages.

Another problem is the fact that the urban area here in Chimoio is in a slope and the municipality does not have conditions to put the cable underground. Then FIPAG comes and put the cables in a swallow zone and when it rains there is erosion and soil displacement. If we look at the quote we will notice that it has been decreasing as the soil displaced is never replaced.

Juliana Come, environmental consultant:
Thank you for your contribution.

Once the interventions had been completed Juliana Come mentioned the comments registration sheet and requested the participants to take with them, fill and send within two days to the address provided in it. The meeting ended at 13:30 hours.

WATER SERVICES AND INSTITUTIONAL SUPPORT PROJECT (WASIS II)
ENVIRONMENTAL AND SOCIAL POLICY MANAGEMENT FRAMEWORK
PRESENTATION

MINUTE OF PUBLIC PARTICIPATION MEETING
MOATIZE CITY

Date: 18/05/2015
Place: Conference Room at the Municipal Assembly
Hora: 14:15 – 16:00
Participants: 35 attendants

POWERPOINT PRESENTATION

The consultant Juliana Come, as the facilitator of the meeting, held opening of the session, introducing herself and asking the registration of each participant. After that she asked the participants to present themselves, referring to their institution and position. Then she started presenting the objectives of me meeting that included: (i) inform on the need to create the environmental and social management framework for the water supply and institutional support (WASIS II) project; (ii) discuss potential environmental and social impacts for water supply projects; (iii) register other environmental and social impacts that were not anticipated.

Then, Juliana Come explained that the creation of the environmental and social management framework for the WASIS II project is a requirement of the World Bank to fund water supply projects in the selected cities. She listed the selected cities which include Beira, Dondo, Chimoio, Gondola, Tete, Moatize, Nacala-Porto, and Pemba. She explained that the WASIS II project aims to improve the existing water transmission network, changing the obsolete pipeline in cement zone (urban area), as well as providing counters to new users, increasing the number of consumers of this service.

Juliana Come passed then to the explanation of the legal aspects of the WASIS II project where she described briefly the need to follow the World Bank Operational Policies (OP) in water supply projects funded by the World Bank. These policies include the OP 4.01 for environmental assessment (regulates participation of the beneficiaries of projects, local government and non-governmental organizations in the public participation process); OP4.04 for natural habitats (regulates the protection, maintenance and rehabilitation of natural habitats); OP4.09 for pest management (relates to agriculture and public health); OP4.10 for indigenous people (land rights and use); OP4.11 for cultural heritage (sacred places, culture and values); OP4.12 for involuntary resettlement (displacement, compensation process); OP4.36 for forests (protection and rehabilitation); OP4.37 for safety of dams (related to water abstraction); OP7.50 for projects on international waterways (regulates procedures for international such as rivers and lakes); OP7.60 for projects in disputed areas (regulates coordination and agreements between different entities with interests and activities in the same area, p.eg. water transmission main located at the same

area as the optic cables of TDM[15] and passing through a paved road of ANE[16]). She also made reference to the Mozambican legislation, citing the decree 42/2008 of 4 November which regulates the environmental impact assessment; the decree 130/2006 for public participation processes; and the water law 43/2008 of 30 October.

It followed the explanation of the objectives of the public participation process, the environmental situation of the country and the positive environmental and social impacts of the WASIS II project. She said that, in terms of benefits, the project will provide more coverage through the increase of the number of connections by a diverse number of users; more security in the access to clean water during the day; and an increase in business development possibilities in sectors and activities in which water supply is a critical factor. With regard to the negative impacts, Juliana Come presented the impacts that occur in different phases of water supply projects. She described seven phases namely: (1) water abstraction from river or lake; (2) water abstraction from wells field; (3) water abstraction pump station; (4) water treatment works; (5) water transmission main; (6) water reservoirs; (7) urban water distribution. The main impacts presented in these phases included water pollution on surface and groundwater sources; ecological issues; saline intrusion; climate change issues; resettlement and compensation; vandalism; conflicting land use and ownership; impacts on groundwater levels; diseases associated with stagnant water from leakages; public nuisance; and visual impacts.

Juliana Come ended the presentation referring to the increased efficiency of services provided in urban areas; increased coverage in peri-urban areas, reducing water leakages and strengthen the institutional and regulator water supply regional chain. She added that the preparation of the ESMF does not replace the EIA and that it is important in this phase to collect contributions of the participants in the meeting in order to anticipate, minimize and mitigate negative impacts. Then she invited the participants to the debate session.

ISSUES AND RESPONSES SESSION

Issues (I) and Responses (R)
I - Avelino Saene Dingo, resident at the Liberdade suburb: The project is welcome. Regarding water supply, I would like to know if when the project comes, the water supply will benefit only the citizens or will also include major projects. If it is for both it is necessary to consider the volume of water provided as the major projects are the biggest water consumers and this might dry up water for the citizens. How this situation will be addressed? With regard to resettlement, will the World Bank also fund the resettlement or it has to be paid by the government? With regard to water abstraction from wells I would like to suggest that FIPAG note the problems caused by silting. In cases of abstraction from river or lakes it is necessary to be aware of the issue of dust and find minimization measures for it. Will the water distribution network be new or will only replace the obsolete equipment? What will be the implementation period of the project?

[15] TDM stands for Telecommunications of Mozambique.
[16] ANE stands for National Roads Administration.

I believe this project will improve the quality of life of users. The existing water supply system has serious problems and there are areas with no water at all despite having installed piping, mainly in dry season.

R - Juliana Come, environmental consultant:
Thank you for your contribution. With relation to your first question, about the beneficiaries of the water supply, I might say that at this stage we do not have information if whether the major projects will be included in the water supply project or not. We only know that the WASIS II project aims to improve the existing water supply system and expand into new areas for the citizens. The program intends to supply the selected cities but it is not defined yet how exactly this supply will be effectuated. Maybe Mr Milton from FIPAG Maputo has something to add regarding this question.

R – Milton Nhachengo, technician at FIPAG Maputo:
The purpose of this meeting is to understand environmental and social impacts of water supply projects. Despite the fact that your question is pertinent, at this stage we do not have such information. With relation to resettlement, this program intends to anticipate such cases and the World Bank requires the Government to be prepared. This stage is premature to have answers to specific questions from the technical side of the program.

R – Juliana Come, environmental consultant:
Perhaps add that your question about the volume will be recorded and placed on the Government to be taken into account at the EIA phase. Outputs of these meetings will be included in the creation of the environmental and social management framework (ESMF), which will be submitted to the World Bank for approval and funding. After that, sub-projects will be developed and environmental impact assessment studies will be conducted. Depending on the categorization by the Ministry of land, environment and rural development, public participation meetings, environmental management plans and resettlement action plans will be conducted depending on the specifications of each project, everything funded by the World Bank. The ESMF is planning to provide new water distribution network in peri-urban areas and rehabilitate the existing system in the concrete zone.

I– Eusebio Mouzinho, leader of the ward at Moatize village:
I heard the explanation of the technician of FIPAG Maputo saying that we are gathered here to discuss impacts of water supply projects and I am not well framed in this regard. As if we are discussing maternal-child education for a woman who has no child. Why this discussion cannot take place when FIPAG develop the project X for Moatize, with specific impacts and we would be here contributing for it? We have serious silting problems in our fields and it I believe that to address such problems in Moatize it is better to abstract water from Rovubue river. When we look at the company VALE, they have water with pressure from Zambeze river but we do not have it. I do not know how we can discuss about environmental and social impacts of a project that does not exist. Will we have a project in Moatize?

R – Juliana Come, environmental consultant:
Thank you for your contribution. I will answer your question in a minute, let us hear the

question from the participant who has his hand raised up for a while and it might be a related question.

I – Marcelo Chitica, leader at the Conselho Municipal Moatize village:
The impacts are real, both positive and negative. Few days ago I went through the line of the company VALE and I saw a very good pipe and pressure. My understanding is that water abstraction from river has more negative impacts than water abstraction from wells. Our water is from Rovubue river but is not good. In order to supply Moatize with good water is better to abstract from the Zambezi river, as VALE does.

R – Juliana Come, environmental consultant:
Answering the questions of Mr Eusebio and Marcelo, first I must say that we want to create a program for the Government in order to obtain funding and be able to develop projects for water supply in Moatize and other selected cities. We cannot compare the Government with the company VALE that has its own resources to obtain water. The Government has to seek funding to supply water to the citizens. This meeting and the creation of the environmental and social management framework is part of the funding process, as a requirement of the World Bank, our funder. This action is important to anticipate at the earlier stage of the planning process environmental and social impacts of water supply projects and propose mitigation measures for negative impacts. Another reason is to ensure that all projects are developed on the same line complying with the World Bank policies and procedures. Therefore, following the line of Mr Eusebio, it is indeed important to talk about maternal-child education for women who has no children so that when women plan to have their child they will know already how to be prepared.

R - Milton Nhachengo, technician at FIPAG Maputo:
I would like to strengthen one aspect. If we look at the project information document (discussion paper provided at the meeting), there is one aspect that speaks of reducing the water seeking for women. It is one of the World Bank objectives to ensure that women access water faster and have time for other activities. The social side of this aspect is that women and child (mainly girls) can have opportunity to go to school rather than spending time seeking for water. The environmental issue is the general question of everyone here. The World Bank does not want to fund projects that in the future will bring negative impacts, for example, a zone funded by the World Bank ceased to exist or is polluted by a project. We have a positive contribution of Mr Marcelo Chitica who said that good water should be pursued to 17 km of Moatize. This contribution will be recorded and taken into consideration at the design and implementation phase of the sub-projects.

I - Martinho Bacacheza, Municipal assembly member:
When the president of this municipality invited us to discuss the issue of water in Moatize I was excited because Moatize has serious water supply problems. After the conclusion of the second phase of the construction of two deposits, the water supply improved considerably but overt time began to fail. Later, we met the provincial delegate and he announced this project. To solve this problem we believe that the holes distance for water abstraction from wells should be within 100 metres but we found in the holes fields holes with only 10 to 50 meters distance. I would like to propose the Government/ FIPAG to apply for funding to open another water abstraction centre from wells that is distant 17 km.

Such distance was suggested by the provincial delegate and we believe that it is based on previous analysis. We were hopeful that we would have a water supply project but now that we are learning that this meeting intends to prepare a program to apply for funding for projects we do not know when the water will come.
With regard to resettlement, it is important to choose a good area and be aware of areas close to the Rovubue river such as in Capanga where there are serious erosion issues. Aside from this issue, the area of Capanga could provide us with water in sufficient quantity and meet our needs because this area has mountains that ends at Rovubue river and might provide pressure for water. If we consider the passage of the conduct over or near the edge of these mountains there will be no resettlement issues.
I would like to hear that some of the research work for the design of project is already done and that the water is already coming. Here in Moatize the water supply problem is so serious that the governmental structures are not well seen here because of this problem. I would also like to propose that when the project comes benefit only the citizens.

R - Juliana Come, consultora ambiental:
Thank you for your contributions.

I – Domingos Augusto Paulo, Non-governmental organization World Vision:
Considering the fact that Moatize has serious soil problems such as silting I would like to propose the installation of laboratories to analyse the quality of water being provided to avoid human health problems. I would like to comment on the guarantees within the waste removal during water treatment processes. During the presentation it was said that certain sludge when not taken appropriate care can cause ecological issues. What are the guarantees that in fact this toxic waste will be removed and given the proper treatment?
Finishing, I would like to know who the proponent of the project is and be clarified about the selection criteria for the cities covered by the WASIS II.

R - Juliana Come, environmental consultant:
Thank you. The Government of Mozambique is the proponent of the project. FIPAG was appointed by the Government as the water supply implementing agency and the World Bank is the lender. With regard to cities selection criteria, the WASIS II choose cities that are growing rapidly, have a growing demand for water services and serious problem in the existing system in urban areas. Today I learned from the president of this municipality that we are proposing a water supply project to Moatize when it had already been selected during WASIS I but nothing was done. WASIS I is currently being implemented and its extension goes until 30 October 2015. For this reason the Government of Mozambique decided to create another water supply and institutional support project, termed WASIS II and apply for its own fund.

I– Tomás Paulo da Graça, District Permanent Secretary:
The project is owned by the Government and I will not provide different comments from the participants. I suggest a very deep analysis for resettlement cases. The resettlement currently taken place is mining the trust of communities. During public meetings the proponents of projects agree in respecting certain conditions that are ignored at the resettlement phase. I suggest the inclusion of local people and not just meetings for people that is able to identify potential impacts of projects.

R - Juliana Come, environmental consultant:
At the EIA phase meetings will be lead not only at the district level but also at the local level. This meeting does not have a specific project and for this reason does not include the locals. We only need general potential environmental and social impacts of projects. When we have specific projects to benefit the communities we go there to know from them what they actually need. At this stage we use various methods to collect information which includes specific focus group meetings and personnel interviews to ensure that for example, in cases of water projects where women is responsible for water seeking can express freely.

I – Fernando Siasse, president of the municipal assembly:
First thanks the project that provides opportunity for us to have this debate. The project is welcome. However, it is important, at the EIA phase, to choose the proper location for the wells field. In Moatize the drilling holes process is challenged by the coal rocks. The holes opening time should also be considered because, for example, this time of year is not ideal as the groundwater is still high. Between August and September we normally have water scarcity which makes this period not suitable for opening holes. I would suggest a study to identify the best time for it but I suggest the opening after September.

R - Juliana Come, environmental consultant:
Thank you for your contribution.

I - Eusebio Mouzinho, area leader of Moatize village:
I would like to draw attention to the importance of enforcement. Often the holes are open and as soon as the water comes then stop digging even if does not have the required depth.

I – Fernando Siasse, president of the municipal assembly:
I agree with Mr Eusebio. It is necessary to be rigid and comply with the terms of reference for opening of holes. If the requirement says 100 meters and the water is available from 20 meters it is necessary to complete the 100 meters.

R – Juliana Come, environmental consultant:
Thank you. It will be registered and considered at the projects implementation phase.

I - Domingos Augusto Paulo, Non-governmental organization World vision :
The problem here is to define who will supervise the opening of holes to ensure that the requirements for it are observed.

I – Juliana Come, environmental consultant:
Thanks for such a valuables contributions. In your opinion, how is the water quality in Moatize?

R – Avelino Saene Dingo, resident of Liberdade neighbourhood:
There was a time that we had an explanation of the leakage in some pipes that resulted in contamination of water and the water supplied from the distribution system was blurred. Aside from the quality of water, the quantity is also a problem here. The water supply

service is about two hours per day average and there are areas where do not benefit from it for days.

I – Tomás Paulo da Graça, District Permanent Secretary:
From 2013 – 2014 there was a project where a new pipeline was installed in Bagamoio neighbourhood but the line never worked. The problem is that I do not know if it brought positive changes or not. Is this program planning to use this new pipeline or will install another one?

I – Ana Torcida Vaz, secretary of the unit:
I live in one of the areas that benefited from this pipeline but nothing ever happened. Additionally we use to access from an old well close to us but now it only have water for one hour a day, from 7 to 8 am.

R – Juliana Come, environmental consultant:
Thank you. Your question will be registered and we will find out about this pipeline.

Completed the interventions Juliana Come mentioned the comments registration sheet and asked the participants to take with them, fill and send within a week to the address provided on it. The meeting ended at 15:45 hours.

WATER SERVICES AND INSTITUTIONAL SUPPORT PROJECT (WASIS II) FOR FIPAG
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)
PRESENTATION

MINUTE OF PUBLIC PARTICIPATION MEETING
BEIRA CITY

Date: 21/05/2015
Place: Rainbow Hotel Conference Room
Hora: 09:00 – 11:00
Participants: 15 participants

POWERPOINT PRESENTATION

The consultant Juliana Come, as the facilitator of the meeting, held opening of the session, introducing herself and asking the registration of each participant. After that she started presenting the objectives of me meeting that included: (i) inform on the need to create the environmental and social management framework for the water supply and institutional support (WASIS II) project; (ii) discuss potential environmental and social impacts for water supply projects; (iii) register other environmental and social impacts that were not anticipated.

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Juliana Come passed then to the explanation of the legal aspects of the WASIS II project where she described briefly the need to follow the World Bank Operational Policies (OP) in water supply projects funded by the World Bank. These policies include the OP 4.01 for environmental assessment (regulates participation of the beneficiaries of projects, local government and non-governmental organizations in the public participation process); OP4.04 for natural habitats (regulates the protection, maintenance and rehabilitation of natural habitats); OP4.09 for pest management (relates to agriculture and public health); OP4.10 for indigenous people (land rights and use); OP4.11 for cultural heritage (sacred places, culture and values); OP4.12 for involuntary resettlement (displacement, compensation process); OP4.36 for forests (protection and rehabilitation); OP4.37 for safety of dams (related to water abstraction); OP7.50 for projects on international waterways (regulates procedures for international such as rivers and lakes); OP7.60 for projects in disputed areas (regulates coordination and agreements between different entities with interests and activities in the same area, p.eg. water transmission main located at the same

area as the optic cables of TDM[17] and passing through a paved road of ANE[18]). She also made reference to the Mozambican legislation, citing the decree 42/2008 of 4 November which regulates the environmental impact assessment; the decree 130/2006 for public participation processes; and the water law 43/2008 of 30 October.

It followed the explanation of the objectives of the public participation process, the environmental situation of the country and the positive environmental and social impacts of the WASIS II project. She said that, in terms of benefits, the project will provide more coverage through the increase of the number of connections by a diverse number of users; more security in the access to clean water during the day; and an increase in business development possibilities in sectors and activities in which water supply is a critical factor. With regard to the negative impacts, Juliana Come presented the impacts that occur in different phases of water supply projects. She described seven phases namely: (1) water abstraction from river or lake; (2) water abstraction from wells field; (3) water abstraction pump station; (4) water treatment works; (5) water transmission main; (6) water reservoirs; (7) urban water distribution. The main impacts presented in these phases included water pollution on surface and groundwater sources; ecological issues; saline intrusion; climate change issues; resettlement and compensation; vandalism; conflicting land use and ownership; impacts on groundwater levels; diseases associated with stagnant water from leakages; public nuisance; and visual impacts.

Juliana Come ended the presentation referring to the increased efficiency of services provided in urban areas; increased coverage in peri-urban areas, reducing water leakages and strengthen the institutional and regulator water supply regional chain. She added that the preparation of the ESMF does not replace the EIA and that it is important in this phase to collect contributions of the participants in the meeting in order to anticipate, minimize and mitigate negative impacts. Then she invited the participants to the debate session.

ISSUES AND RESPONSES SESSION

Issues (I) and Responses (R):
I – Pedro Arone, professor at UP[19] Beira: During the presentation I learn that the project intends to provide water supply to urban and peri-urban areas. Many zones in expansion are characterized by disorderly occupation than does not follow the standard for urbanization. These areas often face leakages problems due to the way This fact challenges the installation of conducts and a normal water distribution system. Was this issue anticipated? How the program is planning to address this problem? **R – Juliana Come, environmental consultant:** Thank you for your contribution. It will be considered during the preparation of the ESMF. I do not think this problem was anticipated at this stage. Even areas disorderly occupied demand water supply services and the residents of these areas have the right to access water.

[17] TDM stands for Telecommunications of Mozambique.
[18] ANE stands for National Roads Administration.
[19] UP stands for Pedagogic University

R – Milton Nhachengo, technician at FIPAG Maputo:
One of the objectives of this meeting is to learn about these aspects and understand the previous errors of projects implemented before and be prepared for it.

I – Augusto Paulo, technician at CMB[20]:
I would like to suggest the first phase of the project focus on the rehabilitation of the system. After that work on the extension of the existing water distribution network to peri-urban areas. I suggest this because the existing water distribution network in the urban area has serious problems and it is better to address these problems first to avoid the creation of more problems.

R – Juliana Come, environmental consultant:
Thank you for your contribution. The ESMF is an overall program for water services and institutional support. It contemplates rehabilitation of existing systems in the selected cities and expansion to new areas among the peri-urban areas. After the approval of the program and the designing of sub-projects for different zones of each city, it will be considered priority areas for improvements. I do not think the rehabilitation will take place at the same time with the expansion but your suggestion will be registered in this ESMF and considered during the design of the sub-projects.

R – Milton Nhachengo, technician at FIPAG Maputo:
The ESMF will include recommendations, for example, the necessary coordination between EDM; TDM and the municipalities in order to have a more efficient management of spaces used by different entities. What is your experience regarding coordination of these institutions in previous projects? What were the main aspects considered? Who should we consult for the project implementation phase? During the meeting in Tete City we had a valuable contribution from a farmer from Nhartanda suburb regarding the location of the FIPAG's holes field surrounded by crops of the residents of Nhartanda. When there is leakage in the holes FIPAG takes long time to repair and remove the water and this flood their crops. Another problem is the destruction of cultures when FIPAG tries to rehabilitate or check their holes. Meetings such as this one are the appropriate forum to present problems as the example in order to plan future holes considering for example maintenance and access.

I – Matias Muromo, Technician at FIPAG Beira:
Unfortunately with no specific project it is hard to provide contributions. Even though, I would like to know if the program identified already the zones that will benefit from water on the selected cities.

R – Juliana Come, environmental consultant:
At this stage of the project, the suburbs and water sources for each city is not identified yet, only the cities. This is the right forum to get directions and contributions to better define specific projects to each city.

I – Beatriz Dias, technician at DPTADER[21]:
Unfortunately I came late and I could not attend the entire presentation. I would like to understand the objective of this meeting. Are we here preparing the WASIS II project or

[20] CMB is the Beira City Council.
[21] DPTADER stands for Provincial Directorate of Land, Environment and Rural DevelopmentE

there is a project already created and we have to provide inputs for it? Is this a public consultation meeting or we as institutions have to contribute regarding our sensitivities on the water supply service?

R – Juliana Come, environmental consultant:
FIPAG is developing the ESMF which is a program form water supply services here referred as WASIS II. At this stage, which is the planning stage, the World Bank, our funder, required the elaboration of the ESMF program where potential environmental and social impacts are included. This meeting aims to collect inputs of water supply impacts, issues and considerations. We have invited representatives of provincial delegations and other organizations that unfortunately are not here represented. We have identified some potential impacts and we would like to have more. When conclude the ESMF, submit and get the approval from World Bank, specific projects will be developed for the selected cities.

I – Beatriz Dias, technician at DPTADER Now I understood that we are here to contribute with inputs to the creation of the ESMF to acquire funds from the World Bank. Only after that projects will be developed and conducted the proper public consultation with a more representative sample. Thank you.

I – Augusto Paulo, technician at CMB:
In the particular case of Beira City I would like to suggest the inclusion in the project of the historical context of our city, number of population that benefits from water from FIPAG, population that demands water, water capability and volume of water that will be increased. It is hard to contribute in such a vague debate.

R – Juliana Come, environmental consultant:
Thank you Mr Augusto. How is the actual situation of water supply here?

I – Augusto Paulo, technician at FIPAG:
FIPAG is here represented and is the best entity to answer this question.

R – Milton Nhachengo, FIGAG Maputo:
We would like to know from the consumers. FIPAG answer might be biased. They can say that everything is fine. For example, were I am staying there was no water problems but I do not know it is always this way.

R– Beatriz Dias, technician at DPTADER
We should contribute so our inputs can be registered and be part of the document. This is our opportunity to have our concerns included in the program.

I – Fernando Marcolino, UP student:
Referring to EDM, there are many new peri-urban areas where coordination involving entities such as EDM, TDM, the municipality but FIPAG is always the last one providing water supply services. This creates constrains for the new residents of such areas and this problem should be addressed.

R – Juliana Come, environmental consultant:
Thank you for contribution.

I - Pedro Arone, professor at UP[22] Beira:
I am a resident of Macaringo suburb and I would say that the water supply there is intermittent, having some from 8 to 12 hours and then few houses benefit from water in the afternoons. The pressure Is normally not good and often we get water from the taps outside our houses.

R – Juliana Come, environmental consultant:
Thank you. Your comment will be registered.

I – José Matos, EDM:
I suggest that FIPAG set particular meetings with public housing delegation and the municipality to discuss problems. We cannot talk freely about FIPAG problems when they are here represented. Beira city is growing fast and the projects should be structured including other components because water is not the only demanded service, such as electricity and road access for example.

R – Juliana Come, environmental consultant:
Thank you for your contribution. In all situations discussed here recommended measures will be done according to the Mozambican legislation and the World Bank directives. I agree that structured projects could be better but they depend on the funding goals.

I – Beatriz Dias, technician at DPTADER:
Is the Dondo District here represented? I saw head of the district of Dondo complaining that they have water supply, electricity and land distributed but no one lives there. I suggest that this project establishes a partnership with the municipality because there are several occupied areas with no water supply or electricity.

R – Juliana Come, environmental consultant:
Thank you for your contribution.

R – José Matos, EDM:
Most of the projects are not structured and water supply and electricity is not enough. There is safety, schools for our children, clinics, stores and policy stations. It is risky to move to Dondo when all public facilities are here.

Beatriz Dias, technician at DPTADER:
I agree with Mr Jose Matos. This should be proposed to the municipality.

Jose Matos, EDM:
This is not an appropriate forum to discuss this issue. This is related to the areas expansion areas planned by the municipality and has nothing to do with FIPAG and EDM. Such

[22] UP stands for Pedagogic University.

expansion depends of funding and the municipality urbanization plans.

I – Diogo Muquito, FIPAG:
With regard to the leakages and other piping problems, I would like to clarify that many piping installation is not made by FIPAG, we only do the monitoring. Beira is growing and if we look at the data, Maculumo and Inhamizua suburbs were created two years ago. The water distribution system was built in 1950. It was projected to supply a limited number of consumers. With the independence the number of residents in town increased but the system remained the same. Some people build their houses on existing piping. Many rehabilitation projects fail to conclude their work because they could not destroy houses to remove or rehabilitate the macaroon tubing, as for example in Munhava suburb. These issues should be analysed in deep to find a possible solution.

R – Juliana Come, environmental consultant:
Thank you for your contribution.

I – Matias Muromo, FIPAG:
WE had a project that goes until 2019 that aims to reduce leakage and replace macaroon tubing. We are aware that will be a challenging to remove in peri-urban areas.

R – Juliana Come, environmental consultant:
Thank you.

R – Diogo Muquito, FIPAG:
This water distribution system has 65 years and we need to rehabilitate and change the obsolete equipment. There is a project been implemented by the Dutch and intends to rehabilitate water systems and reservoirs. I suggest that the project does not rehabilitate reservoirs but build new ones considering the demand and growth of the city. 4 – 5 years ago we used to have 10 thousand customers but now we have around 50 thousand customers. There are places with bad conditions for water supply but due to the pressure and demand FIPAG supply water and after few months they have problems.

R – Juliana Come, environemntal consultant:
Thank you for your explanation.

Sérgio Matimbe, FIPAG:
I suggest that this project coordinates with local government the resettlement question. The construction in many areas in expansion was disorderly and should be better to resettle and ordinate in order to have a good water supply system.

Beatriz Dias, technician at DPTADER:
With the explanation of Mr Diogo I realized that FIPAG does not include the municipality on the planning. The municipality has to participate in such debates and be aware of the projects.

I – Diogo Muquito, FIPAG:
The municipality also has its own challenges. I attended a program from the municipality and they were applying for funding to build a hospital in Nhamanhabue (new suburb) and

they never get.

Beatriz Dias, technician at DPTADER:
I was talking about the coordination between entities in existing areas and not the creation of new ones. The municipality should be included in discussions about existing zones with several problems such as Munhava.

I – Matias Muromo, FIPAG:
I attended a meeting about a water supply project that goes until 2019 and the municipality was represented. I do not know what happened here.

Augusto Paulo, CMB:
I suggest all participants to visit the municipality master plan and look at the territorial ordering. All plans about expansion are included there.

Beatriz Dias, technician at DPTADER
We would like to have an example of implementation of the plans stated in the master plan.

Augusto Paulo:
For example, we have the Languna zone where erosion problems were addressed by the municipality.

Beatriz Dias, technician at DPTADER:
FIPAG daily receives request of water in new areas. They cannot refuse to provide areas in zones that are not included in the plan. Another solution should be proposed otherwise FIPAG will have problems.

I - Augusto Paulo, environmental technician at CMB:
I would like to know if, due to the water cost, FIPAG cannot build water reservoirs.

R – Diogo Muquito, FIPAG:
The construction of water reservoirs requires funds.

R – Milton Nhachengo, FIPAG Maputo:
Please let focus on the objective of this meeting. As my colleague Diogo says, construction of new reservoirs requires funds and we are here discussion environmental and social impacts to prepare an ESMF in order to apply for funding from the World Bank. With this funding sub-projects will be implemented in the selected cities including Beira.

I – Sergio Matimbe, FIPAG:
This funding from the World Bank refers to resettlement. Was population survey undertaken for the people affected by the macaroon piping problem to ensure that the budget covers it? Was the municipality included in the process?

J – Juliana Come, environmental consultant:
The objective of this meeting is not to discuss the budget of the program but to identify environmental and social impacts of water supply projects. The discussion document that we provided to each participant refers approximately 180 million dollars to this program. This amount will be shared by this eight selected cities and projects will be designed based

on this total.

R – José Matos, EDM:
As Ms Beatriz explained, the consultants did not mention that we have a project already. We are here to provide inputs to prepare the ESMF to submit to the World Bank in order to obtain funds to develop water supply projects. I would like to refer to an important aspect which is the viability of this project. It is important to provide contribution regarding quantity of water, contribution to agriculture, jobs, etc. It should be interesting to include population displacement, jobs, housing, etc. and mention inhabited zones with water supply and electricity services available. We should provide inputs to enrich the project and acquire the credit.

I - Beatriz Dias, technician at DPTADER:
I suggest a change in the aims of the program which are rehabilitation of existing systems and expansion to new areas to focus on new constructions of water distribution systems because the existing system has more than 60 years.

R –Juliana Come, environmental consultant:
Thank you.

I – Matias Muromo, FIPAG:
Rehabilitation is also important because we have around 220 km of obsolete piping waiting funds for rehabilitation in many suburbs such as Inhamizua, Mafarinha in Dondo, Mandruzo and 25 de Setembro.

I – Sérgio Matimbe, FIPAG:
I would like to suggest the consultants to learn about others existing projects being implemented otherwise water supply projects will be designed for same areas.

R – Juliana Come, environmental consultant:
Thank you. We refer to this project as WASIS II because WASIS I was developed and extended until October 2015. The Government realized that WASIS I would be concluded with several residual issues with many cities still to benefit from water supply services. In this context WASIS II was created and FIPAG is applying for funds to this project.

I - Fernando Marcolino, UP student:
I have already been consulted on the objectives of the WASIS II Project to be carried out in the Canhandula area in Dondo, and from what I understood the objective is to supply water to five thousand households including other infrastructures, schools and clinics. I suggest that the funding for Beira is integrated in this project and that water is also provide to Canhandula.

R – Matias Muromo, FIPAG:
Water supply in that area will depend on the Inhamizua system.

Completed the interventions Juliana Come mentioned the comments registration sheet and asked the participants to take with them, fill and send within a week to the address provided on it. The meeting ended at 11:00 hours.

WATER SERVICES AND INSTITUTIONAL SUPPORT PROJECT (WASIS II) FOR FIPAG
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)
PRESENTATION

MINUTE OF PUBLIC PARTICIPATION MEETING
NACALA PORTO

Date: 27/05/2015
Place: Afrin Hotel Conference Room
Hora: 09:00 – 11:00
Participants: 6 participants

POWERPOINT PRESENTATION

The consultant Juliana Come, as the facilitator of the meeting, held opening of the session, introducing herself and asking the registration of each participant. After that she started presenting the objectives of me meeting that included: (i) inform on the need to create the environmental and social management framework for the water supply and institutional support (WASIS II) project; (ii) discuss potential environmental and social impacts for water supply projects; (iii) register other environmental and social impacts that were not anticipated.

Then, Juliana Come explained that the creation of the environmental and social management framework for the WASIS II project is a requirement of the World Bank to fund water supply projects in the selected cities. She listed the selected cities which include the city of Beira, Dondo, Chimoio, Gondola, Tete, Moatize, Nacala-Porto, and Pemba. She explained that the WASIS II project aims to improve the existing water transmission network, changing the obsolete pipeline in cement zone (urban area), as well as providing counters to new users, increasing the number of consumers of this service.

Juliana Come passed then to the explanation of the legal aspects of the WASIS II project where she described briefly the need to follow the World Bank Operational Policies (OP) in water supply projects funded by the World Bank. These policies include the OP 4.01 for environmental assessment (regulates participation of the beneficiaries of projects, local government and non-governmental organizations in the public participation process); OP4.04 for natural habitats (regulates the protection, maintenance and rehabilitation of natural habitats); OP4.09 for pest management (relates to agriculture and public health); OP4.10 for indigenous people (land rights and use); OP4.11 for cultural heritage (sacred places, culture and values); OP4.12 for involuntary resettlement (displacement, compensation process); OP4.36 for forests (protection and rehabilitation); OP4.37 for safety of dams (related to water abstraction); OP7.50 for projects on international waterways (regulates procedures for international such as rivers and lakes); OP7.60 for projects in disputed areas (regulates coordination and agreements between different entities

with interests and activities in the same area, p.eg. water transmission main located at the same area as the optic cables of TDM[23] and passing through a paved road of ANE[24]). She also made reference to the Mozambican legislation, citing the decree 42/2008 of 4 November which regulates the environmental impact assessment; the decree 130/2006 for public participation processes; and the water law 43/2008 of 30 October.

It followed the explanation of the objectives of the public participation process, the environmental situation of the country and the positive environmental and social impacts of the WASIS II project. She said that, in terms of benefits, the project will provide more coverage through the increase of the number of connections by a diverse number of users; more security in the access to clean water during the day; and an increase in business development possibilities in sectors and activities in which water supply is a critical factor. With regard to the negative impacts, Juliana Come presented the impacts that occur in different phases of water supply projects. She described seven phases namely: (1) water abstraction from river or lake; (2) water abstraction from wells field; (3) water abstraction pump station; (4) water treatment works; (5) water transmission main; (6) water reservoirs; (7) urban water distribution. The main impacts presented in these phases included water pollution on surface and groundwater sources; ecological issues; saline intrusion; climate change issues; resettlement and compensation; vandalism; conflicting land use and ownership; impacts on groundwater levels; diseases associated with stagnant water from leakages; public nuisance; and visual impacts.

Juliana Come ended the presentation referring to the increased efficiency of services provided in urban areas; increased coverage in peri-urban areas, reducing water leakages and strengthen the institutional and regulator water supply regional chain. She added that the preparation of the ESMF does not replace the EIA and that it is important in this phase to collect contributions of the participants in the meeting in order to anticipate, minimize and mitigate negative impacts. Then she invited the participants to the debate session.

ISSUES AND RESPONSES SESSION

Issues (I) and Responses (R):
I – Fenias Ndimande, EDM engineer: What was the WASIS I about? What is the different between WASIS I and WASIS II? This project will benefit many residents of Nacala-Porto as the situation here is bad. The city is growing fast and we need water, especially for the industries here established. What will be the water sources for Nacala? **R – Juliana Come, environmental consultant:** Thank you for your question. First, regarding WASIS I and II it is used the same denomination because both are water services and institutional support projects but they have different objectives and aims. WASIS I was funded by the African Bank for Development and we are in the process to acquire funding for WASIS II from the World Bank. These projects focus different cities as well. WASIS is an abbreviation of water

[23] TDM stands for Telecommunications of Mozambique.
[24] ANE stands for National Roads Administration.

services and institutional support project. These projects the duration of five years and WASIS was extended to October 2015.

R – Milton Nhechengo, FIPAG Maputo:
Each project has its own package. Even if WASIS I and WASIS II benefit the same city, it will not address the same problem. WASIS I started in 2008 and was extended until 2015. The extension of WASIS I should be called WASIS II and this would be WASIS III but it was not considered as another project. The fact that FIPAG has to look at the industrial demand of Nacala-Porto it is important but this project intends to first benefit the citizens and not the industry.
This funding we are applying from the World Bank stated a specific credit and as the years passes the amount reduces.

I – Fenias Ndimande, EDM engineer:
Nacala-Porto is growing and we can show it on our commercial graphic. These projects should be defined with 10 years duration where during this time they would address all water supply projects.

R – Milton Nhechengo, FIPAG Maputo:
Our donor offered a specific amount and FIPAG have to share between other cities. This is what sometimes we apply for funding for other activities within the main funded project.

R – Juliana Come, environmental consultant:
This amount that the World Bank offered has to be planned within the ESMF. It is necessary to define what will be done in each city according to their needs.

I – Rajaque Vasco, Planning technician at SDEJT[25]:
I would like to add an aspect. If the WASIS II project comes to Nacala-Porto, a real study should be conducted. We have few schools with water. The population is moving to peri-urban areas, trading their spaces due to the growth of the industry, with no water supply services. We hope that this project also benefit areas such as Mahalene and other areas outside the concrete zone. If this project focused only on the concrete zone it will fail to its purpose. I would be better is this meeting included participation of residents of these new areas.

R – Juliana Come, environmental consultant:
Thank you for your contribution.

I – Maria Judite Chilae, SDPI[26] technician:
As we are here talking about FIPAG I would like to ask FIPAG why they do not answer our requests. This is the third year that the SDPI is waiting for water supply.

R – Juliana Come, environmental consultant:
Although this is not the right forum but thank you for your question. I invite FIPAG to say something.

R – Adriano Bata, FIPAG:

[25] SDEJT stands for District Services for Education, Youth and Technology
[26] SDPI stands District Services for Planning and Infrastructure.

Unfortunately ate the moment I do not have information to answer but after the meeting I can provide my contact and find out about your request.

I would like to talk about a negative impact in our holes field. Our holes fields are artesian which mean that once opened they pull water two hours per day. This floods the crops of the population.

In my understanding the saline intrusion is more for underground water and not for rivers and lakes as referred in the presentation. Rivers and lakes normally just dry but we do not have cases of saline intrusion.

Regarding the water distribution, projects normally focus on water services expansion based on the existing system in urban areas and do not rehabilitate and increase this system. After a while both urban and peri-urban areas have water supply problems.
It is necessary look at the World Bank policies because there is one that prohibits the removal of existing piping in urban areas, also called fibre-concrete.

R – Juliana Come, environmental consultant:
Thank you for your contribution. This project intends to rehabilitate the obsolete piping and I am quite sure that some in urban areas will have to be removed due to this time. We will look at the World Bank document.

I – Robene Manuel, Health Nacala:
We are happy with this project. As other participants referred, Nacala has serious water supply problems. There is a need in improvement of quantity and quality of water. What is the prevision of the implementation of this project? What are the planned water sources?

R – Juliana Come, environmental consultant:
Thank you for your question. At the moment we have to submit the ESMF at the first day of June. We are finalizing these meetings, this is the last meeting and we conducted similar meetings in Tete, Moatize, Chimoio, Beira and Pemba. The World Bank will take its time to analyse and answer our request of funding.

R – Adriano Bata, FIPAG:
With regards to the water sources in Nacala, we have identified four holes camp, namely Mpaco, Mutuzi, Teteriane (close to Matibane and has three artesian holes), and the Nacala Dam that produces below its actual capability.

I – Robene Manuel, Health Nacala:
I heard that Nicandavale suburb also has a holes camp. This hole I know but the quality of water is not good.

I – Juliana Come, environmental consultant:
Thank you for such a valuable contributions. I would like to know from FIPAG or the municipality is there is coordination between different sector or not? What were the main problems due to the lack of coordination?

I – Milton Nhachengo, FIPAG Maputo:

What would be the ideal methodology to EDM, TDM and FIPAG operates?

R – Fenias Ndimande, EDM Engineer:
This three institutions normally uses same routes and an inter-sectorial coordination is important.

I – Robene Manuel, Directorate of Health Nacala:
I believe that these institutions have a planning and projects department and technicians of company should be in contact and share information. I would like to understand if the water in artesian holes is treated.

R – Adriano Bata, FIPAG:
I am wondering why you ask such thing. Is there a problem or it is just curiosity?

I – Robene Manuel, Directorate of Health Nacala:
No, no, just curiosity. Thank you.

Completed the interventions Juliana Come mentioned the comments registration sheet and asked the participants to take with them, fill and send within the weekend to the address provided in it. Then she invited Milton Nhachengo to say the last consideration. The meeting ended at 10:30 hours.

WATER SERVICES AND INSTITUTIONAL SUPPORT PROJECT (WASIS II) FOR FIPAG
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)
PRESENTATION

MINUTE OF PUBLIC PARTICIPATION MEETING
PEMBA CITY

Date: 25/05/2015
Place: Cruz Vermelha Conference Room
Hora: 09:00 – 11:00
Participants: 15 participants

POWERPOINT PRESENTATION

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ISSUES AND RESPONSES SESSION

Issues (I) and Responses (R):
I – Atanásio Ambo, secretary at the city committee: After this presentation I would like to share my doubts regarding the information presented here. I learned that this meeting intends to present the ESMF[29] for the water services and institutional support project. Regarding the implementation of water supply projects, electricity provision and communications, I noticed that this sectors often need conducts that open paved roads and destroy infrastructures. Another problem is that most of such projects do not consider expansion which is always necessary. Reserved conducts could minimize the impacts of roads destruction and soils movement. As an example, we have roads recently rehabilitated but we know that soon another project will come and destroy our roads. When presenting negative impacts I did not see destruction of roads and

[27] TDM stands for Telecommunications of Mozambique.
[28] ANE is the National Roads Administration.
[29] Environmental and Social Management Framework.

infrastructures nor mitigation measures.

Another thing is the lack of redundancy in our projects. Currently we have a small water system in Metunge that is supplying some zones but if opportunity for a bigger system comes, the existing will be destroyed rather than expanded. There is also the politic impact to be considered which refers to the population against Government due to bad services provided.

R – Juliana Come, environmental consultant:
Thank you for your contribution. Your contribution will be considered.

I – Ângelo Francisco, DPTADER techncian:
During your presentation I saw some aspects on an EIA. I would like to know if EIA will be conducted for each project.

R – Juliana Come, environmental consultant:
This identification of environmental and social impacts at this stage is required by the World Bank. They do not want to fund a project that has critical negative impacts. When the World Bank approve this program and we develop sub-project this impacts will be considered.

I – Ângelo Francisco, DPTADER technician:
Can we call this a preliminary evaluation?

R - Juliana Come, environmental consultant:
Yes but only in practical terms and for the identification of impacts.

I - Atanásio Ambo, secretary at the City Committee:
Recently we had a water supply project from Millennium Challenge Account (MCA) and we attend public consultation meetings for this project and after that nothing happened. Have you consulted this project?

R – Juliana Come, environmental consultant:
This program is being conducted by FIPAG but is owned by the Government of Mozambique. The MCA might have funding for some projects. When we conduct an EIA it does not mean that we have a project already but that there is an intention to implement the project and studies are being conducted in order to identify positive and negative impacts of the project. The EIA study is submitted to the Ministry of land, environment and rural development for approval and only after that the project is implemented. Sometimes, depending on the specifications of projects they are not approved.

I - Atanásio Ambo, secretary at the City Committee:
My main constraint was the expectation created to the participants. Around 100 people attended to that meeting and they participated actively and nothing happened. Now when people are invited to projects they do not comment as they are losing hope.

R – Juliana Come, environmental consultant:
The problem is that when consultants want contributions and participants participating actively they often do not clarify that the study intends to provide a project. They say affirmatively there a project will be developed in the area which motivates people to contribute. Raised expectations are a critical problem. Few years ago during an EIA study I went to a community to present a project what would create several benefits for them including jobs. The project was not approved and after a while another company decided to develop a business close to this area. We, as consultants had to go to the same community and present another project. They refused to contribute to the second project as they were waiting implementation of the first one that could bring more benefits.

I – Ângelo Francisco, DPTADER technician:
It is important to look at the quality of water supplied. Aside from the problems for water supply quality is also an issue in Pemba. Does this water follows the WHO[30] standards for human consume?
In terms of variables included on chemical analyses, was it analysed the substances in our water?
I am asking this because few months ago I went to the doctor and he told me that the water we consume has problems.

R – Juliana Come, environmental consultant:
Thank you very much. I would like to invite FIPAG to clarify this doubt.

I – Ângelo Francisco, DPTADER technician:
This is a concern for us because the project intends to expand the water supply to new consumers and this increases the quantity of water supplied and it is important to ensure quality as well.

I –**Atanásio Ambo, secretary at the City Committee:**
This is also my concern and I would like to add that besides the chemical products used for water treatment we are recommended to use CERTEZA. I wonder if was conducted already a survey to learn if this chemical mixture is safe for the human health.

R – Ângelo Francisco, DPTADER technician:
With regard to the use of CERTEZA, it is more to eliminate the micro-organisms that might provide diarrheic diseases. For example, we in a river we have multiusers and some actions might contaminate the water. Same might happen with underground water as the river is an aquifer as well. Another fact, for example, I have a water tank and water bomb at my house. Once a week I have to clean the deposit due to the quantity of sediments deposited in the tank. I imagine how the ones that access water directly from their taps live. This proves that the quality of water is not good. I believe that in Maputo things are different but I am quite sure that here the water is not analysed.

I – Martinho Uacala, technician at Tecnica:
I would like to know if we have a water treatment station for Pemba. We have serious water problems and we do not know about FIPAG policies. We only access water from 5

[30] World Health Organization.

to 6 o'clock and we often see trucks with water. This is a water management problem. We are forced to purchase water from the trucks when we pay FIPAG for water supply. The trucks should collect water at the end of the day to avoid restrictions for us.

R – Silvio Machachane, FIPAG:
I am here representing FIPAG and I am aware of your concerns. We access underground water in Metunge through holes and the water treatment station is there. It is true that the water in each city is different and the water treatment also differs according to the type of water in each city. Our station is prepared for the water conditions here which has high quantity of steel. In order to treat our water we reduce steel through a process called aeration and after that we include chlorine. Our major challenge is the transport of water. Our machinery is old and we have problems with water bombs. Last year we opened more holes in Chuiba but it is not solving our demand problems and we need a new water transmission main due to the growing of the city.
With respect to water quality, we believe that because we do not have water in the piping constantly, dust and other waste might accumulate in the tubes and when the water comes we have turbid water in our taps. I am not a laboratory technician but I see how the process is done.
Our tables are based on the international regulation and our water is within the normal standards. I would like to know from Mr Angelo the exact substance that he was talking about.
We would like to know from the participants other problems to help us improving. We have water transport problems; obsolete piping; we need 60 km water transmission main and this project and these meetings will help us designing solutions to improve.

I – Martinho Uatala, techniciantechnicianat Tecnica:
Adding, I believe that your explanation about the turbid water is not a valid answer to my question. I think that it is a water management problem that your colleagues in the water quality department do not know how to address or are not capable of it. A water treatment has four phases before the water reaches our houses. It is important to pay attention to this fact. You referred that the water we consume has chlorine but we do not know the quantity of chlorine that FIPAG use. We use CERTEZA that also includes chlorine and we do not know if will create problems.
Another question, we have to ensure that institutions such as EDM and TDM coordinate to avoid constraints for us.

R – Juliana Come, environmental consultant:
Thank you.

R – Ângelo Francisco, DPTADER technician:
The municipality have to be included in the coordination with these institutions. EIA should foresee these cases and recommend measures for multiuse areas.

R – Milton Nhachengo, FIPAG:
With regard to this question, we invited the municipality and entities that operates in the underground to coordinate.

I – Martinho Uacala, technician at Técnica:
I am sure that the invitations were not directed. I am here representing the Técnica because we saw the advert in the newspaper. FIPAG should invite institutions with letters and announce this meeting on the Radio as well.

R – Juliana Come, environmental consultant:
Thank you. The meeting was planned in Maputo and we send the invitation letter and send to the delegates of FIPAG in centre and north region. We had 33 participants attending the meeting in Moatize and depend on the dynamism of each delegate.

I – Adelino Savelo, Secretary of the Caricio suburb:
I would like to understand what was done in WASIS I, what happen and why we are applying for WASIS II. We should not be here discussing impacts only for funding purposes but also to understand the real impacts and concerns of the citizens of Pemba. Is the water enough for us?
The project that you are presenting here will help FIPAG or the name of FIPAG will change to WASIS II?

R – Juliana Come, environmental consultant:
Thank you for your contribution. We did not refer WASIS I because these are different programs. The ESMF is a new program and WASIS I is currently being implemented in selected cities and was funded by the African Development Bank. WASIS II has the same name because it is also a water services and institutional support project but as we are applying to a different funder we have to follow the World Bank requirements and the elaboration of the ESMF is one of their requirements. We did not mention WASIS I because they are different programs and have different objectives.

R – Milton Nhachengo, FIPAG Maputo:
WASIS I was only Centre and North, initiated in 2008 and with extension until October 2015. FIPAG is a continuing process but the ESMF is new. This project is a FIPAG project when WASIS is only the funding of the project. We do not know exactly why Pemba was included and the real reason for the inclusion of the selected cities aside from the growing of the city and demand for water. Some cities will benefit from rehabilitation and construction but some cities will have only rehabilitation.

R – Silvio Machachane, FIPAG:
As referred my colleague, FIPAG will not change the name, this is just a funding process. In Pemba we often talk about Chinese piping, This piping was installed during WASIS I which was funded by the African Bank for Development[31].

R – Martinho Uacala, technician at Técnica:
Just to add that we had a water supply project called 7 cities and Mocimboa da Praia, Nacala and Quelimane also benefited from it.

[31] African Development Bank.

R – Silvio Machachane, FIPAG:
It is also important to focus on the institutional coordination. This might create constraints to the residents in Pemba. We have faced challenges with ANE destroying our piping due to the lack of communication.

R – Milton Nhachengo, FIPAG Maputo:
In Xai-Xai (Maputo) we had an accident with the optic fibre of TDM and since that we had to work in coordination with them to avoid these situations.

R – Ângelo Francisco, DPTADER technician:
At the end of this process and after the elaboration of the ESMF, will the report be available for consultation?

R – Milton Nhachengo, FIPAG Maputo:
Normally these reports are uploaded on the World Bank webpage but I do not think this one will be a public domain. If the World Bank decided to share the report, it will be available in English.

R – Juliana Come, environmetal consultant:
Thank you for all the contributions.

Completed the interventions Juliana Come mentioned the comments registration sheet and asked the participants to take with them, fill and send within a week to the address provided in it. The meeting ended at 11:00 hours.

REUNIÃO DE CONSULTA PÚBLICA DO PROJECTO DE ABASTECIMENTO DE ÁGUA E APOIO INSTITUTIONAL (WASIS II)
QUADRO DE POLÍTICAS DE GESTÃO AMBIENTAL E SOCIAL

FOLHA DE REGISTO DE PARTICIPANTES

DATA DA REUNIAO: 20 de Maio de 2015 **PROVINCIA:** Manica, Município de Chimoio

LOCAL DA REUNIAO: Sala Vumba, Hotel Inter Chimoio **PARTICIPANTES:** 6 participantes

INSTITUIÇÃO	NOME DO PARTICIPANTE	POSIÇÃO	TELEFONE	E-MAIL
C. Municipal. C	Eusébio Andrade	Vereador	844003293	esimbeb2@gmail.com
Direcção Prov. da Saúde	Daniel Chemussa	P.F. Qualidade e Humanização	825929460	chamussadanielantoniosasita@yahoo.com.br
A. Municipal	Beca M'Salika	membro	840635333	Mbalikacesar@gmail.co
A. Municipal	Américo J. Muchaoto	funcionário	824692144	americomuchaoto@gmail.com
[illegible]				
DPEC - Manica	Anão Januário	Chefe do Departamento de Planificação	825203690 843004933	j.anao2012@yahoo.com.br
DPOPHRH-Manica	Filipe Mandava	Técnico	827832560	mandavaf@yahoo.com

REUNIÃO DE CONSULTA PÚBLICA DO PROJECTO DE ABASTECIMENTO DE ÁGUA E APOIO INSTITUTIONAL (WASIS II)
QUADRO DE POLÍTICAS DE GESTÃO AMBIENTAL E SOCIAL

FOLHA DE REGISTO DE PARTICIPANTES

DATA DA REUNIÃO: 27 de Maio de 2015 **PROVINCIA:** Nampula, Cidade de Nacala

LOCAL DA REUNIÃO: Hotel Afrin **PARTICIPANTES:** 6 participantes

INSTITUIÇÃO	NOME DO PARTICIPANTE	POSIÇÃO	TELEFONE	E-MAIL
SDEJT* - Nacala	Rajaque Braga Vasco	Técnico de Planif.	827009180	rajaquevasco@gmail.com
FIPAG-NCL	Adriano Bata	Téc GEP	828785077	adriano.bata@fipag.co.mz
EDM-NCLA	Fenias Ndimande	ENG: GEP	840367226	fenias.ndimande@edm.co.mz
SDPI - Nacala	Maria Judit Chilale	Tecnica	845667385	
Saúde Nacala Porto	Robene Manuel	Saúde Comunidade	825269992	robmanuel.78@gmail.com
Fipag. SEDE	Milton Nhachungue	Tec. Ambiente	848611330	m.nhachungue@fipag.co.mz

REUNIÃO DE CONSULTA PÚBLICA DO PROJECTO DE ABASTECIMENTO DE ÁGUA E APOIO INSTITUTIONAL (WASIS II)
QUADRO DE POLÍTICAS DE GESTÃO AMBIENTAL E SOCIAL

FOLHA DE REGISTO DE PARTICIPANTES

DATA DA REUNIÃO: 25 de Maio de 2015 PROVINCIA: Cabo Delgado, Pemba

LOCAL DA REUNIÃO: Sala 1, Cruz Vermelha PARTICIPANTES: 15 participantes

INSTITUIÇÃO	NOME DO PARTICIPANTE	POSIÇÃO	TELEFONE	E-MAIL
BAIRRO J. MACHEL	CALISTO INTANIA	ADJ. SECRETÁRIO	868716776	[illegible]
DPCA - C. Delgado	Ângelo Francisco	Técnico	824156923	amartebio@gmail.com
FIPAG. SEDE	Milton Nhachungue	Tec. [illegible]	848611330	m.nhachungue@fipag.co.mz.
FIPAG - Pemba	Silvio Machaule	Tecnico GIS	828326150	silvmachaule@gmail.com
B. CIMENTO	Eusébio Cavecha	S. Presidente	826843000	[illegible]
TECNICA PEMBA. ENG. CO	MARTINHO VACALA	TECNICO	845152260	marthouvala@SIZ.Gmail.com.
B. Mahate	Rodrigues [illegible]	Secretário B.	823144329	[illegible]
Alto - Jingone	Gouveia [illegible]	Representante	865101218	[illegible]
[illegible]	[illegible]	Representante	829198146	[illegible]
SECRETARIA PROVINC	ALBERTO ISIDRO	TÉCNICO	825482031	albisidro@gmail.com
C. Mondlane	Armando [illegible]	Adj - secret. do B.	824109770	[illegible]
B. Mieze	Assane Jassine	Chefe do B.	863139589	[illegible]

Comité da Cidade	Atanásio Amba	Secret. Org.	828138720	atanasioamba@gmail.com
Bairro / Cariaco	Adelino A. Saude	secretario B.	823898581	–
Bairro Natite	Cecilio A. M.	Secret B.	827701240	

REUNIÃO DE CONSULTA PÚBLICA DO PROJECTO DE ABASTECIMENTO DE ÁGUA E APOIO INSTITUTIONAL (WASIS II)
QUADRO DE POLÍTICAS DE GESTÃO AMBIENTAL E SOCIAL

FOLHA DE REGISTO DE PARTICIPANTES

DATA DA REUNIAO: 18 de Maio de 2015 **PROVÍNCIA:** TETE
LOCAL DA REUNIÃO: Tete, Hotel Zambeze **PARTICIPANTES:** 15 participantes

INSTITUIÇÃO	NOME DO PARTICIPANTE	POSIÇÃO	TELEFONE	E-MAIL
Consultec	Tânia Diniz	coordenadora Adjunta de Projecto	821501847	taniacsd@consultec.co.mz
TDM	João Duarte	Chefe de Operações	825023170	jduarte@tdm.mz
DPS-TETE	Jorge Real	Chefe Planif.	825978600	jjorgemario.real@yahoo.com
Associação Mpadui	Lázaro Weta	Presidente	824216146	
UPCT	Nelson Tembo	Técnico	849157565	upctete@gmail.com
SIIAE_Cidade Tete	Elisa Cherene	Tecnica	826911200	cherene.elisa@yahoo.com.br
ARA-ZAMBEZE	Manuel José	Hidrólogo	827606601	mahunguanamanuel@gmail.com
ARA-Zambeze	Osvaldo Moiambo	Ambientalista	828856078	moiambo03@gmail.com
FIPAG	Gerbaldino Zeca	Economista	827382355	garcicazeca@gmail.com
FIPAG	Wache Matavele	Tecnico	821457860	wachematavele@gmail.com
FIPAG	Alex Chiluvane	Hidraulico	82-0895725	alexsollyw@yahoo.com.br
FIPAG	Kátia Zacarias	Directora	84303034	kzacarias@fipag.co.mz

Arlindo				
União dos c. Vinharta	Arlindo Arcelino	Pres. Fiscal da	824420774	
nda		união		
Fipag sede	Milton Macy	Tec. [illegible]	848611330	[illegible]@[illegible].com

APPENDIX 2: MITADER PRE-ASSESSMENT FORM ("FICHA DE PRE-AVALIAÇÃO")

Environmental Information for Project Development

1 Name of project:

2 Type of activities:

a) Tourism : ----------

b) Industrial : ----------

c) Agricultural: ----------

d) Other : ----------

specify: ----------

3 Identification of components: : ----------

4 Contact: ----------

5 Location of activities:

5.1 Administrative Localization (town, city, district, province, geographical position)

5.2 Insertion: (Urban – Rural)

6 Zoning:

Residential : ----------

Industrial : ----------

Services : ----------

Parks/gardens: ----------

7 Description of activities

7.1 Infrastructures and dimensions (attach map, etc.) : ----------

7.2 Associated activities:----------

7.3 Short description of technology operation:----------

7.4 Principal and complementary activities:----------

7.5 Type, origin and number of workers: ----------

7.6 Type, origin and quantity of primary material: ----------

7.7 Chemical product proposed of use ----------

7.8 Type, origin and quantity of water and energy resource: ----------

7.9 Type, origin and quantity of combustibles and oils proposed to use: primary material: ----------

7.10 Other necessary resources : ----------

8 Land ownership (legal situation, owners, modality of acquiring, etc.) : ----------

9 Alternatives for location of activities: ----------

(implementation justification, etc.)

10 Short information on local and regional environmental references:

10.1 Physical Characteristics for implementation of activities:

Plains

Plateau

Valley

Mountains

10.2 Principal Ecosystems:

River

Lake

Sea

Land

10.3 Location/zone:

Coastal Zone

Continental Zone

Island

10.4 Type of principal vegetation:

Flora

Savana

Others (specify)

10.5 Land use:

Residential

Industrial

Protected area

Others (specify)

10.6 Principal existing infrastructures in the protect area: ----------

11 Complementary Information:

Location map

Other information related to the project activities

APPENDIX 3: PROPOSED ENVIRONMENTAL AND SOCIAL SCREENING FORM

Project title……..

Project number…….

Project type……..

Name of district for infrastructure rehabilitation/construction……

Name of Executing Agent……

Date: ……

Name of the Approving Authority ……

PART A: BRIEF DESCRIPTION OF THE PROPOSED ACTIVITIES

Please provide brief information on the type and scale of the construction/rehabilitation activity (total area, required land, approximate size of floor area).

_____
_____
_____
_____
_____

Please provide information regarding actions needed during the construction of facilities including support/ancillary structures and activities required to build them, e.g. need for borrow pits, energy and water pipes/lines installations, access road etc.

_____
_____
_____
_____

Please describe how the construction/rehabilitation activities will be carried out, including complementary activities and infrastructures and resources required e.g. roads, disposal site, water supply, energy requirement, human resource etc.

_____
_____
_____
_____

PART B: BRIEF DESCRIPTION OF THE ENVIRONMENTAL SITUATION AND

IDENTIFICATION OF ENVIRONMENTAL AND SOCIAL IMPACTS

Please describe the proposed infrastructures location, sitting; surroundings (include a map)

_____
_____
_____
_____

Describe the land formation, topography, vegetation in/adjacent to the activity area

_____
_____
_____

Estimate and indicate where vegetation might need to be cleared.

_____
_____
_____
_____

PART C: OTHER ENVIRONMENTAL ASPECTS

#	Environmental and social aspect	Yes	No	Don't Know
	Is the site zoned for the proposed land-use?			
	Are there any environmentally sensitive areas or threatened species (specify below) that could be adversely affected by the project?			
	Is there any intact natural forests?			
	Is there any surface water courses, natural springs?			
	Is the water table close to the surface? i.e. 0,5 m or less?			
	Are there any wetlands (lakes, rivers, swamp, seasonally inundated areas) in the proximity of the site?			
	Is there any area of high biodiversity?			
	Are there habitats of endangered/threatened or rare species for which protection is required under the Mozambican national law/local law and/or international agreements			
	Is there a possibility that, due to construction/rehabilitation works and subsequent operation of the infrastructure, the river and lake ecology will be negatively affected with regards to its water quality and quantity?			
	Is the site (or its complementary facilities) located within/adjacent to any protected areas designated by the government (national park, national reserve, world heritage site etc.)?			
	Is the infrastructure likely to alter any historical, archaeological, cultural heritage traditional (sacred, ritual area) site or require excavation near same?			
	Will the project involve any involuntary land acquisition?			
	Will there be any voluntary land acquisition?			
	Will the activities be located in any vacant public land?			
	Is the site located in any or near polluted area (near a waste dump)?			
	Is the site located in an area of steep slope and or susceptible to			

	landslides or erosion of soils?			
	Is the site located to agricultural land?			
	Is the site located in the proximities of tourism activities?			
	Is the project site susceptible to natural disasters (flooding, fire, cyclones and earth quake)?			
	Is the site located in area of population concentration points (schools, markets, health facilities, water sources and commercial areas)?			
	Will the construction/rehabilitation activities result in the permanent or temporary loss of crops, fruit trees and household infra-structure (such as granaries, outside toilets and kitchens, livestock?			
	Will the construction/rehabilitation works interfere with or block access, routes etc (for people, livestock and wildlife) or traffic routing and flows?			
	Will the operating noise level exceed the allowable noise limits?			
	Will the construction/rehabilitation works require large number of staff and laborers; large/long-term construction camp?			
	Will the activities result in emission of large amounts of dust, hazardous fumes?			
	Will the construction/rehabilitation works generate solid or liquid wastes? (including human excreta/sewage, asbestos)			
	If "Yes", does the architectural plan include provisions for their adequate collection and disposal, particularly asbestos?			
	Are the construction/rehabilitation activities prone to hazards, risks and could they result in accidents and injuries to workers during construction or operation?			
	Will the operation involve use of considerable amounts of natural resources (construction materials, water spillage, land, energy from biomass etc.) or may lead to their depletion or degradation at points of source?			
	Has public consultation and participation been sought?			

Name, job title, and contact details of the person responsible for filling the Form:

Name: ----------

Job title: ----------

Telephone numbers: ----------

Fax Number: ----------

E-mail address: ----------

Date: ----------

Signature: ----------

PART D: MITIGATION MEASURES

For all "Yes" responses, please briefly describe the measures taken to this effect. Subsequent to completion of the present Environmental and Social Screening Form, the analysis by the District Environmental Commission will follow in order to classify the activity into one of the categories A, B or C.

APPENDIX 4: ENVIRONMENTAL AND SOCIAL CHECKLIST

For each activity proposed, fill the corresponding section on the checklist;

Civil work activity	**Issue to be addressed**	**Yes**	**No**
Construction/rehabilitation	Are there agricultural lands in the proximity of the site (cultivated or non-cultivated lands) or any other natural resources likely to be affected by construction/rehabilitation works? Are there appropriate facilities to handle wastes resulting from the proposed construction/rehabilitation works? Will the construction/rehabilitation works require clearing of vegetation and excavation of soils? Will the use of local construction materials (borrow pit materials for brick manufacturing, need for firewood and timber harvesting) be required during the construction/ rehabilitation works? Are there pollution risks of surface and groundwater as a result of the proposed construction/ rehabilitation works? Are there physical/cultural resources on the site that may be affected?		

Where the response is "YES" in the above Table, reference should be made to the proposed mitigation measures in the Table on section 7.5, describing the relevant mitigation measures listed.

APPENDIX 5: TERMS OF REFERENCE FOR THE PROPOSED ENVIRONMENTAL OFFICER FOR FIPAG

ENVIRONMENTAL OFFICER (EO): Reporting to the FIPAG Head of Environmental Department the Environment Officer (EO) will serve as the main contact person on environment and social and health and safety issues of FIPAG's projects' at the Cities. He shall ensure that the environmental and social mitigation measures (including resettlement) are followed for all FIPAG's activities. This position will be based in Tete City, and the EO will also be responsible for the Moatize Water Supply project.

Duties:

- Assist FIPAG in identifying and managing: 1) environmental, social, health, and safety impacts of FIPAG projects, 2) relevant environmental requirements per Mozambique environmental law and Donors' Environmental and Social Safeguard Policies, and 3) ensure the implementation of relevant mitigation measures.
- Ensure compliance of the proposed project activities with relevant Mozambique environmental laws and regulations, and the World Bank Policy on Involuntary Resettlement.
- Provide support to FIPAG's efforts to obtain environmental licenses from relevant government authorities;
- Organize and manage required sessions for stakeholders participation sessions in environmental and social impact issues, in accordance with approved guidelines and procedures;
- Review the contractors' recommendations and ensure that final reception of goods, works or services and for the corresponding closing of contracts are carried out in full compliance with the environmental management plans;
- Ensure that all Environmental Management Plans, Resettlement Action plans and other environmental and social plans are properly and effectively developed, managed and implemented;
- Ensure that any complaints, related to environmental and social impact issues, arising from the implementation of FIPAG activities are resolved in a timely manner and properly documented.
- Monitor the implementation of the Resettlement Action Plans and ensure effective communication with Project Affected Persons (PAPs);
- Other tasks and responsibilities as requested by the FIPAG Executive Director.
- Through Supervisor's Environmental Controller Officer, ensure the implementation, by the contractor, of the environmental, health and safety requirements set out in the project's EMP;

- Communicate issues of environmental and occupational health and safety to FIPAG manager at city level highlighting the need to address specific urgent environmental, health and safety measures;
- Maintain liaison with the Supervisor's teams and project managers, ensuring that they are informed about environmental and health and safety management aspects related to their projects;
- Ensure that non-compliance with the requirements with environmental, health and safety are report to FIPAG by the Supervisor;
- Work with the Supervisors' Environmental Controller to establish procedures for internal and external communication, providing information on emergency and activities taken – This can also be used by FIPAG's communication specialist for messaging of important project's issues to stakeholders;
- Prepare regular reports regarding the projects' performance with regards to implementation of environmental, health and safety management requirements as established on the EMPs;
- Carry out technical site audits/monitoring and point out any non-conformity with the implementation of environmental, health and safety requirements to the Supervisors, and follow-up actions for corrections;
- In coordination with the Supervisor's Environmental Controller Officer, analyze the Works Program and collaborate in the programming and implementation of the environmental, health and safety activities proposed by the Contractors.
- Ensure that the Supervisors are undertaking the required control of safety conditions of materials and equipment arriving at the project site;
- In coordination with Supervisors, ensure the supply and management of stocks of Collective Protective Equipment (CPE) and Personal Protective Equipment (PPE);
- Take corrective measures or organize their implementation in order to eliminate risks ;
- Co-ordinate the procedures to be taken in the event of a serious accident ;

Qualifications and Experience:

- Advanced degree in Natural or Social Science (academic degree in water/environment related fields is preferable)
- At least 5 years of experience with environmental/social impact assessment and mitigation management
- Experience with the implementation of infrastructure (roads/water/sanitation construction/rehabilitation) projects required.
- Familiarity with Mozambican environmental laws and regulations and resettlement practices.
- Proven experience in undertaking and reviewing environmental and social impact assessments.
- Experience with overseeing resettlement activities and familiarity with implementing the World Bank Policy on Involuntary Resettlement (OP 4.12) is highly desirable.
- Ability to interact constructively with both technical and construction experts and Project Affected People is required.
- Written and verbal fluency in both Portuguese and English is required

- Responsible and flexible attitude and capable of working with minimal supervision, including ability to handle a variety of tasks and demands.
- Computer skills (MS office, internet).

All applications for this position must be submitted via postal mail or e-mail to:

Applications must be received no later than **August 20, 2016 at 2pm.** Preference will be given to individuals working or living in Mozambique. To receive consideration, applications must include i) a CV that demonstrates the applicant's qualifications and experience, and ii) a cover letter (one page maximum) explaining what the applicant foresees as the challenges of the position and how their experience and education would allow them to meet those challenges. All applications will be treated in the strictest confidence. Only applicants selected for interviews will be contacted.