PROJECT: INTEGRATED URBAN WATER AND SANITATION PROJECT
COUNTRY: MALAWI

ENVIRONMENTAL AND SOCIAL MANAGEMENT SUMMARY

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ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) SUMMARY

Project Title: Integrated Urban Water Supply and Sanitation
Project Number: P-MW-E00-007
Country: Malawi
Department: OWAS
Division: OWAS.2
Project Category: Category 2

1. Introduction

The Government of Malawi, through the Northern Region Water Board (NRWB) has identified funding from the African Development Bank (AfDB) and the OPEC Fund for International Development OFID for the construction of Mzimba Water Supply Scheme project whose main objective is to improve the existing water supply services to Mzimba Boma and surrounding areas. In addition, the project aims to sustainably supply water to the proposed Mombera University site, which the Government of Malawi (GoM) intends to establish in the near future.

The Northern Region Water Board, with support from the African Development Bank and the OPEC Fund for International Development (OFID) intends to upgrade and rehabilitate Mzimba Water Supply Scheme and to extend the Water Supply services from Kamwazeka Village, near the National Food Reserve Agency (NFRA) warehouses to the proposed Mombera University project site. The Board hired the services of Water, Waste and Environment Consultants to prepare an Environmental and Social Management Plan (ESMP) for the proposed project.

The proposed works include catchment protection, sanitation improvement, rehabilitation and upgrading of water supply system. In addition to the supply scheme rehabilitation and upgrading works, the Government now intends to extend the water supply services further to the Mombera University site by constructing water storage tanks, installing booster pumps and constructing a distribution pipeline along the Mzimba-Kasungu M9 Road.

To ensure that the project benefits everyone in the community positively, both during the construction phase and during the operation phase; and to encourage ownership, gender mainstreaming will be at the center of the implementation of the activities. NRWB, the contractor and key stakeholders will ensure that employment opportunities to be created by the project are inclusive of women and the youth groups to eliminate gender imbalances. Where appropriate, employment of local people from the project area will be prioritised. Representation of women in decision making positions at all levels in the water supply scheme and important committees, for example the catchment management committee, will be encouraged.

The Environmental and Social Management Plan (ESMP) has been prepared to identify the environmental and social management and mitigation actions required to implement the project in accordance with the requirements of the African Development Bank (AfDB) and applicable
national legislation and regulations of Malawi. The ESMP provides an overview of the environmental and social baseline conditions on the direct impacted areas, summarizes the potential impacts associated with the proposed project and sets out the management measures required to mitigate any potential impacts. The ESMP is to be utilized by the contractor to be commissioned by NWRB for the project and will form the basis of site-specific management plans that will be prepared by the contractor and sub-contractors as part of their construction methodology prior to works commencing.

2. Brief Project Description and Key Components

Mzimba Water Supply Scheme is one of the schemes operated by the Northern Region Water Board. The scheme was established in 1958 and since then it has undergone a number of expansion and rehabilitation works in order to improve service delivery to the target population. The rationale for upgrading and rehabilitating the scheme is to improve the water supply service delivery to Mzimba Town and immediate surrounding areas; and to provide for sustainable expansion of the scheme in future, in response to the socio-economic development in the target supply area.

According to a feasibility study by Sogreah Consultants, the projected water demand for Mzimba Boma by 2020 and 2025 is 5,000m3 and 7,000m3 per day, respectively. Yet the current average water treatment capacity for Mzimba Water Supply Scheme is 1,700m3 per day. The current treatment capacity is even lower than the projected water demand for 2010 (i.e. 1,900 m3 per day). Data obtained from Mzimba Water Supply Scheme office indicates that the current water demand stands at 3,000m3 per day. The existing treatment plant was designed for a maximum capacity of 1,500 m3 per day; although at present an average of 1,700 m3 of water is treated per day.

The proposed project is intended to expand the Water Treatment Plant facilities and increase storage capacity by constructing three service tanks at Mzimba Boma. The first tank of 3,000m³ will be constructed near the National Food Reserve Authority Warehouse, to receive water from the Treatment Plant and to supply the lower zone settlements. The second tank of 2000m³ will be constructed at Kazomba Hill, 4.2 km from the 3,000m³ tank along the Mzimba – Lilongwe Road, to supply the upper zone settlements; and the third 300m³ tank will be constructed at Mombera University campus, a distance of 6.8km from Kazomba Tank along the Mzimba – Lilongwe Road. In addition, a pump-station to convey water to the proposed University of Mombera site will be constructed.

The main project components include:

*Upgrading of the existing Water Treatment Plant:* The existing treatment plant will be upgraded by: (i) Construction of additional 4 No. sedimentation tanks; (ii) Construction of 2 No. flocculation units - one for the existing sedimentation tanks and another for the new sedimentation tanks; (iii) Installation of 2 No. pumps to boost raw water pressure from the existing sedimentation tanks before entering the existing pressure filters; (iv) Construction of 3
No. rapid gravity filters; (v) Construction of 120m3 backwash water tank; (vi) Installation of air blower; and (vii) Construction of a chemical dosing house and accessories.

**Upgrading of the Transmission Pipeline:** Upgrading of the transmission pipeline will involve replacing of the existing 250mm pipeline, which is old, with a 500mm pipeline. The pipeline will be laid from the treatment plant to the service tank in town, for a distance of about 12km. Two and a half hectares of vegetation will be cleared for installation of the 12km long transmission pipeline, with a 2 metres wide way leave, from Kazomba service tank to the proposed Mombera University site.

**Access Road:** A 6m wide area will be cleared along the 12km transmission pipeline, from the treatment plant to the service tank, to establish the access road. The access road will be 4 metres wide, with an additional 2 metres wide strip, to provide the way leave for the transmission pipeline. A total land area of about 7.2ha will be cleared of vegetation to allow for the construction of the access road and the transmission pipeline.

**Distribution Pipelines:** The distribution pipe network will be upgraded by replacing small pipelines with larger ones. In addition, the distribution pipelines will be extended to the newly developed areas.

**Water Storage Tanks:** Three water service tanks will be constructed. One tank of 3,000m3 will supply water to the low-lying areas and will also serve as a well for water to be pumped to another tank. A 2,000m3 tank will be constructed to supply water to the high-lying areas and will also serve as a well for water to be pumped to a tank to be constructed at the proposed Mombera University site, where a 500m3 tank will be constructed to supply water to the proposed university.

**Catchment Management:** Catchment management activities will include re-afforestation activities, which will involve planting 500,000 tree seedlings and supporting local communities with 100,000 tree seedlings so that they can establish woodlots; as well as patrolling the area to ensure that people do not carry out activities that would degrade the catchment. Communities around the catchment area will be sensitised and mobilised to take part in the management of the water catchment area. Seedlings will be purchased from the communities and some of the communities will be employed on temporary basis to assist the NRWB to plant and take care of the planted trees.

**Improved Sanitation and Hygiene Promotion:** Improved sanitation and hygiene will be promoted through: (i) Building capacity of the communities to increase their knowledge on improved sanitation and hygiene; (ii) Conducting awareness campaigns to eradicate open-defecation; (iii) Conducting hygiene and sanitation marketing; and (iv) Training artisans and empowering them with basic tools of constructing improved latrines.

**Sanitation Masterplan Development:** A Strategic Sanitation Plan will be prepared for Mzimba Town as part of the project. Furthermore, the project will provide a vehicle (plant) for solid waste collection and disposal, as well as tools such as wheelbarrows, shovels and rakes. These will be for use by the District Council.
3. Major Environmental and Social Impacts and Climate Change Risk

Positive impacts which are expected to be generated by the project during the operational phase include: (i) Improved availability of and accessibility to potable water to communities around Kazomba and the proposed new Mombera University site and Mzimba Town; (ii) improved sanitation facilities at market places and in schools; (iii) Reduced prevalence of water-borne diseases associated with consumption of unsafe water from boreholes and wells. Sanitation related diseases will also be reduced through improved hygiene and sanitation in the project area; (iv) Urbanisation of areas peripheral to Mzimba Town such as Kazomba area and the proposed Mombera University site will result in increased demand for infrastructure and services, thereby improving the socio-economic welfare of the communities concerned; (v) Increase in revenue generation from new water connections by the NRWB while the Government will get more revenue from various forms of taxes on wages, goods and services.

The negative impacts, which will occur during the construction phase include: (i) Soil erosion as a result of land clearing and excavation works and a reduced rate of vegetative recovery on affected soils will occur due to soil compaction; (ii) Pollution and siltation of surrounding water courses, especially during the rainy season, due to soil erosion and washout of oil spills and solid waste; (iii) Dust and fugitive emissions due to land clearing, excavation and transportation of construction materials will lead to air quality degradation; (iv) Loss of vegetation and reduced biodiversity quality in the area; (v) Increase in prevalence of sexually transmitted infections (STIs), including HIV and AIDS due to influx of sex workers into the area. Adverse impacts during the operational phase include: (i) modification of the landscape due to construction of water storage tanks; (ii) Slight alteration of natural river flow, ecosystems and aquatic habitat due to the increased abstraction of raw water from Mzimba River as a result of expansion of the water supply scheme.

Mzimba District, in general, and the project area in particular, are not spared from climate change and related adverse effects; hence necessitating the urgent need for authorities in the district to integrate climate change issues and adaptation measures in socio-economic development plans. The area around Mzimba River and the intake point at Machecheta are significantly affected by deforestation due to clearing of land for upland agriculture and felling of trees for fuel wood and timber. The consequential loss of tree cover and vegetation, as a result of the deforestation, exposes the area to risks of increased runoff speed, exposure to high raindrop impacts and increased wind speed; as well as siltation of water bodies. These factors have the potential to enhance the severity of disasters such as flooding, hail storms and drought associated with climate change. Recent consultations with M’mbelwa District Council officials and other key informants revealed that Mzimba Boma and other areas in the district experienced some floods or heavy runoff during the rainy season of 2014.

Some measures have been included in the project design, to protect the infrastructure from damages of possible flooding in the area. These measures include construction of check dams
and stone pitching to control banks from collapsing and river beds from erosion. The aim of these structures is to protect the backfilled soil in pipe trenches as well as pipe supports in the river banks for the proposed 12km long transmission pipeline to be installed from the water treatment plant to the service tank at Kaphuta Hill in Mzimba Town. The pipe supports and trenches will be at risk of being washed away during possible flooding due to the loose soils prevalent in the area. The catchment management activities of re-afforestation and patrolling against degradation will also protect the infrastructure of the treatment plant from the adverse effects of flooding. Mitigation measures for potential climate change induced hazards on the infrastructure to be constructed through the project, have been included in the environmental management plan.

4. Enhancement / Mitigation measures and Complimentary Initiatives

Enhancement measures proposed on the project include: (i) proactive Gender mainstreaming into the project, focusing on the employment opportunities to women, members of the vulnerable groups and youth in the area; in the catchment management programmes and other project activities; (ii) inclusion of women and representatives of vulnerable groups in important stakeholder meetings to determine their needs and wants as well as potential improvements as the project progresses; (iii) NRWB to sustain the desired performance of the intake and treatment works for Mzimba Water Supply Scheme through timely preventative maintenance of its facilities and provision of appropriate work inputs. This will enable the scheme to sustain reliable supply of potable water to its target consumers; (iv) Construction of sanitation facilities in schools, health centres and market places to improve women’s (especially girls) hygiene during menstruation as part of the project activities. (v) NRWB and other stakeholders i.e. Ministry of Health and NGOs, to sensitize communities about hygienic practices for handling water to avoid secondary contamination and promote proper sanitation practices among communities. (vi) NRWB to maintain and continually increase water storage capacity it to ensure as much storage as possible at all times to support consumers and communities in cases of drought. (vii) NRWB, Catchment Committee and relevant stakeholders to commence catchment rehabilitation works immediately after commencement of the project and to provide adequate financial and technical support to the catchment management programmes for their effectiveness.

On Climate Change, the mitigation actions proposed in the project are in alignment with the National Climate Change Policy priority 2 and includes catchment management activities which shall involve planting of 500,000 tree seedlings at degraded locations of Mzimba River Catchment area and provision of 100,000 tree seedlings to the communities for the establishment of community woodlots. This component shall support the Government’s programme on Reduction of Emissions from Deforestation and forest Degradation (REDD), as it will yield positive local as well as global socio-economic and environmental benefits through reduced Greenhouse gas emissions. The restored green areas, as a result of the catchment management activities, will in the long term, contribute to the absorption of carbon dioxide from the atmosphere, through photosynthesis. It is estimated that forested areas absorb between 10 and 20 tons of carbon dioxide per hectare each year. Re-afforestation of the entire 10.7 hectares, estimated to be cleared during construction, would, in the long term, contribute to absorption of
between 107 and 204 tonnes of carbon dioxide per year; contributing to reduction of greenhouse
gas effects. The planned catchment management activities will also help to increase the
resilience of communities near Mzimba River against impacts of flooding.

The mitigation measures proposed on the project include: (i) Ensure that vegetation is cleared
and excavations are done as designed to avoid unwarranted clearance of vegetation; (ii)
Rehabilitate affected land by tilling the soils to facilitate natural regeneration of vegetation; and
plant trees and grass immediately after construction works to minimise soil erosion by wind or
water; (iii) The routing pipe layouts and access roads should follow areas with as little vegetation
as possible; (iv) Minimize the number and length of access roads and use existing roads or tracks
as far as possible; (v) Ensure that construction vehicles and plant i.e. tippers, excavators,
compactors etc. use only designated access roads to avoid degradation of soils outside designated
zones; (vi) Sprinkle water on designated earth access roads and construction sites to minimise
dust emissions caused by movements of vehicles and plant; Provide appropriate personal
protective equipment (PPEs) such as mouth masks to construction workers to prevent inhaling of
dust and exhaust gas emissions; (vii) Sensitization of communities on health, hygiene and
HIV/AIDS awareness; (viii) Maintenance of downstream environmental flows from Mzimba
River based on approved supply scheme operation procedures to minimise the effects of flow
changes on the ecosystem and possible downstream communities.

Table 1: Summary of Environmental Mitigation and Management Costs

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Cost(MK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Management of all impacts on soil, water, flora and fauna through land</td>
<td>73,440 000</td>
</tr>
<tr>
<td></td>
<td>rehabilitation works</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Management of Destruction of marriages or family stabilities due to extra</td>
<td>10,000 000</td>
</tr>
<tr>
<td></td>
<td>disposable income by workers</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Management of Increase in unwanted pregnancies and school drop outs amongst</td>
<td>10,000 000</td>
</tr>
<tr>
<td></td>
<td>girls</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Management of Increase in prevalence of sexually transmitted infections</td>
<td>3,000 000</td>
</tr>
<tr>
<td></td>
<td>(STIs) due to extra disposable income by workers and migration of sex</td>
<td></td>
</tr>
<tr>
<td></td>
<td>workers into the project area</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Management of Increase in crime rate due to improvement in socio-economic</td>
<td>18,000 000</td>
</tr>
<tr>
<td></td>
<td>life of people in the area that will attract migration of criminals into</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the project area as well as job losses after construction</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Management of possible issues of unequal employment among men and women</td>
<td>10,000 000</td>
</tr>
<tr>
<td></td>
<td>and all related gender impacts</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Management of possible increased flooding risk and its threat to</td>
<td>9,000 000</td>
</tr>
<tr>
<td></td>
<td>infrastructure</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Management of climate change related hazards through promotion of</td>
<td>3,000 000</td>
</tr>
<tr>
<td></td>
<td>sustainable agricultural practices and checking urbanization in catchment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>area</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Possible management of land and property loss in acquiring land for solid</td>
<td>5,000 000</td>
</tr>
<tr>
<td></td>
<td>and liquid waste management facilities to be constructed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total:</td>
<td>141,440 000</td>
</tr>
</tbody>
</table>

The responsibility of implementing the ESMP is that of the contractor. The supervision of the
implementation of the ESMP shall be undertaken by the Supervising Engineer. Both the
Contractor and the Supervising Engineer shall engage Environmental and Social Experts in their
teams. The Contractor shall recruit a full time Environmental, Health and Safety Officer for the preparation of the Construction ESMP (CESMP) and for the day to day implementation of the CESMP of the project. The Supervising Engineer shall recruit an Environmental and Social Officer who shall visit the sites on a part time basis and prepare quarterly reports on the CESMP implementation. To ensure that the mitigation measures are taken on board by the Contractor, NRWB shall ensure that the project ESMP requirements are included as part of the Contract and Bidding documents.

5. Environmental and Social Monitoring Program

Environmental and Social Monitoring will be done to verify if predicted impacts have actually occurred and check that mitigation actions recommended in the CESMP are implemented and to check their effectiveness. Monitoring will also identify any unforeseen impacts that might arise from project implementation. Internal Monitoring for the CESMP shall be undertaken by NRWB Environmental Unit. Currently, the NRWB collaborates with Ward Counsellors, officers at District Council such as District Environmental Officer, District Forestry Officer, District Lands Officer and local chiefs in providing catchment protection activities.

Under the project, the District Environmental Officer will be responsible for reviewing the ESMP reports in order to align the activities with the provisions of the Environmental Management Act. S/he will also make appropriate recommendations to the District Council. The Forestry Officer will assist in providing technical advice on re-afforestation activities as part of the mitigation measures and catchment protection, while the Lands Officer will provide guidance during assessment of any compensation requirements for field crops where it will be necessary to do so. The Counsellors and Local chiefs will be key during community mobilization and sensitization. The Ministry of Labour will monitor the protection of workers from occupational hazards through the Occupational Safety and Health Department; and the Ministries of Gender and Education will assist in monitoring on issues related to potential increase in unwanted pregnancies and school drop outs amongst girls in the area due to the influx of workers.

External monitoring shall be done by the Department of Environmental Affairs (DEA) according to their regulatory mandate prescribed in the Environmental Management Act of 1997. Monitoring will be done through site inspection, review of grievances logged by stakeholders and ad hoc discussions with the beneficiary communities. Internal Monitoring will be undertaken quarterly over the construction period whereas external monitoring shall be done annually or as need arises.

Table 2: Summary of Environmental Monitoring Costs

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Cost(MK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monitoring of land rehabilitation works for restoration of biomass loss in the area</td>
<td>2,000,000</td>
</tr>
<tr>
<td>2</td>
<td>Monitoring of possible Soil degradation/ pollution by oil spillages and other construction pollutants</td>
<td>1,000,000</td>
</tr>
<tr>
<td>3</td>
<td>Monitoring Occupation diseases/disorders for workers due to exposure to dust and</td>
<td>1,000,000</td>
</tr>
<tr>
<td></td>
<td>Monitoring</td>
<td>Amount</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>4</td>
<td>Destruction of marriages or family stabilities due to extra disposable income by workers</td>
<td>900 000</td>
</tr>
<tr>
<td>5</td>
<td>Increase in unwanted pregnancies and school drop outs amongst girls</td>
<td>800 000</td>
</tr>
<tr>
<td>6</td>
<td>Increase in prevalence of sexually transmitted infections (STIs) due to extra disposable income by workers and migration of sex workers into the project area</td>
<td>900 000</td>
</tr>
<tr>
<td>7</td>
<td>Increase in crime rate due to improvement in socio-economic life of people in the area that will attract migration of criminals into the project area</td>
<td>1,000 000</td>
</tr>
<tr>
<td>8</td>
<td>Monitoring of gender impacts</td>
<td>1,000 000</td>
</tr>
<tr>
<td>9</td>
<td>Change of natural scenery of the project area</td>
<td>600,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>8,600,000</strong></td>
</tr>
</tbody>
</table>

### 6. Public Consultation and Disclosure Requirements

Public consultations were undertaken at various levels with stakeholders at the national level, and with the proposed project beneficiaries to elicit the perceptions of the different stakeholders with regard to the positive and negative impacts the project. Initial consultations were done in the District in 2009 and additional consultations were done in June 2015 during the update of the study reports, ESMP and development of the Project Implementation Manual.

During the preparation of the ESMP Report, discussions were held with the beneficiaries. A number of stakeholders were consulted and these included Government Ministries, Departments and Agencies (MDAs), the project proponent, members of communities within the water supply zones for Mzimba Water Supply Scheme. The Stakeholders included Management and staff of Mzimba Water Supply Scheme in Mzimba; Ministry of Gender and Women Affairs in Lilongwe; Environmental Affairs Department in Lilongwe and Mzimba; Forestry Department in Mzimba; Director of Planning and Development and support staff; Members of Mzimba DESC; Community members in Mzimba Town, Kamwazeka village and Kazomba village. Focus group discussions were also held with the chairs and members of the community at communal water points.

Overall there was broad support for the project. The stakeholders supported the proposed expansion of the treatment works to be able to increase the quality and quantity of water supply to unserved areas such as Mzimba Boma and the settlements. The Forestry Department fully supported the Catchment Management initiatives and recommended the establishment of Catchment Management Committee as prescribed in the Water Resources Act. The stakeholders comments and concerns have been incorporated in the project planning. Consultations will continue during Project Implementation as outlined in the Project Implementation Manual.

During the course of the ESMP implementation, NRWB will continuously consult key and important stakeholders to inform them about the implementation of the project as well the ESMP. These consultations will aim to: (i) Keep local communities updated on progress of project activities; (ii) Seek feedback on project activities; (iii) Encourage community participation in
implementation of mitigation activities (where applicable); and (iv) Disseminate the ESMP content and its implementation procedure to them. Continuous public consultation will help to ensure that any grievances by the local community are addressed in time, and this can guarantee that the project will be supported by the local community.

In terms of public disclosure, copies of ESMP and its summary shall be shared with relevant stakeholders such as local communities, relevant government institutions, schools, hospitals, civil society organizations among others. The purpose will be to inform them about the project activities; negative environmental and social impacts expected from project and proposed mitigations. The ESMP shall be disclosed on the AfDB website for a period not less than 30 days prior to the presentation of the project to the Board for consideration.

7. Institutional Arrangements and Capacity Building Requirements

NRWB has an Environmental Unit which is responsible for implementing and monitoring environmental, social and climate change activities. The Environmental Unit has planted a total of 3,000 tree seedlings at Mzimba River catchment. The Board has adequate capacity to implement and monitor the issues as detailed in the ESMP. For example, there is a team of 3 Environmental Officers who are responsible for environmental and social safeguard issues. Over the years, the officers have received thorough grounding and experience in environmental and social safeguards through other similarly donor funded projects. All the officers are graduates in environmental related fields with one holding a post-graduate degree in environmental monitoring. Two of the officers based at Head Office have also gone through a week long training in Environmental and Social Safeguards in Lusaka, Zambia and Dar es Saalam, Tanzania respectively in 2013 under the World Bank sponsorship.

While 2 officers are stationed at Head Office, the other one will be on site in Mzimba Scheme where the project will be implemented. The officer at Mzimba scheme shall be responsible for day to day monitoring of implementation of social and environmental issues. A site inspection form shall be prepared for monitoring the activities. Those at Head Office shall provide backstopping services and make monthly review of progress on implementation ESMP and provide progress report during the monthly Site Meetings.

Table 3: Institutional Responsibility for the Implementation of ESMP

<table>
<thead>
<tr>
<th>Organization</th>
<th>Designation</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 AfDB/ OPIC</td>
<td>Donor/Funder</td>
<td>• To provide financial support to the project and ESMP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To provide technical and supervisory support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To review environmental and social impacts Report regularly</td>
</tr>
<tr>
<td>2 NRWB</td>
<td>Borrower and</td>
<td>• To oversee and assist the Contractor and</td>
</tr>
<tr>
<td>Organization</td>
<td>Designation</td>
<td>Responsibility</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| management              | project implementers             | Environmental experts in ESMP Implementation during construction  
  • To ensure the effective implementation of ESMP by putting in place monitoring and evaluation programs for ESMP  
  • Provide strategic, policy and operational guidance |
| 3 Contractor            | Contractor                       | • To execute the implementation of the project  
  • To implement the ESMP during Construction |
| 4 NRWB & Supervising consultant | Supervisors                     | Co-ordinates implementation of ESMP i.e.  
  • Implementation of mitigation Plan  
  • Monitors mitigation plan and health safety management plan(implementation of monitoring plan)  
  • Provides progress report of implementation of ESMP to management and DEA  
  • Oversee the inter-institutional coordination for environmental mitigation, monitoring and supervision |
| 5 District Council/ local government | Supervisors                  | • Supports implementation of mitigation Plan through regular monitoring  
  • Mobilization of communities on catchment management activities and sensitization programs.  
  • Supports monitoring of the mitigation plan and health safety management plan  
  • To ensure that the project and the contractor do not violate all public policies/rules and regulation |
| 6 Local community water committees | Supervisory and advisory roles | • Liaison with the contractor and NRWB in the implementation of ESMP  
  • Provide specific and localized advise on water resources management, and especially in the catchment areas |
| 7 DEA                   | Supervisory and advisory role    | • To ensure NRWB and Contractors adhere to the existing environmental policy requirement in the course of Project and ESMP implementation  
  • To conduct planned and unplanned site inspection so as to enforce environmental policy compliance |

8. Estimated Costs

The total cost for ESMP implementation is estimated at MWK152,200,000. The cost overview associated with the various proposed measures, monitoring program, and consultations is presented in Table 4.
Table 4: Summary ESMP Costs

<table>
<thead>
<tr>
<th>Activities/ Measure</th>
<th>Relative cost (MWK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cost of mitigation measures</td>
<td>141,440,000</td>
</tr>
<tr>
<td>Cost for Monitoring Plan</td>
<td>8,600,000</td>
</tr>
<tr>
<td>Cost for Consultancy for ESMP Implementation (Environmentalist &amp; Sociologist-36 Months, @ 60,000MKW)</td>
<td>2,160,000</td>
</tr>
<tr>
<td>TOTAL COST (estimated)</td>
<td>152,200,000</td>
</tr>
</tbody>
</table>

9. Implementation Schedule and Reporting

NRWB is the Implementing Agency (IA) whereas the Ministry of Agriculture, Irrigation and Water Development (MoAIWD) will provide overall policy direction to the NRWB. NRWB which is a parastatal organization under the MoAIWD was established in 1996 following the enactment of the Waterworks Act No. 17 of 1995. The Board is responsible for provision of water supply services to the urban centres in the northern region of Malawi including Mzimba Town. The Board is governed by the Board of Directors who are appointed every two years by the Government. It has an Executive Management (Corporate Management Team – CMT) headed by the Chief Executive Officer.

Under the Technical Services Department, NRWB has an established Project Implementation Unit (PIU) which is staffed with several officers. For the implementation of this project, the following will be the key personnel: PIU Manager, Water and Sanitation Engineer, Project Accountant, Procurement Expert, Community Mobilization Officer and Social and Environmental Officer.

The NRWB will prepare progress reports on a quarterly basis which will highlight the progress towards meeting the project’s targets as will be reflected in the project result based logical framework and the progress in implementation of the ESMP. Apart from reports, monitoring and evaluation will also be undertaken through supervision visits/missions. Quarterly supervision visits and review meetings by the Government and NRWB will be essential to track implementation progress, challenges and strategically plan the way forward. The Bank’s Environmental and Social safeguards unit shall undertake an Annual visit or mid-term review mission to verify the progress of implementation of the ESMP.

10. Conclusion

This project involves improvement of water supply and sanitation system in Mzimba Town. The project is aimed at sustainable improvement in the delivery of water supply services to the
communities of Mzimba Boma and surrounding areas. Hence it is already intended to improve the socio-economic wellbeing of the targeted communities and as such, social impacts should be avoided or minimized to the greatest extent possible.

For sustainability of the water supply scheme, the proposed catchment management activities must be efficiently and effectively implemented, in collaboration with the expert stakeholder institutions. NRWB should use the provisions of the Water Resources Act 2013 to set up a Catchment Management Committee, train the committee and provide the necessary support and required resources. The committees should be gender balanced. NRWB and the respective key stakeholders are expected to ensure that employment opportunities to be created by the project are inclusive of women and the youth groups, in an endeavor to eliminate gender imbalances prevailing in the proposed project area. Where appropriate, employment of local people from the project area must be prioritized to encourage community ownership and sustainability of the project.

In general, the project has been found to be environmentally, socially and economically beneficial and is expected to contribute towards poverty alleviation. The socio-economic benefits accrued from the project include improved health and quality of life among the local residents due provision of reliable and safe water supply and sanitation. The health of the host communities is expected to improve due to increased access to clean, safe potable water, and improved sanitation. Economically the communities will benefit due to savings from money spent on medical services due to reduced incidence of water borne diseases, and increased productivity due to increased availability of water supply for various productive activities. Another economic benefit will accrue from increased revenue collection by NRWB due to increased supply.

From an environmental point of view, the project will help to promote awareness among the local communities on the importance of protecting catchment areas as part of the integrated water resource management. Although the project has been found to have positive impacts there are also some adverse (negative) impacts. In this regards the mitigation measures have been proposed for negative impacts and enhancement measures for positive impacts. In addition, the Environmental and Social Management Plan (ESMP) has been developed to implement the proposed mitigation measures. Furthermore, the Environmental and Social Monitoring Plan has been incorporated into the ESMP to ensure that the proposed mitigation measures are complied with during project implementation. The design of the project has included comprehensive interventions (including catchment management initiatives) that will facilitate provision of water supply services in an environmentally sustainable and socially acceptable manner. It is expected therefore that the NRWB and all the key stakeholders will combine their efforts to ensure effective and efficient implementation of this ESMP for sustainability of the project.

It is therefore recommended that the project should proceed without delay as long as the recommendations advanced in the ESMP are fully and efficiently implemented.