



REPUBLIC OF MOZAMBIQUE
MINISTRY OF PUBLIC WORKS, HOUSING AND WATER RESOURCES
NATIONAL DIRECTORATE FOR WATER RESOURCES MANAGEMENT
DEPARTMENT OF WATER RESOURCES MANAGEMENT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

for

Construction Project for the Machangulo Water Supply System, Matutuine District

Subgrantee: - Ministry of Public Works, Housing and Water Resources - National Directorate of Water Resources Management
Address: Rua da Imprensa, Plot no 162
PO Box: 1611; MAPUTO
Contact: Subgrantee Project Manager: Hilario Pereira on 21322191/2; Fax: 21312571; Cel: 823097310, hpereira@dngrh.gov.mz

ESS Consultant: Arcangelo Paulo Passela, No 70 Joaquim Chissano Ave, 1st Floor, Maputo Paulo Passela I
ppassela@gmail.com I +258843289330

1. Location of project area

The District of Matutuine is located in the South of Mozambique, in the extreme South of the province of Maputo, between the 26° and 27° parallels of latitude South and between 32° and 33° of longitude East. It is bordered to the North by Maputo Bay, to the South by the Republic of South Africa through the Province of KwaZulu-Natal, to the East the Indian Ocean, and to the West with the Kingdom of Eswatini. The District has an area of 5.403 km² with a population of 37 166 inhabitants.

The District of Matutuine has five (5) Administrative Posts, namely: Bela Vista, Catembe-Nsime, Catuane, Machangulo and Zitundo. The Administrative Post of Machangulo comprises four (04) communities: Ngomene, Mabuluco, Ndelane and Santa-Maria being this is last one the headquarters of the Machangulo Administrative Post.

2. Description of the work that the ESMP will be applied

Activities directly related to the Project

Phase-I

- i) Procurement of goods and services;
- ii) Inventory of the existing water sources;
- iii) Assessment of water demand for different uses (domestic water supply, small scale irrigation and others);
- iv) Hydrogeological assessment including geophysical survey and identification of the site(s) for groundwater exploitation;
- v) Stakeholders consultation on the relevance of the project;
- vi) Project management and administration of contracts for goods and services; and
- vii) Monitoring and evaluation.

Phase-II

- Assessment of willingness to pay for water consumption;
- Construction of Water Supply system for Machangulo area which will include the following activities:
 - i) Pumping test for the borehole to be drilled in selected site;
 - ii) Supply and installation of solar system to produce sufficient power to the system (borehole pump and treatment plant) and all its accessories;
 - iii) Construction in metallic structure, of the pressure towers, in which four (04) 10,000 liters tanks will be installed (includes supply of all accessories that allow its full operation);
 - iv) Supply and installation of four (04) tanks of 10,000 liters each;
 - v) Construction of 1 standpipe with 2 taps and supply of all accessories for their connection to the network including water drainage channels;
 - vi) Supply and installation of all mechanical and hydraulic components of the water supply system;
 - vii) Construction of a transmission main and distribution network with an extension of 10 000 m;
 - viii) Supply and installation of a chlorinator(s);
 - ix) Training of the Community for good use, operation and maintenance of the water supply system.

Environmental and Social Management Plan (ESMP) Construction Project for The Machangulo Water Supply System, Matutuine - Mozambique				
Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
A. General Requirements for ESHS Management				
<u>Responsibilities and Liabilities</u>	Ensure that all workers, suppliers and possible subcontractors are familiar and comply with the ESHS requirements and specifications of this ESMP. Comply and implement the World Bank ESF E&S safeguards policies and SADC GMI ESCP, ESMF and ESS standards,	Induction training performed and recorded. Contracts with subcontractors and suppliers	Contractor/ Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management	Review of training records Review of Contracts to ensure that Project requirements are included
	The contractor will provide a relevant on-site point person to liaise with the Ministry's hydrogeologist regarding ESMP implementation. This role will be stipulated within the contract as a mandatory requirement.	Contract for Machangulo Water Supply System	Contractor/ Ministry of Public Works, Housing and Water Resources	Review of contractor's records for presence of responsible person on site
<u>Resources allocated to ESHS Management</u>	Ministry of Public Works and Housing and Water Resources to appoint ESHS staff and E& S consultant assigned and trained to discharge ESHS tasks effectively	Monthly ESHS reports prepared and implemented by trained ESHS staff	Contractor/ Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management	Check project records for number of non-compliance to ESHS provisions due to lack of adequate ESHS management

<u>Reporting</u>	ESHS staff trained on Reporting of progress and incidents, accidents, observations, near misses as per SADC - GMI ESMF. Contractor will submit monthly reports through ESS Consultant to the Ministry of Public Works. Ministry of Public Works will provide regular monitoring and submit monitoring reports to SADC-GMI and SADC GMI will review and provide feedback to both Ministry and Contractor as well as enforce compliance Training delivered by SADC-GMI to all subgrantees on ESMPs and the subgrantee in Mozambique appointed an ESS consultant	Number of compliant monthly reports on progress, incidents, accidents, observations, near misses Reporting protocol for ESHS incidents as outlined in the SADC-GMI ESMF and ESCP Procedures	Contractor ESS Consultant Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management Contractor/ESS Consultant will submit monthly reports to the Ministry of Public Works; Ministry of Public Works will provide regular monitoring and submit monitoring reports to SADC-GMI and SADC GMI will review and provide feedback to both Ministry and Contractor	SADC-GMI to undertake monthly review of ESMP report for incidents, accidents, observations, near misses SADC-GMI will review and enforce compliance
Code of Conduct	Share and facilitate induction of the SADC-GMI Code of Conduct as per Sub Grant Manual 2022	Code of Conduct in place and rules shared with personnel (see SADC-GMI Sub grants manual(2022)	Contractor/ Ministry of Public Works, Housing and Water Resources	Review of Code of Conduct induction records once at project inception Review of reported punishable or misconduct behaviour monthly Review of grievance records monthly

<u>ESHS Training</u>	Provide H&S induction and training and awareness to the workforce regarding H&S risks and mitigation measures (including indirect workers) tailored to Project scope. Training to be undertaken once at the onset of project by Contractor, Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management and SADC-GMI	Training Reports by SADC-GMI, Ministry of Public Works, ESS Consultant and Contractor respectively	Contractor Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management SADC-GMI	Once off review of training Reports by SADC-GMI to confirm delivery of the ESHS training Monthly review of ESMP implementation reports to identify ESHS training gaps
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B. Protection of the Environment				
Protection of adjacent areas	Restrict excavation activities during periods of intense rainfall. Use temporary bunding to reduce the risk of sediment, oil or chemical spills to the receiving waters.	Contractor to produce construction drawings/plans for approval by National Directorate Supervisory checklist Unsuccessful boreholes backfilled Excavation on-hold during intense rainfall	Contractor National Directorate for Water Resources Management	Check weather forecast prior to each field activity Inspect the site conditions prior and during excavation.
	Ensure that means of protection are in place to avoid or minimize adverse effects on vegetation, soils, groundwater and surface water, biodiversity, natural drainage and the water quality in areas within the works area. Construction methods to minimize impacts to the extent possible.	Contractor to produce construction drawings/plans for approval by National Directorate No impacts identified in the adjacent environment Supervisory checklist	Contractor Ministry of Public Works, Housing and Water Resources	Monthly supervision (including monitoring of adjacent natural resources) .
	Ensure that work site boundaries and limits are in accordance with plans agreed upon in advance. All construction activities should be carried out within boundaries. Prior to construction, contractor will seek approval and clearance from the Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management for boundaries and limits	Contractor to produce construction drawings/plans for approval by National Directorate Marking the borders of works site using danger tape Inform immediate community of the borders of work site	Contractor to undertake mitigation measures National Directorate for Water Resources Management to monitor compliance	Site inspection prior to commencement of activities; and Regular supervision by National Directorate for Water Resources Management to monitor compliance

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B. Protection of the Environment				
	Ensure to keep the minimum distances from permanent water course and outside of floodable areas; sensitive urban services and buildings (health centre, school, water supply for populations); any housing; During construction, contractor will adhere to the minimum distances permitted, and the Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management will enforce this requirement.	Contractor to produce construction drawings/plans for approval by National Directorate Marking the borders of works site boundaries in line with given limits and usage of warning signs	to undertake mitigation measures National Directorate for Water Resources Management to monitor compliance	Site inspection prior to commencement of works; and monthly supervision
	After construction, form reshaped land so that it is inherently stable, adequately drained and suitable for the desired long-term land use and allows natural regeneration of vegetation	Visual inspection and comparison with adjacent undisturbed areas.	Contractor National Directorate for Water Resources Management	Site inspection before and after completion of works
Pollution prevention	Ensure all works carried out minimise pollution risk (e.g. liquid effluents, air emissions, noise and vibration management, vehicle and equipment maintenance and selection, fuel, oil and chemical storage and handling) including the whole duration of the Project.	Ensure that potential pollutants are not stored and handled within 50 m of sensitive receptors (particularly watercourses). Ensure that potential pollutants are safely stored i.e. stored above catch pan.	Contractor National Directorate for Water Resources Management	Site inspection prior and during commencement of works Onsite review of disposal records

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B. Protection of the Environment				
General and construction waste management	Ensure all general and construction waste is stored and disposed from the work site in compliance to the national law and good international industrial practices	Construction waste removal records Regular inspection of site	Contractor (implement); PEA (monitor)	Site inspection before and after completion of works
Emissions and dust	Ensure that the contractor staff are wearing appropriate PPE e.g. face mask Sensitize communities to maintain safe distance	Visual Inspection of site Supervisory checklist Water bowsers onsite to regularly water dusty areas to minimise dust	Contractor National Directorate for Water Resources Management	Visual inspection during monthly supervisory visits
	Sensitize drivers to turn off the vehicles when not in use	Vehicle engines are switched off when not in use	Contractor	Site inspection and review of grievance records monthly
Noise and vibration	Avoid operations like drilling and vehicle movements at night.	No work conducted between 8 pm and 6 am	Contractor Ministry of Public Works, Housing and Water Resources	Site Inspection and review of grievance records monthly
	Locate stationary equipment (such as power generators) as far as possible from nearby receptors (e.g. worker resting areas, populated areas and environmentally sensitive areas). Make sure that noise levels don't exceed 120db in case of equipment or vehicle use.	Effective distances between equipment and receptors are kept Use of sound detector to ensure that noise level is kept below recommended level	Contractor National Directorate for Water Resources Management	Once prior to commencement of works Monitor noise levels in case equipment is used Review of grievance records
Selection of borrow areas, backfill	Select borrow areas or areas to be excavated, backfill material stockpile locations and access roads if applicable to the project.	Designated areas selected	Contractor	Once during site selection

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B. Protection of the Environment				
material stockpile sites and access road	Locate disposal site on low value land.	Designated areas selected	Contractor	Once during site selection
Vegetation clearing	Limit vegetation clearing to areas within the site boundary where it is strictly necessary. Prior to vegetation clearing, contractor will seek approval and clearance from the Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management to ensure that vegetation clearing is kept to necessary areas only. Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management to ensure works are carried out under good practices. During and after works, the contractor should provide updates to the PEA on the good practices i.e Use selective clearing over total removal, avoid removing native vegetation, Plan for rehabilitation and replanting, adhere to local regulations and guidelines and follow permitting procedures. Ministry of Public Works, Housing and Water Resources - National Directorate for Water Resources Management to provide review and approval throughout this process.	Visual Inspection of vegetation clearing	Contractor Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management	Site inspection prior to commencement of activities. Review of grievance records

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B. Protection of the Environment				
	Prior to vegetation clearing, contractor should seek approval and clearance from the Ministry to ensure that vegetation clearing of kept to necessary areas only Contractor to ensure that the approved work is undertaken with good practices. Avoid clearing mature trees and endangered species. In areas where endangered species are known to exist, carry out adequate evaluation to ensure that no adverse impact to endangered species will be caused by the works. Plan adequate mitigation measures to ensure that the works will not negatively affect the endangered species. If endangered species are found unexpectedly during works, halt all works and provide ad-hoc assessment of the areas for endangered species and establish adequate mitigation measures.	Visual Inspection and comparison of matured trees before and after works During and after work, the contractor to provide updates to the Ministry on the good practices.	Contractor Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management to provide review and approval throughout this process.	Site inspection once prior to commencement of activities. Site inspection once on project completion Monthly review of grievance records

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C. Health and Safety				
Accident reporting	Ensure all H&S related incidents (e.g. observations, accidents) on site are recorded and followed properly. Within the code of conduct, GBV must be taken into account in this regard	H&S incident reporting protocol in place as per World Bank and SADC-GMI Sub-Grant Manual Grievance Mechanism procedure	Contractor Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management	Check incident/accident records on each site visit
Personal protective equipment	Ensure the provision of Personal Protective Equipment (PPE) for workers (hardhats, masks, safety glasses, safety boots. The Consultant is expected to specify the protective equipment when drawing up the quantity map.	Daily visual inspection Supervisory checklist PPE Stock inventory	Contractor	PPE inspections on each site visit

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C. Health and Safety				
First-aid	Ensure minimum first aid provisions on site The Consultant is expected to include in the technical specifications/staff a technician with first aid skills.	First aid is on site and adequately stocked Supervisory checklist	Contractor Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management	Regular supervisory visits to check availability of first aid kit on each site visit
Hygiene, accommodation and food	Ensure provision of Health and Safety (H&S) and hygienic and sanitary facilities at the site e.g toilets and bathrooms In addition to toilets, recreational areas and rules for preparing or providing food should be defined.	Daily visual inspection	Contractor	Regular site inspections and checking of records for potential associated risks

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D. Labour and relations with local communities				
Local recruitment	Ensure local communities are preferred for the supply services e.g building. Local staff will be favoured in the process of hiring labour and providing services and goods. If there are no qualified personnel for this activity, neighboring areas will be used Gender will also be taken into account during contracting. A complaint mechanism must be established through a depository and put in writing in order to guarantee the integrity of the workers. Complaints should be addressed within one week. The complaints procedure should align with the code of conduct established by the WB. Contractor to abide by Mozambique in addition to following national LMP protocols which are part of the contract that they will sign with subgrantee The ESS consultant appointed by the subgrantee will report on a monthly basis any compliance issues	Labour Management Procedure (LMP) Supervisory checklist Inspection of daily labour roster Contracts	Ministry of Public Works, Housing and Water Resources National Directorate for Water Resources Management	Regular supervisory visit to verify local recruitment Check contractor's staff establishment for compliance with local recruitment standards

Community interaction	Engage/ communicate/inform communities. Ensure consultations with the local authorities and communities regarding the construction. Obtain local knowledge regarding chance finds and land acquisition matters. Subgrantee to engage community at least 3 times, namely before start of site activities, during implementation and at project closure. GRM should be disclosed at the first meeting The local community will be involved in the consultancy through the hiring of local labour and training provided by the consultant.	Minutes of Meetings Grievance Mechanism Photos and videos	Ministry of Public Works, Housing and Water Resources	Review of grievance register Minutes of consultation/ community meetings
Chance Finds	In the event that there are chance finds on the project, ensure to: 1. Immediately cease work 2. Document and immediately notify the relevant authorities 3. Engage with authorities 4. Support assessment and decision making 5. Facilitate implementation of Mitigation measures as per SADC-GMI Sub grants Manual (2022) procedure 6. Resumption of work followed by regular monitoring and reporting	Site reports	Ministries responsible for environment, national heritage, archives, water resources	Review of site reports