THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WATER AND IRRIGATION

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

SECOND WATER SECTOR SUPPORT PROJECT (WSSP-II)
&
WATER SECTOR DEVELOPMENT PROGRAME II
October 2016
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<td>BWOs</td>
<td>Basin Water Offices</td>
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<tr>
<td>CITES</td>
<td>Convention on International Trade in Endangered Species</td>
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<td>COWSOs</td>
<td>Community-owned Water Supply Organisations</td>
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<tr>
<td>DAWASA</td>
<td>Dar es Salaam Water and Sewerage Authority</td>
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<tr>
<td>DEMC</td>
<td>District Environmental Management Committee</td>
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<tr>
<td>DEMO</td>
<td>District Environmental Management Officer</td>
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<tr>
<td>DIA</td>
<td>Direct Influence Area</td>
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<td>ESIA</td>
<td>Environmental and Social Impact Assessment</td>
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<td>EISs</td>
<td>Environmental Impact Statements</td>
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<td>EMA</td>
<td>Environment Management Act</td>
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<td>ESMU</td>
<td>Environmental and Social Management Unit</td>
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<td>ESP</td>
<td>Environmental and Social Preliminary Assessment</td>
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<td>ESMF</td>
<td>Environmental and Social Management Framework</td>
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<td>EWURA</td>
<td>Energy and Water Utilities Regulatory Authority</td>
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<td>GoT</td>
<td>Government of the United Republic of Tanzania</td>
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<tr>
<td>GGESP</td>
<td>Guidelines of Good Environmental and Social Practices</td>
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<tr>
<td>IAs</td>
<td>Implementing Agencies</td>
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<td>IWRMD</td>
<td>Integrated Water Resource Management and Development</td>
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<td>IIA</td>
<td>Indirect Influence Area</td>
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<tr>
<td>LGA</td>
<td>Local Government Authority</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>MKUKUTA</td>
<td>Mkakatiwa Kukuza Uchumina Kuondoa Umaskini</td>
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<tr>
<td>MoWI</td>
<td>Ministry of Water and Irrigation</td>
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<td>NAWAPO</td>
<td>National Water Policy 2002</td>
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<td>NEMA</td>
<td>National Environmental Management Act</td>
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<td>National Environment Management Council</td>
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<td>NEP</td>
<td>National Environment Policy</td>
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<td>RWSSP</td>
<td>Rural Water Supply and Sanitation Programme</td>
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<td>NWSDS</td>
<td>National Water Sector Development Strategy</td>
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<tr>
<td>PAD</td>
<td>Project Appraisal Document</td>
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<td>PAP</td>
<td>Project Affectation People</td>
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<td>PCU</td>
<td>Programme Coordination Unit</td>
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<td>PESIA</td>
<td>Preliminary Environmental Impact Assessment</td>
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<tr>
<td>PMO-RALG</td>
<td>Prime Minister’s Office – Regional Administration and Local Government</td>
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<td>RAP</td>
<td>Resettlement Action Plan</td>
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<td>RMF</td>
<td>Resettlement Management Framework</td>
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<td>RPA</td>
<td>Resettlement/Compensation Preliminary Assessment</td>
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<td>RWSTs</td>
<td>Regional Water and Sanitation Teams</td>
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<td>SWAp</td>
<td>Sector-Wide Approach to Planning</td>
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<td>UWSAs</td>
<td>Urban Water and Sewerage Authorities</td>
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<td>UWSSP</td>
<td>Urban Water Supply and Sewerage Programme</td>
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<tr>
<td>VEMO</td>
<td>Village Environmental Management Officer</td>
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<td>WATSANs</td>
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<td>WRMP</td>
<td>Water Resources Management Programme</td>
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<td>WSDP</td>
<td>Water Sector Development Programme</td>
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<td>WSS</td>
<td>Water Supply System</td>
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<tr>
<td>WSSAs</td>
<td>Water Supply and Sanitation Authorities</td>
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<td>WSSP-II</td>
<td>Second Water Sector Support Project</td>
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WSSP-II Activities Activities financed by WSSP-II or linked thereto (per OP/BP 4.01 or OP/BP 4.12)

EXECUTIVE SUMMARY

The Government of Tanzania (GoT), through the Ministry of Water and Irrigation (MoWI) is implementing the Water Sector Development Programme (WSDP) or “the Programme”, for the period 2006–2025. The first phase of the project (WSDP-I) started in July 2007 and the Additional Financing closed at the end of December 2015. The second phase of Programme (WSDP-II) is been implemented from 2015 until June 2019. The WSDP I and II were set up as a SWAP arrangement with a number of DPs providing financing in the form of basket lending. The WB provided basked lending for WSDP I, but not for WSDP II.

Under the proposed Second Water Sector Support Project (WSSP-II), the World Bank will finance specifically defined activities of the WSDP-II. The WB is not supporting the overall WSDP-II, as such the World Bank’s safeguard policies, are not required to be applied to the Programme. The specific activities financed by the World Bank under WSSP-II or activities linked thereto (as defined under OP/BP 4.01 and OP/BP 4.12) are referenced herein as the “WSSP-II Activities”. The GoT and other DPs involved in WSDP-II may choose to use this ESMF as a reference document for the environmental and social management. However, accordingly, the Bank will not and has no obligation to review or clear any safeguard instruments or perform any supervision or monitoring with respect to any other activity than the WSSP-II.

The overall objective of this Environmental and Social Management Framework (ESMF) for the WSSP-II, is to guide the MoWI and the Implementing Agencies (IAs) in the environmental and social management during WSSP-II implementation, by defining environmental and social concepts, methodologies, tools, and procedures that should be applied during the “project cycle” in order to comply with the national law and the World Bank’s safeguard policies.

The Environmental and Social Management Unit (ESMU) of the MoWI and the Safeguard Coordinator of the Implementing Agencies (SC-IA) will be the responsible for the ESMF implementation.

The document is organized into eight (8) chapters and Annexes. The first five chapters include secondary information, which is the base of the environmental and social management; and the others chapters include specific information about the concepts, methodologies, tools, procedures and responsibilities for the environmental and social management of the Project.

Chapter 6 “Environmental and Social Concepts, Methodologies and Tools” presents the key environmental and social management concepts, methodologies and tools to be applied by the MoWI and the IAs, in the water supply system (WSS) and sewerage systems (SS) projects, during the project cycle. The ESMF include a methodology to define the environmental and social risk level of the projects financed by the WSSP-II. In regards of the tools, three specifics templates or forms have been designed for internal use by the IAs, through the Safeguard Coordinator or responsible of the environmental and social management, in order to ensure incorporation of the environmental and social variables throughout the project cycle, and systematize the environmental and social management information for process record-keeping purposes. The management tools designed for the environmental and social management are: i) Environmental and Social Preliminary Assessment (ESPA); ii) Environmental and Social Monitoring Report (ESMR); and iii) the Environmental and Social Final Report (ESFR).
Chapter 7 “Environmental and Social Management” presents, on the basis of the legal and institutional framework and the Bank’s environmental safeguard policies, the main environmental and social management activities, procedures and responsibilities during the “project cycle”. This chapter includes: a) the environmental and social project cycle; b) the role and responsibilities of the IAs on the environmental and social management, and c) the internal procedures at the IAs level for the environmental and social management.

Finally, Chapter 8 “Assessment process to comply with the environmental national law” summarizes the national environmental and social assessment process required for compliance with national laws and regulations.

The MoWI has developed this ESMF with the support of the Safeguards Advisor and in consultation with the World Bank safeguards team. This instrument was presented and socialized in a workshop with the participation of the main stakeholders in April 2014.
1. Introduction

The Government of the United Republic of Tanzania (GoT), with assistance from Development Partners (DPs), has been implementing the **Water Sector Development Programme (WSDP)** since 2006. This Programme focuses on prioritized water resources management and service delivery in the water and sanitation sector. The proponent of the Programme is the GoT, while the Ministry of Water and Irrigation (MoWI) is the implementing institution on behalf of the Government.

The WSDP was set up as a SWAP arrangement with a number of DPs providing financing in the form of basket lending. In order to ensure adequate environmental and social management during the Programme implementation, and to comply with national environmental laws and the World Bank’s safeguard policies, an Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) were developed by the MoWI as part of the WSDP-I in 2006, and was updated in 2014 for the WSDP-II.

Under the proposed Second Water Sector Support Project (WSSP-II), the World Bank is financing certain specifically defined activities of the GoT’s under WSDP II. The WB is not supporting the WSDP-II overall and as such the World Bank’s safeguard policies are not required to be applied to the overall WSDP-II Programme. The specific activities financed by the World Bank under WSSP II or activities linked thereto (as defined under OP/BP 4.01 and OP/BP 4.12) are referenced herein as the “WSSP-II Activities”. The GoT and other DPs involved in WSDP-II may choose to use this ESMF as a reference document for the GoT’s WSDP-II more broadly. However, accordingly, the Bank will not and has no obligation to review or clear any safeguard instruments or perform any supervision or monitoring with respect to any activity other than WSSP-II.

This ESMF for the WSSP-II has been prepared taking into account the Tanzanian’s environmental law and the World Bank guidelines of the Environmental Assessment Policy (OP/BP 4.01).

1.1 Objective

The overall objective of the ESMF is to guide the MoWI and the Implementing Agencies (IAs) in the environmental and social management during WSSP-II implementation, by defining environmental and social concepts, methodologies, tools, and procedures that should be applied during the “project cycle” in order to comply with the national law and the WB safeguard policies.

The specific objectives of the ESMF are to:

- Present the legal, institutional framework, and the general characterization of the country, related to the environmental and social context in the water supply and sewage sector;

- Present the main potential environmental and social impacts on the water supply and sewage projects, including the main aspects related to the adaptation of climate change in the water and sewerage projects;
- Introduce the environmental and social management process into the water and sewerage projects (methodologies, tools, and procedures), to ensure the adequate environmental and social management throughout the project cycle, and comply with national laws and the World Bank safeguard policies; and

- Include internal procedures that IAs should take into account during the project cycle, as well as the procedures to ensure compliance with national laws with a view to obtaining the respective Environmental Certification.

1.2 Scope

The Environmental and Social Management Unit (ESMU) of the MoWI at the central level, and the Safeguards Coordinator of the Implementing Agencies (SC-IA) at the regional/district level, will be responsible for the ESMF implementation. It is important to mention that the IAs involved in Component 1 and 2 of the WSSP-II, should assign this responsibility to a Safeguards Coordinator who will be trained on the application and use of the ESMF.

The document is organised into eight (8) chapters: Chapter One provides the objectives and scope of the ESMF; Chapter Two provides information about WSSP-II, and its components; Chapter Three provides the relevant Tanzanian environmental policies and legislation applicable to WSSP-II, and the institutional framework; and general environment and social characterization of the country and specifically of the Dar es Salaam region; Chapter Four provides information about the World Bank’s environmental and social safeguard policies; Chapter Five describes the environmental and social impact likely to be generated in the water supply and sewerage projects in the development phases (planning and design, construction, operation and maintenance, and the decommissioning phases), including relevant information about climate change adaptation in the water sector; Chapter Six presents definitions, methodologies, and tools for environmental and social management; Chapter Seven gives the environmental and social management procedures and responsibilities along the project cycle, including a flowchart to identify the main environmental and social management checkpoints during the project cycle; and Chapter Eight presents the environmental and social assessment process in order to comply with national legislation, including the steps of the assessment process and its flowchart.

Additionally, the document includes Annexes to support the environmental and social management during the Project implementation, especially with regard to the main legislation, World Bank safeguard policies, environmental and social management templates, and Terms of References (ToRs) studies to comply with the national law and the safeguards policies.

The draft version of this instrument was presented and discussed in a workshop with the main stakeholders on March 24 to 26 2014, in Morogoro City (Annex 1). Finally, this ESMF will be published in the MoWI website and disclosed in the World Bank InfoShop in compliance with the Bank’s disclosure policy.
2. The Project

2.1 Project Objective of Development

The project will contribute to the country’s effort to address critical water dependent development challenges and deteriorating natural resource base. Building on results achieved under WSSP-I, the Project will continue supporting integrated climate resilient investment planning in the basins, including institutional coordination and capacity building to plan and manage water resources and land use at a basin level, with the aim of achieving sustainable water management solutions to the broad set of water-dependent sectors and increase resilience and reduce water-related shocks to the economy and communities. The WSSP-II will contribute to improve the knowledge base and management tools by modernizing system operations in critical basins. Very practically, this means improved forecasting for agricultural production, flood risk management, optimization of hydropower releases and improved regulation of abstractions and water quality, based on the optimized basin planning exercises that were carried out in WSDP-I and will be further refined under the upcoming project. Also, the Project will implement watershed management investments on sustainable land and water management practices in hotspot areas of Wami-Ruvu basin towards reducing the water security challenges the basin and Dar es Salaam city is facing.

In Dar es Salaam city, the project will support the Government effort to improve water supply and sanitation coverage and service level through various initiatives including the ongoing institutional reform that aims to clarify institutional mandate, responsibility, and accountability for water and sanitation services in Dar es Salaam city. The project will also contribute to improve access to clean water supply and safe sanitation by extending the water supply distribution network and sewerage system to unserved areas of the city. Small piped water supply systems and mix of low cost sanitation solutions will be provided to ensure that the low income areas that are often affected by recurring cholera outbreak have better access to water supply and sanitation services. The institutional reform and infrastructure provision will be complemented by supporting operational efficiency improvement and modernization of the utilities operation. The utilities capacity gap in NRW reduction and management as well as in operation of large sewerage systems will be filled by partnering with private sector through a performance based contract for NRW and design build operate contract for the new sewerage system operation. To address the above mentioned areas and achieve its development objectives, the project will finance the following three components. Component 1: Integrated WRM; Component 2: Dar es Salaam water supply and sanitation services improvement; and, Component 3: Project Management and Implementation Support. A detailed description is included in the Annex to the PAD.

Component 1: Integrated Water Resources Management (IWRM) (US$ 53 million). The three sub-components described below will address the key areas that constitute improved water resources management that supports resilience and economic growth. The component explicitly seeks to support strategic and operational decision making across sectors, recognizing that it is important to shift from a more inward-looking institutional building phase to an outward-looking approach of addressing key problems in natural resources management, agriculture and hydropower through improving the information base (hydromet, operational decision support, forecasting), the institutions (coordination, monitoring, regulation and enforcement) and the investments that support growth in water-dependent sectors. As such the project addresses the interlinked challenges of poverty and a deteriorating natural resource base in critical basins in
Tanzania to reduce the process of environmental degradation and improve the productive potential of natural resources that underpin the economy and livelihoods in the country.

**Sub-Component 1.1:** Institutional strengthening for improved WRM performance (US$ 17.6 million). This Sub-Component aims at strengthening the institutions for IWRMD (BWBs, NWB, WUAs and MOWI) and partners to more adequately deliver on their mandate (support financial sustainability, capacity enhancement, performance management, and importantly cross-sectoral collaboration). Focus will need to shift from single-sector institutional strengthening to intersectoral collaboration, following from high level dialogue and supporting implementation of joint investments. Therefore support will include consultancies, works, equipment, non-consultant services and incremental operating costs.

This Sub-Component seeks to improve the performance of water resources institutions in managing the country’s water resources – individual staff capacity, internal organization, financing, stakeholder representation and gender inclusion, networking and collaboration. At national level, the key objective is to strengthen effective coordination on water resources management among sectors. The component would finance national level strengthening of implementation of the National Water Policy and sector strategies, multi-sectoral decision making through the National Water Board, basin level coordination and implementation of IWRMD plans, improved local WRM, licensing and enforcement. In order to address a perceived weakness in the institutional setup of the NWB, namely its confined advisory role and lack of an executive agency, a key activity is the establishment of a Water Resources Center of Excellence to provide multi-sectoral analysis and strategic policy support to the National Water Board, which is comprised of different stakeholders. The aim is that this Center of Excellence will provide analytical background and multi-sectoral backing for policy advice and as such supports the NWB in fulfilling its important role of advising on water resources. It will have direct functional relationships with the different sector agencies, be comprised of multi-sectoral staff, and be answerable on its coordination mandate to the NWB. As such, it will complement the Administrative Secretariat function of the Water Resources Division, by becoming the technical secretariat and multi-sectoral “think-tank” for the NWB. It will also support the Ministry in providing technical guidance and analytical support to BWBs on multi-sectoral decision-making at basin level.

At the basin and local level, the project will support coordination between Basin and Lake Water Boards with the Local Government Authorities (LGAs) on issues of land and water management planning and regulation. The component will also continue supporting improvements to essential facilities, equipment and information systems to enable agencies to more effectively carry out their roles in the program. This Sub-Component is critically required to move from the current fragmented approach to investments and systems operation, to a more coordinated and holistic approach based on a shared and sustainable vision for the development and management of the resources and the capacities at different tiers in government and across agencies to follow through on this vision. Where WSSP-I emphasized performance of internal functions of these institutions, WSSP-II will explicitly add emphasis on external coordination and collaboration in delivering on the mandate of WRM. Agency performance will be measured with a Performance Assessment Framework, adopted and improved from the first phase and institutional strengthening will be monitored according to this framework and remedial actions will be taken accordingly. The ultimate objective is that water management institutions are able to articulate the vision for the basin in consultation with stakeholders and act accordingly to plan and regulate to support basin and national priorities.

**Sub-Component 1.2:** Strengthening Hydromet Services (US$ 15 million). This sub-component will support the improvement of the knowledge base on water resources in Tanzania. This will enable MOWI and TMA to collect, store, analyze and disseminate to the general public more credible data and information in order to make better use of hydromet and other data for critical water management and sector decisions, such as flood early warning, agricultural development, hydropower management, natural resources management, improving licensing and infrastructure
operations, and information/awareness raising to other sectors on water issues. When successful, this will enable critical improvements operational decision making and water use efficiency in the hydropower, irrigation and flood management sectors primarily, as well as improve environmental status, and general infrastructure planning along river courses. It is proposed that the hydromet system is revitalized starting from the articulated sector demands.

The Sub-Component seeks to support the efficient and effective collection, storage, analysis and wide dissemination of credible data and knowledge products for a range of WRM needs. This Sub-Component include the following activities:

Modernization of the Water Resources Monitoring Network. Building on pilot investments under Phase I, this would include support to modernize the monitoring of weather, water levels, flows, water quality, groundwater, and sediment loads. It is expected that this would result in an optimized core network that provides information in real-time or quasi real-time. It is expected that this will provide the backbone for a modern water resources information system, improved forecasting and early warning, and an operational decision support system.

Development of an Operational Decision Support System. This activity will include support for an integrated hydromet data management and visualization platform; weather, hydrologic, and flood forecasting and warning systems; and, integrated water system infrastructure operations, including specific pilot modules in priority basins. In particular analysis on the effectiveness of flooding and disaster response communications on women and men will be undertaken using participatory exercises that support the inclusion of marginalized groups. Subsequently, an integrated Operational Decision Support System will be developed to support water infrastructure management based on a multi-sectoral perspective (e.g. for operation of hydropower reservoirs, major irrigation clusters, etc.).

Data Rescue and Digitalization. Decades of meteorological and hydrological data are stored in hard copies under precarious conditions. This activity is intended to preserve all data at risk of being lost by digitizing it for easy access making data available for analysis.

Lessons learned from WSSP-I and similar programs in the region have been incorporated in the design, most notably: start with the end-user including women: public recognition of the value of these services helps build accountability, a strong and inclusive client base and sustainable resource streams; modernization of operations must be of sufficient financing and scope to be transformative. In this light open-data will be promoted; technical modernization must be accompanied with institutional reorganization and clear legal and regulatory frameworks; integration of the national hydromet system between TMA and DWR with regional and global knowledge products enhances services with improved data and forecasting products. Importantly also, these investments will be designed within the financial and institutional carrying capacity of the water resources institutions. Costs of operating and maintaining the network will be a key factor in design. The proposed financing options study will need to study hydromet financing in particular.

Sub-Component 1.3: Investments in Water Security and Conservation Strengthening (US$ 20.4 million). Support core functions of BWBs and WUAs on their conservation work program and priority investments in the Wami Ruvu basin, particularly in the field of sustainable watershed management interventions, and carry out preparatory work and due diligence for larger works (limited to Category B type works as the WSSP II is a Category B project).

The Sub-Component aims to improve water security and water conservation and carry out a capacity enhancement program for lower tier water resources management institutions. Water User Associations and (sub-) Catchment Councils in the country will be supported in carrying out their core functions in conservation, local water planning and management, monitoring, and conflict resolution, through a program of annual funding allocations to WUAs based on a program of increasing responsibility and fund management based on proven performance. WUAs will be
assisted in prioritizing activities, planning and supervising investments, carrying out a program of awareness raising and local monitoring of the state of water resources in the basin. This support program has a dual role of rolling out broad based local water resources management solutions, and strengthening the delivery model through local WUAs.

In addition to this nation-wide program to strengthen the core functions of water management agencies, the component will support direct investments focused on the Wami-Ruvu Basin. These investments will be based on priorities to be identified in the IWRMD Plan for Wami-Ruvu which is to be completed during the first year of the project, building on experiences in developing such plans under the first phase for other basins under WSSPI. It is expected that the Wami-Ruvu Basin Plan will be endorsed by all sector agencies and that priority investments and management actions will be identified which then will be supported under the program. Wami-Ruvu Basin is one of the critical basins in the country and the city of Dar es Salaam is located within this basin.

Investments in the basin will be carried out in all its sub-basins (Wami, Ruvu and Coast) and will have high impact on Dar es Salaam and the surrounding region, the proposed future Kidunda reservoir (not financed under this program) as well as in-situ in the upstream catchments. The Wami-Ruvu Basin was selected based a priority basin because of these features and activities supported under WSSP-I will build on lessons learned in past and parallel activities in other basins (most notably Lake Victoria, Rufiji and Pangani) and lessons from within the Wami-Ruvu itself under the GEF SLM project. A flexible approach is proposed in which later on in the project, or through future phases of the Series of Projects, investments could be expanded to other basins as well, in line with the IWRMD Plans and upon agreement between Bank and Borrower. In any case, it is proposed that a specific investment plan is drawn up for additional basin investments by MTR for possible future financing. While planning is to be completed for specific investments (locations, designs, relative priorities), the following activities will be undertaken:

Planning and monitoring of catchment areas. An iterative planning process will be undertaken in the catchment areas by BWBs with stakeholders to develop broad catchment plans. In parallel, the BWBs, with support from the Ministry and technical assistance to be recruited for this purpose will roll out a multi-year on-the-job performance based training program for WUAs. WUAs will be assisted by BWBs and technical assistance during the first round of activities in micro-catchment action planning at community level. 3D modelling to incorporate gender dimensions in WRM hydrological design will be introduced in a number of key catchments. Separate consultations and groupings by sex, and indigenous groups will be conducted to enable more equitable allocations across competing water constituencies, and improve the quality of water management plans and processes. Planning standards will be tested and harmonized across parallel programs in early stages of implementation. All these plans shall refer to the strategic priorities of the basin wide IWRMD Plans and priorities set-out therein. Importantly, planning will be linked to land use plans developed at district level by LGAs and broadly discussed with government, community and other stakeholders. Support will be provided to recruit NGOs/service providers to help interface between government (LGAs, BWBs) and community activities in catchment management. Since enforcement of abstractions and discharge has been a major challenge in managing water resources, the BWBs and LGAs shall explicitly include in their planning enforcement plans and shall pilot enforcement in critical hotspot areas in the basin.

Rehabilitation of targeted catchments and water security improvements. Within the Wami-Ruvu basin, this activity will finance interventions identified in micro-catchment plans including: (i) soil and water conservation for more sustainable and productive agriculture; (ii) forestry and rural energy interventions to restore forest cover and reduce firewood consumption within the sub-catchments; (iii) stream and water control, including check dams to support improved water management through smaller-scale structures built by community members. The activity would support the activities through service providers (contracted) and works (contractors) and goods (equipment) for catchment management interventions. In other basins, the support will extend to core activities in conservation, protection, awareness raising, and conflict resolution nationwide.
All activities will be based on annual work plans and will undergo process of technical vetting at BWB and LGA with technical assistance from relevant departments and provided through the project. Annual performance contracts will be drawn up between WUAs and BWBs that spell out mutual responsibilities and funding for activities. Subsequent annual plans and allocations will be based on levels of achievements in previous years. A monitoring system will be in place and results will be communicated, with successful WUAs receiving recognition and further delegated responsibilities.

**Preparation of priority water investments.** In Wami-Ruvu basin, under the IWRMD Plans a number of smaller and larger investments have been proposed, some of which are water investments and others are investments in other sectors that have a bearing on water resources. To support the basins in the implementation of the plans by multiple stakeholders the program will support the preparation of water investments. Criteria for inclusion under this activity is that (i) the investments are prioritized under the IWRMD Plan, (ii) the study can be completed within the project timeframe and has a demonstrable beneficial water resources impact; (iii) there is reasonable expectation of future available financing; and (iv) the studies passes a pre-feasibility screening.

**Component 2: Dar es Salaam WSS Improvement (US$ 164 million).** Dar es Salaam is considered as one of the fastest growing cities in Africa. The population of the city, currently around 5 million, is expected to reach 9 million by 2030. The current status of sanitation in the city is critical and is expected to be worsen if not sufficiently addressed by the end of the SDG period. The plan is to increase the present 10% of sewerage connection to 30% of the population by 2030. The remainder of the population will need to be serviced by on-site, off-grid solutions, equating approximately 6.3 million people. At an estimate, this would require 315 off-grid fecal sludge management (FSM) systems, each servicing 20,000 people. This would require a capital investment of USD 32 million. However, since there is limited global experience in implementation of such intervention at scale, and the lengthy time processing the land acquisition may take, the project will support 50 of such schemes.

The estimated cost of the packages for expansion of the water supply network to unserved areas is USD 284.00 million while the current allocation from the project is US$ 119 including the off-grid water supply. The project component is therefore designed to allow for adaptability and flexibility of allocation between the water supply and sanitation sub-components as well as absorb additional resource as and when made available within or from outside the project. The Components comprises support to the ongoing institutional restructuring/reform of the Dar es Salaam WSS Services (Sub-Component 2.1); investment towards expansion of WSS services (Sub-Component 2.2); and support to improve operational efficiency and modernization of the utilities (Sub-Component 2.3).

**Sub-Component 2.1: Support to Institutional Restructuring/Reform and capacity building of the Dar es Salaam WSS Services (US$2 million).** This is the core of the project support to improve WSS services in Dar es Salaam city. This involves support to the ongoing restructuring of the two institutions responsible for service provision in Dar es Salaam, DAWASA and DAWASCO. Technical assistance will continue to be provided to implement the preferred institutional arrangement based on experience in the region and elsewhere.

The new arrangement will replace the current lease agreement and substantially change the mandate, accountability, and responsibility of the two utilities. DAWASA as a bulk supplier will now be responsible for ownership and operation of the raw water treatment plants, ground water sources, and wastewater treatment facilities while DAWASCO as retailer will own and operate all assets from the bulk water supply points and to the wastewater treatment facilities and supply retail services. The change in Government and assignment of new top management in MOWI demanded transitional time for the officials to get acquainted with the reform. As a result the lease agreement has been amended to capture key elements of the reform and its term extended for two more years until June 30, 2018. The Reform Technical Team (RTT) formed by the MOWI with staff drawn
from relevant institutions and led by the urban water supply division director, supported by an international and a national expert, has been engaged in preparation and implementation of the reform activities. A reform implementation road map that identified the reform activities is drawn up by the RTT. The plan covers legal, organizational, financial, business planning, and other capacity building support required for its implementation in terms of the initial reorganization and for reform within each of the institutions to ensure improved performance. Amendments to DAWASA act and DAWASCO establishment order have been drafted and expected to be discussed and approved before end of the extended lease period. The RTT has also drafted the bulk supply agreement based on exchange with the Durban water utility. This component will provide technical assistance to support further refinement of this contract and its elements including alignment with the business plans, definition of performance indicators and incentive mechanism, risk analysis and mitigation plans, further demarcation of roles and responsibilities, as well as design of joint monitoring arrangement.

Dar Es Salaam Water – Institutional Arrangement

**Sub Component 2.2:** Investments in water supply distribution, sewerage network expansion and treatment and sanitation in unserved priority areas (US$134 million). The expansion of the Lower Ruvu raw water treatment plant and transmission line has been completed and Upper Ruvu raw water treatment plant and transmission line is in the final stage of completion. When fully operational these plants will bring in an additional 204,000 m³/day of water for supply to the Dar es Salaam service area. Kimbijji / Mpera ground water well field is under development with estimated yield of 260,000 m³/day. It is, therefore timely that the expansion of the distribution system be under taken. Preparatory activities are underway for expansion of water supply and sewerage coverage in Dar es Salaam. The feasibility studies and updating of design for expansion of water distribution in selected service areas of Dar es Salaam and packages of contracts to be
financed under WSSP-II are being finalized. The following sub components have been identified for financing under this sub component:

a. Water supply distribution systems rehabilitation and expansion (US$ 48 million):
   Designated works Part one (packages 2B and 2F) (Ardhi University-Tegeta – Mpiji and (Mpiji – Bagamoyo) (estimated cost is US$ 45.5 million). This package will install 1426 Kms of pipes; 42 kiosks, and 214 stand posts; and, benefit 607,000 people by the end of the project in the area covered.

b. Investment in priority water supply expansion areas (US$ 15 million): This will finance expansion of distribution network in critical section of the city.

c. Waste water treatment and sewerage investment (US$ 50 million). This sub component will finance construction of a modern waste water treatment plant at Mbezi catchment with design capacity of 11,000 m3/day and associated trunk sewer and network. Only 10% of Dar es Salaam city is covered with sewerage network and stabilization ponds scattered in the city while large volume of waste is discharged to the sea through a piped outflow. Seven of the eight ponds DAWSCO is operating are in poor operational state due to limited management capacity. A design build and operate approach will be used for the new waste water treatment plant to fill the capacity gap and ensure that the system is managed and operated efficiently.

d. WSS services in unserved priority areas (US$ 21 million): This sub-component provides water and sanitation services to the population of Dar, who are not connected to the formal network. This comprises of the approximately 40-50% who are outside of the water supply network, and about 90% who are outside of the sewerage network. The proposed solutions for this population includes decentralized interventions, which may be an interim measure (especially for water supply), to be integrated to the grid network as it expands in the future. The provision of safe sanitation and water in these areas would have the impact of mitigating the health risks including the recurring cholera.

Off-grid Sanitation (US$15 million): The intervention proposed under this project includes a shift away from unimproved toilets to improved ones, safe emptying and transportation of the waste to a treatment facility, and treatment and safe disposal of the waste into the environment.

These include decentralized fecal sludge transportation and treatment facilities, and condominial/simplified sewerage with decentralized waste water treatment systems (DEWATS) if a nearby sewer is not available. It is anticipated that about 315 such decentralized treatment facilities would be required in the next decade, to meet the needs of Dar’s 9 million residents by the year 2030. Facilitating the development of private sector to offer septage collection from pit latrines or septic tanks with simple transportation systems which can access congested localities, and transporting it to treatment facilities would be a part of the proposed intervention; the creation of jobs through the development of treatment and transportation facilities would be a benefit from the project. As scarcity of suitable land for these facilities, especially in congested parts of the inner city, could be an issue, a few transfer stations may also be constructed. Few medium sized FSM plants would also be constructed to receive the aggregated fecal sludge.

The project would also support the establishment of toilets in public places such as markets, bus stations, and other places where people congregate in large numbers.

An understanding of the institutional responsibilities and coordination among the various institutions involved is critical to this endeavor. The project shall seek to increase coordination between the various institutions through an MOU and a steering committee, represented by the main stakeholders.

A media campaign to promote behavior change outcomes on sanitation, including the need to move away from open defecation, use improved toilets, empty the pits/septic tanks when full
through a safe transportation and disposal method, and adopting handwashing and hygiene behavior, would form part of the project.

Off-grid water supply (USD 6 million): In areas where the existing grid network has not reached, independent stand-alone small water supply systems (SPS) would be set up under the project. These projects would be integrated into the main grid network of DAWASCO, once the expansion of these to these areas take place. The existing and new SPSs would form part of DAWASCO’s management of operations, including tariff collection and O&M. The regulation of these systems, including the tariff, would be undertaken by EWURA, as part of the overall regulation of the sector in Dar es Salaam.

**Sub-Component 2.3:** Utility modernization (US$ 8 million). This sub component will strengthen the operational performance of both DAWASA and DAWASCO after assuming their new roles as respectively Bulk supplier and Distribution Company. At the moment the organizations are reactive to problems and a shift has to be made to get in control. Key issues to address across the board of the companies are increasing accountability and responsibility, planning and procedures, organizational structure and skills. A number of specific topics are paramount for overall performance improvement; (a) business planning; (b) operations and maintenance of Water Treatment Plants; (c) improved network management; (d) NRW management (e) improved customer metering and billing and collection;

a. Business and water supply planning: this component will improve the Business planning processes and ensure reliable capital and operational expenditures, it will include an investment plan and tariff study; secondly it will include a water supply plan (demand and resources study) for the long term; thirdly it will included a water safety plan and water quality management plan (from source to tap) to improve procedures during stress situations and improve the water quality to Dar es Salaam.

b. Operations and maintenance of water treatment plants; to increase operational efficiency and water quality but also accountability the WTP’s operations will be reviewed. Asset management, preventive maintenance planning, chemical consumption, energy use will all be reviewed in a comprehensive effort to improve efficiency. Crucial to this is that the WTP need to be fitted with online monitoring equipment for both water quantity and water quality parameters. Through better procedures the water quality will improve, operational costs will go down and pressure and flow can be optimized based on demand in the network, reducing NRW.

c. Network management; to improve performance in the network DAWASCO needs to establish clear roles and responsibilities for the main and distribution network. A central control unit which is responsible for flow and pressure in the main network and the regional offices which are responsible for multiple DMA’s. Tasks for the Central Control will include hydraulic modelling, flow and pressure management and NRW reporting. To establish this unit a SCADA system will be installed (electromagnetic flow meters, pressure meters and control unit), hydraulic model will be provided, asset management for the main network, and NRW management system will be provided.

d. NRW Management; Implementation of the nonrevenue water improvement program will require expertise DAWASCO does not have at the moment. It will require operationalization of district metered areas (DMAs) and strengthening the Regional offices. A technical assistance involving on the job training in planning, implementing and monitoring of non-revenue water initiatives for reduction of technical and commercial losses with the ultimate aim of transfer of skill to the DWASACO staff and establishing NRW management systems will be provided under the project. With the transferred skill DAWASCO will be able to maintain the results to be achieved under the performance based contract (PBC) sub-component described below.
c. Customer metering and billing; DAWASCO is doing a tremendous effort to improve its customer database. This includes complete survey of the customer database. Further support is needed on meter management for both domestic and commercial customers as well as for increasing the revenue through correct billing and collection. The support will include technical assistance, meter management, billing equipment, computers, scanners, EDAMS water modeling training: Customer service (call center applications, system training, computers, telephones, transport (motor cycles, motor vehicles); Meter reading efficiency.

d. General support; HR, ICT support to NRW reduction and customer care. This covers GIS (satellite image, GIS license and GPS equipment), material management, procurement, and financial management.

Sub-Component 2.4: Performance Based NRW reduction in Dar es Salaam (US$ 20 million). This sub component will support the effort DAWASCO wants to make on NRW management. Although NRW management is often seen as integral part of good utility management, outsourcing of certain water loss reduction activities can help to speed up operational improvement. Through a PB NRW contract a specific area of Dar es Salaam (approximately 1 million people) will improve service and reduce sufficient losses to serve more people in adjacent areas. The scope of the PBC will be:

a. Full DMA cover of the assigned area; the DMA’s will be established, bulk meters will be installed with a data transfer facility to the SCADA system, distribution network will be documented in GIS, 100 percent customer’s meters (commercial and non-commercial) will be installed for charging on volumetric basis and illegal connections will be removed;

b. Develop a reliable customer database and correct classification of each customer; support the billing and collection process in the assigned area and establish a water balance for the DMA’s as to determine apparent and physical losses;

c. Reduce physical losses; active leakage detection through acoustic sounding, replacement of household connections, repairs and replacement of pipelines based on quality requirements of DAWASCO.

d. NRW management system; supply and installation NRW management software, during the maintenance period the network will be handed over to the care takers of DAWASCO.

Component 3: Project Management and Implementation Support (US$ 8 million). The overall objective of this component is to strengthen the ability of the Project Coordination Unit (PCU) and the PMU in MOWI and implementation agencies to implement and manage the project. It also aims to provide capacity building assistance in water resources management and service delivery improvement in Dar es Salaam. This objective will be achieved by implementing the following activities

i. Support to project coordination and management units in the MOWI and the implementing agencies at the basin and utility levels.

ii. Capacity building for WRM and WSS service improvement.

a. Capacity building for WRM: in addition to the WRM specific capacity building provided in the component, this component will support capacity to plan, manage and monitor the subcomponent. It also provides complementary capacity building and facilitation support to the cross sectoral planning and coordination for integrated water resources management.

b. Capacity building for Dar es Salaam WSS institutions: Capacity building to project management staff in DAWASA and DAWASCO as well as cross
cutting capacity building initiatives for program monitoring and performance management activities by EWURA will be supported under this component.

**Technical assistance:** As the project involves institutional development and reform activities, this component will provide support to short term technical assistances to address issues unfolding in the course of implementation, and on the job trainings.

**Figure No. 1: Institutional Arrangements**

[Diagram showing institutional arrangements]
3. Environmental and Social Overview

3.1 Legal Framework

A number of policies, instruments and laws support environment and social management and the environmental and social impact assessment processes in Tanzania. The Environment Management Act No. 20 of 2004 (EMA), the Environmental Impact Assessment and Audit Regulation (2005), the National Environment Policy (1997), and the National Environment Action Plan (1994) are the key instruments that cover environmental and social management in all the sectors of development.

Apart from the National Environment Policy, there are a number of sectoral policies that consider Environment Impact Assessment as one of the planning tools for facilitating and promoting sustainable development. These policies envisage that by integrating environmental and social considerations in the decision-making process it is possible to avoid or minimize impacts associated with project implementation that may have negative effects on the environment. The policies presented below are some of the relevant sectoral and cross-sectoral policies that require the undertaking of an ESIA study prior to commencement of project implementation. In addition, these policies provide directives on the management of the project in order to ensure minimum impact on the concerned natural resources and sensitive ecosystems, and welfare of the society.

National Policies:


The overall objectives of the National Environment Policy (NEP) are:

- To ensure sustainability, security and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risk health or safety;
- To prevent and control degradation of land, water, vegetation and air which constitute our life support systems;
- To conserve and enhance our natural and manmade heritage, including the biological diversity of the unique ecosystems of Tanzania;
- To improve the condition and productivity of degraded areas including rural and urban settlements in order that all Tanzanians may live in safe, healthful, productive and aesthetically pleasing surroundings;
- To raise public awareness and understanding of the essential linkages between environment and development, and to promote individual and community participation in environmental actions;
- To promote international cooperation on the environment agenda, and expand our participation and contribution to relevant bilateral, sub-regional, regional, and global organizations and programs including implementation of Treaties.

The NEP seeks to provide the framework for making fundamental changes that are needed to bring environmental and social considerations into the mainstream of decision-making in Tanzania. It seeks to provide policy guidelines and plans, give guidance to the determination of priority actions, and provide for monitoring and regular reviews of policies, plans and programmes. It further provides for sectoral and cross-sectoral policy analysis in order to achieve compatibility among sectors.
As stated in the NEP, the environmental objective of the Water, Sewerage and Sanitation sector is to support the overall national objective of providing clean and safe water within easy reach, to satisfy other needs, to protect water sources, and prevent environmental pollution. In order to achieve this, the following policy objectives shall be pursued:

- Planning and implementation of water resources and other development programmes in an integrated manner and in ways that protect water catchment areas and their vegetative cover;
- Improved management and conservation of wetlands;
- Promotion of technology for efficient and safe water use, particularly for water and wastewater treatment and recycling; and
- Institution of appropriate user charges that reflect the full value of water resources.

b. National Forest Policy, 1996

The National Forest Policy identifies four main areas (forest land management, forest-based industries and products, ecosystem conservation and management, institutions and human resources) and present policy statements and instruments/directives to be applied to each of these. In accordance with the policy, an Environmental and Social Impact Assessment (ESIA) will be required for all investments, which convert forestland uses or may cause damage to the forest environment. Some of the policy strategy statements that are relevant for water and sewage projects include the following:

- To enable sustainable management of forest on public lands, clear ownership for all forests and trees on these lands will be defined and management responsibility promoted; and
- Biodiversity conservation and management as well as watershed management and soil conservation will be included in the management plans for all protected forests.

Involvement of forestry management authority, local communities and other stakeholders in conservation will be consulted while establishing water sources and project sites.

**National Legislation:**

In addition to the above policies, there are a number of legal and regulatory frameworks that proposed water projects must comply with. The *Environmental Management Act (2004)* is the principal legislation governing all environmental management issues in the country. Within each sector, there are sectoral legislations that deal with specific issues pertaining to the environment. Some of the legislations and regulations that are relevant in the management of the environment are presented in the next table. A summary of the main environmental legislation in relation to the water supply and sewerage sectors is presented in Annex 2:

**Table No. 1: Existing key environmental law in Tanzania**

<table>
<thead>
<tr>
<th>Act</th>
<th>Key elements</th>
<th>Implementing authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Management Act, 2004</td>
<td>The objective of this Act is to provide for and promote the enhancement, protection, conservation, and management of the environment. This Act provides a legal framework necessary for coordinating harmonious and conflicting activities with a view to integrating such activities into an overall sustainable environmental management system by providing key technical support to Sectoral Ministries.</td>
<td>Ministry of Natural Resources and Tourism NEMC</td>
</tr>
<tr>
<td>Environmental Impact Assessment and Audit</td>
<td>These Regulations shall apply to all projects undertakings and activities referred to in Part VI and...</td>
<td>Ministry of Natural Resources</td>
</tr>
<tr>
<td>Act</td>
<td>Key elements</td>
<td>Implementing authority</td>
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<tr>
<td>Regulations (2005)</td>
<td>the Third Schedule to the EMA, and the First Schedule to these Regulations.</td>
<td>and Tourism, NEMC</td>
</tr>
<tr>
<td>Wildlife Conservation Act, No. 12 of 1974, as amended</td>
<td>The Act protects wildlife and vegetation by restricting the utilisation of wildlife to license holders. The use of sensitive wildlife habitats is restricted during certain times of the year or for specified periods.</td>
<td>Ministry of Natural Resources and Tourism</td>
</tr>
<tr>
<td>Forest Act, No. 14 of 2002</td>
<td>The Act provides for the management of forests and its main objectives are to promote and enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of natural resources for the benefit of the present and future generations. In addition, the legislation aims to ensure ecosystem stability through conservation of forest biodiversity, water catchments and soil fertility.</td>
<td>Ministry of Natural Resources and Tourism, Tanzania Forest Services (TFS)</td>
</tr>
<tr>
<td>Fisheries Act, No. 6 of 1970</td>
<td>The Act limits annual catches. Specific regulations were introduced in 1973 and 1982 restricting some methods of fish harvesting as well as prohibiting dynamiting and poisoning.</td>
<td>Division of Fisheries, Ministry of Tourism and Natural Resources</td>
</tr>
<tr>
<td>Mining Act, No. 17 of 1980, as amended</td>
<td>The Act sets out government policy on all forms of mining and is supported by various regulations covering claims, prospecting rights, mining rights, and royalties. Mining license applicants are required to submit plans for environmental protection. Each industry is required to establish realistic resource-recovery standards and to adhere to them. Mining plans must be presented before operations begin.</td>
<td>Ministry of Energy and Minerals</td>
</tr>
<tr>
<td>Local (District and Urban) Authorities Act, No. 7 of 1982</td>
<td>Local authorities are empowered to enact by laws regarding the protection of soil, agriculture, water supplies, and other natural resources. The act contains provisions to protect human health and regulate pollution.</td>
<td>Local authorities</td>
</tr>
<tr>
<td>Town and Country Planning Ordinance of 1966, Chap. 378</td>
<td>The ordinance was intended to establish a land-use planning scheme for designated areas. The National Land Use Planning Commission was established to advise the Government on land conservation and development.</td>
<td>National Land Use Planning Commission</td>
</tr>
<tr>
<td>Public Health, Sewerage and Drainage Ordinance, Chap. 336</td>
<td>The ordinance prohibits the discharge of certain substances into sewers. Violation of the ordinance is an offense, and penalties may be imposed on offenders.</td>
<td>Ministry of Health and Social Welfare</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation, 2014.

The EMA (2004) includes three specific regulations with regard to the water supply and sewerage projects:

a. Air Quality Standards Regulations (2007);
b. Solid Quality Standards Regulations (2007); and

Additionally some of the main laws and regulations specifically related to the water and sewage sector are the following:

a. Water Utilization Act (No. 42), 1974;
c. Water Utilization (miscellaneous amendment) Act, (No. 8), 1997;
d. Energy and Water Utilities Regulatory Authority, 2001;
e. Water and Sanitation Act (2009) and its regulations; and
f. EWURA Regulations.

Finally, some laws and regulations related specifically to the land and social aspects (the detail of each is presented in the Resettlement Management Framework) are the following:

a. Land Act, (No. 4), 1999;
b. Village Land Act (No. 5), 1999;
c. Town and Country Planning Ordinance, Cap. 378;
d. National Land Use Planning Commission Act (No. 3), 1984;
e. Tanzania Investment Act (No. 26), 1997;
f. The Occupational Health and Safety Act, (No. 5), 2003;

**International Agreements**

Tanzania is a party to many international agreements related to environmental and social management:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989);
- Convention of the Protection of the World Cultural and Natural Heritage, Paris (1972);
- Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and their Destruction, London (1972);
- Convention on Biological Diversity (1992)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973);
- Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, Bamako, Mali (1991);
- United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (1994);
- Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora (1994);
- Montreal Protocol on Substances that Deplete the Ozone Layer (1987);
- Phyto-Sanitary Convention for Africa, Kinshasa (1967);
- United Nations Framework Convention on Climate Change (1983);
- Vienna Convention for the Protection of the Ozone Layer;
- Nile Basin Commission; and
- Lake Victoria Environmental Management Project (LCEMP).

### 3.2 Institutional Framework

The MoWI will have the overall responsibility for implementing the Programme. Programme oversight will be through the SWG that brings together the key government and non-government stakeholders and a selection of DPs. The working group will, among other things, approve annual
work plans and budgets as well as undertake quarterly oversight implementation review meetings. Programme management will be coordinated through the PCU of the MoWI, and in general is supported with technical personnel from all components of Programme management, as and when required. The following present the main WSDP stakeholders:

- **Ministry of Water and Irrigation (MoWI):** The MoWI will be responsible for overall coordination, monitoring and evaluation of the programme, facilitation of capacity building, and for ensuring policy compliance. MoWI will be the Secretariat of the Sector Working Group and ensure cohesiveness of the sector coordination, monitoring and evaluation framework featured in the table below.

- **Basin Water Offices (BWOs):** BWOs will be primarily responsible for Water Resources Development (WRD) Programme, including planning, management and overall coordination at the basin level. Basin management will be carried out through catchment committees and Water User Associations (WUAs).

- **Dar es Salaam Water and Sewerage Authority (DAWASA):** is a body corporate managed by a Board of Directors with broad powers regarding the ownership of assets the ability to borrow etc. The Act vests in DAWASA all government land assets and other property including rights of way used for the supply of water and sewerage services in the DAWASA service area.

- **Dar es salaam Water and Sewerage Corporation (DAWASCO):** is a sole provider of water supply and sewerage Services in Dar es Salaam city and parts of Coast region. The Corporation is responsible for the management, Operation, and maintenance of water supply and waste water disposal services. DAWASCO has put up strategy aimed at improving its services to its clients in Dar es Salaam, Kibaha and Bagamoyo.

- **Energy and Water Utilities Regulatory Authority (EWURA).** All utilities will be licensed by EWURA for technical operation and economic regulation purposes. EWURA will also monitor service performance and approve service tariffs.

With regard to the environmental authority, the Environmental Management Act (EMA) provides the legal and institutional framework for the management of the environment and implementation of the nation’s Environment Policy. Institutionally it provides for the continuation of the National Environment Management Council (NEMC) and the National Environmental Advisory Committee. At the MoWI the responsibility is under the Environmental and Social Management Unit (ESMU).

The NEMC is in charge of the enforcement, compliance, review, monitoring of environmental impact assessments and the facilitation of public participation in environmental decision-making and supervision of all matters relating to the environment assigned to the Council. Amongst its functions NEMC reviews ESIAs/PESIAs and recommends them (or not) for approval, and identifies projects or programmes for which environmental audit or monitoring must be conducted.

It is noted that under the Act, NEMC may “delegate to any sector Ministry, environmental body, employee or agent of the Council, the exercise of any of the powers or the performance of any of the functions or duties of the Council under the Act” (EMA paragraph 26).

### 3.3 Environmental and Social Characterization

#### 3.3.1 Environment Aspects

This section shows secondary information about the country and specific information about Dar es Salaam region where the WSSP-II is expecting to take place.
a. Location

Tanzania lies between 29°30'E and 40°30'E, and 1°00'S and 11°48'S. It is a land of contrasts, being the home of Africa's highest mountain (Kilimanjaro, at 5,895 meters [m]) and its lowest point (the floor of Lake Tanganyika, which is 1,470 m deep). Located on the east coast of Africa, it covers an area of approximately 945,000 square kilometers (km²), of which the Zanzibar Islands cover 2,400 km². The islands of Mafia, Pemba, and Zanzibar are included in this area. Of this area, 61,495 km² are covered by the inland waters of the Great Lakes (Victoria, Nyasa, and Tanganyika). The country is bordered by Uganda to the north for 396 km; Rwanda and Burundi to the northwest for 217 km and 451 km, respectively; the Democratic Republic of Congo to the west for 459 km (a water border on lake Tanganyika); Zambia and Malawi to the southwest for about 338 km and 475 km, respectively; Mozambique to the south for 756 km; and Kenya to the northeast for 769 km. The Indian Ocean, with shores characterized by coral reefs and small islands, lies to the east. The continental shelf within the 200 m depth contour varies from 4–60 km from the shore.

![Figure No. 2: Tanzania location](image)

![Figure No. 3: Dar es Salaam location](image)

Except for the coastal belt and islands, most of the country is part of the Central African Plateau (1,000–1,500 m above sea level) and characterized by gently sloping plains and plateaus, broken by scattered hills and low-lying wetlands. The Central African Plateau is deeply incised by two arms of the Rift Valley: the eastern arm, which includes lakes Natron and Manyara, and the deeper western arm, which contains Lake Tanganyika. Both arms of the rift converge in the south of the country near the northern end of Lake Nyasa/Malawi.

In regards of **Dar es Salaam**, the capital is located at 6°48' South, 39°17' East (−6.8000, 39.2833) in an area of 1,350 Km² (0.19 percent of the Tanzanian mainland) on a natural harbor on the eastern coast of Tanzania, with sandy beaches in some areas. Administratively, Dar es Salaam region is divided into 3 districts: Ilala, Kinondoni, and Temeke.

The WSSP-II (WB support areas) will include construction of extension of the distribution mains from Ardhi University Terminal Reservoirs to Bagamoyo. The project is categorized in two main packages, 2B and 2F. These components are supplied by the Lower Ruvu water system and cover areas that are classified into zones of Salasala, Wazo, Bunju, Bagamoyo town, Tegeta A, Mabwepande and Changanyikeni.
The WSSP-II will involve construction of water distribution networks (secondary mains and tertiary pipes) to individual household consumers and water kiosks for public water supply and consumption. Overall the pipe networks will cover 31.548 km for 2B and 49.666 of secondary main pipeline (between 110-450mm of diameter), 94.161 km and 222.508 km of tertiary pipelines of distribution networks respectively for the two project packages (2B and 2F). These pipeline works will use the existing street and other settlement access roads to a greater extent.

b. Climate

Tanzania experiences a variety of climatic conditions, ranging from the alpine deserts on the top slopes of Mount Kilimanjaro that are permanently covered by snow, to the tropical coastal areas that are under the influence of two monsoon winds. The northeast monsoon wind, which blows southwards from December to March, brings the hottest weather, while the southeast monsoon winds that blow northwards from March to September bring intermittent rains. The main rainy season on the coast is from March to May (the long rains) with a second season between October and December (the short rains). Mean annual rainfall varies from 400 mm in the central regions to over 2,500 mm in the highlands and the western side of Lake Victoria. Mean annual temperatures are influenced by altitude, ranging from 21°C in high mountain areas to 29°C at sea level.

In regards of Dar es Salaam, due to close proximity to the equator and the Indian Ocean, the city experiences tropical climatic conditions, typified by hot and humid weather throughout much of the year. It has a tropical wet and dry climate. Annual rainfall is approximately 1,100 mm, and in a normal year there are two rainy seasons in April and May; and short rains in Nov and Dec.

c. Ecological Zone

There are seven agro-ecological zones in Tanzania based on climate, physical geography, soils, vegetation, land use and tsetse fly occurrence, which are the main physical factors that influence opportunities and constraints for crop and livestock production.

Dar es Salaam is divided into three ecological zones, namely the upland zone comprising hilly areas to the west and north of the City, the middle plateau, and the lowlands, which include Msimbazi Valley, Jangwani, Mtoni, Africana and Ununio areas.

d. Hydrology

Tanzania shares three major lakes (Nyasa/Malawi, Tanganyika, and Victoria) with other countries in the region. Other lakes in the country include Masoko, Manyara, Natron, and Rukwa. Tanzania also has many permanent and seasonal rivers. Main rivers include the Kilombero, Mara, Pangani, Ruaha, Rufiji, Ruvu, and Ruvuma.

Tanzania’s wetlands cover about 10 percent of the country. They are classified as marine and coastal wetlands, inland wetland systems, rivers and inland flood plains, and artificial wetlands. The marine and coastal wetlands include the mangrove estuary swamps, coral reefs, seaweed and grasses, and intertidal mudflats. The inland wetlands include the Rift Valley lakes (Balangida, Eyasi, Manyara, Natron, Nyasa, Rukwa, and Tanganyika), some depression swamps (Bahi and Wembere), and Lake Victoria. The shores of the Rift Valley lakes provide a habitat for birds, while Lake Natron serves as the largest flamingo breeding ground in Africa. The soda lakes (Eyasi, Manyara, Natron, and Ngorongoro) are their feeding grounds. The waters of these lakes and the adjacent land are often inhabited by wildlife, which is a major tourist attraction in Tanzania.

Some swamps are important breeding sites for fish. Lake Tanganyika is home to about 217 endemic fish species, while Lake Nyasa/Malawi has the most diverse fish species population (over 600 species). Both lakes are world famous for their variety of aquarium fish. Lake Tanganyika is
important nationally for sardine, while Lake Victoria has a naturally rich and diverse indigenous fish fauna (178–208 species). However, the introduction of Nile perch has led to the disappearance of several indigenous species.

Dar es Salaam stretching about 100 km between the Mpiji River to the north and beyond the Mzinga River in the south. The Indian Ocean borders it to the East. The beach and shoreline comprise sand dunes and tidal swamps. Coastal plains composed of limestone extend 10 km to the west of the city, 2- 8 km to the north, and 5- 8 km to the south. Inland, alluvial plains comprise a series of steep- sided U- shaped valleys. The upland plateau comprises the dissected Pugu Hills, 100- 200 m in altitude. Dominated by limestones, sandy clays, coarse sands and mixed alluvial deposits, the soils of the Dar es Salaam region are not particularly fertile (Dongus, 2000).

e. Protected Areas

Proportionately, Tanzania has a much bigger land surface area devoted to resource conservation (29 percent) than most countries. The hierarchical protected-area system consists of national parks (12), game reserves (28), the Ngorongoro Conservation Area (1), and game-controlled areas (38) totaling 240,000 Km$^2$. In addition to the wildlife-protected areas, there are 540 forest reserves covering 132,000 Km$^2$, equivalent to 15 percent of the total woodland and forest area in Tanzania, not including the Mafia Island Marine Park. The protected areas are within the nine water resources basins, in which they support water catchments from anthropogenic activities. The Katavi national Park and subsequent game reserve are within the Lake Rukwa water resources basin.

The main protected area in Dar es Salamm region is the Dar es Salaam Marine Reserve System (DMRS) which is a group of marine wildlife reserves situated off the coast of Dar es Salaam Region. The reserve system consists of nine uninhabited islands, four north of Dar es Salaam (Bongoyo, Mbudya, Pangavini and Fungu Yasini) and five south of the city (Inner and Outer Makatumbe, Inner and Outer Sinda and Kendwa Island). It provides protection for several important tropical ecosystems; coral reefs, mangroves and seagrass beds. These are off-shore islands situated at around 10 kilometer from the shoreline, and distance from the shoreline beach to the project areas range from 5-20 Kilometers. In this particular project no project activity will be

Figure N° 4: Tanzania Protected Areas and the Main Road System

Source: NEMC.
located neither on the offshore islands nor on the cost-line beaches of Dar es Salaam city and Bagamoyo town. The area covering the project activities are within the planned and unplanned residential settlement within (Kinondoni Municipal Council and Bagamoyo) project areas.

In the Kinondoni Municipal Council there is one administrative Word named Mabwepande in which a protected Pande Game reserve exists. The proposed project activities will be only on the settlements outside conserved area. The distance between the settlements and the forest is between 500-1000m from the benchmarks.

The Pande Game Reserve (GR) is a part of the East African coastal forest in Dar es Salaam region. The game reserve was gazetted in 1990. The reserve covers 1,226 ha lying between 80-126 meters above sea level consisting of disturbed forest, thicket, grassland and woodland (Nike, 2003). It is part of the Eastern Arc, Coastal Forest Biodiversity hotspot and one of the highest priority areas for biodiversity conservation in the world. It is also classified as an important bird area by Birdlife International (Nike, 2003). In 1952 Pande was gazetted as a forest reserve in order to have better management. When the reserve was gazetted, small areas of scrubland were left out to meet the needs of the adjacent communities.

f. Flora and Fauna

The flora of Tanzania is extremely diverse, with over 12,700 plant species—a figure comprising more than one-third of the total plant species in Africa (UNEP 1998). Yet, Tanzania’s diverse flora are not evenly distributed throughout the country, they are found in six specific ecological zones, namely: (i) Moist Forest Mosaic; (ii) Coastal Forests and Thickets; (iii) Afromontane; (iv) Acacia—Savannah Grassland; (v) Acacia—Commiphora Thornbush; and (vi) Brachystegia—Julbernardia—Savannah Woodland.

Tanzania also has a highly diverse and widely distributed amphibian population that is particularly endemic to the coastal forests and the forests of the Eastern Arc Mountains. Tanzania has 293 reptile species that are also widely distributed throughout the country and not greatly threatened by
habitat change. The number of bird species found in Tanzania is 1,065. Of these, 25 are endemic, and all but 3 species are limited to forest habitats. Some 302 species of terrestrial mammals reside in Tanzania. Of these 302 species, 13 species (4 percent) and 5 subspecies are endemic to Tanzania and Kenya, and 1 subspecies is endemic to Tanzania and Uganda.

The species of critical importance include chimpanzee, colobus and mangabey monkeys, elephant, and a dwindling population of black rhinoceros. The larger carnivores include lions, leopards, cheetahs, and African wild dogs. There are over 30 antelope species, and the giraffe population is the largest in Africa. Tanzania also has a rich menagerie of small mammal species, including bats (97 species), shrews (32 species), and rodents (100 species).

Tanzania also has diversity large, diverse populations of millipedes, terrestrial mollusks, and butterflies. The marine environment has more than 7,805 invertebrate species, and there are also about 789 species of freshwater invertebrates (mostly aquatic insects).

### 3.3.2 Social Aspects

This section show also relevant social information about the country and specific information about Dar es Salaam region where the WSSP-II is expecting to take place.

#### a. Population

According to the latest estimates, the population of Tanzania is estimated at 36 million people in approximately 130 tribes, with a 2.5 percent growth rate (national census 2002).

The population of Dar es Salaam region according to the 2012 national census had a population of 4,364,541, which was much higher than the pre-census projection of 3,270,255. For 2002–2012, the region’s 5.6 percent average annual population growth rate was the highest in the country. It was also the most densely populated region with 3,133 people per square kilometer.

The main economic activities in the WSSP-II areas include agriculture (crops), Livestock and Poultry, Trade, Industry and Commerce Sectors. A good number of the population in the target areas earn their living through employment in public and private sectors.

#### b. Health and Education

Health and education progress in Tanzania has been slow, although some achievements have been recorded in recent years. Life expectancy at birth increased from 44 in 1978 to 54 years for males and 56 years for females in 2002; infant mortality dropped from 100 to 68 per 1,000 between 2000 and 2004, while child mortality dropped from 141 to 112 per 1,000 between 2000 and 2004. However, infant, child, and maternal mortality rates still remain among the highest in the world, and more than one-third of all children under five are malnourished. HIV/AIDS incidence (human immunodeficiency virus/acquired immunodeficiency syndrome) is high, with 7 percent of the population between 15 and 49 years of age are HIV positive. In the 1990s, HIV incidence increased significantly among this group and was higher among women, but recent data indicate a stabilization trend. Communicable diseases (HIV/AIDS, persistent malaria, acute respiratory infection, and diarrhea), malnutrition, and poor quality health care have been major factors in poor survival indicators. Finally, the proportion of the rural population with access to safe water remains low is 56 percent in 2015.

Net primary school enrolment increased from 57 percent in 2000 to 95 percent in 2005, but the illiteracy rate remains high. The illiteracy breakdown by age and gender is:

- 0 to 14 years: 44.3 percent (male 7,988,898; female 7,938,979)
There are a number of education institutions in the proposed Dar es Salaam project area. Examples of the institutions include primary and secondary schools and other tertiary institutions. In Kinondoni Municipality there are 198 primary schools, of which 131 are government owned and 67 were private, and 86 secondary schools, of which 16 were government owned and 70 private. The district has a total number of 56,811 pupils in public schools of whom 29,411 are boys and 27,400 are girls. Further the district has 26 secondary schools of which, 17 are owned by the Government and 9 are owned by individuals or religious organizations. The district has also tertiary institutions, which include the Agency for the Development of Education Management (ADEM), Bagamoyo College of Art, Mbegani Fisheries and School of Library Archives and Documentation Studies (SLADS).

There are about fourteen Health facilities (Hospital, Health Centre and Dispensaries) in the Dar es Salaam project area. Epidemics have been a major killer hazard in the proposed project areas. The most common killer diseases are HIV/AIDS pandemic malaria, cholera, dysentery and water borne diseases. The major causes of the outbreak of diseases are poor sanitation and inadequate sewage system, lack of clean drinking water. In urban areas it is also due to poor planning and uncontrolled urban development.

c. Poverty

Despite its potential and rich resource endowment, Tanzania is one of the poorest countries in the world, with a gross domestic product (GDP) per capita of US$552 in 2010 (estimated by U.S. Department of State). The economy depends heavily on agriculture, which accounts for over 40% of GDP, provides 85% of exports, and employs about 80 percent of the workforce. Nearly 90% of the poor in Tanzania are in rural areas, and the sale of crop and livestock products accounts for about 75 percent of rural household cash income. The severe degradation of land, forests, and water resources that support agriculture has become an obstacle to the revival of the rural economy.

Official estimates suggest that over half of Tanzania’s 36 million people live below the international “dollar-a-day” poverty line. Poverty is more widespread in rural areas, with almost 61% of the rural population categorized as poor, compared to 39 percent of the urban population. Income distribution is uneven; in the 1998 rural survey, the lowest quintile accounted for only 7% of mean expenditures.

Based on the results of the in-country consultations with local communities, local and central governments, and civil society members during the preparation of this ESMF, the poor people are: (i) rural households; (ii) female-headed households, other households with less than two adult members, elderly, and handicapped persons; and (iii) urban households. These groups are not mutually exclusive. The reasons for these categories are:

- Rural households:
  - Low agricultural productivity, declining soil fertility, and environmental degradation;
  - Lack of access to land, land fragmentation, and insecurity of land tenure;
  - Lack of access to markets and absence of rural commercial activity and alternative income-earning opportunities;
  - Low-quality education, lack of access to education, and high cost of education;
  - Poor health services and health standards and rise in HIV/AIDS incidence negatively impact productivity;
  - Poor nutritional intake;
  - Lack of access to low-cost capital or micro-credit or micro-grants;
- Lack of access to affordable and sustainable household energy sources; and
- Vulnerability.

- **Female-headed households:**
  - Shortage of household labor;
  - Declining soil fertility;
  - Many women have to take care of unemployed/unemployable husbands, dependent parents, and dependent orphans;
  - Low education attainment, poor access to land and limited employment opportunities;
  - Poor social services, such as water, health, education, and more.

- **Urban poor:**
  - Rapid increase in urban population;
  - No employment opportunities, particularly among poorly educated young people;
  - Poor basic social services and infrastructure;
  - Lack of housing and land; and
  - High food prices due to low agricultural productivity, high transport costs, and restrictions on petty trade.

In regards of **Dar es Salaam** region, Over 70 percent of Dar es Salaam residents live in informal, unplanned settlements that lack adequate infrastructure and services, and over half of them survive on roughly a dollar per day. With a population growth rate of about 8 percent per year, Dar es Salaam is one of the fastest-growing cities in sub-Saharan Africa. City and municipal authorities face significant challenges with respect to providing new or even maintaining existing infrastructure and services (Dar es Salaam Case Study, World Bank).

The WSSP-II support in water resources will address some of these water resources challenges facing the Nation through the support to Implementation of Integrated Water resources Management Plans already in place in six out of nine basins.

d. **Ethnic Groups**

The major ethnic groups in the WSSP-II project areas are Zaramo, Ndengereko and Kwere, Zigua, Masai, Doe. However, due to the large influx of people from up country, there is a sizeable multicultural mix. Also there are a number of Asiatic and Arabian groups, largely engaged in commercial and industrial activities. Bagamoyo town has a heterogeneous population including different ethnic group and cultures from the parts of Tanzania, although Kwere is the dominant ethnic group in the district.
4. World Bank Safeguard Policies

4.1 General overview

The World Bank safeguard policies are divided into environment, social, and legal areas. Likewise, the World Bank has a public disclosure policy that should be applied in all safeguard policies.

![Figure 6. World Bank Safeguard Policies](image)

<table>
<thead>
<tr>
<th>Environmental Policies</th>
<th>Social Policies</th>
<th>Legal Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP/BP 4.01 Environmental Assessment</td>
<td>OP/BP 4.10 Indigenous People</td>
<td>OP/BP 7.50 International Waterways</td>
</tr>
<tr>
<td>OP/BP 4.04 Natural Habitat</td>
<td>OP/BP 4.12 Involuntary Resettlement</td>
<td>OP/BP 7.60 Projects in Disputed Areas</td>
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<td>OP/BP 4.09 Pest Management</td>
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<td>OP/BP 4.36 Forest</td>
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<tr>
<td>OP/BP 4.37 Safety of Dams</td>
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The Safeguard Policies pursue three objectives: (i) ensuring that environmental and social issues are evaluated in the preparation and decision-making process; (ii) reducing and mitigating the environmental and social risks of Bank-financed programs or projects; and (iii) providing mechanisms for consultation and information disclosure. Additionally, the Safeguards pursue the compliance of the national law and regulations in regards to the environmental and social issues.


4.2 Safeguards policies triggered by the WSSP-II

The project (WSSP-II) has been rated Environmental Risk Assessment Category B and triggers the following World Bank Environmental and Social Safeguard Policies:

- OP/BP 4.01 Environmental Assessment
- OP/BP 4.04 Natural Habitats
- OP/BP 4.11 Physical Cultural Resources
- OP/BP 4.12 Involuntary Resettlement
- OP/BP 4.37 Safety of Dams

The next table presents the common settings in which World Bank safeguards are triggered and generic directions to comply with them.

### Table No. 2: Social and Environmental Safeguards Commonly Triggered in Water Supply and Sewage Projects

<table>
<thead>
<tr>
<th>Safeguard Policy</th>
<th>Trigger settings and requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment</td>
<td>This safeguard is typically triggered in projects where the work will affect, temporary or permanently, the natural environment and/or society, through direct, indirect, or cumulative impacts. The specific sub-projects financed by the WSSP-II will require to develop the environmental and social studies (ESIA, PESIA, EAR and others) required by national law and the Bank’s Environmental Assessment Policy to ensure the social and environmental sustainability of the project, and to obtain the respective environmental permissions. Before start the works, the sub-projects will requires the NEMC permission.</td>
</tr>
<tr>
<td>OP/BP 4.01</td>
<td></td>
</tr>
<tr>
<td>Natural Habitats</td>
<td>This safeguard is most likely triggered for projects located in a protected area or critical area that may be affected directly or indirectly by the project. Depending on the potential negative impacts to the natural habitats (flora and fauna), these projects will require special studies to protect or preserve the species identified at risk of being affected. If a project can cause irreversible damages, it will be excluded. In the case of WSSP-II, potentially the Dar es Salaam Marine Reserve System (DMRS) indirectly may be affected. The proposed conversional wastewater treatment facility is expected to be installed at 2-3 kilometers away from shoreline mangrove. The possible effect to the mangrove vegetation is its exposure to the effluent emanating after being treated to acceptable environmental standard (30mg/l BoD5). The facility is among the proposed project to be financed by the Bank. The effects are expected to be positive as the expected to influence natural regeneration, as mangrove shall perform as media for nutrient uptake mainly Nitrogen and Phosphorus after primary and secondary digestion performed by a plant. This facility is proposed to be located in an already mangrove degraded area within Mbezi.</td>
</tr>
<tr>
<td>OP/BP 4.04</td>
<td></td>
</tr>
<tr>
<td>Indigenous or Vulnerable Groups</td>
<td>This policy is triggered when a project is located in recognized areas of distinct social and cultural groups, vulnerable groups, where a project benefits or affects these communities. The World Bank use the term “Indigenous” in a generic sense to refer to “distinct vulnerable, social and cultural group”. These groups should has the following characteristics in varying degrees: a) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; b) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; c) customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and; d) a language, often different from the official language of the country or region. Note: In the WSSP-II project area, no Indigenous or vulnerable groups have been identified.</td>
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<tr>
<td>OP/BP 4.10</td>
<td></td>
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<tr>
<td>Involuntary Resettlement</td>
<td>This safeguard is triggered when projects require the relocation of people or compensation is required because of a project’s impact on livelihoods or natural resources. The affectation could be minimal or substantial depending on whether houses or productive lands (legal or illegal) are impacted.</td>
</tr>
<tr>
<td>OP/BP 4.12</td>
<td></td>
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</tbody>
</table>
These cases require a Resettlement Action Plan (RAP) taking into account the World Bank’s guidelines.

The investments of the WSSP-II, may potentially affect people located in the surrounding areas of the projects, especially along the distribution lines of water and sewerage that the project will finance.

Physical Cultural Resources OP/BP 4.11

This safeguard might be triggered during project construction in zones of recognized archaeological/cultural/physical potential. Investigations, Rescue, and the Chance Finds Procedures Plan are the most common instruments required.

The WSSP-II subprojects triggers this policy as there is always possibilities of chance finds during construction works. The chance finds procedures will help protect and preserve cultural artifacts and objects of architectural significance.

Safety of Dams OP/BP 4.37

This policy is triggered. While the project is not financing large water reservoirs and dams, it will involve the financing of small dams (less than 15 m). The Project will apply the Ministry of Water’s Guidelines for Dam Safety dated 2012 in those situations.

In accordance with the Bank’s public disclosure policy, a Communication and Disclosure Plan (CDP) is required to present all the environmental and social documents developed for the specific projects (ESIAs\(^1\)/PESIAs\(^2\), EAR\(^3\), RAPs\(^4\), and others) as part of the participation and consultation process. The sub-projects financed by the WSSP-II will take into account this Bank’s requirement.

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1 ESIA: Environmental and Social Impact Assessment
2 PESIA: Preliminary Environmental and Social Impact Assessment
3 ESAR: Environmental and Social Audit Report
4 RAP: Resettlement Action Plan
5. Environmental and Social Impacts and Measures

Based on the Guidelines of Good Environmental and Social Practices (GGESP) developed by the MoWI for the Water Supply Systems (WSS) and Sewerage Systems (SS), following present the main environmental and social impacts and its mitigation measures for the potential activities that the WSSP-II will finance.

5.1 Description of the potential environmental and social impacts

Following present the main environmental and social potential impacts and measures in the water supply and sewerage system sectors:

5.1.1 Environment impacts

**Loss of ecological and productive values:**

a. Loss of important species, communities, habitats and landscapes

Water and Sewerage projects can have significant impacts on important animal and plant species and communities as well as on landscapes. These impacts are more common in the case of construction involving new access road where there is destruction of habitats such as forest or wetland. However where an area has been settled for some time human changes to the original ecosystem may mean that the only areas in which some species survive is in the remnants of the original ecosystem which persist in the project area.

In general, the total area destroyed directly by the construction of new projects is not great – usually some tens of hectares – depending, of course, on the magnitude of the project. However other factors can significantly increase the importance of this loss, including:

- Additional areas destroyed for labor camps, workshops, borrow pits, quarries, etc.;
- Areas impacted by harvesting of fuel-wood, cutting construction timber for camps, formwork, etc.; and
- Impacts of induced development (in-migration, opening of agricultural land, logging, industrial areas) resulting from the water and sewerage project and its access roads.

For water supply projects (WSSP-II), the impact of water abstraction itself on water resources; can cause a significant impact. In this particular case the source of water is a Ruvu river and the abstraction of water for this particular project was identified to cause a significant impact particularly during dry spells between August and September. MoWI is considering construction of a Kidunda Dam Project to regulate the river flows. However, funding for this Dam is not yet secured, but will not be financed by the Bank as part of the proposed WSSP - II.

Kidunda dam project will therefore satisfy the following basic purposes:

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5 The Guidelines of Good Environmental and Social Practices (GGESP) was developed in November 2015 and approved by the MoWI in February 2016 as institutional instrument for the environmental/ social management of the sector.
a. Supply water to the city of Dar es Salaam and its environs through Lower and Upper Ruvu intakes.

b. Provide an adequate stream flow to protect the Ruvu River environment during extreme dry seasons leaving a sufficient environmental flow to avoid irreversible damages to the downstream riverine habitat.

c. Create positive impacts developing sustainable economic strategies such as fishery implementation eco-tourism, etc.

d. Improve the livelihood conditions of the resettled people through roads, health centers, schools and other basic facilities.

e. Use the same flow released for water supply purposes to generate power for the region and the national power network.

The disposal of sewage sludge, from the project area is well taken into account. The area is currently less populated, where by water carriage sewerage system is not feasible option. The project area will be initially serviced by on-site sanitation technologies supported by cesspit empties. The sludge collected will be disposed at the existing waste stabilization ponds at Lugalo Barracks. The long term plan for the project area is when the area will be fully populated and the use of water per capita will raise from existing 50-70L/capita to (100-120L/capita) which is enough to qualify for connecting to sewerage system. The planned sewerage project is expected to be connected to the proposed waste-water treatment plant which will be located within Mbezi area, which is about 2-3 km. from the shoreline and the remaining mangrove forest. The final location for the Mbezi WWTP will be chosen to avoid any environmentally sensitive areas. The (ToR) for a consultancy study for the feasibility of the proposed sewerage project is ready. It is envisaged that with guidance from GGESP the project will maintain good water quality and odors in the project area.

b. Loss of riverside vegetation

Riverside vegetation performs a number of highly significant ecological functions. These are frequently essential to the maintenance of aquatic systems and should be strenuously protected. The functions of riverside vegetation (usually of vegetation beside lakes and ponds) include:

- Shading of water to maintain temperatures within ranges in which aquatic life can live;
- Supporting aquatic food chains through inputs of vegetative material, either directly through leaves and branches falling into the water, or indirectly as run-off of decomposed matter from the leaf layer under the vegetation (non-native vegetation species generally do not provide good food sources since native decomposing organisms are not adapted to break down the exotic plant material);
- Providing habitat for species such as insects which become part of the aquatic food chain;
- Creating breeding, shelter and feeding habitat for aquatic species when trees and larger branches fall into the water (non-native species do not provide such good habitat as they do not decompose as readily to provide hollows);
- Preventing bank erosion during peak flow periods; and
- Trapping sediment flowing from land-based sources that would otherwise raise turbidity in the water.

In WSSP-II Water resources supported project the said Riverside vegetation impacts and respective mitigations need to be considered, to enhance a number of highly significant ecological functions.
Among possible mitigation is to undertake detailed environmental flows and stick on the agreed operational procedures.

c. **Spoil disposal leading to loss of habitat**

Spoil disposal can lead to loss of habitat through direct covering of habitat (usually only significant in the case of highly endangered or highly restricted habitats) or through erosion of disposal areas leading to sedimentation of (usually aquatic) habitats.

The WSSP-II DAWASA projects will ensure a thorough study on mangrove and potentially other endangered species is conducted within the scope of ESIA and no uncontrolled spoil disposal will be accommodated during project implementation and operation. The water distribution project will be located in the semi developed peri urban areas. Much of the land in this area has already being altered by anthropogenic activities, such roads, buildings, backyard gardens and orchards, car-parks and garage. Others are religious Institutions, schools, dispensaries retailer shops and communal market places.

d. **Disruption to groundwater supplies**

Quarrying, particularly in limestone areas, can disrupt groundwater supplies by rupturing impervious layers and allowing the water stored in the aquifer to escape into deeper formations. This can have impacts over very extensive areas and can completely destroy community and agricultural dry season water supplies.

e. **Disruption to animal migrations**

New access road for a water or sewerage projects can block or disrupt animal migrations. This usually occurs as a result of the break in the habitat that roads create. A very wide range of animal groups can be affected, ranging from elephants to very small animals such as mice and squirrels. Where roads cross-waterways they can impact the migrations of aquatic species such as fish and frogs. For some species this involves moving with advancing floodwaters across areas, which are dry for much of the year and are therefore not obviously fish migration routes. It is important to obtain local knowledge of fish migrations and the water conditions, which such migrations require.

Since animals undertake migrations in order to meet some biological need (e.g. moving to seasonally available food sources or breeding areas) disruption of migration routes can result in the loss of the affected animal population.

Local communities should always be surveyed to gather information about animal migrations in their area before the construction of a new right of way.

f. **Impact on local resources through demand for fuel, food, food and building materials**

The establishment of labor camps and workshops, especially in big projects, can impact on the local resource base in a number of ways, including:

- Cutting of trees for fuel for cooking and heating;
- Harvesting plant and animal products for food;
- Buying up of locally produced food supplies so that there is insufficient for local people (who may be unable to pay the high cash prices paid by construction crews); and
- Cutting of trees, reeds, etc., for construction of camp buildings and workshops.

All of these factors can adversely impact both the local ecology and the local communities.
The WSSD II will also have such activities in the project areas where special attention needs to be included in the ESMP, tender documents, and contracts and client-monitoring checklist.

g. **Impact on local wildlife through recreational activities by workforce**

It is not uncommon for construction crews to engage in hunting or trapping of local wildlife during their free time. This may be done for relaxation or in order to vary their protein supply. Impacts can be quite severe where there is a large workforce or where the local wildlife is rare, endangered, or merely susceptible to disturbance. Such impacts can also affect local human populations where they make it more difficult for them to secure necessary protein supplies.

h. **Post construction increase in harvest of environmentally sensitive products**

One of the most significant secondary impacts of water projects and sewerage projects, especially when the projects include access road, can be the increase in harvesting of environmentally sensitive products. This most commonly occurs as a result of improved access to markets, either because transport times are reduced (as in the case of fresh fish and meat from wildlife) or because bulky items can be more easily transported (as in the case of timber). Additional pressure leading to increased harvests comes from the increase in population resulting from in-migration following better services.

When water projects and sewerage provide greatly improved access to markets local people are likely to take advantage of this opportunity to increase their income by increasing the amount of resources that they harvest. In many cases they are actively encouraged in this by buyers from outside the area who now have access. The ability to sell greater volumes of the resource can lead to the introduction of more “efficient” harvesting technology that might previously have been unnecessary. Such new technologies might not only harvest more of the resource, they may also cause damage to the ecosystem in the harvesting process, thereby exacerbating the un-sustainability of the process.

The end result of the improved access to markets for local products may be that these are quickly exhausted, leaving the people in a worse situation before the project construction.

i. **Introduction of plant and animal pest**

Bringing heavy equipment and construction supplies into an area has the potential to inadvertently introduce plant and animal pests to the area. Introductions of pest species in this way can easily cross international borders. Such pests can have a very significant long-term impact on the environment and the economy.

Ways in which pests are typically introduced through water and sewerage projects and ancillary projects are by seeds carried in mud and dust on construction equipment and by animals, which are carried in the spaces in materials such as pipes. Animal pests, particularly reptiles and amphibians, can similarly be transported long distances.

j. **Loss of agricultural land**

Agricultural land, already leveled and cleared, provides what seems an ideal area for a new construction of water or sewerage projects. The loss of land to the project area itself may be relatively insignificant, though it still may be significant in local terms. However the development attracted to the area by the improved access created by the project (induced development), coupled with increasing land values in the project area, can lead to conversion of large tracts of agricultural land to other uses. This potential conversion needs to be considered in planning and in impact assessment.
Hydrological and water resources:

a. Effect of sediment on water bodies
Sediment has a variety of harmful impacts on water bodies. The overall effects of these are to reduce the productivity of aquatic systems, reduce important functions such as flood control and water supply, and affect human health. These include:

- Increased turbidity;
  This impacts the environment in a number of ways, such as preventing light penetration, which inhibits the growth of aquatic vegetation and reduces the chances of fish seeing their prey to capture it. Waters with high turbidity tend to have higher temperatures and lower dissolved oxygen concentration. This can lead to the death/reduced breeding success of aquatic organisms.

  Suspended sediment, particularly clay particles, can provide a site for harmful bacteria which make them more difficult to eliminate through normal water treatment processes. This can have human health impacts as well as increasing the cost of treating water supplies to an acceptable quality. Increased turbidity can also reduce/remove the aesthetic/visual values of a water body.

- Settling of sediment on the bottom of the waterway;

- Settling of sediment can have a wide range of impacts:
  - Smothering aquatic plants and bottom living organisms;
  - Covering fish spawning areas and food supplies;
  - Reducing the capacity of channels to carry water, thus affecting functions such as flood regulation, water supply, and navigation.

- Interference with aquatic organisms; and

- Sediment particles in the water can harm the gills of fish and block the filtering mechanisms of filter-feeders such as mollusks.

b. Erosion and Sedimentation
Construction in the rainy season, or improper construction methods which leave soils exposed unnecessarily after dry season construction, can lead to significant erosion. Improper drainage in the project area of high rainfall can ruin the project including access roads and have adverse impacts on adjacent land, particularly in steep areas. Even during the dry season, or in areas of generally low rainfall, if the drainage and erosion prevention is badly designed, a short but intense rainfall can cause significant erosion downstream of the project drainage. Erosion is not only damaging to land and vegetation but also causes serious sedimentation problems in nearby surface waters.

c. Impacts on drainage
In the case of access road for a water and sewerage project, can have detrimental impacts on the drainage of surrounding areas. For example, access roads built on embankments which interfere with cross drainage, and roads on causeways which do not allow adequately for maintaining natural
water flows can permanently impair the biological cycles and productivity of wetland ecosystems. Additionally the access roads can cause flooding of adjacent areas by blocking the flow of water.

Attention needs to be paid not only to natural drainage, also to existing constructed drainage systems. Local irrigation channels can be crucial to the production of dry season crops.

d. Removal of material from river and stream beds

Removal of sand, gravel, and rocks from streams can have a number of significant impacts:

- Destruction of breeding, feeding and shelter habitats of fish and other aquatic life;
- Increase in sediment load of downstream water through disturbance; and
- Changes in bottom profile leading to changes in direction and velocity of water flow – this then leads to changes in direction and flow of water which can cause erosion of stream base or banks. Where banks erode there is likely to be secondary impacts due to the loss of riparian vegetation and deposition of sediment downstream.

e. Spoil disposal leading to sedimentation

Spoil disposal can lead to severe sediment impacts, particularly where spoil is disposed of in steep areas or into or near watercourses, or where spoil is not properly stabilized. The use of GGESP in the spoil disposal can reduce the impacts.

Traffic impacts:

a. Traffic impacts of mobilizing equipment and movement during the construction

The movement of large equipment along public roads introduces risks of traffic accidents, particularly when such equipment is over-width or over-length. In addition, movement of equipment during construction is often along or across lanes being used by normal traffic. This poses a risk of collision between equipment and normal traffic. The use of the GGESP in traffic control can reduce the impacts.

b. Traffic flow disruption during construction

Normal traffic flows can be severely disrupted specially in urban areas during the construction. This can have economic as well as human health impacts.

c. Traffic accidents

Any project, which generates increased traffic or results in higher travel speed (access road), will have a potential risk of increased numbers of traffic accidents.

Air, Water, and noise pollution:

a. Water pollution from sewage and rubbish disposal

Labor camps can generate large quantities of wastes, which have the potential to impact on the quality of nearby water supplies as well as on landscape and wildlife values. In addition, where human waste from labor camps pollutes local water supplies this may cause health problems for local people.
Rubbish from labor camps can have a variety of impacts, including providing a breeding place for flies and other vermin, being spread around the countryside by wind and animals to reduce visual values, attracting wildlife to feed on rubbish with the wildlife possibly becoming a local pest or suffering impacts from improper foods. The use of GGESP in sewage and rubbish disposal could reduce the impacts.

b. Oil pollution during construction

Oil pollution can arise from a range of sources during project construction. These include:

- Improper disposal of oil and grease during equipment maintenance;
- Leaks from fuel and lubricant stores and leaks and spills during filling of storage tanks;
- Oil leaks from machinery such as generators; and
- Pollution from bitumen and solvents during storage or while applying bitumen surface, especially when application happens during rain periods.

Oil pollution does not need to be a major spill in order to create impacts. Significant impacts can also arise from continuous small amounts of oil pollution over a period of time. The most serious impacts tend to happen when the oil reaches water bodies, but pollution of terrestrial habitats can also lead to impacts. The most damaging aspects of oil pollution are the toxic effects of the more volatile components and the coating of organisms with oil, which affects their ability to function. This latter effect can result from interfering with respiration (e.g. of invertebrates or small vertebrates), from hindering movement, or by other effects such as the loss of insulating properties of fur and feathers when coated in oil. The use of GGESP in oil pollution control can reduce the impacts.

c. Run-off or slumping of stockpiles into stream

Stockpiles of earth, sand, or other building materials should not be placed adjacent to watercourses. Under the effects of rain and wind these materials can move into streams leading to significant local and sometimes more widespread impacts.

d. Run-off of sediment-laden or polluted water from quarries and pits

Heavy rain can lead to accumulated dust and sediment being flushed out of quarries and pits and carried into nearby water bodies. The section on Effect of Sediment on Water bodies describes the potential environmental impacts of this.

e. Accidental spills of hazardous material

Some materials can have significant environmental impacts if spilled on the project area. This might occur as a result of a container falling or vehicle accident. While significant effects are usually localized, the accidental introduction of some substances into waterways can have widespread impacts. Some pesticides fall into this category.

f. Noise pollution in nearby settlements and wildlife areas

Noise pollution can have significant impacts on human health, including damage to hearing and increasing stress levels. It can be particularly impacting in urban areas (vicinity of hospitals, schools, others). Noise can significantly disrupt teaching in schools and can result in significant production losses and even death of stock in intensive livestock rearing facilities.

Where there are wildlife breeding areas (e.g. wetlands with breeding water birds) close to production sites the breeding success of these can be significantly reduced through such impacts as:
preventing courtship behavior and nest building; causing stress to parent animals that affects their ability to forage for food; disturbing parent animals so that they abandon young animals; and causing adults or young to stampede with resultant deaths and injuries. The use of GGESP in managing noise pollution impacts.

g. Vibration impacts during construction phase

Vibration can damage building structures and service infrastructure as well as having a psychological impact on residents. The most serious vibration impacts come from pile-driving, though the operation of heavy equipment can also cause vibration impacts. The use of GGESP can reduce the impacts.

h. Air pollution during construction phase

The major source of air pollution during the construction phase is dust and similar particulate matter. This can arise from:

- The operation of equipment such as rock crushers;
- Movement and operation of construction machinery;
- Dust blowing off loads of fill as they are transported;
- Dust blowing from stockpiled material;
- Loading and unloading of fill; and
- Normal traffic using the unsealed road surface or bypass lanes.

Air pollution can also arise from the emissions from motors of equipment used during the construction and from long lines of normal traffic waiting to pass through the construction.

Short-term exposure to high levels of dust can lead to immediate health problems through causing or exacerbating bronchial complaints and sinus and eye conditions. In addition, long-term exposure to some types of dust can have the additional impact of causing lung disease, which can ultimately be fatal. Workers in quarries and rock-crushing plants are particularly susceptible to this condition.

In addition, dust can impact on crops in a variety of ways, including:
- Preventing or reducing fertilization, with resultant crop loss or decrease;
- Destroying natural protective leaf coatings and rendering the crop less healthy or more susceptible to disease and pests;
- Reducing photosynthesis by blocking sunlight falling on leaf surfaces, thus reducing plant growth and seed/fruit production; and
- Lowering market value of leafy vegetables.

In the projects that include access roads, traffic passing along a completed road gives rise to dust and air pollution, even where the road has a hard surface. The most significant pollutants will be carbon monoxide and lead (where leaded fuels are in use). Lead in particular can have significant health impacts, particularly on children.

i. Water abstraction

Water resources abstracted for a particular water supply projects can have a significant decline level of water in the downstream side. Such impact can affect the riverine ecosystems, the downstream off-take infrastructures, navigations and the flow rates. As such a critical assessment is needed during design to ensure all other users in the ecosystem and biological diversity are considered for impact mitigation that include water allocation.
j. Disposal of sewage sludge

All sewerage treatment facilities usually generate sludge. The generated sludge needs to be decanted dries and used as a source of manure. In places where land is limited and solar radiation is sufficient throughout, the sludge drying beds ear recommended for a final disposal technology. Otherwise sludge dewatering can become costly and hence becomes less cost effective technology.

k. Maintenance of water quality

Effluent from wastewater treatment facilities usually is directed to environment or receiving water body (i.e. lake, river or ocean). The quality of receiving water body can be affected if the final effluent is not well polished through a tertiary treatment. The tertiary treatments are recommended for reduction of primary products of Phosphorus and Nitrogen. This technology actually making use of aquatic plants like reeds and papyrus for effective nutrients uptakes. Monitoring and evaluation of water quality in both inlet and outlet points can assure maintenance of water quality of the receiving environment.

l. Odor from sewage

Odor from sewage collection and treatment facilities is inevitable, but can be minimized to some extent through sealing off the system and ensuring there is enough water for a continuous carriage. From a design stage a slope of the sewer line can be a source of odor due to lowering of velocity along the sewer. Any decomposing, which takes place within a line, will be the primary cause of odor. The anaerobic process, due to its nature is a primary source of odor. Reducing scum and floating debits, can minimize the magnitude of odor. This is always during operation of the system. The conversional wastewater treatment is currently be recommended, for effective treatment of waste water and disposal efficiency. The use of GGESP in sewage odor control can reduce the impacts.

5.1.2 Social impacts

a. Local Uncertainty

The local population generally hears rumors or stories about water and sewerage projects well before construction or even land acquisition occur. During this phase the community generally lacks accurate detailed knowledge of the proposed activities and feels serious concern about the effects that the project will have on them. Since land acquisition affects people’s livelihood, this is a common matter for concern. People will frequently postpone making important changes to their property, income production, or lifestyles while there is any uncertainty about the effects that they will suffer from the water or sewerage projects.

b. Severance and social disruption

Water projects, especially with large reservoirs, can disrupt existing, long-established social relationships through making it physically difficult for people to move between houses or between communities. There is also the risk of affecting farmers’ access to their farmland, or between one part of their land and another, making it difficult to move livestock and machinery from one part of the farm to another.

c. Disturbance to existing properties frontage, or public utilities
Environmental and Social Management Framework

Where new roads are created or existing roads are widened as part of the construction of a water supply or sewerage project, there are likely to be impacts on existing property frontages or on public utilities such as electricity supplies. This types of impacts involve costs, whether to individuals or to the community.

d. Resettlement

This refers to resettlement where inhabitants are moved away from their original locality because their dwelling places or income earning land will become part of the reserve area or project affected area (i.e. pipelines, construction of dams with reservoir, others). It is important to note that settlers who are occupying right of ways illegally and has to be moved to another location (or are forced to move themselves) should be included as part of the Project Affected People (PAPs). The major potential impacts of resettlement include:

- **Adverse socio-economic impacts on both the resettled and on the host population:** These impacts will occur for all groups but are likely to be greatest for ethnic minorities, the aged (who are less able to adapt to a new environment and changes in lifestyle), and groups who depend on a specific aspect of their present environment for their livelihood. Groups, which have strong cultural ties to their present location, will require particular measures and may warrant diversion of the project to avoid having to resettle them. Examples include groups which have strong spiritual ties to a place or to a feature of a place and who believe that their existence as a people is dependent on those ties.

- **Conflict between those resettled and the host population:** Very significant and long-term impacts can occur where there are major cultural differences between those resettled and the original population in the resettlement area. Not uncommonly these impacts are expressed as an ongoing lack of cooperation and communication that may escalate into overt violence. Even without major cultural differences, there is likely to be resentment among the host population of those resettled into their area. This stems from a range of perceptions, including: the impression that those resettled are receiving preferential treatment from the government; feelings that the local resources are inadequate to support an increased population; and a general fear and distrust of outsiders.

- **Adverse impacts on the environment in and around the resettlement area:** New settlements make new demands on their environment. In addition, the preparation of the resettlement area, including the construction of infrastructure such as roads, houses, and water supplies, and the clearing of land for agriculture, are likely to have environmental impacts. These must be regarded as impacts of the original water or sewerage project that caused the resettlement and must be assessed as part of that project.

e. Unrest and dissatisfaction over distribution of labor opportunities and other benefits

Water and Sewerage projects generally involve significant employment of unskilled and semi-skilled labor and also provide opportunities for gaining training or experience, which provides access to future employment. If local communities see these advantages going to outsiders there are likely to be reactions against the water and sewerage project.

Similarly, the establishment of a large labor force in a concentrated locality generates opportunities for commercial transactions such as the provision of food and drink. There is a risk that local small business people will lose out on these benefits to outsiders who have experience in such interactions with projects. This can also cause dissatisfaction among local communities.

f. Disease risk associated with workers in labor camps
Workers in labor camps may be at risk of a number of diseases. These diseases may have an adverse impact on the project construction schedule, on the cost of the project, on the long-term health and income of the workers, and on the local population.

Typically diseases and illnesses may be water borne, either through a vector associated with water, as in the case of malaria, dengue fever, and schistosomiasis, or directly through disease organisms in the water supply to the camp as in the case of amoebic dysentery. Some of the workers may also be carriers of mosquito-borne diseases.

Attention should also be paid to sexually transmitted diseases, particularly HIV/AIDS. This may be brought into the area by infected road workers who then pass on the disease to the local population, possibly through the services of prostitutes. In other situations, particularly where a large labor force is involved, the labor camp may attract prostitutes from outside the local area, and this may introduce HIV/AIDS to the workforce and to the local community.

g. Impacts on health and social well-being of local communities

The considerations involved here are much the same as for the previous heading (*Disease Risks to Workers in Labor Camps*). However, in addition, where construction crews are from different ethnic backgrounds to the local community there is the potential for misunderstandings and clashes. These difficulties can exacerbate other minor irritations caused by the presence of the construction workers and might lead to a lack of cooperation or even outright hostility. Where project workers remain in the area and become permanent settlers any small social frictions may develop into more open hostilities.

h. Labor camp may become a permanent settlement

Labor camps that are located in the one place for long periods of time, particularly where workers have their families with them, tend to become permanent settlements. This applies more to the temporary unskilled and semi-skilled construction workers than to skilled employees. Since such camps are typically constructed as temporary facilities their amenities, e.g. for sewage disposal, are also of a temporary nature and not generally suited to long-term settlement. There is tendency for such settlements to take on slum-like characteristics.

Where labor camps become long-term settlements they run the risk of adding significant demands to what may be already over-extended local infrastructure such as schools and health programs.

i. Population increase as a result of immigration

The construction or improve of water supply or sewerage systems, and construction of access road for these projects, may lead to a local population increase as a result of immigration. Where this occurs gradually over a long period environmental impacts are less likely to be severe than where the increase occurs over a short time. Rapid increases in population can have significant impacts on the natural and socio-economic environment of the area, due to demands on local resources, the need for infrastructure, lack of waste disposal facilities, and conflicts with original communities.

These impacts of infrastructure construction can be difficult for existing government services to control because of the unexpected significant extra workload and possibly the imposition of new responsibilities for which staff are not trained or budgets are not available.

j. Illegal settlement resulting from improved access
This set of impacts is much the same as those for the above heading (*Population Increase as a Result of In-migration*) and has the same causes. However because it involves illegal settlement the long-term socio-economic and environmental impacts are likely to be greater, as are the impacts on local communities.

**k. Impacts on Vulnerable People**

Vulnerable people, including ethnic minorities, are sometimes in a socially and economically vulnerable position compared with outsiders who may enter their area as a result of the facilities of access and services. This disadvantage can result from differences in language, values, experiences in the cash economy, and levels of influence with government.

Outsiders may include water and sewerage construction crews and particularly groups who enter their area as a result of improved access. This latter group includes buyers (middlemen) of natural products and cultural artifacts, logging operators and new settlers seeking land. Unless there are specific measures taken to protect the rights and resources of the minority group they are likely to suffer significant long-term impacts.

**l. Hazard when quarry or pits is abandoned**

When quarries or borrow pits are abandoned after construction is completed they can become a hazard to local communities, either through the danger that they pose to people and livestock who might fall into them (whether full of water or not), or through disease risk resulting from the breeding of disease vectors (e.g. mosquitoes or snails) in water collected in them.

**m. Aesthetic visual impacts of quarries and borrow pits**

Abandoned quarries and borrow pits can represent significant visual impacts on the landscape. Apart from the magnitude of the impact that these features cause directly, their presence can lead to an ongoing lack of consideration for visual landscape values in the area that encourages other similar impacts.

**n. Aesthetics visual impacts of right of way on landscape**

Where water and sewerage projects and also access roads to these projects pass through areas of high scenic value the intrusion of the projects and associated earthworks and structures into the landscape may detract from those values.

**o. Destruction or lacking-in of archeological, historic and cultural values**

Items of archaeological, historical, and cultural value are important not only to local people but also as a source of tourism revenue, either now or in the future. It is therefore important that these values receive appropriate protection. Water and Sewerage, and its access road works can destroy archaeological, historical, and cultural values through direct physical damage.

The existence of archaeological sites is often unsuspected until artifacts are uncovered during construction work. Where there is some likelihood that archaeological sites exist, an appropriately qualified person can be tasked with accompanying the equipment making the first earthworks, in order to identify sites of importance, as they are uncovered. There should be provision for work to be halted in a location for a defined period while the significance of uncovered sites is assessed. Similarly there should be provision for further delays if it is determined that sites are of high significance.
Where projects provide new access by passing close to archaeological or historical sites there is the potential for loss or reduction of these values through the resulting improved access for illegal removal and vandalism.

Quarries pose a particular risk to pre-historic archaeological values through the destruction of caves and rock shelters. These sites frequently contain layers of debris in the floors, which constitute a record of the lifestyles of the pre-historic population at the site, as well as a record of the ecology of the area at the time.

Quarrying in areas with caves or rock shelters not only risks totally destroying these sites but also carries a risk that quarry staff will damage them.

The next Table No. 3 presents a summary of project’s activities, and the environment elements that potentially is affected in water and sewerage projects.

**p. Social conflicts over scarce water competing demand**

In areas where the water is going to be distributed, the possible conflict may arise during initial testing and balancing pressures in the system. It is possible to have one side to have water though out while the other sides are missing. In some cases peoples who have house connection are sounding superior to those who are using the public kiosk. Such conflict will phase out as time goes. More people will be connected to the system and pressure balanced.

**q. Quality impact on health**

It is anticipated toward end of the project the community in the water-supplied area will be using clean and safe water. Much of water born decease will decrease and health and hygiene improve. Whoever the prevailing on -site wastewater disposal on the project site poses another emerging challenge. The water related diseases vectors i.e. mosquito may get sufficient breading sites in the pit stagnant water. An effective wastewater collection tracks are needed for sludge removal.

5.2 **Description of the potential environmental and social measures**

The environmental and social negative impacts should be prevent, mitigate and/or compensate with environmental and social measures in order to assure a good environmental and social management during the design, construction and operation of the water and sewerage projects.

The MoWI prepared (approved by the Ministry), as part of the WSDP-II, **Guidelines of Good Environmental and Social Practices (GGESP)** for the Water and Sewerage sector, in order to assure the implementation of environmental and social measures in the design, construction and operation of the water and sewerage projects. These guidelines will be utilized during implementation of all water sector projects, including WSSP – II.
Table 3: An Outline of Typical Project Activities and Examples of Potential Impacts, both Negative and Positive

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<th>Surface water quality</th>
<th>Groundwater resources</th>
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## ENVIRONMENTAL COMPONENTS

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Note: X indicates the component of the project activity that may have a potential impact (either negative or positive).
5.3 Climate change

Like many other countries in Sub-Saharan Africa, in Tanzania is expected to be severely affected by the climate change impacts, with flooding and periods of drought having the potential of causing serious economic and social harm. The projected climate-related variability of water resources is likely to have a negative impact on the country’s productive potential as well as on the fight against poverty, especially as Tanzania’s economy is highly dependent on water for agricultural production. As climate change is a relatively new topic in Tanzania, further capacity development is needed to ensure that climate change is integrated into policy documents and addressed through activities on the ground.

Given the current and expected future impacts of climate change on Tanzania’s water resources, the water sector is taking a leading role in preparing the country to a changing climate. The has established Basin Water Boards (BWB) in all nine water basins as an important step towards a more decentralized Integrated Water Resources Management (IWRM) approach, following the orientations of the 2009 Water Resources Management Act.

In 2012, the National Climate Change Strategy (NCCS) has been developed in response to the growing concern of the negative impacts of climate change and climate variability on the country’s social, economic, and physical environment. Its overall aim is to enhance the technical, institutional and individual capacity of the country to address the impact of climate change. The Strategy covers adaptation, mitigation and cross-cutting interventions that will enable Tanzania to benefit from the opportunities available to developing countries in their efforts to tackle climate change.

The goal of the Strategy is to enable Tanzania to effectively adapt to climate change and participate in global efforts to mitigate climate change with a view to achieving sustainable development in line with the Five Years National Development plan; the Tanzania Development Vision 2025, as well as national sectoral policies. It is expected that this Strategy will reduce vulnerability and enhance resilience to the impacts of climate change. The implementation of the Strategy will
enable the country to put in place measures to adapt to climate change and mitigate GHG emissions in order to achieve sustainable national development through climate resilient pathways. The specific objectives of this Strategy are:

a. To build the capacity of Tanzania to adapt to climate change impacts.
b. To enhance resilience of ecosystems to the challenges posed by climate change.
c. To enable accessibility and utilization of the available climate change opportunities through implementation.
d. To enhance participation in climate change mitigation activities that lead to sustainable development.
e. To enhance public awareness on climate change.
f. To enhance information management on climate change.
g. To put in place a better institutional arrangement to adequately address climate change.
h. To mobilize resources including finance to adequately address climate change.

Based on the National Strategy, a Water Resources Management Strategic Interventions and Action Plan for Climate Change Adaptation was prepared by the MoWI (December 2012). The strategic intervention and action plan was necessary in order to enable stakeholders in the water sector to effectively cope with risk associated with climate change and variability in Tanzania. The strategic intervention and action plan are expected to streamline all climate change activities in the water sector and provide a basis for coordination of the activities at basin level.

As part of the GIZ – Support Water Sector Development Programme, in the component of Water Resources Management under Conditions of Climate Change established in 2012, provides support to MoWI by realizing a multi-level approach encompassing the national (MoWI Division of Water Resources) as well as water basin levels (Lake Nyasa and Lake Rukwa BWB), and by deploying a mix of long-term technical advisors and short-term experts.

The GIZ Programme provides support at the national as well as decentralised levels (multi-level approach). This support is offered through a mix of long-term technical advisors and short-term experts. At the national level, a GIZ advisor supports MoWI’s Division of Water Resources to strengthen its coordinating role in climate-sensitive water resources management; in Lake Rukwa BWB, a GIZ development advisor focuses on communication and climate change adaptation; and in Lake Nyasa BWB, a GIZ development advisor supports the improvement of water monitoring and data management.

**Climate Change: Effects to consider in the water sector:**

Climate changes have significant effects on the available sources of water, as well as on the competing demands on its use. Small water utilities have to be alert to these effects as they pose threats to their long-term viability and sustainability.

a. Climate change effects:
   - Rising sea levels;
   - Increased saline intrusion into groundwater aquifers;
   - Water treatment challenges, including increased bromide, need for desalination; and
   - Increased risk of direct storm and flood damage to water utility facilities.

b. Effects of warmer climate:
   - Changes in discharge characteristics of major rivers due to upstream changes;
   - Changes in recharge characteristics of major groundwater aquifers due to upstream changes;
- Increased water temperature leading to increased evaporation and eutrophication in surface sources;
- Water treatment and distribution challenges;
- Increased competing demands for domestic and irrigation;
- Increased urban demand with more heat waves and dry spells;
- Increased drawdown of local groundwater resources to meet the increasing water demands.

c. Effects of more intense rainfall events:

- Increased turbidity and sedimentation;
- Loss of reservoir storage;
- Water filtration or filtration/avoidance treatment challenges; and
- Increased risk of direct flood damage to water utility facilities.

d. Suggested strategies to adapt risks from climate change:

Within the capabilities of small water utilities are some strategies that they can implement either as part of the daily operations, or as special measures in response to external developments.

- Water conservation measures:
  - Meter all production and connections;
  - Use tariff design to manage demand;
  - Disseminate water conservation tips to consumers.

- Design of facilities
  - If possible, have at least two sources of supply at different locations. Build superstructures above high flood-line level.
  - Adopt energy-efficiency program and, where possible, select facilities which require less power consumption.
  - Monitor wells near coastlines to prevent salinization. If climate change causes sea levels to rise dramatically, even aquifers that have been sustainably utilized can suffer salinization.
  - Utilize renewable energy sources.

- Reforestation of watersheds:
  - Join or initiate community programs for watershed reforestation.
  - Enlist the support of the community in protecting the watersheds.

- Adaptation of disaster effects
  - Form disaster response committee.
  - Network with multi-sectoral organizations.

This chapter presents the key environmental and social management concepts, methodologies and tools to be applied by the MoWI and the IAs, in the water supply system (WSS) and sewerage systems (SS) projects, during the project cycle. The WSSP-II includes investments in the construction of building, especially to DAWASA, so this ESMF include a methodology to define the “environmental and social risk” of some type of water and sewerage projects.

6.1 Concepts and definitions

6.1.1 Components and Magnitude of a Water Supply System

A water supply system (WSS) is a system of engineered hydrologic and hydraulic components, which provide water supply. A water supply system typically includes: 1) intake (spring, river, dam and reservoir, or well); 2) main transmission pipeline (raw water); 3) treatment plant; 4) treated water pipeline; 5) storage tank, and 6) distribution network.

Figure No. 8: Water Supply System Components


In context of WSSP-II the WB will support DAWASA on the construction of the distribution networks in the specified area.

The next Table No. 4 summarizes the definition of each component of a WSS and the classification of each component in terms of its magnitude.
Table No. 4: WSS Components, Definition and Magnitude

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<th>Type of project</th>
<th>Definition and Magnitude</th>
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<td>Natural situation where water flows to the surface of the earth from underground.</td>
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<td>– Spring water</td>
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<td>– River</td>
<td>Surface water source. Requires civil works to catch the water to the system.</td>
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<td></td>
<td>– Dam + Reservoir</td>
<td>A dam is a barrier that impounds or storage water to be used for different activities: fresh water, irrigation, others. A reservoir is a natural or artificial lake, storage pond, or impoundment from a dam, which is used to store water.</td>
</tr>
<tr>
<td></td>
<td>– Well or borehole</td>
<td>A water well or borehole is an excavation or structure created in the ground by digging, driving, boring, or drilling to access groundwater in underground aquifers.</td>
</tr>
<tr>
<td></td>
<td>(2) Aqueduct or Raw Water Pipeline</td>
<td>Watercourse constructed to convey raw water. The term aqueduct is used for any system of pipes, ditches, canals, tunnels, and other structures used for this purpose.</td>
</tr>
<tr>
<td></td>
<td>(3) Water Treatment Plant</td>
<td>Water treatment describes those industrial-scale processes used to make water more acceptable for a desired end-use.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Volume intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big (B)</td>
<td>More than 50,000 m$^3$/d.</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>Between 5,000 - 50,000 m$^3$/d.</td>
</tr>
<tr>
<td>Small (S)</td>
<td>Less than 5,000 m$^3$/d.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Dam (Height)</th>
<th>Reservoir (Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big (B)</td>
<td>More than 15 m.</td>
<td>More than 100 ha</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>Between 5 - 15 m.</td>
<td>Between 10 - 100 ha</td>
</tr>
<tr>
<td>Small (S)</td>
<td>Less than 5 m.</td>
<td>Less than 10 ha</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big (B)</td>
<td>More than 500 m.</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>Between 100 - 500 m.</td>
</tr>
<tr>
<td>Small (S)</td>
<td>Less than 100 m.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big (B)</td>
<td>More than 50,000 m$^3$/d.</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>Between 5,000 - 50,000 m$^3$/d.</td>
</tr>
<tr>
<td>Sector</td>
<td>Type of project</td>
</tr>
<tr>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4) Fresh Water Pipeline  
Watercourse constructed to convey fresh water from the Treatment Plant to the users.

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big (B)</td>
<td>More than 10 km.</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>Between 1 - 10 km.</td>
</tr>
<tr>
<td>Small (S)</td>
<td>Less than 1 km.</td>
</tr>
</tbody>
</table>

(5) Distribution Network  
Pipes or tubes, that carries pressurized and treated fresh water to buildings.

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big (B)</td>
<td>More than 10 km.</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>Between 1 - 10 km.</td>
</tr>
<tr>
<td>Small (S)</td>
<td>Less than 1 km.</td>
</tr>
</tbody>
</table>

6.1.2 Components and Magnitude of a Sewerage System

A sewerage system (SS) or wastewater system is a water-carried waste, in solution or suspension, which will be removed from a community. It is more than 99% water and is characterized by volume or rate of flow, physical condition, chemical constituents, and the bacteriological organisms that it contains. An SS typically includes: 1) sewerage network; 2) pump station; 3) wastewater pipeline; 4) sewerage treatment plant, and 5) effluent pipeline. Usually the final disposal of an effluent is in a water body (river, lakes, others), or it can be reused in productive lands.

Figure No. 9: Sewerage System Components


The next Table No. 5 summarizes the definition of each component of an SS and the classification of each component in terms of its magnitude.
Table No. 5: SS Components, Definitions and Magnitude

<table>
<thead>
<tr>
<th>Sector</th>
<th>Type of project</th>
<th>Definition</th>
<th>Magnitude</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEWERAGE SYSTEM</td>
<td>(1) Sewerage Network</td>
<td>Sewage or wastewater transport from households to the main pipe or pumping station or treatment plant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Big (B)</td>
<td>More than 10 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium (M)</td>
<td>Between 1 - 10 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Small (S)</td>
<td>Less than 1 km.</td>
</tr>
<tr>
<td></td>
<td>(2) Pumping Stations</td>
<td>When it is not possible to evacuate fluid by gravity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Big (B)</td>
<td>More than 50,000 m³/d.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium (M)</td>
<td>Between 5,000 - 50,000 m³/d.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Small (S)</td>
<td>Less than 5,000 m³/d.</td>
</tr>
<tr>
<td></td>
<td>(3) Wastewater Pipeline</td>
<td>Sewage or wastewater transport from the town, city or pumping station, to the treatment plant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Big (B)</td>
<td>More than 10 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium (M)</td>
<td>Between 1 - 10 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Small (S)</td>
<td>Less than 1 km.</td>
</tr>
<tr>
<td></td>
<td>(4) Treatment Plant</td>
<td>Sewage treatment is the process that removes the majority of the contaminants from wastewater or sewage and produces a liquid effluent suitable for disposal to the natural environment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Big (B)</td>
<td>More than 50,000 m³/d.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium (M)</td>
<td>Between 5,000 - 50,000 m³/d.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Small (S)</td>
<td>Less than 5,000 m³/d.</td>
</tr>
<tr>
<td></td>
<td>(5) Effluent Pipeline</td>
<td>Once the wastewater is treated, the improved water quality should be disposed in water bodies. It can also be used in productive activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Big (B)</td>
<td>More than 10 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium (M)</td>
<td>Between 1 - 10 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Small (S)</td>
<td>Less than 1 km.</td>
</tr>
</tbody>
</table>

6.1.3 Components and Magnitude of Buildings

The building investments include the rehabilitation, improve or new construction of civil works for Implementing Agencies (IAs) who requires to bring better services to the public and improve the work station of the technical staff.

The next Table No. 6 summarizes the definition of Building components and the classification of each component in terms of its magnitude.
Table No. 6: WSS Components, Definitions and Magnitude

<table>
<thead>
<tr>
<th>Sector</th>
<th>Type of project</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUILDING</td>
<td>(1) Civil Works</td>
<td>Construction, improvement, or rehabilitation of building.</td>
</tr>
<tr>
<td></td>
<td>(2) Equipment</td>
<td>Equipment work and furniture to operate the building. No environmental and social impacts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big (B)</td>
<td>More than 5,000 m²</td>
</tr>
<tr>
<td>Medium (M)</td>
<td>Between 1,000 – 5,000 m²</td>
</tr>
<tr>
<td>Small (S)</td>
<td>Less than 1,000 m²</td>
</tr>
</tbody>
</table>

6.1.4 Scope of works

The next Table No. 7 summarizes the classification usually used in the water and sewerage sector to define the scope of works.

Table No. 7: Scope of works definitions in WSS and SS

<table>
<thead>
<tr>
<th>Scope of project</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>New project</td>
<td>When the project proposed constitutes a new investment. Usually in new areas where, in most cases, land and/or households will be affected. The extension of pipeline is considered as a new project.</td>
</tr>
<tr>
<td>Improvement</td>
<td>When the project expects to improve the original design. For example, increase of the dam size, expansion of pipeline section to increase capacity, increased water-treatment capacity, others. In the case of sewerage, increased treatment plant capacity and expansion of conduction lines, others. These projects potentially could affect productive lands or households.</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>When the existing structure of a WSS and SS requires specific work in order to recover its original characteristics. An increase in the original service capacity of the original design is not expected. No affectation of land or households.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Periodic works that the WSS or SS requires in order to maintain the project in optimal conditions.</td>
</tr>
</tbody>
</table>

6.1.5 Environment Site Sensitivity of Project Influence Area

The environmental site sensitivity depends on the ecological characteristics of the project area (direct and indirect influence area), which could be affected by the construction and operation of the project. The degree of site sensitivity could be HIGH, MODERATE or LOW. Most of the variables used to define site sensitivity are related to the Bank’s safeguard policies.

The next Table No. 8 presents the definitions of site sensitivity levels:
### Table No. 8: Definition of Project Site Sensitivity

<table>
<thead>
<tr>
<th>Site-Sensitivity</th>
<th>Definition</th>
<th>SP Triggered</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>Areas with important ecological and sociocultural characteristics in the <strong>direct influence area</strong> (DIA). Commonly inside national parks or protected areas. High degree of biodiversity, endemism, and threat (CITES). Great danger of environmental degradation (deforestation, hunt, and others), critical ecosystem (wetlands, forests, etc.), areas with a high index of natural disasters (floods, earthquake, etc.), and places of significant cultural and historical interest.</td>
<td>OP/BP 4.01 OP/BP 4.04 OP/BP 4.11</td>
</tr>
<tr>
<td>MODERATE</td>
<td>Areas with important ecological and sociocultural characteristic in the <strong>indirect influence area</strong> (IIA). Commonly in “buffer” zones. Moderate degree of biodiversity, endemism, and threat (CITES), Moderate danger of environmental degradation (deforestation, hunt, and others), critical ecosystem (wetlands, forests, etc.), areas with high index of natural disasters (floods, earthquake, etc.), and places of significant cultural and historical interest.</td>
<td>OP/BP 4.01 OP/BP 4.04 OP/BP 4.11</td>
</tr>
<tr>
<td>LOW</td>
<td>Area previously affected (anthropic intervention) or with no critical ecosystem and social aspects in the DIA or IIA. Low degree of biodiversity, endemism and threat (CITES); low danger of environmental degradation (deforestation, hunt, etc.); low risk to natural disasters (floods, earthquake, others); and no presence of cultural/historical sites in the DIA or IIA.</td>
<td>OP/BP 4.01</td>
</tr>
</tbody>
</table>

This classification should be considered also in the building investments, but most of these investments will be located in urban areas where no critical areas are expecting.

### 6.2 Methodology to define the environmental and social risk level: Screening

All WSSP-II activities require a preliminary assessment or screening to define the **environmental and social risk level** (category). Based on this classification, the institution responsible for implementation of the project will define: the environmental and social studies required by national law and the Bank’s safeguard policies; the estimated budget to implement the Plans; and the requirements of public participation and consultation. In addition to this the screening process will also determine whether the project is eligible for approval from a safeguard point of view.

The environmental and social risk level differs depending on the “type” of project (WSS, SS or Buildings, magnitude and scope) and “Site Sensitivity” (ecological and sociocultural issues). The methodology to develop this preliminary assessment requires the next three steps:

**Step 1: Classification in terms of the “type” of project**

The type of project is a function of the project component, magnitude and scope of works. The next checklist table can be used to define the type of project.
### Table No. 9: Classification Based on the Type, Magnitude and Scope of WATER SUPPLY projects

<table>
<thead>
<tr>
<th>Component</th>
<th>Magnitude</th>
<th>Scope</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Spring Water</td>
<td>□ Volume intake &gt; 50,000 m³/d</td>
<td>□ New construction a</td>
<td>a</td>
</tr>
<tr>
<td>□ River</td>
<td>□ Volume intake &gt; 5,000 &lt; 50,000 m³/d</td>
<td>□ Improvement a</td>
<td>a</td>
</tr>
<tr>
<td>□ River</td>
<td>□ Volume intake &lt; 5,000 m³/d</td>
<td>□ Rehabilitation a</td>
<td>a</td>
</tr>
<tr>
<td>□ River</td>
<td>□ Height more than 15 m</td>
<td>□ Maintenance b</td>
<td>b</td>
</tr>
<tr>
<td>□ Dam</td>
<td>□ Height between 5 to 15 m</td>
<td>□ New construction a</td>
<td>a</td>
</tr>
<tr>
<td>□ Reservoir</td>
<td>□ Height less than 5 m</td>
<td>□ Improvement a</td>
<td>a</td>
</tr>
<tr>
<td>□ Reservoir</td>
<td>□ Area more than 100 ha.</td>
<td>□ Rehabilitation a</td>
<td>a</td>
</tr>
<tr>
<td>□ Reservoir</td>
<td>□ Area between 10 and 100 ha.</td>
<td>□ Maintenance b</td>
<td>b</td>
</tr>
<tr>
<td>□ Reservoir</td>
<td>□ Area less than 10 ha.</td>
<td>□ New construction a</td>
<td>a</td>
</tr>
<tr>
<td>□ Borehole</td>
<td>□ Depth more than 500 m</td>
<td>□ Improvement a</td>
<td>a</td>
</tr>
<tr>
<td>□ Borehole</td>
<td>□ Depth between 100 and 500 m</td>
<td>□ Rehabilitation b</td>
<td>b</td>
</tr>
<tr>
<td>□ Borehole</td>
<td>□ Depth less than 100 m</td>
<td>□ Maintenance c</td>
<td>c</td>
</tr>
<tr>
<td>□ Treatment Plan</td>
<td>□ Volume more than 50,000 m³/d</td>
<td>□ New construction a</td>
<td>a</td>
</tr>
<tr>
<td>□ Treatment Plan</td>
<td>□ Volume between 5,000–50,000 m³/d</td>
<td>□ Improvement a</td>
<td>a</td>
</tr>
<tr>
<td>□ Treatment Plan</td>
<td>□ Volume less than 5,000 m³/d</td>
<td>□ Rehabilitation b</td>
<td>b</td>
</tr>
<tr>
<td>□ Pipeline</td>
<td>□ Length more than 10 km</td>
<td>□ New construction a</td>
<td>a</td>
</tr>
<tr>
<td>□ Distribution Network</td>
<td>□ Length between 1 and 10 km</td>
<td>□ New construction b</td>
<td>b</td>
</tr>
</tbody>
</table>
### Environmental and Social Management Framework

#### WSSP-II

<table>
<thead>
<tr>
<th>SS Component</th>
<th>Magnitude</th>
<th>Scope</th>
<th>First Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewerage Network</td>
<td>Length more than 10 km</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length between 1 to 10 km</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length less than 1 km</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance d</td>
<td></td>
</tr>
<tr>
<td>Pump Station</td>
<td>Volume more than 50,000 m³/d</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volume between 5,000-50,000 m³/d</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volume less than 5,000 m³/d</td>
<td>New construction b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation d</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance d</td>
<td></td>
</tr>
<tr>
<td>Sewerage Pipeline</td>
<td>Length more than 10 km</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length between 1 to 10 km</td>
<td>New construction a</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Improvement b</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Rehabilitation c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length less than 1 km</td>
<td>New construction b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation d</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance d</td>
<td></td>
</tr>
<tr>
<td>Treatment Plan</td>
<td>Volume more than 50,000 m³/d</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance b</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volume between 5,000-50,000 m³/d</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volume less than 5,000 m³/d</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance d</td>
<td></td>
</tr>
<tr>
<td>Effluent Pipeline</td>
<td>Length more than 5 km</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length between 1 to 5 km</td>
<td>New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length less than 1 km</td>
<td>New construction b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improvement c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation d</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance d</td>
<td></td>
</tr>
</tbody>
</table>
Table No. 11: Classification based on the Type, Magnitude and Scope of BUILDINGS

<table>
<thead>
<tr>
<th>SS Component</th>
<th>Magnitude</th>
<th>Scope</th>
<th>First Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building</td>
<td>☐ Area more than 5,000 m²</td>
<td>☐ New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Improvement a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Rehabilitation b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Maintenance c</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Area between 1,000 to 5,000 m²</td>
<td>☐ New construction a</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Improvement b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Rehabilitation c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Maintenance d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Area less than 1,000 m²</td>
<td>☐ New construction b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Improvement c</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Rehabilitation d</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Maintenance d</td>
<td></td>
</tr>
</tbody>
</table>

This first classification (a, b, c and d) gives to the evaluator an initial impression of the potential environmental risks of the project, where projects classified as “a” could have more potential negative impact, and projects classified as “d” could have less potential negative impact. If the project has more than one component, this classification should be developed for each component.

**Step 2: Environmental classification based on project site sensitivity**

To define the environmental site sensitivity level of a project (High, Moderate, or Low), the Safeguard Coordinator of the Implementing Agency (SC-IA) in charge of environmental and social management should complete the following checklist (Table No. 12) to define the environmental and social site sensitivity.

Table No. 12: Environment Site Sensitivity Checklist

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Description</th>
<th>Trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>1.1 Protected areas in the DIA (National Parks, Forest Reserve, etc.)</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>1.2 High danger of environment degradation (deforestation, hunting, others)</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>1.3 Sensitive or critical ecosystem in the DIA (wetlands, mangrove swamps,</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>primary or secondary forests, and others)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.4 Mountainous topography (&gt;35% of slope) when the project anticipates</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>construction of access road, pipelines, etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.5 Vulnerable areas to natural disasters (floods, earthquake, and others)</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>1.6 Presence of places of significant cultural and historical interest in the DIA</td>
<td>☐</td>
</tr>
<tr>
<td>MODERATE</td>
<td>2.1 Protected Areas in the IIA or in buffer zones</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>2.2 Moderate danger of environment degradation (deforestation, hunting, others)</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>2.3 Sensitive or critical ecosystems in the IIA (wetlands, mangrove swamps,</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>primary or secondary forests, and others)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.4 Wavy topography (15-35% of slope) where the construction of access road,</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>pipelines, etc. is expected</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.5 Moderate risk to natural disasters (floods, earthquake, and others)</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>2.6 Presence of places of cultural and historical significance in the IIA</td>
<td>☐</td>
</tr>
</tbody>
</table>
3.1 Intervened areas out of protected areas (national parks, or buffer areas)  □
3.2 Low danger of environmental degradation (deforestation, hunt, and so forth)  □
3.3 No sensitive or critical ecosystem areas in the direct influence area (wetlands, mangrove swamps, primary or secondary forests, and others)  □
3.4 Flat topography (<15% of slope), when the project expects the construction of access road, pipelines, etc.  □
3.5 Zones at low risk to natural disasters (floods, earthquake, and others)  □
3.6 Absence of places with cultural and historical significance  □

DIA: Direct influence area; IIA: Indirect influence area

If at least one setting triggers the high variables, the evaluator can conclude that the project or component has a HIGH environmental site sensitivity; if there is no setting in high, but at least one setting is triggered in the moderate variables, the evaluator can conclude that the project or component has a MODERATE environmental site sensitivity; and if there are no triggers in the high or moderate settings, the evaluator can conclude that the project or component has a LOW environmental site sensitivity.

**Step 3: Environmental risk level: Category**

The “environmental risk level” is a function of the TYPE of project or component (step 1) and the ENVIRONMENT SITE SENSITIVITY (step 2). To obtain this result the evaluator can use the following matrix (Matrix No. 1).

<table>
<thead>
<tr>
<th>Preliminary Classification</th>
<th>SITE SENSITIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>a</td>
<td>A</td>
</tr>
<tr>
<td>b</td>
<td>A</td>
</tr>
<tr>
<td>c</td>
<td>B</td>
</tr>
<tr>
<td>d</td>
<td>B</td>
</tr>
</tbody>
</table>

**Category A:** HIGH environmental risk level. Project is likely to have a significant adverse impact on the environment, and in-depth study is required to determine the scale, extent, and significance of the impact, and to identify appropriate mitigation measures.

**Category B:** MODERATE environmental risk level. Project is likely to have a significant adverse impact on the environment, but the magnitude of that impact is not well known. A preliminary environmental assessment is required to decide whether the project can proceed without a full environmental impact assessment.

**Category C:** LOW environmental risk level. Project is likely to have no significant adverse environmental negative impacts; thus implementation can start after inclusion of environmental and social management guidelines.

If a project has more than 1 component, this process should be applied for each component. The final result of the environmental risk level for the project will be the higher classification obtained in each component. For example, if the project includes the construction of a new pipeline and the rehabilitation of a Dam, and the first component was classified as Category A and the second component was classified as Category B, the entire projects should be classified as Category A.
Step 4: Social risk level:

The “social risk level” depends if a project construction affect people (WB OP/BP 4.12) or if the project will benefit or affect ethnic groups (WB OP/BP 4.10). The SOCIAL SITE SENSITIVITY might be HIGH, MODERATE or LOW: For instance, DAWASA’s WSSP-II supported project activities will potentially use the existing roads to fix the pipe networks.

- **HIGH social risk level**: Project is likely to have a significant adverse impact on resettlement/compensation or/and vulnerable groups. More than 200 PAPs (Project Affected People); and ethnic groups in the direct influence area of the project (beneficiaries).

- **MODERATE social risk level**: Project is likely to have a significant adverse impact on resettlement/compensation or ethnic groups, when the PAPs is less than 200 people; and the presence of specific ethnic groups are in the indirect influence area of the project.

- **LOW social risk level**: No resettlement/compensation and ethnic groups are in the project influence area.

Step 5: Environmental and Social risk level:

As a result of the Step 3 and 4, the final Category of the WSSP-II project from the environmental and social point of view could be:

- Category B + High or Moderate SOCIAL risk level
- Category C

In order to facilitate the application of this methodology, section 5.6 presents the internal tool (Environmental and Social Preliminary Assessment – ESPA) designed to apply this methodology during the project preliminary assessment (screening).

6.3 Environmental and social studies

To comply with national environmental law and WB safeguards policies, all WSSP-II projects must go through an environmental and social assessment process.

6.3.1 Environmental studies required by national law and the World Bank

The environmental studies required by national environmental law (Environmental Impact Assessment and Audit Regulations, 2005) and the Bank’s Safeguard (OP/BP 4.01 Environmental Assessment) are a function of the Environmental Risk Level or Category of the project:

- **Category B**: Preliminary Environmental and Social Impact Assessment (PESIA)
- **Category C**: Good Environmental and Social Practices Guidelines (GGESP)

In the case of existing projects, according with the national law, require an Environmental and Social Audit Report (ESAR). The main objectives of the ESAR are:

- Determine how far activities and programmes of activities and processes of a project or undertaking conform with the approved environmental and social management plan of that specific project or undertaking and environmental management practices and environmental
quality standards;
- Provide a mechanism to learn from experience, and to refine design and implementation procedures of a project or undertaking so as to mitigate adverse environmental impacts; and
- Provide regulatory bodies with a framework for checking compliance with, and the performance of an Environmental and Social Management Plan (ESMP), being part of Environmental and Social Impact Assessment (ESIA).

In these cases, when the project exist and is classified as **Category A or B requires an ESAR** rather than an ESIA or PESIA.

The first schedule of the Environmental Impact Assessment and Audit Regulation (2005) includes the “Type of projects that require an ESIA”. The **Annex 4** includes the list of projects for which it is mandatory to develop an ESIA document, and also the list of projects that would potentially not require such a study. The guidelines to prepare the ESIA, PESIA and ESAR, are included in **Annex 5**. With regard to the “Good Environmental and Social Practices Guidelines”, this document is under preparation in order to apply for all projects classified as Category C.

Is important to mention that preparation of ESIA for projects have to take into account the following requirements: (i) ensuring the scope of the TOR for the ESIA includes all ancillary infrastructure necessary for full performance (e.g. access roads, transmission pipelines), whether or not they are financed by the implementing agency; and (ii) contracting an ESIA to be undertaken by independent experts unaffiliated with the project.

### 6.3.2 Environmental and social studies required by the safeguard policies

If any additional safeguard issues are identified during the screening process for WSSP-II, it will be necessary to conduct additional environmental and social studies to comply with the World Bank’s Safeguard Policies:

If **Natural Habitat** issues are identified in the screening process, it will be necessary to include a special analysis of the natural habitat in the ESIA in order to identify measures to prevent, mitigate, and/or compensate, the potential negative impact. Where significant amounts of natural habitat will be converted or degraded by the project, the special analysis must be done to explain why there is no feasible alternative and show that the overall benefits of the project exceed the environmental costs, and provide for a Biodiversity Management Plan including a biodiversity offset.

- If **Physical and Cultural Resources (PCR)** issues is identified in the screening process, a specific **Physical and Cultural Resources Plan (PCRP)** should be developed in order to prevent or avoid any damages. This PCRP and “Chance Find Procedures” should be included as part of the Environmental and Social Management Plan (ESMP) of the ESIA or PESIA document.

- If **Involuntary Resettlement** issues are identified in the screening process, a **Resettlement Action Plan (RAP)** is required. This Plan must be developed and implemented before start of the construction. The guidelines to prepare these instruments are in the Resettlement Management Framework (RMF) developed by the WSSP-II.

- If, **Ethnic People** or Distinct Vulnerable Social and Cultural Groups are identifying in the screening process, under the Bank’s safeguard policies, an Ethnic Group Plan (EGP) would be required. This Plan must be developed and implemented before start of the construction.
Table: No. 13: Definition of Ethnics Groups or Distinct Vulnerable Social and Cultural Groups

<table>
<thead>
<tr>
<th>World Bank OP/BP 4.10:</th>
<th>Group of people who meet the next 4 criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;</td>
</tr>
<tr>
<td></td>
<td>- Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;</td>
</tr>
<tr>
<td></td>
<td>- Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and</td>
</tr>
<tr>
<td></td>
<td>- An indigenous language, often different from the official language of the country or region.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>African Commission on Human and Peoples’ Rights (ACHPR):</th>
<th>According with the “Report of the African Commission’s Working Group of Experts on indigenous Populations/Communities” of the ACHPR, indigenous or ethnics are the people that:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Their cultures and ways of life differ considerably from the dominant society.</td>
</tr>
<tr>
<td></td>
<td>- Their cultures are under threat, in some cases to the point of extinction.</td>
</tr>
<tr>
<td></td>
<td>- The survival of their particular way of life depends on access and rights to their lands and the natural resources thereon.</td>
</tr>
<tr>
<td></td>
<td>- They suffer from discrimination as they are regarded as less developed and less advanced than other more dominant sectors of society.</td>
</tr>
<tr>
<td></td>
<td>- They often live in inaccessible regions, often geographically isolated.</td>
</tr>
<tr>
<td></td>
<td>- They suffer from various forms of marginalization, both politically and socially.</td>
</tr>
</tbody>
</table>


In general, the EGP should include measures to ensure that: a) such groups have been involved in a process of free, prior and informed consultation leading to broad community support for the project; b) any adverse impacts on such groups are mitigated; c) the groups obtain culturally appropriate as well as specific to their needs from the project; d) there is a process for grievance redress; and e) the project includes monitoring and evaluation to assess the project’s impacts on and benefits for vulnerable groups. Annex 6 includes the guidelines to prepare all these plans or instruments taken into account the Bank’s Safeguards guidelines.

6.4 Environmental and social estimated budget for the ESMP implementation

At the preliminary stage, it is important to estimate the environmental and social budget for the plan’s implementation (ESMP, RAP, others) in order to include an estimated budget in the total budget of the project. In the case of the ESMP, for projects Category A or B, the estimated budget amount can be estimated in function of the environmental risk level or Category of each project.

To obtain this result the evaluator can use the matrix below (Matrix No. 2), where the estimated budget for the ESMP is a percentage of the total amount of a project.

Matrix No. 2

Estimation of the environmental budget to implement the ESMP
This estimated environmental budget should be confirmed once the ESMP and the others Plans has been prepared, but at this stage it is important to have this estimation in order to properly assign this budget in the total amount of the project. The estimation of the RAP budget should be obtained once that instruments would be prepared, but is based on the Valuation Report that the Local Authority should be develop as part of the RAP preparation. This RAP budget will be paid for the Local Authority.

6.5 Public participation and disclosure mechanism

a. Public participation

Public participation for Category B, and C projects are required. Category B and C projects require at least one (1) consultation process. In the case of Category C projects, the document used for the consultation or participation process is the feasibility study, which includes an environmental and social assessment.

IAs, through the consultants responsible for /PESIA/ESAR preparation, are responsible for identifying interested and affected parties, and ensuring that all parties concerned are given adequate opportunity to participate in the process.

Whenever there is strong public concern over a proposed project, and the impact is expected to be extensive and far-reaching, NEMC is required to organize a public hearing. The outcome of the public hearing should be considered when deciding whether or not a permit should be issued.

b. Disclosure

All WSSP-II project activities should include a strategy for public information disclosure to keep the general public and those involved in the project informed about its purpose and potential environmental and social impacts. Information will be disseminated to local communities in the respective language (Kiswahili). In general, the information published should contain:

(i) Basic information on the project;
(ii) Schedule of activities before the bidding process and during construction;
(iii) Environmental and social studies (PESIA, ESAR, RAP, others); and
(iv) The summary and results of the community dialogue and public participation.

6.6 Internal tools for the environmental and social management

A series of environmental and social tools (templates) have been designed for internal use. The IAs and the Environmental and Social Management Unit (ESMU) should apply these tools, in order to ensure incorporation of the environmental and social safeguards in the “project cycle”. These tools also serve to systematize the environmental and social management information for process record-keeping purposes. The management tools for the environmental and social management are:

i) Environmental and Social Preliminary Assessment (ESPA);
ii) Environmental and Social Monitoring Report (ESMR); and
iii) Environmental and Social Final Report (ESFR).

The Annex 7 includes the templates of these internal management tools.

6.6.1 Environmental and Social Preliminary Assessment (ESPA)

The ESPA is the first internal management tool that should be used by the Safeguard Coordinator of the Implementing Agency (SC-IA) during the first stage of the project cycle (identification or preliminary assessment) to define: a) the environmental and social risk level of the project (Category); b) the environmental and social studies required to comply with national law and the WB’s (WSSP-II activities only) safeguard policies; and c) the estimated budget for the Environmental and Social Management Plan (ESMP).

6.6.2 Environmental and Social Monitoring Report (ESMR)

The ESMR is the second internal management tool that should be used by the SC-IA during the construction stage of the project, in order to follow-up and monitor the implementation of the environmental and social measures identified in the ESMP and others plans. This tool can be used also by the ESMU of the MoWI, to monitor and follow up the environmental and social aspects of the projects. The ESMR contains basic information about the field visits, participants, the issues observed, and recommendations for the constructor.

In regard to Category B projects the ESMR must be submitted to the ESMU-MoWI every 6 months; and for Category C projects, the ESMR must be submitted to the ESMU-MoWI at least once during the project execution period. Monitoring should also be required during operation, every 6 months during the 2 years of operation for a water supply and treatment plant.

6.6.3 Environmental and Social Final Report (ESFR)

The ESFR is the third and final management tool that should be developed by the SC-IA at the end of the construction stage and before the project construction closing, in order to verify compliance with the environmental and social measures agreed upon in the ESMPs or other plans.

6.7 Monitoring task of the environmental and social management

In order to assess the environmental and social management performance of the WSSP-II, is necessary to monitor the application of the three (3) safeguards tools used during the project cycle: ESPA, ESMR and ESFR. The responsibility of this safeguard monitoring is the ESMU of the MoWI. This instance should compile the results of the application of each management tools of the IAs in order to report the results monthly.


7. Environmental and Social Management

The overall purpose of this section is to present, on the basis of the legal and institutional framework, and the safeguard policies, the main environmental and social management activities and procedures during the “project cycle”. These include: a) the environmental and social project cycle; b) the role and responsibilities of Implementing Agency (IAs), and c) the internal procedures at IAs level for the environmental and social management.

7.1 Environmental and social project cycle

The environmental and social management should be developed throughout the project cycle. In each of these stages the SC-IA should develop some activities in order to ensure compliance with national laws and safeguard policies. The environmental and social management project cycle has five stages: i) preliminary assessment; ii) assessment; iii) legal agreement; iv) construction; and (v) operation and maintenance.

![Project Cycle Diagram](image)

7.2 Environmental and social stakeholders: Role and responsibilities

The main stakeholders involved in the WSSP-II are:

- Ministry of Water (MoWI);
  - The Direction of Project Coordination Unit (DPCU);
  - The Environmental and Social Management Unit (ESMU) of the MoWI;
- Implementing Agencies (IAs);
- National Environment Management Council (NEMC);
- Consultants;
- Contractors;
- Community;
- World Bank (WB).

The IAs will solely be DAWASA and Water Resources Offices.
The MoWI and the IAs are the responsible for the environmental and social management of the WSSP-II. The instruments that ensure the environmental and social sustainability of the projects and the compliance of the environmental and social national law and the Bank’s safeguard policies during project preparation and evaluation are the Environmental and Social Management Framework (ESMF) and the Resettlement Management Framework (RMF). Specifically the instance responsible of the ESMF and RMF implementation is the Environmental and Social Management Unit (ESMU). The IAs through the Safeguard Coordinator (SC-IA) is the instance responsible to apply the environmental and social management tools included in the ESMF & RMF. During construction the ESMU and the SC-IA will be responsible to monitor the application of the Environmental and Social Management Plans and others Plans required by specific sub-projects.

In each IAs the Safeguard Coordinators (SC-IA) are appointed to oversee the implementation of the ESMF and RMF who are all trained in the required discipline to manage the environmental and social issues including emerging gaps.

The National Environmental Management Council (NEMC) is the national authority responsible for ensuring compliance with national environmental laws. The main evidence of compliance with national environmental laws is the Environmental Certification (EC). In each city, municipality, district, town council there is an appointed Environmental Management Officer (EMO). The responsibilities of the EMO include monitoring the preparation, review and approval of the ESIs of local investments and project, and to report to the Director of the Environment on implementation of the Act within the area of his/her jurisdiction. Similarly, Committees and Environmental Management Officers are to be appointed at the Kitongoji (KEMO), Ward (WEMO), Mtaa (MEMO) and Village (VEMO) levels. They are empowered to coordinate all activities geared towards the protection of the environment within their local areas.

The environmental and social Consultants are the parties responsible for the environmental and social studies preparation in order to comply with national laws and the Bank’s policies.

The Constructors are the parties responsible for ESMP implementation, when this instrument had been required, to ensure adequate environmental and social management during construction.

The Community beneficiary and operator of the projects through community-owned Water Supply Organisations (COWSOs) are responsible in monitoring the contractor’s role in implementation of ESMP during construction and maintain the environmental and social qualities during project operations. The World Bank ensures the compliance with its safeguard policies during all phases of the project cycle.

The next Table No. 17 summarize the role and main responsibilities of each stakeholder along the project cycle.
Table No. 13: Role and responsibilities of the WSSP II stakeholders

<table>
<thead>
<tr>
<th>PROJECT CYCLE</th>
<th>World Bank</th>
<th>MoWI (ESMU)</th>
<th>Implementing Agency (Safeguard Coordinator)</th>
<th>NEMC</th>
<th>Constructors</th>
</tr>
</thead>
</table>
| PRELIMINARY ASSESSMENT | - ESMU participate in the Annual Investment Plan preparation;  
- ESMU review the pipeline projects to advise or alert any environmental and social issues | - The IA prepare the Annual Investment Plan, according to the WSSP II;  
- Once the investment plan is approved, the Safeguard Coordinator of the Implementing Agency (SC-IA) review the project documentation with existing information;  
- SC-IA prepares the Environmental and Social Preliminary Assessment (ESPA) included in the ESMF; and  
- Category B projects, the IA sends to the MoWI-ESMU the ESPA for review and comments.  
- Category C: submit the ESPA to MoWI-EMU and apply GGESP to include terms and procedures needed for a good environmental and social practice, in the BoQ and contract. | | | |
| ASSESSMENT | - For WSSP-II Activities only: The Bank review and send comments on the draft documents of the projects Category A. If no comments, the Bank send the approval to the MoWI  
- ESMU review the ESPA and send comments to the IA if is required;  
- If no comments include the ESPA in the project file of the ESMA and in the project documentation of the respective Direction;  
- ESMU review the environmental and social studies and send comments if is required.  
- For WSSP-II Activities only: Projects classified as Category A, the MoWI send the draft version of the environmental | - SC-IA prepares TORs, based on the ESMF, of the environmental and social studies required by law and safeguards (Category B);  
- IA begins the procurement process to hire the consultant to develop the environmental and social studies;  
- SC-IA follow-up the preparation of the studies;  
- Once the consultant deliver the draft document of the environmental and/or social studies, the IA send the draft document to ESMU-MoWI for review and comments;  
- Once the environmental and social studies were approved by the MoWI and has the approval of the WB (for WSSP-II Activities only), the IA starts the process with NEMC to | - NEMC review all the documentation according its procedures and if it has no objections, prepare the EC;  
- Coordinate with SC-IA in all the evaluation process in order to comply with the environmental and social law | | |
<table>
<thead>
<tr>
<th>PROJECT CYCLE</th>
<th>World Bank</th>
<th>MoWI (ESMU)</th>
<th>Implementing Agency (Safeguard Coordinator)</th>
<th>NEMC</th>
<th>Constructors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>and social studies to the WB for review and approval;</td>
<td>receive the Environment Certification (EC).</td>
<td>- SC-IA, based on the EC and all the environmental and social studies developed during the previous stage, has to prepare the environmental and social clauses (construction and monitoring) to include in the contract; and - IA includes the environmental and social clauses (from ESMF and GGESMP) into the terms of contract (construction and monitoring).</td>
<td>- Sign the contract</td>
<td></td>
</tr>
<tr>
<td>LEGAL AGREEMENT</td>
<td>- Review and clear ESMR and ESFR of projects Category B - Follow up the WSSP-II projects, especially projects Category B during the WB Missions</td>
<td>- Review and send comments if is required to the ESMR and ESFR; - Send to the WB the Category B ESMR and ESFR for review and comments; - Use the information of the ESMR to prepare the Status Report for the WB.</td>
<td>- SC-IA is the responsible for implementing the ESIA, ESMP, or PESIA and other environmental and social studies and to conduct environment and social monitoring of the project; - For this activity the SC-IA should prepare the second internal tool “Environmental and Social Monitoring Report” (ESMR), presented in the ESMF. The frequency for this type of report depends on the environmental and social magnitude of the projects; - Send any observations to the constructors if is required; - For Projects Category B the IA send the ESMR to the MoWI-ESMU; - IA send the observations to the constructor to take into account the SC-IA recommendations; - Once the works is finalized, the SC-IA has to prepare the “Environmental and Social Final Report” (ESFR), to review all the</td>
<td>- Follow-up the compliance of the ESIA, PESIA and others environmental studies; - Received any complain from the community. - Take into account the observations and comments generated for the SC-IA</td>
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<td>- Follow up the compliance of the ESIA, PESIA and others environmental studies; - Received any complain from the community.</td>
<td>- Follow-up the compliance of the ESIA, PESIA and others environmental studies; - Received any complain from the community.</td>
<td>- Take into account the observations and comments generated for the SC-IA</td>
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<td>environmental and social compliance before project closing.</td>
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<td>- For Projects Category B the IA send the ESFR to the MoWI-ESMU.</td>
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<td>- For Category C the IA should send a completed checklist to the ESMU-MoWI.</td>
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<td>OPERATION</td>
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<td>- The ESMU-MoWI can do also follow-up activities during the operation phase.</td>
<td>- The IA is responsible to monitor the environmental and social aspects during the project operation</td>
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7.3 Environmental and social management along the project cycle

The environmental and social management includes the activities that the SC-IA\(^6\) or Environmental Unit, should have to develop during the project cycle to ensure the implementation of the ESMF and the environmental and social quality of the WSSP-II subprojects, and comply with national environmental and social laws, and the Bank’s safeguard policies. The main activities that the responsible of the environmental and social safeguards should develop during the project cycle are the following:

7.3.1 Stage 1: Preliminary assessment

- Once the IAs identifies a project that the institution will support, the responsible of the environmental and social safeguards (Safeguard Coordinator of the Implementing Agency – SC-IA) should prepare the Environmental and Social Preliminary Assessment (ESPA), which is the first environmental and social tool in the project cycle. The main purpose of the ESPA is to determine, based on a preliminary environmental and social assessment, the project’s level of environmental and social risk (category), in order to define the studies required by the national law and the Bank’s safeguard policies;

- The IAs sends the ESPA to the MoWI for review and comments. Once the ESMU has review the ESPA, if requires send comments to the IA, and if the project is classified as Category B, the MoA send the ESPA to the World Bank (for WSSP-II Activities only) for review and clearance.

- Once the ESMU-MoWI and WB Safeguard Team (for WSSP-II Activities only), have approved the ESPA, the IAs starts the procurement process to hire the consultant that will prepare the Study. Before starting the study preparation, the IAs should confirm the scope of the environmental studies required for the specific project with the environmental authority (NEMC at the central level or DEMC at the district level). In this regard, the IAs must submit to the environmental authority (NEMC at the central level or DEMC at the district level) the project description summary, including the ESPA (the detail of this process is presented in the next chapter);

- Once the environmental authority approves the scope of the studies required, the IAs, with the support of the SC-IA, prepare the TORs for the studies: PESIA for Category B, or ESAR if the project is under construction (Category B). Also, if any safeguard study is required, the SC-IA also prepare the TORs of each study (RAP, EGP, others); and

- The TORs for Category B projects (PESIA, RAP, others), should be reviewed by the ESMU-MoWI. The Category B projects require the Bank’s review and Clearance.

7.3.2 Stage 2: Assessment

- Based on the TORs approved in the previous stage, the IAs hire the consultants to prepare the environmental and social studies;

\(^6\) All IAs participating in the WSDP must assign to one of the staff engineers the responsibility of the environmental and social safeguards in order to ensure the application of the ESMF and RMF during the project cycle.
The SC-IA follow up the preparation of the studies and ensure that the consultant includes the consultation and socialization process according with the ESMF guidelines (at least 1 consultation procedure for Category B and C projects);

Once the IAs received the draft documents (studies) the SC-IA review and send comments to the consultant if is necessary. The IAs submits the studies to the MoWI for review and comments. The ESMU review and send comments if is required. The studies for Category A, the MoWI send to the World Bank (for WSSP-II Activities only) for review and “no objection”; and

Once the IAs has received comments on the studies (ESMU-MoWI and WB Safeguard Team (for WSSP-II Activities only)) and these are included in the final documents, the IAs approves the studies and submits them to the environmental authority in order to obtain the Environmental Certification (EC). The assessment process to obtain the EC is presented in the next chapter.

### 7.3.3 Stage 3: Bid process and legal agreement

The IAs begins the bid process to select the company to execute the project. The bid documents should include the environmental and social studies so that the technical and economic proposals can incorporate implementation of environmental and social measures; and

Once the construction firm is selected, the IAs include in the legal agreements for the project construction, a specific environmental and social clauses to comply with and implement all actions and measures identified in the environmental and social studies, and plans developed during the assessment stage.

### 7.3.4 Stage 4: Construction

The works cannot begin without the Environmental Certification, so the constructor should verify the status of the EC before starting construction;

During construction, the IAs, with the support of the SC-IA, monitor the project in order to ensure compliance with environmental and social plans. To conduct this follow-up, the SC-IA will use the second internal management tool, which is the Environmental and Social Monitoring Report (ESMR). The purpose of the ESMR is to record observations from the field visit and any resulting recommendations, in order to confirm that environmental and social aspects are being properly managed during project execution. The ESMR will be used each time that the responsible of the environmental and social safeguards (SC-IA), makes a field visit. The number of visits depends on the environmental and social risk levels;

The IAs must submit the ESMR to the ESMU-MoWI for a Category B projects; and the MoWI will submit the ESMR Category A project to the WB for review and comments (for WSSP-II Activities only); and

Once the project construction has been completed, the IAs with the support of the SC-IA, should develop the third management tool, which is the Environmental and Social Final Report (ESFR), to review and confirm the proper implementation of the environmental and social plans.

### 7.3.5 Stage 5: Operation
The IAs are responsible for monitoring the implementation of environmental and social aspects through application of the GGESMP during the operation stage. Also during operation, the IAs are responsible to monitor the projects at least 2 year after the construction.

7.4 WSSP-II environmental and social management flowchart

A summary of the activities along the project cycle is summarized in the next flow chart.
Figure 11. Environmental and Social Management Flowchart

ENVIRONMENTAL AND SOCIAL MANAGEMENT OF THE IMPLEMENTING AGENCIES (IAs)  
WSSP-II

Abbreviations:

ESIA: Environmental and Social Impacts Assessment  
PESIA: Preliminary Environmental and Social Impact Assessment  
ESAR: Environmental and Social Audit Report  
GGESP: Guidelines of Good Environmental and Social Practices  
RAP: Resettlement Action Plan  
EGP: Ethnic Groups Plan

Note: In the table above where WB’s role is mentioned this is meant to apply to WSSP-II Activities only
8. Assessment process to comply with the National Law

8.1 Steps to comply with the national environmental law

The environmental and social assessment process in Tanzania is presented in part VI of the EMA 2004, EIA and Audit Regulation of 2005, and also in the General Environmental Impact Assessment Guidelines and Procedure, prepared by NEMC (revised in March 2002).

In summary, this process involves the following six main steps:

- **Step 1**: The developer is required to register the project with the NEMC. The Implementing Agency (IA) completes the Registration Form (F-1). (Annex 8.1)

- **Step 2**: The IAs send the F-1 to NEMC, including a brief project description and the screening that includes a proposal of categorization based on the preliminary assessment. IAs should use the Environmental and Social Preliminary Assessment (ESPA) included in this instrument for the purposes of screening.

- **Step 3**: Once the scope of the studies are confirmed by the environmental authority (ESIA, PESIA or ESAR), Safeguard Coordinator of the Implementing Agency (SC-IA) prepares the TORs needed to conduct the proposed study. Guidelines to prepare the TORs of an ESIA, PESIA and ESAR are included in this ESMF. Once the TORs have been reviewed by the ESMU-MoWI (Categories B) and WB the IA submits the TORs to NEMC for review, improvement, and approval.

- **Step 4**: The Consultant hired by the IAs conducts the ESIA, PESIA or ESAR study in accordance with the TOR approved by ESMU-MoWI (Categories B), WB and NEMC.

- **Step 5**: Before submitting the PESIA or ESAR to NEMC, the IAs should submit the study to the ESMU-MoWI for review and comments. In the cases of PESIA for Category B the MoWI submit the study to the WB for review and clearance. Once the PESIA is reviewed and approved by ESMU-MoWI and WB, the IAs sends the PESIA/ESAR to NEMC for its review and approval. To submit the document (PESIA/EAR) the IA has to use the Form 2: Submission of the PESIA/EAR (Annex 8.2). The Technical Review Committee established by the NEMC reviews the PESIA/ESAR and notifies the Environment Minister whether the PESIA/ESAR is acceptable or not. The NEMC could request that the developer make corrections and improvements based on the PESIA/ESAR.

- **Step 6**: The IAs, with the support of the Consultant, incorporates NEMC recommendations and submits the final document to the NEMC for approval. If the document is acceptable, NEMC recommends to the Minister issue the Environment Certification (EC).
8.2 Flowchart to comply with the national law

A summary of the activities for the environmental and social assessment process along the project cycle is summarized in the next flow chart:

Figure No. 8: Flowchart of the Environmental and Social Assessment Process
Bibliography


- Aide Memoire of the Joint Supervision Mission, from 2007 to 2014. Ministry of Water (MoWI) and the Development Partners.


- The Environmental Impact Assessment and Audit Regulation, National Environment Management Council (NEMC), 2005.


- Operational Programme for Effective and Sustainable Protection and Conservation of the Natural Resources 2014 to 2019, Ministry of Water (MoWI), 2014.


During the review of the ESMF the consultant met with the next instance or institution in order to up-date the information and simplify the document:

- **Ministry of Water (MoWI).** Meetings with most of the technical units at the central level in order to know the project cycle and recommend in the up-date version of the instrument the steps and procedures for the environmental management.

- **Project Coordination Unit of the WSSP-II.** Meetings with the Unit and specifically with the Environment Safeguard Coordinator (ESC), during the consultancy in order to work together in the review and up-date version of the instruments.

- **National Environment Management Council (NEMC).** Review of secondary information about the environment legislation in Tanzania.

- **Workshop to present and training in the use and application of the up-date version of the ESMF and RMF.** During the workshops were up-date and include some additional recommendation in order to improve the safeguards instruments. Morogoro, March 2014.

- **World Bank Safeguard Team.** Meetings with the environmental and social safeguards specialist, in order to review and include some recommendations.

- **Implementing Agencies (IAs).** Meetings with the main implementing agencies of the WSSP-II during the site visit of a sample of projects, in order to know and identify the requirements for the environmental and social management.
ANNEXES
Annex 1: List of participant and main issues raised during socialization

As part of the socialization process of the “Environmental and Social Management Framework – ESMF” and “Resettlement Management Framework – RMF”, two (2) workshop presentation to review, discuses and train in the use and application of the instruments, was held in March 24 to 26 2014, in Morogoro City.

Main issue raised during the review discussion and training on the application of the instrument are listed below:

- The use of scope, Magnitude and site sensitivity to establish a Category of a particular project is much easy than the previous screening form, However to establish the magnitude of various components it needs an already feasibility study report and possibly a design of the proposed project. In the practical sense once the two documents are ready the project is already far ahead towards procuring a contractor. It was agreed to work very closer with consultant who can avail a pre-feasibility study which can give light on the possible magnitude and scope of relevant projects components.

- The site sensitivity is subject to individual perception and experience on the judgement of physical, ecological and anthropogenic features prevailing on the site. It needs a physical visit to the site and consultation with the community. The feasibility study does not give the actual sensitivity we are talking about. It was agreed that there shall be a specific budget for the SC-IA or EMU-MoWI to undertake a site visits together with a consultant while preparing the pre-feasibility study and draft design.

- The social screening of the proposed projects is mainly relaying on the population. In some cases the affected PAPs can be less than 200 but they are significantly affected by the project due to the kind of activity being undertaken on the proposed land they possess.

- In water supply project many projects scope is rehabilitation and/or expansion. The selection of a specific scope for a project will relay on the % coverage of the two. If the rehabilitation is more than expansion cost then the scope will fall under rehabilitation. The clarification was given to consider most the high sensitive impact to environment and society.
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**PRESENTATION AND DISCUSSION WORKSHOP ON THE DRAFT ESMF AND RMF**

**Component 1: Water Resources Development Programme**

**Component 3: Urban Water Supply and Sewerage Services Programme**

**Morgoni, March 13-15, 2014**

**LIST OF PARTICIPANTS**

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**PANELISTS:**

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Annex 2: Summary of the main environmental and social legal framework


The Water Resource Management Act (WRMA), 11/09, was passed by the National Assembly of the United Republic of Tanzania, on 28 April 2009 and assented to by the President on 12 May 2009. It came into force on 1 August 2009. The Act provides for the institutional and legal framework for sustainable management and development of water resources; outlines principles for water resources management; provides for the prevention and control of water pollution; provides for participation of stakeholders and the general public in implementation of the National Water Policy, repeal of the Water Utilization (Control and Regulation) Act, and provides for related matters.

The objective of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account the following fundamental principles, including:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water and the principle that water is essential for life and that safe drinking water is a basic human right;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Facilitating social economic development;
- Promoting stakeholders' involvement in water resources management at all levels, especially by ensuring decentralization to the lowest possible level of government, consistent with available capacity at such level;
- Protecting biological diversity, especially the aquatic ecosystems;
- Providing for systems for managing the growing demand for water use through integrated planning and management of surface and groundwater resources, in ways which incorporate economic, environmental and social dimensions in the planning process;
- Preventing and controlling pollution and degradation of water resources;
- Providing implementation of international obligations stipulated under international legal instruments to which the United Republic is a party; and
- Promoting dam safety security and the management of water related disasters.


The general functions of EWURA are provided for under Section 7 of the Energy and Water Utilities Regulatory Authority Act, 2001. Under the provisions of Section 7 (1) of that Act, the functions conferred on EWURA thereby shall be to perform the following in relation to the regulation of the provision of water supply and sanitation services by a water authority or other person, other than a community organisation established in accordance with Section 37 of this Act: (a) exercise licensing and regulatory functions in respect of water supply and sanitation services including the establishment of standards relating to equipment attached to the water and sanitation system; and (b) also among others provide guidelines on tariffs chargeable for the provisions of water and sewage services.

c. The Forest Act, 2002

The Forest Act, (No. 14), 2002, provides for the management of forests. Its main objectives are to promote and enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of natural resources for the benefit of present and future generations. In addition, the legislation aims to ensure the stability of ecosystems through the conservation of forest biodiversity, water catchments and soil fertility.
According to section 18 of this Act, an EIA is required for certain developments in accordance with the modalities and substance as set out in the guidelines by authorities responsible for the protection of the environment. Among others are: (a) road construction or the laying of pipelines; (b) construction of dams, power stations, electrical or telecommunication installations; and (c) construction of buildings.

d. The Wildlife Conservation Act, 1974

The Wildlife Conservation Act, (No. 12), 1974, deals with the sector that is entrusted with the custodianship of wildlife resources in the country. The Act empowers the minister to establish game control areas, prohibit, restrict/regulate the hunting, killing and capture of animals during such periods as may be specified. In addition, it also gives the director of wildlife powers \textit{inter alia}: to restrict the carriage of weapons in game reserve; protect vegetation against burning or cutting; restrict use of devices for killing or capturing animals within game reserve and game controlled areas and to declare any area to be a partial game reserve for protected animals and restrict the hunting, capturing or killing protected animals or national game.

On public interest, the director is empowered to refuse to issue licenses, certificates and permission to any person and may cancel permission/permits and try various offences. Although the Act does not prohibit consumptive use of wildlife, it seeks to control and regulate that use in order to ensure sustainability. Among the many objectives and strategies that the Act sets, the following are major:

- To promote conservation wildlife and its habitat (Protection);
- To regulate development, projects/activities in protected areas (Development);
- To conserve viable populations of species making up Tanzania’s fauna and flora with emphasis on endangered, threatened, endemic species and their habitats; and
- Enforcing EIA process for proposed developments in protected areas and requesting for environmental planning for developments to be carried out in the wildlife areas outside protected areas in order to minimize negative impacts.

Water development projects will observe laws governing the conservation of wildlife.

e. The National Land Use Planning Commission Act, 1984


The villages surrounding the project area may find themselves in land conflicts that may be a result of lack of land-use planning. Water Development projects should take in consideration and understand the strategic planning of the other land surrounding the project.


The Occupation Health and Safety Act, (No. 5), 2003, is an Act for health and safety. The Act is administered through the Ministry of Labour. Under the Act, the labour minister shall appoint the chief inspector (CI) to perform the functions stipulated in the Act. The CI may in turn also designate any person as an inspector to perform all functions assigned to an Inspector in respect of water projects, this act shall be enforced in all work places.

g. Contractors Registration Board Act, 1997

According to this act, all construction contracts are required to be executed by registered companies and entitled class in respect to the costs of the project.
Annex 3: World Bank Environmental and Social Safeguard Policies

a. Environmental Assessment (OP/BP/GP 4.01)

This policy requires environmental assessment (EA) of projects/programmes proposed for Bank financing to ensure that they are environmentally sustainable, and also to inform decision-making. EA is a process where the breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the projects. The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, vulnerable peoples, and cultural property); and trans boundary and global environmental aspects.

The environmental and social impacts of the WSSP-II will come from the water supply and sewage services projects/activities that will receive financing under the WSSP-II. Because the location of these projects will be selected each year, the EA process calls for the GoT to prepare this ESMF to establish a mechanism to determine and assess future potential environmental and social impacts during implementation of the projects under the proposed WSSP-II, and then set out mitigation, monitoring, and institutional measures to be implemented during project operations to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

b. Natural Habitats (OP/BP 4.04)

The World Bank does not support projects that, in the Bank's opinion, involve significant conversion or degradation of critical natural habitats. Wherever feasible, Bank-financed projects are sited on already converted lands (excluding any lands that in the Bank's opinion were converted in anticipation of the project). The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its location, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs. If the EA indicates that a project would significantly convert or degrade natural habitats, the project includes mitigation measures acceptable to the Bank. Such mitigation measures include, as appropriate, minimizing habitat loss (for example, strategic habitat retention and post-development restoration) and establishing and maintaining an ecologically similar protected area. The Bank accepts other forms of mitigation measures only when they are technically justified.

In deciding whether to support a project with potential adverse impacts on a natural habitat, the Bank takes into account the borrower’s/developer’s ability to implement the appropriate conservation and mitigation measures. If there are potential institutional capacity problems, the project should include components to develop the capacity of national and local institutions for effective environmental planning and management. The mitigation measures specified for the project may be used to enhance the practical field capacity of national and local institutions.

c. Vulnerable groups

Those that may be below the food poverty line, lack access to basic social services (including those that are geographically isolated), and are not integrated with society at large and its institutions due to physical, social, or cultural factors.

To identify if such groups are present in the project area a social assessment will be undertaken. This Social Assessment includes measures to ensure that such groups have been involved in a process of free, prior and informed consultation leading to broad community support for the project; any adverse impacts on such groups are mitigated; the groups obtain culturally appropriate
as well as specific to their needs from the project; there is a process for grievance redress; and, the project includes monitoring and evaluation to assess the project’s impacts on and benefits for vulnerable groups. Where necessary, Ethnic Group Plans (EGPs) may be prepared.

d. Involuntary Resettlement (OP/BP 4.12)

The Implementing Agency (IA) will make dedicated efforts to avoid impacting people, land and property, including people’s access to natural and other economic resources. Nevertheless, land appropriation, compensation, and resettlement of residents seems inevitable for certain types of projects in certain areas. This social issue is of crucial concern to the GoT and the Development Partners (DPs), because its impact on poverty, if left unmitigated, is negative, immediate, and widespread. Thus a Resettlement Management Framework (RMF) has been prepared by the government and approved by the Bank in compliance with OP/BP 4.12. The RMF provides guidelines for the RAP that must be prepared when any programme investment triggers this policy. The RAP is prepared by the IA and submitted to the respective district executive director for approval. In some cases, the World Bank reserves the right to review any RAP as a condition for financing that particular project investment.

The resettlement policy applies to all displaced persons, regardless of the total number affected, the severity of the impact, or whether or not they have legal title to the land. Particular attention should be given to the needs of vulnerable groups among those displaced. The policy also requires that RAPs must be implemented before the implementation/start of project construction to ensure that displacement or restriction of access does not occur before necessary measures for resettlement and compensation are in place. For projects requiring land appropriation, it is further required that these measures include the provision of compensation and of other assistance required for relocation, prior to displacement, and preparation and provision of resettlement sites with adequate facilities, where required. In particular, the appropriation of land and related assets may take place only after compensation has been paid, and where applicable, resettlement sites, new homes, related infrastructure, and moving allowances have been provided to displaced persons. For programme activities requiring relocation or loss of shelter, the policy further requires that measures to assist the displaced persons be implemented in accordance with the RAPs.

Where there is a conflict between the laws of Tanzania and the Bank’s OP/BP 4.12, the latter must take precedence if the Bank is to fund the project.

e. Safety of Dams (OP/BP 4.37)

The Bank may finance types of projects/programs that include new or existing dams, but will rely on the performance of an existing dam, such as water supply systems that draw directly from a reservoir controlled by an existing dam; diversion dams or hydraulic structures downstream from an existing dam, where failure of the upstream dam could cause extensive damage to or failure of a new Bank-funded structure; and/or irrigation or water supply projects that will depend on the storage and operation of an existing dam. Projects/programs in this category also include operations that require increases in the capacity of an existing dam, or changes in the characteristics of the impounded materials, where failure of the existing dam could cause extensive damage to or failure of Bank-funded facilities.

Therefore, for projects that use existing dams, the Bank requires that the project developer arrange for one or more independent dam specialists to:

- Inspect and evaluate the safety status of the existing dams or their appurtenances and performance history;
- Review and evaluate the owner’s operation and maintenance procedures; and
• Provide a written report of findings and recommendations for any remedial work or safety-related measures necessary to upgrade the existing dams to an acceptable standard of safety.

The Bank may accept previous assessments of dam safety or recommendations or improvements needed in the existing dam if project sponsors or owners/operators of the dam provide evidence that:

• An effective dam safety programme is already in operation; and
• Full inspections and dam safety assessments of the existing dam that are satisfactory to the Bank have already been conducted and documented.

For projects that involve the construction of new dams, the Bank requires that the dam be designed and its construction supervised by experienced and competent professionals. It also requires that the project sponsor adopt and implement certain dam safety measure for the design, bid, tendering, construction, operation, and maintenance of the dam.

The Bank distinguishes between small and large dams. Small dams are normally less than 15 m in height. This project will only finance small dams. This category also includes, for example, low embankment tanks. Large dams are 15 m or more in height. Dams that are between 10 m and 15 m in height are treated as large dams if they present special design complexities—for example, an unusually large flood-handling requirement, location in a zone of high seismicity, foundations that are complex and difficult to prepare, or retention of toxic materials. Dams fewer than 10 m are treated as large dams if they are expected to become large dams during the operation.

For small dams, generic dam safety measures designed by qualified engineers are usually adequate. The Project will apply the Ministry of Water’s Guidelines for Dam Safety dated 2012 in those situations. For large dams, the Bank requires:

(i) Reviews by an independent panel of experts on the investigation, design, and construction of the dam and at the start of operations;
(ii) Preparation and implementation of detailed plans, including for construction supervision and quality assurance, instrumentation, operations and maintenance, and emergency preparedness;
(iii) Prequalification of bidders during procurement and bid tendering;
(iv) Periodic safety inspections after dam completion; and
(v) A Dam Safety Measures Report (DSMR).

e. Projects on International Waters (OP/BP/GP 7.50)

This policy applies when potential international water rights may be an issue for projects involving any of the following types of international waterways in Tanzania:

(i) Any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more states—for example, the lakes Victoria, Nyasa, and Tanganyika, which border neighbouring states;
(ii) Any tributary or other body of surface water that is a component of any waterway described in (i) above—many rivers in Tanzania are either sourced from or flow directly into one of these lakes; and
(iii) Any bay, gulf, strait, or channel bounded by two or more states or, if within one state, recognized as a necessary channel of communication between the open sea and other states, and any river flowing into such waters.

Projects on international waterways may affect relations between the Bank and its borrowers and between states (whether members of the Bank or not). The Bank recognizes that the cooperation and goodwill of riparians is essential for the efficient use and protection of waterways. Therefore,
the Bank strongly appreciates riparians making appropriate agreements or arrangements to ensure cooperation and goodwill across the entire waterway or any part thereof. The Bank stands ready to assist riparians in achieving this goal.

This policy requires the GoT, if it has not already done so, to formally notify riparians of the proposed WSSP-II and any details of project activities that will involve international waterways.

f. Cultural Property (OP/BP 4.11)

Cultural property includes sites having archaeological (prehistoric), paleontological historical, religious, and unique natural significance. The Bank will normally decline to finance a project that will significantly damage irreplaceable cultural property, and will assist only those projects that are sited or designed so as to prevent such damage.

It is not anticipated that the projects will adversely affect sites having archaeological, paleontological, historical, religious, or unique natural significance as defined under OP/BP 4.11. However, a screening mechanism is proposed to ensure that any such sites are identified and avoided, or impacts mitigated, in line with the cultural resources policy. The public, project contractors, and operators will be notified of the potential for chance finds, and “chance find procedures” will be included in construction contracts.
Annex 4: List of Projects requiring or potentially requiring ESIA

4.1 List of Projects requiring ESIA (Mandatory List)

1. Agriculture
   i. Large-scale cultivation.
   ii. Water resources development projects (dams, water supply, flood control, irrigation, drainage)*
   iii. Large scale monoculture (cash and food crops including floriculture)
   iv. Biological pest control
   v. Agricultural projects necessitating the resettlement of communities.
   vi. Introduction of new breeds of crops
   vii. Introduction of genetically modified organisms (GMOs)

9. Transport and infrastructure
   i. Construction, expansion or rehabilitation of new trunk roads *
   ii. Construction, expansion or rehabilitation of airports and airstrips and their ancillary facilities
   iii. Construction or new expansion to existing railway lines
   iv. Construction of new, or expansion to shipyards or harbor facilities

13. Waste treatment and disposal
   (a) Toxic and Hazardous waste
       i. Construction of incineration plants
       ii. Construction of recovery plant (off-site)
       iii. Construction of waste water treatment plant (off-site)
       iv. Construction of secure landfill facility
       v. Construction of storage facility (off-site)
   
   (b) Municipal Solid Waste
       i. Construction of incineration plant
       ii. Construction of composting plant
       iii. Construction of recovery/re-cycling plant
       iv. Construction of municipal solid waste landfill facility

   (c) Municipal Sewage
       i. Construction of waste water treatment plant *
       ii. Construction of marine outfall *
       iii. Night soil collection transport and treatment *
       iv. Construction of sewage system *

21. Water Supply
   i. Canalization of water courses *
   ii. Diversion of normal flow of water *
   iii. Water transfers scheme *
   iv. Abstraction or utilization of ground and surface water for bulk supply *
   v. Water treatment plants *

* Potential activities in the water and sanitation projects
4.2 List of Projects that may or may not require ESIA

LIST OF SMALL-SCALE ACTIVITIES AND ENTERPRISES THAT REQUIRE REGISTRATION (MAY OR MAY NOT REQUIRE EIA)

i. Fish culture
ii. Small animal husbandry and urban livestock keeping
iii. Horticulture and floriculture
iv. Wildlife catching and trading
v. Basket and other weaving
vi. Nuts and seeds for oil processing
vii. Bark for tanning processing
viii. Brewing and distilleries
ix. Bio-gas plants
x. Bird catching and trading
xi. Hunting
xii. Wildlife ranching
xiii. Zoos and sanctuaries
xiv. Tie and dye making
xv. Brick making
xvi. Sea weed farming
xvii. Salt pans
xviii. Urban livestock keeping
xix. Urban agriculture
xx. Wood carving and sculpture
xxi. Hospitals and dispensaries, schools, community centre and social halls, play grounds
xxii. Rain water harvesting *
xxiii. Garages
xxiv. Black smith.
xxv. Tile manufacturing
xxvi. Kaolin manufacturing
xxvii. Livestock stock routes
xxviii. Fire belts.
xxix. Tobacco curing
xxx. Sugar refineries
xxx. Tanneries
xxxii. Pulp plant
xxxiii. Oil refineries and ginneries
xxxiv. Artisanal and small scale mining
xxxv. Rural road
Annex 5: Guidelines to prepare the environmental studies required by national legislation

5.1 Environmental and Social Impact Assessment (ESIA)

(a) Executive summary. Concisely discusses significant findings and recommended actions.

(b) Policy, legal, and administrative framework. Discusses the policy, legal, and administrative framework within which the EA is carried out. Explains the environmental requirements of any cofinanciers. Identifies relevant international environmental agreements to which the country is a party.

(c) Project description. Concisely describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power plants, water supply, housing, and raw material and product storage facilities). Indicates the need for any resettlement plan (see also subpara. (h)(v) below). Normally includes a map showing the project site and the project's area of influence.

(d) Baseline data. Assesses the dimensions of the study area and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigatory measures. The section indicates the accuracy, reliability, and sources of the data.

(e) Environmental and Social impacts. Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental enhancement. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.

(f) Analysis of alternatives. Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the "without project" situation—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

(g) Environmental and Social management plan (ESMP). Covers mitigation measures, monitoring, and institutional strengthening; see outline in OP 4.01, Annex C.

(h) Appendixes

- List of ESIA report preparers—individuals and organizations.
- References—written materials both published and unpublished, used in study preparation.
- Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local nongovernmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs.
- Tables presenting the relevant data referred to or summarized in the main text.
- List of associated reports (e.g., resettlement plan)
5.2 Environmental and Social Management Plan (ESMP)

A project's environmental and social management plan (EMP) consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The plan also includes the actions needed to implement these measures. To prepare a management plan, the borrower and its ESIA design team (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements. More specifically, the ESMP includes the following components.

Mitigation

The ESMP identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental and social impacts to acceptable levels. The plan includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient. Specifically, the ESMP:

(a) Identifies and summarizes all anticipated significant adverse environmental and social impacts;
(b) Describes—with technical details—each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;
(c) Estimates any potential environmental and social impacts of these measures; and
(d) Provides linkage with any other mitigation plans (e.g., for involuntary resettlement or cultural property) required for the project.

Monitoring

Environmental monitoring during project implementation provides information about key environmental aspects of the project, particularly the environmental impacts of the project and the effectiveness of mitigation measures. Such information enables the borrower and the Bank to evaluate the success of mitigation as part of project supervision, and allows corrective action to be taken when needed. Therefore, the ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the ESIA report and the mitigation measures described in the EMP. Specifically, the monitoring section of the ESMP provides:
(a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and
(b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Capacity Development and Training

To support timely and effective implementation of environmental project components and mitigation measures, the ESMP draws on the EA's assessment of the existence, role, and capability of environmental units on site or at the agency and ministry level. If necessary, the EMP recommends the establishment or expansion of such units, and the training of staff, to allow implementation of ESIA recommendations. Specifically, the ESMP provides a specific description of institutional arrangements—who is responsible for carrying out the mitigatory and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).
Implementation Schedule and Cost Estimates

For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

Integration of ESMP with Project

The plan is expected to be specific in its description of the individual mitigation and monitoring measures and its assignment of institutional responsibilities, and it must be integrated into the project's overall planning, design, budget, and implementation. Such integration is achieved by establishing the ESMP within the project so that the plan will receive funding and supervision along with the other components.

1. The management plan is sometimes known as an "action plan." The EMP may be presented as two or three separate plans covering mitigation, monitoring, and institutional aspects, depending on borrowing country requirements.
2. For projects involving rehabilitation, upgrading, expansion, or privatization of existing facilities, remediation of existing environmental problems may be more important than mitigation and monitoring of expected impacts. For such projects, the management plan focuses on cost-effective measures to remediate and manage these problems.
3. For projects having significant environmental implications, it is particularly important that there be in the implementing ministry or agency an in-house environmental unit with adequate budget and professional staffing strong in expertise relevant to the project (for projects involving dams and reservoirs, see BP 4.01, Annex B).
5.3 Preliminary Environmental and Social Impact Assessment (PESIA)

1. Description of Adverse Impacts

Anticipated impacts are identified and summarized.

2. Description of Mitigation Measure

Each measure is described with reference to the effects it is intended to address. As needed, detailed plans, designs, equipment description, and operating procedures are included.

3. Description of Monitoring Programme

Monitoring provides information on the occurrence of impacts. It helps identify how well mitigation measures are working, and where better mitigation may be needed. The monitoring programme should identify what information will be collected, how, where, and how often. It should also indicate what level of impact would trigger a need for further mitigation. How environmental impacts are monitored is discussed below.

4. Responsibilities

The people, groups, or organizations that will carry out the mitigation and monitoring activities are defined, as well as to whom they will report and be responsible. There may be a need to train people to carry out these responsibilities and to provide them with equipment and supplies.

5. Implementation Schedule

The timing, frequency, and duration of mitigation measures and monitoring are specified in an implementation schedule and linked to the overall project schedule.

6. Cost Estimates and Source of Funds

These are specified for the initial project investment and for the mitigation and monitoring activities as the project is implemented. Funds to implement the environmental and social plans will predominantly come from the developer, with possible assistance from the WSSP-II.
5.4 Environmental and Social Audit Report (ESAR)

An Environmental and Social Audit Report (ESAR) shall be carried out through questionnaires, and environmental site visits and test analysis and in the manner specified in the EA Regulation.

The environmental specialist shall consider the next information:

a. Description of the project;
b. Objective, scope and criteria of the audit;
c. All relevant environmental law and regulatory frameworks on health and safety, sustainable use of natural resources and on acceptable national and international standards;
d. Verify the level of compliance by the proponent or the developer with the conditions of the environmental management plan;
e. Evaluate the proponent's or the developer's knowledge and awareness of and responsibility for the application of relevant legislation;
f. Review existing project documentation related to all infrastructural facilities and design;
g. Examine monitoring programs, parameters, and procedures in place for control and corrective actions in case of emergencies;
h. Examine records of incidents and accidents and the likelihood of future occurrence of the incidents and accidents;
i. Inspect all buildings, premises and yards in which manufacturing, testing and transportation takes place within and without the project area, as well as areas where goods are stored and disposed of and give a record of all significant environmental risks associated with such activities;
j. Examine and seek views on health and safety issues from the project employees, the local and other potentially affected communities; and
k. Prepare a list of health and environmental concerns of past and on-going activities.

The Contents of environmental audit report shall include:

a. A presentation of the type of activity being audited;
b. An indication of the various materials, including non-manufactured materials, the final products, and by-products, and waste generated;
c. A description of the different technical activities, processes and operations of the project;
d. A description of the national environmental legislative and regulatory frameworks on ecological and socio-economic matters relevant to that particular project or activity;
e. A description of the potentially affected environment on ecological and socio-economic matters;
f. A prioritization of all past and ongoing concerns of the project;
g. An identification of all environmental and occupational health and safety concerns of the project;
h. An opinion on the efficacy and adequacy of the environmental management plan of the project;
i. Detailed recommendations for corrective activities, their cost, timetable and mechanism for implementation;
j. An indication of the measures taken under the environmental management plan to ensure implementation is of acceptable environmental standards; and
k. A non-technical summary outlining the key findings, conclusions, and recommendations of the auditor.
Annex 6: Guidelines to prepare the World Bank Safeguard Studies

6.1 Ethnic Group Plan

Objectives and Scope

Where the project results in adverse impacts on ethnic groups (EGs) the project should be classified as Category A, and a Ethnic Group Plan (EGP) will be developed as a standalone document. However, where some vulnerable minority groups are integrated socially and economically with the mainstream population, and such is confirmed during the screening process and subsequent studies, a EGP will not be necessary.

Surveys and information required

a. Surveys

In projects with likely impacts on EGs, the ESPA should include additional specific screening to address this issue.

The social assessment should, among others, focus on EGs issues in projects with likely adverse impacts on this people. While the social assessment will address macro-level issues and broad strategies to mitigate impacts, specific and focused studies would be required for the EGP preparation.

b. Information Required

The information required for preparation of EGP will include the following:

- The basic census, socio-economic data and inventory of affected assets
- Household ownership of economic and productive assets
- Annual income from primary and secondary employment opportunities
- Economic information of community (e.g., brief information on economic and natural resources, production and livelihood systems)
- Social information of community (e.g., brief description of kinship, value system; types of social organizations of formal/informal groups, farming groups, etc., especially those that can help group in adjusting to potential impacts)
- Potential impact of sub-project on basic social services (e.g., water supply, health clinics, and schools)
- Potential impact of project on the social and economic livelihood

Information should be gathered from group meetings, one with a general assembly of affected ethnic groups in the area and one with vulnerable women, especially those who live along the zone of influence of the project area. Discussions should focus on the project objectives, potential positive and negative impacts, and recommendations for project design. If the social assessment indicates that the potential impact of the proposed project will be significantly adverse and that the ethnic minority community rejects the project, the project authorities should consider redesigning or reformulating the project.

Formulation of Development Alternatives

The proposed mitigation measures should ensure that social and economic benefits they receive are in harmony with their cultural preferences. The focus of the EGP should be on resource-based, non-cash measures that are developed through an extensive public participation and consultation to
mitigate adverse impacts on such communities. The assistance should also include institutional strengthening and capacity-building of tribal elders, community groups working on resettlement activities.

**Public Participation and Consultation**

The community participation and consultation framework and grievance redress mechanism should be developed in culturally appropriate ways familiar to the ethnic groups. They should be developed with the ethnic groups and their leaders in close collaboration with local officials. Wherever possible, staff with ethnic group background and experience should be hired as part of the social impact assessment team as well as the monitoring team.

**Ethnic Group Plan**

In case the screening exercise identifies major impacts on some ethnic groups, and further confirmed during the studies, warranting the preparation of standalone EGP, necessary surveys and investigations would be prepared during the feasibility study phase of project preparation.

An EGP addresses the (i) aspirations, needs, and preferred options of the affected EGs; (ii) local social organization, cultural beliefs, ancestral territory, and resource use patterns among the affected EGs; (iii) potential positive and negative impacts on EGs; (iv) measures to avoid, mitigate, or compensate for the adverse project effects; (v) measures to ensure project benefits will accrue to EGs; (vi) measures to strengthen the capacity of the Catalytic Fund to address EG issues; (vii) the possibility of involving local CBOs and NGOs with expertise in EG issues; (viii) budget allocation; and (ix) monitoring.

The EGP is prepared in a flexible and pragmatic manner, and its level of detail varies depending on the specific project and the nature of effects to be addressed. The EGP includes the following elements, as needed:

- A summary of the social assessment;
- A summary of results of the free, prior, and informed consultation with the affected EGs’ communities that was carried out during project preparation and that led to broad community support for the project;
- A framework for ensuring free, prior, and informed consultation with the affected EGs’ communities during project implementation;
- An action plan of measures to ensure that the EGs receive social and economic benefits that are culturally appropriate, including, if necessary, measures to enhance the capacity of the project implementing agencies;
- When potential adverse effects on EGs are identified, an appropriate action plan which includes measures to avoid, minimize, mitigate, or compensate for these adverse effects.
- The cost estimates and financing plan for the EGP; and
- Accessible procedures appropriate to the project to address grievances by the affected EGs arising from project implementation.
- Mechanisms and benchmarks appropriate to the project for monitoring, evaluating, and reporting on the implementation of the EGP. The monitoring and evaluation mechanisms should include arrangements for the free, prior, and informed consultation with the affected EGs’ communities.
6.2 Chance Finds Procedures

Contracts for civil works involving excavations should normally incorporate procedures for dealing with situations in which buried Physical and Cultural Resources (PCR) are found unexpectedly. The final form of these procedures will depend upon the local regulatory environment, including any chance find procedures already incorporated in legislation dealing with antiquities or archaeology.

*Note:* The general guidance provided applies when there will be an archaeologist on call. In exceptional situations in which excavations are being carried out in PCR-rich areas such as a United Nations Educational, Scientific, and Cultural Organization World Heritage site, there will normally be an archaeologist on site to monitor the excavations and make decisions. Such cases will require a modified version of these procedures, to be agreed upon with the cultural authorities.

Chance finds procedures commonly contain the following elements.

1. **PCR Definition**

   This section should define the types of PCR covered by the procedures. In some cases, the chance find procedure is confined to archaeological finds; more commonly it covers all types of PCR. In the absence of any other definition from the local cultural authorities, the following definition could be used: “movable or immovable objects, sites, structures or groups of structures having archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.”

2. **Ownership**

   This paragraph should state the identity of the owner of the artifacts found. Depending on the circumstances, the owner could typically be the state, the government, a religious institution, the landowner, or it could be left for later determination by the concerned authorities.

3. **Recognition**

   This is the most difficult aspect to cover. As noted above, in PCR-sensitive areas, the procedure may require the contractor to be accompanied by a specialist. In other cases, the procedures may not specify how the contractor will recognize a PCR, and a clause may be requested by the contractor disclaiming liability.

4. **Procedure upon Discovery**

   **Suspension of Work**

   This paragraph may state that if a PCR is found during execution of the works, the contractor shall cease activity. However, it should specify whether *all works* should cease, or only the works immediately involved in the discovery, or, in some cases where large buried structures may be expected, all works may be stopped within a specified distance (for example, 50 meters) of the discovery. This issue should be informed by a qualified archaeologist.

   After stopping work, the contractor must immediately report the discovery to the resident engineer. The contractor may not be entitled to claim compensation for work suspension during this period.
The resident engineer may be entitled to suspend work and request that the contractor provide excavations at the contractor’s expense if the Eng. thinks that a discovery was made and not reported.

**Demarcation of the Discovery Site**

With the approval of the resident engineer, the contractor is then required to temporarily demarcate and limit access to the site.

**No Suspension of Work**

The procedure upon discovery may help the resident engineer decide whether the PCR can be removed and work can continue, for example, in cases where the find is one coin.

**Chance Find Report**

The contractor should then, at the request of the resident engineer, and within a specified time period, complete a Chance Find Report, recording:

- Date and time of discovery;
- Location of the discovery;
- Description of the PCR;
- Estimated weight and dimensions of the PCR; and
- Temporary protection implemented.

The Chance Find Report should be submitted to the resident engineer and other concerned parties as agreed upon with the cultural authority and in accordance with national legislation. The resident engineer, or other party as agreed, is required to inform the cultural authority accordingly.

**Arrival and Actions of Cultural Authority**

The cultural authority ensures that a representative will arrive at the discovery site within an agreed upon time, such as 24 hours, and determines the action to be taken. Such actions may include:

- Removal of PCR deemed to be significant;
- Execution of further excavation within a specified distance of the discovery point; or
- Extension or reduction of the area demarcated by the contractor.

These actions should be taken within a specified period, for example, seven days. If the cultural authority fails to arrive within the stipulated period (for example, 24 hours), the resident engineer may have the authority to extend the period by a further stipulated time. If the cultural authority fails to arrive after the extension period, the resident engineer may have the authority to instruct the contractor to remove the PCR or undertake other mitigating measures and resume work. Such additional works can be charged to the contract. However, the contractor may not be entitled to claim compensation for work suspension during this period.

**Further Suspension of Work**

During this seven-day period, the cultural authority may be entitled to request the temporary suspension of the work at or in the vicinity of the discovery site for an additional period of up to, for example, 30 days. The contractor may or may not be entitled to claim compensation for work suspension during this period. However, the contractor will be entitled to establish an agreement with the cultural authority for additional services or resources during this further period under a separate contract with the cultural authority.
6.3 Dam Safety Measures Report

This report is used when the purpose of the project is the rehabilitation of an existing dam or a dam under construction.

1. Purpose and Scope of Work

The purpose of the dam safety assessment is to prepare a reconnaissance-level assessment of quality management of a dam or weir, and of the reliability of the water source. The work will involve initial and wrap-up meetings with personnel responsible for the dam/weir; a field examination; and a DSMR of findings and recommendations. If deemed necessary, the report will provide a ToR for more thorough follow-up activities to identify (to feasibility level with cost estimates) the investments and other measures needed to ensure the safety of the dam/weir.

2. Qualifications of the Dam Specialist

The work will be carried out by a dam specialist (DS) independent from the owner/operator of the dam/weir and who has not been associated with the design, construction, and operation of the dam/weir. The DS will have appropriate qualifications and substantial experience with the design, construction, operation and maintenance of dams, especially in developing countries.

3. Investigations of Operating Conditions

The owner/operator of the dam/weir will provide the DS with the following information:
- Construction year, first impoundment;
- Dam size: height (m), crest length (m);
- Reservoir size (m³);
- Dam type;
- Estimated population downstream that would be threatened by dam failure; and
- Estimated replacement cost.

The DS will discuss with the owner/operator past and current operations and maintenance (O&M) practice with particular reference to:
- Existing records;
- Maintenance logbooks;
- Instrumentation and monitoring;
- Emergency preparedness;
- O&M resources (human and financial); and
- Status of reservoir sedimentation and measures to prolong the life of storage (reservoir conservation).

4. Investigations of Structural Conditions

Depending on the type of dam/weir, a suitable checklist for the inspection activities will be used. Inspection details are left to the DS who will carry out the task; however the inspection report should contain the following information:
- Construction year, first impoundment;
- Dam/weir size: height (m), crest length (m);
- Reservoir size (m³);
- Dam type;
- Geotechnical aspects of foundations;
- Design flood return period (years);
- Availability of as-built drawings;
- Spillway reliability assessment;
- Bottom outlet reliability assessment;
- Seepage;
- Deformations, settlements;
- Conditions of slopes/concrete structures;
- Active storage (m$^3$);
- Estimated population downstream that would be threatened by dam failure; and
- Estimated replacement cost.

5. **Investigations of Regulatory Framework**

The DS will:
- Discuss the existing regulatory framework for dam/weir safety with relevant authorities (regulator, line ministries, utilities, and others);
- Compare the existing regulatory framework, in matrix format, with comments as necessary regarding the essential elements identified in the World Bank’s *Regulatory Frameworks for Dam Safety—A Comparative Study*[^7];
- Identify opportunities and constraints to achieving the essential elements; and
- If judged feasible, develop reference ToR for an action plan aimed at achieving the essential elements in the national context (priorities, institutional reforms, incentives, enforcements, and so forth)

6. **Dam Safety Report**

The DS will produce a Dam Safety Report that includes:
- Description of the dam/weir, ownership, and regulatory framework;
- Dam safety assessment according to international standards (such as the International Commission on Large Dams);
- Structural measures required to bring safety to acceptable standards, including a preliminary cost estimate differentiating interventions in three categories: (i) emergency (human life at immediate risk); (ii) urgent (likely to pose a risk to human life, major assets at risk); and (iii) significant (any needed rehabilitation beyond meaningful maintenance);
- Non-structural measures (instrumentation and monitoring, standby electricity supply, training, dam safety plans) to be implemented to make dam safety sustainable after rehabilitation; reference should be made to OP/BP 4.37 Safety of Dams, and appendices of *Regulatory Frameworks for Dam Safety*;
- Preliminary assessment of reservoir sedimentation status and recommendations to prolong life of storage facilities;
- Resources needed for reliable O&M (human resources and recurrent costs);
- Overall assessment of challenges and opportunities for the management of the dam/weir; and
- TORs for the preparation of feasibility studies for any required rehabilitation measures (structural and non-structural).

6.4 Public Consultation Plan

The purpose of community involvement is not to find the “right” answer from the community, but to engage the community in the project so that they can share ownership and have the opportunity to inform the design process. It will also give the community the comfort of knowing early on in the process the mechanism through which affected individuals/households can make their voices heard. In developing a strategy for public involvement, there are a number issues to keep in mind:

- Define goals clearly;
- Secure commitment to effective implementation;
- Plan consultation timing and phasing;
- Provide adequate resources;
- Identify and acknowledge site-specific sensitivities;
- Identify and acknowledge historical context;
- Recognize the interest of developers/operators; and
- Be prepared to hear different views.

In building a public involvement program, the following outline must be followed:

- Identify all stakeholder groups (typically integrated with social assessment). Who will be affected directly and indirectly? Who else might have an interest or feel that they are affected?

- Identify the key issues for which public involvement will be required (scoping). These key issues would include:
  - Environmental and social issues, or decisions at stake;
  - Key organizations and interested parties involved;
  - Local authorities and the agencies involved;
  - Size of the issue or importance of the decision; and
  - Urgency and time frame.

- Understand the decision-making process:
  - Identification of parties making the decisions; and
  - Where in the project cycle decisions are made.

- Determine the necessary level of involvement. Meaningful public involvement takes place at three levels:
  - Conveying information to the public;
  - Listening to the opinions and preferences of the public; and
  - Involving the public in decision-making.

The nature and size of the project, combined with both the nature and number of stakeholders and the status of national legislation, will largely define when, where, and at what level public involvement is required for an EA and the environmental management plan.

Timely disclosure of information is key, and it may be useful to develop systems to ensure that stakeholders receive information on time and in an accessible format. While it is important that consultation take place before major decision points, the aim should be to facilitate consultation throughout the preparation and implementation phases. This implies that consultation will often be necessary as part of the research effort of the environmental assessment and in the development of mitigation measures during the analysis phase of the study. When building information disclosure systems:
- Select most effective involvement techniques to be used;
- Define a communication methodology; and
- Develop a budget.

**Table: Methods and Levels of Public Involvement**

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Target</th>
<th>Level of public involvement</th>
<th>Public involvement analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media announcement</td>
<td>Operator will describe what is occurring</td>
<td>General public</td>
<td>- Education&lt;br&gt;- Information feedback</td>
<td>- No participation&lt;br&gt;- Some participation</td>
</tr>
<tr>
<td>Storefront access</td>
<td>Operator has open door policy for public to walk in and discuss project, issues, and offer input</td>
<td>General public</td>
<td>- Education to information feedback</td>
<td>- None to some participation</td>
</tr>
<tr>
<td>Newsletter</td>
<td>Operator forwards regular progress newsletters to selected individuals and groups (stakeholders)</td>
<td>Identified stakeholders, groups, and individuals</td>
<td>- Education</td>
<td>- No participation</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>This method is more for gathering information as a project input</td>
<td>General public</td>
<td>- Education and information gathering, but could be categorized as consultation as well</td>
<td>- Could be reasonable participation</td>
</tr>
<tr>
<td>Interest group meetings</td>
<td>Operator holds regular meetings with different interest groups to educate</td>
<td>Identified stakeholders, groups</td>
<td>- Education&lt;br&gt;- Information feedback&lt;br&gt;- Consultation or joint planning</td>
<td>- No participation&lt;br&gt;- Some participation&lt;br&gt;- More and possibly significant participation</td>
</tr>
<tr>
<td>Advisory groups</td>
<td>Operator forms an advisory group of representatives of various stakeholder groups</td>
<td>Advisory groups of selected individuals</td>
<td>- Consultation&lt;br&gt;- Joint planning</td>
<td>- Some participation&lt;br&gt;- Significant participation</td>
</tr>
<tr>
<td>General meetings</td>
<td>Operator holds general meetings at strategic times during the process</td>
<td>General public</td>
<td>- Education&lt;br&gt;- Information feedback</td>
<td>- No participation&lt;br&gt;- Some participation</td>
</tr>
<tr>
<td>Knowledgeable and influential persons</td>
<td>Operator identifies the knowledgeable and influential individuals in the community</td>
<td>Knowledgeable and influential persons</td>
<td>- Education&lt;br&gt;- Information feedback&lt;br&gt;- Consultation</td>
<td>- No participation&lt;br&gt;- Some participation&lt;br&gt;- Some participation, but could be very significant</td>
</tr>
<tr>
<td>Planning group</td>
<td>Operator assembles a group from the stakeholders who will provide planning input</td>
<td>Planning group of selected or elected individuals</td>
<td>- Joint planning</td>
<td>- Very significant participation</td>
</tr>
</tbody>
</table>
Annex 7. Templates for Environmental and Social Management Instruments

7.1 Environmental and Social Preliminary Assessment

## Environmental and Social Preliminary Assessment (ESPA)

### 1. General Information

| Name of the project: |  |
| Implementing Agency: |  |
| Component of WSSP: | □ Water Resources Management  
□ Urban Water Supply and Sanitation Services |
| Location: | - Region:  
- District:  
- City/Village: |
| Evaluator name: |  
Date of field visit: |  |

### 2. Project

**Description and general purpose of the project:**  
________________________________________  
________________________________________

**Specific works and activities to be undertaken**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

### 3. Stakeholders

**Direct:**  
-  
-  

**Indirect:**  
-  
-  

### 4. Potential impacts and measures

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive:</strong></td>
<td></td>
</tr>
</tbody>
</table>
Direct:  
-  
-  |
| Indirect: |  
-  
-  |
| **Negative:** |  
Direct:  
-  
-  |
| Indirect: |  
-  
-  |
## 5. First Preliminary Classification: Type of project

<table>
<thead>
<tr>
<th>Water Supply System</th>
<th>Magnitude: (Apply Table 4)</th>
<th>Scope: (Apply Table No. 7)</th>
<th>Applying Table 9 the classification in function of the type of project is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components: (Apply Figure 4)</td>
<td>☐ Intake (spring or river)</td>
<td>☐ Large</td>
<td>☐ a</td>
</tr>
<tr>
<td></td>
<td>☐ Intake (dam + reservoir)</td>
<td>☐ Medium</td>
<td>☐ b</td>
</tr>
<tr>
<td></td>
<td>☐ Intake (borehole)</td>
<td>☐ Small</td>
<td>☐ c</td>
</tr>
<tr>
<td></td>
<td>☐ Main Transmission Pipeline</td>
<td>☐ New Construction</td>
<td>☐ d</td>
</tr>
<tr>
<td></td>
<td>☐ Treatment Plant</td>
<td>☐ Improvement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Treated Water Pipeline</td>
<td>☐ Rehabilitation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Storage Tank</td>
<td>☐ Maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Distribution network</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sewerage System</th>
<th>Magnitude: (Apply Table 5)</th>
<th>Scope: (Apply Table No. 7)</th>
<th>Applying Table 9 the classification in function of the type of project is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components: (Apply Figure 5)</td>
<td>☐ Sewerage Network</td>
<td>☐ Large</td>
<td>☐ a</td>
</tr>
<tr>
<td></td>
<td>☐ Pump Station</td>
<td>☐ Medium</td>
<td>☐ b</td>
</tr>
<tr>
<td></td>
<td>☐ Wastewater Pipeline</td>
<td>☐ Small</td>
<td>☐ c</td>
</tr>
<tr>
<td></td>
<td>☐ Sewerage Treatment Plant</td>
<td>☐ New Construction</td>
<td>☐ d</td>
</tr>
<tr>
<td></td>
<td>☐ Effluent pipeline</td>
<td>☐ Improvement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Rehabilitation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Maintenance</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Buildings</th>
<th>Magnitude: (Apply Table 6)</th>
<th>Scope: (Apply Table No. 7)</th>
<th>Applying Table 10 the classification in function of the type of project is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components:</td>
<td>☐ Civil construction</td>
<td>☐ Large</td>
<td>☐ a</td>
</tr>
<tr>
<td></td>
<td>☐ Equipment</td>
<td>☐ Medium</td>
<td>☐ b</td>
</tr>
<tr>
<td></td>
<td>☐ Others</td>
<td>☐ Small</td>
<td>☐ c</td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ New Construction</td>
<td>☐ d</td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Improvement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Rehabilitation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>☐ Maintenance</td>
<td></td>
</tr>
</tbody>
</table>

## 6. Second Preliminary Classification: Environmental Site Sensitivity

<table>
<thead>
<tr>
<th>HIGH</th>
<th>MODERATE</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Protected Areas in the IIA (National Parks, Forest Reserve, etc.)</td>
<td>☐ Protected Areas in the IIA or in Buffer Zones (National Parks, etc.)</td>
<td>☐ Intervened areas out of Protected Areas (national parks, etc.)</td>
</tr>
<tr>
<td>☐ High danger of environmental degradation (deforestation, hunt, etc.)</td>
<td>☐ Moderate danger of environmental degradation (deforestation, others)</td>
<td>☐ Low danger of environmental degradation (deforestation, etc.)</td>
</tr>
<tr>
<td>☐ Sensitive or critical ecosystem in the DIA (wetlands, mangrove swamps, forests, and others)</td>
<td>☐ Sensitive or critical ecosystems in the IIA (wetlands, mangrove swamps, forests, and others)</td>
<td>☐ No sensitive or critical ecosystems in the influence area (wetlands, mangrove swamps, forests, others)</td>
</tr>
<tr>
<td>☐ Mountainous topography (&gt;35% of slope) when the project expects construction of road, pipelines, etc.</td>
<td>☐ Wavy topography (15–35% of slope) when the project expects the construction of road, pipelines, etc.</td>
<td>☐ Flat topography (&lt;15% of slope), when expects the construction of access road, pipelines, etc.</td>
</tr>
<tr>
<td>☐ High risk to natural disasters (floods, earthquake, others)</td>
<td>☐ Moderate risk to natural disasters (floods, earthquake, others)</td>
<td>☐ Low risk to natural disasters (floods, earthquake, others)</td>
</tr>
<tr>
<td>☐ Presence of places of significant cultural/historical interest in the DIA</td>
<td>☐ Presence of places of cultural and historical significance in the IIA</td>
<td>☐ Absence of places with cultural and historical significance</td>
</tr>
</tbody>
</table>

### Environmental Site Sensitivity: ____________________________

DIA: Direct Influence Area; IIA: Indirect Influence Area

## 7. Environmental Risk Level: Category

| Category A: | Projects with high environmental risk level |
| Category B: | Projects with moderate environmental risk level |
| Category C: | Projects with low environmental risk level |

### Matrix 1. Environmental and Social Category

<table>
<thead>
<tr>
<th>Preliminary classification</th>
<th>Site sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>A</td>
</tr>
<tr>
<td>b</td>
<td>A</td>
</tr>
<tr>
<td>c</td>
<td>B</td>
</tr>
<tr>
<td>d</td>
<td>B</td>
</tr>
</tbody>
</table>
8. Social Risk Level

- Potential Resettlement/Compensation issues is expecting in the project:
  - If is High or Moderate, apply next section RSF

- Potential Ethnic Group (affect/ benefit) is expecting in the project: OP/BP 4.10
  - If is High, apply next section EGSF

9. Environmental and Social studies required by National Law and Safeguard Policies

- OP/BP 4.01
  - Cat. A
  - Cat. B (new proj.)
  - Cat. C

- OP/BP 4.10
  - HIGH

- OP/BP 4.12
  - HIGH

10. Environmental Budget for the ESMP implementation

- Estimated budget of the project: US$ __________
- Estimated budget for the ESMP implementation: US$ __________

  Matrix 2. Environmental Budget for the ESMP implementation

<table>
<thead>
<tr>
<th>Preliminary classification</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>6%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>b</td>
<td>5%</td>
<td>4%</td>
<td>3%</td>
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<tr>
<td>c</td>
<td>4%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>d</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Note: This budget doesn’t include the resettlement and ethnic group plans implementations

11. Map, Design, and/or Other Supporting Drawing and Layout

12. Observations

Comments:

Officer: ________________________________
Signature: ________________________________
Date: __________
If in Section 8 of the ESPA, the information about the Involuntary Resettlement is “checked”, the next form should be applied.

**RESETTLEMENT/COMPENSATION SCREENING FORM (RSF)**

<table>
<thead>
<tr>
<th>Probable Involuntary Resettlement Effects</th>
<th>Yes</th>
<th>No</th>
<th>Not known</th>
<th>Possible</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Will the project include any physical construction work?</td>
<td></td>
<td></td>
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<tr>
<td>– Does the project include upgrading or rehabilitation of existing physical facilities?</td>
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<tr>
<td>– Is any project effect likely to lead to loss of housing, other assets, resource use, or incomes/livelihoods? Estimated number?</td>
<td></td>
<td></td>
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<tr>
<td>– Is land appropriation likely to be necessary? Estimated area?</td>
<td></td>
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<tr>
<td>– Is the site for land appropriation known?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>– Is the ownership status and current usage of the land known?</td>
<td></td>
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<tr>
<td>– Will easements be utilized within an existing right of way?</td>
<td></td>
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</tr>
<tr>
<td>– Are there any people without land titles who live or earn their livelihood at the site or within the right of way? Estimated Number?</td>
<td></td>
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<tr>
<td>– Will there be loss of housing? Estimated number?</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>– Will there be loss of agricultural plots?</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Will there be losses of crops, trees, or fixed assets?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Will there be loss of businesses or enterprises?</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>– Will there be loss of incomes and livelihoods?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Will people lose access to facilities, services, or natural resources?</td>
<td></td>
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</tr>
<tr>
<td>– Will any social or economic activities be affected by land use–related changes?</td>
<td></td>
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</tr>
</tbody>
</table>

If involuntary resettlement impacts are expected:

| Are local laws and regulations compatible with the World Bank’s Involuntary Resettlement Policy? | Yes | No | Not known | Possible | Remarks |
| Will coordination with the MoWI be required to deal with land appropriation? | Yes | No | Not known | Possible | Remarks |
| Does the IA retain sufficient skilled staff for resettlement planning and implementation? | Yes | No | Not known | Possible | Remarks |
| Are training and capacity-building interventions required prior to resettlement planning and implementation? | Yes | No | Not known | Possible | Remarks |

**Information on affected persons:**

| Any estimate of the likely number of households that will be affected by the project? | Number: __ |
| Are any of the households poor, headed by a woman, or vulnerable to poverty risks? | Number: __ |
| Are any of the PAP from ethnic groups? If yes, explain: | Number: __ |

**Involuntary Resettlement/Compensation Classification:**

After reviewing the answers above, the project team leader and social development/resettlement specialist agree, subject to confirmation, that the project is categorized as noted below.

- **[ ] HIGH risk**  
  Significant resettlement impact (more than 200 people affected), Full Resettlement/Compensation Action Plan (RAP) is required.

- **[ ] MODERATE risk**  
  Limited resettlement impact (less than 200 people affected), Resettlement Action Plan (RAP) is required.

- **[ ] LOW risk**  
  No resettlement impact. No resettlement plan is required.

- **[ ] Consultant support is required to prepare the RAP.**
If in Section 8 of the ESPA, the information about the ethnic groups is “checked”, the next form should be applied.

**ETHNIC GROUP SCREENING FORM (EGSF)**

### 1. Identification of ethnic group in the project area

<table>
<thead>
<tr>
<th>Impact on ethnic groups (EGs)</th>
<th>Not known</th>
<th>Yes</th>
<th>No</th>
<th>Remarks or identified problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Are there ethnic groups (EGs) present in project locations?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>– Are they in the direct influence area (DIA) or in the indirect influence area (IIA)?</td>
<td></td>
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<tr>
<td>– Do they maintain distinctive customs or economic activities that may make them vulnerable to hardship?</td>
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<tr>
<td>– Will the project restrict their economic and social activity and make them particularly vulnerable in the context of project?</td>
<td></td>
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<tr>
<td>– Will the project change their socioeconomic/cultural integrity?</td>
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<tr>
<td>– Will the project disrupt their community life?</td>
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</tr>
<tr>
<td>– Will the project positively affect their health, education, livelihood or social security status?</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Will the project negatively affect their health, education, livelihood or social security status?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>– Will the project alter or undermine the recognition of their knowledge, preclude customary behaviours or undermine customary institutions?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>– In case no disruption of vulnerable community life as a whole will there be loss of housing, strip of land, crops, trees and other fixed assets owned or controlled by EG households?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2. Anticipated project impact on ethnic groups

<table>
<thead>
<tr>
<th>Project activity and output</th>
<th>Anticipated positive effect</th>
<th>Anticipated negative effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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</tr>
</tbody>
</table>

### 3. Decision on the Social Classification

- □ Should be classified as a **HIGH** risk and a Ethnic Group Plan (EWP) is required
- □ Should be classified as **MODERATE** or **LOW** risk and no EGP or specific action is required

### 4. Observations

Comments:________________________________________________________________________________________
________________________________________________________________________________________

Officer: ____________________________  Signature: ____________________________  Date: ____________________________
7.2 Environmental and Social Monitoring Report

ESMR
ENVIRONMENTAL AND SOCIAL MONITORING REPORT

Name of the project
Implementing Agency:

Component of WSSP-II:
- Water Resources Management
- Urban Water Supply and Sanitary Services

Project Category:
- A
- B
- C

Location:
- Region:
- District
- City/Village

Evaluator name: Sign: Date:

a. People participating in the site visit:

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Charge</th>
<th>Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

b. Status of the legal and safeguards compliance:
- What types of environmental and social studies were required by the project during the preparation phase? ESIA, PESIA, RAP, EGP, Others.
- Did the project have the Environmental Certification?
- Were the safeguards instruments (ESIA, RAP, EGP) disclosed? Date of disclosure.

c. Status of project execution
- On which date did works begin?
- When are works expected to conclude?
- How far along, in terms of percentage, is the project?
- Have the main activities of the project with a potential environmental impact been carried out?

d. Environmental and social effects observed during the field visit
Summary of the environmental, social, and health and safety observations during the field visit including (as applicable):
- Water/Wastewater Quality
- Air and Noise
- Health and Safety
- Soil protection
- Waste Disposal
- Ecological Management
- Site construction and management
- Worker Camps
- Cultural Heritage Management
- Community Relations and Grievances
e. **Compliance of Environmental and Social Specifications**
   Analysis of project compliance with environmental design specifications (Environmental and Social Management Plan – ESMP), including environmental and social control, health and safety, mitigation, monitoring results and compensation measures, if any.

f. **Conclusions and recommendations**
   Corrective measures are recommended, when necessary, for contractors, in order to take into account the environmental and social problems observed during the site visit.
7.3 Environmental and Social Final Report

Name of the project
Implementing Agency:

Component of WSSP-II: □ Water Resources Management
□ Urban Water Supply and Sanitary Services
Project Category: □ A
□ B
□ C

Location: - Region:
- District
- City/Village:

Evaluator name: Sign: Date:

On (date) ___________, the final review of the environmental and social aspects corresponding to the project ________________ was conducted to verify fulfillment of the prevention, mitigation and/or compensation measures proposed for the project in the ESMP, as well as to ascertain if any other negative impact has occurred during the period in which the activity took place. Content was integrated by the following persons:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Institution</th>
<th>Charge</th>
<th>Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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</tr>
</tbody>
</table>

a. Background
   Describe case record including dates, brief narration of the problem, and recommendations from previous site visits.

b. Results of the review
   Describe in detail the conditions in which the mitigation measures were developed, the grade of fulfillment, and current state, explaining when necessary the reasons why measures were not completed. Completing the table below will help visualize this information.

<table>
<thead>
<tr>
<th>No.</th>
<th>Mitigation measures</th>
<th>Accomplishment</th>
<th>Time still needed to accomplish measures</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>%</td>
</tr>
</tbody>
</table>

|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |

|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |

|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |

|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |

|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |
|     |                     |     |    |   |                                       |              |

c. Conclusions and recommendations
   Based on the examination, prepare conclusions regarding fulfillment of the mitigation measures and recommendations.
Annex 8: NEMC Formats for the environmental assessment process

8.1 FORM 1: Submission of Project Brief

FORM No. 1: SUBMISSION OF THE PROJECT BRIEF

Application Reference No..............................................................

PART A: PROPONENT DETAILS

Name of proponent (Person or Firm)................................. PIN No...........................................
Address.............................................................................. Name of contact person............................................................
Telephone No. ........................................ Fax No. ......................... Email ..............................................................

PART B: DETAILS OF THE PROJECT

1. PROPOSED UNDERTAKING/DEVELOPMENT
   - Title of proposal: (general classification of undertaking)
   - Description of proposal: (nature of undertaking, unit processes [flow diagram], raw materials list of chemicals {source, types, quantities}, storage facilities, wastes/by-products {solid, liquid and gas}
   - Scope of proposal: (size of labor force, equipment and machinery, installed/production capacity, product type, area covered facility/proposal, market)

2. PROPOSED SITE
   - Location (attach a site plan/map): Current zoning
   - Distance to nearest residential and/or other facilities
   - Adjacent land uses (existing & proposed)
   - Site description

3. INFRASTRUCTURE AND UTILITIES
   - Structures (buildings and other facilities)
   - Land required
   - Water (source, quantity)
   - Power (type, source & quantity)
   - Road
   - Other major utilities (e.g. sewerage, etc.).

4. ENVIRONMENTAL IMPACTS
   Potential environmental effects of proposed undertaking (both constructional and operational phases).

5. OTHER ENVIRONMENTAL ISSUES
   Significant potential risks and hazards associated with the proposal (including occupational health and safety). Briefly state the relevant environmental studies already conducted and attach copies where appropriate.

PART C: DECLARATION BY THE PROPONENT

I hereby certify that the particulars given above are correct and true to the best of my knowledge:
Name: ..............................................................................

Signature..........................................................................
On behalf of......................................................................
Position.............................................................................
Date..................................................................................

PART D: DETAILS OF THE ENVIRONMENTAL IMPACT ASSESSMENT EXPERT

Name (individual/firm).....................................................................................................................
Certificate of registration No. ...........................................................................................................
Address...........................................................................................................................................
Tel........................................Fax........................................Email.........................................................

PART E: FOR OFFICIAL USE

Decision of the Council......................................................................................................................
Comments ...........................................................................................................................................
..................................................................................................................................................
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..................................................................................................................................................

Officer..................................................Sign........................................Date..........................

NB:

1. If the project brief does not contain sufficient information required under the Environmental
   Impact Assessment Regulations, the applicant may be requested to give further information
   concerning the project or be notified of any defects in the application and may be required to
   provide the additional information.

2. Any person who fraudulently makes a false statement in a project report or alters the project report
   commits an offence.

Important notices: Please submit the following:

- (a) Three (3) copies of this form;
- (b) Ten (10) copies of the project brief; and
- (c) The prescribed fees to:

  Director General, The National Environment
  Management Council, .................................................. P.O. Box ...............,
  Dar es Salaam.
  Tel ..............Fax............ Email........................................
8.2 FORM 2: Submission of the Environmental Impact Assessment Statement

FORM No. 2: SUBMISSION OF THE ESIA

Application Reference No..............................................

PART A: PROPOONENT DETAILS

Name of proponent (Person or Firm).................................................. PIN No........................................
Address........................................................................ Name of contact person........................................
Telephone No. ........................................ Fax No. ....................... E-mail .............................................

PART B: DETAILS OF THE ENVIRONMENTAL IMPACT ASSESSMENT/STATEMENT

Title of the proposed project..............................................................
Objectives and scope of the project........................................................
Description of the activities.................................................................
Location of the proposed project............................................................
Proposed environmental management plan.............................................

PART C: DECLARATION BY THE PROPOONENT

I hereby certify that the particulars given above are correct and true to the best of my knowledge:

Name: ........................................................................
Signature............................................................................
On behalf of........................................................................
Position..............................................................................
Date.....................................................................................

PART D: DETAILS OF THE ENVIRONMENTAL IMPACT ASSESSMENT EXPERT

Name (individual/firm)........................................................................
Certificate of registration No...........................................................
Address........................................................................................
Tel........................................ Fax................................... E-mail.................................

PART E: FOR OFFICIAL USE

Decision of the Council........................................................................
Comments ......................................................................................

Officer..........................................................Sign..............................Date.........................

NB: Please submit the following:
  - (a) Three (3) copies of this form;
  - (b) Ten (10) copies of the project brief; and
  - (c) The prescribed fees to:

  Director General, The National Environment Management Council, ........................................, P.O. Box .................
  Dar es Salaam Tel ............... Fax.......... E-mail..............................................