

WATER SUPPLY AND SANITATION APPRAISAL MANUAL

Metaferia Consulting Engineers With WRDF consultants



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ACRONYMS

CEA	Cost Effective Analysis
CSA	Central Statistics Agency
DSCR	Debit Service Cost Ratio
FBCR	Financial Benefit-Cost Ratio
FIRR	Financial Internal Rate of Return
FNPV	Financial Net Present Value
GoE	Government of Ethiopia
GTP-I	Growth & Transformation Plan One
GTP-II	Growth & Transformation Plan Two
HR	Human Resources
JEG	Job Evaluation and Grading
JMP	Joint Monitoring Program for water supply and sanitation
LFA	Logical Framework Analysis
MCE	Metaferia Consulting Engineers
MDG	Millennium Development Goal
MOV	Means of Verification
MoWIE	Ministry Of Water Irrigation & Electricity
MoWR	Ministry of Water Resources
SNNPR	Southern Nation Nationality People Region
TOR	Terms of Reference
UNICEF	United Nations International Children's Emergency Fund
US	United States
USAID	United State Agency for International Development
WRDF	Water Resources Development Fund
WSS	Water and Sanitation

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1 Introduction

1.1 General

The government of Ethiopia developed an integrated water resources management policy, strategies & programs in 1980s. Consequently, an enabling comprehensive and integrated water resources management policy was enacted in 1999. The policy was formulated on the core goal of enhancing and promoting all national efforts towards the efficient, equitable and optimum utilization of the available water resources for significant socio-economic development on a sustainable basis. However, it is worth noting that sanitation/wastewater has not been given due attention at equal level with that of water supply.

1.2 Water Supply

The national water resources policy clearly stipulates that water resources are both social and economic resources so that every Ethiopian shall have access to sufficient water of acceptable quality, to satisfy basic human needs, at reasonable fee for services rendered. The water supply coverage of the urban, rural and national population of the country were 80%, 19% and 26%, respectively in 1996. This low water supply coverage drove the formulation of detail and enabling legal frameworks. Hence, detail proclamations, regulations and directives were ratified at national and regional levels for empowering the sector and administrative entities to ensure improved coverage (Desalegn 1999).

Urban water supply utilities were established by regional proclamations in the middle of 1990s. The proclamations stipulate that the utilities have full autonomy to ensure water supply to their customers and administer their own finance. Changes in climatic conditions and improving standard of living, emergence of industries, and drastic increase of project costs for water supply surpasses the capacities of many of the utilities in terms of investment costs to provide the water supply services. Consequently, Water Resources Development Fund office was established in 2002 by Proclamation No. 268/2002 with the objectives of enabling water supply and sanitation service providing institutions through financial loans to become fully self-sufficient in the provision of reliable and sustainable water supply and sanitation services to the community and to make significant contribution in the course of development efforts directed towards attaining food self-sufficiency by expanding and ensuring the sustainability of irrigation development.

The country has endorsed the first five-year Growth and Transformation Plan (GTP-1) in 2010 and commenced implementation in the 2011-2015 period to ensure rural, urban and total access to water supply coverage reaches to 98%, 100% and 98.5% respectively. During this period, development and expansion of reliable water supplies to rural and urban areas were undertaken. The standards for coverage assessment were set as 15 l/c/d within 1.5km radius for rural residence and 20 l/c/d within 0.5 km radius for urban residence. Accordingly, the national, rural and urban potable water supply coverage achieved were 84%, 82% and 91% respectively.

However, the standards were evaluated as underestimated values and revised in the GTP II to be 25 l/c/d within 1km radius for rural residents and 100, 80, 60, 50 and 40 l/c/d for categories 1, 2, 3, 4 and 5 towns respectively. Consequently, the water supply coverage of the rural, urban and national level was estimated in 2015 as 59%, 51% and 58% respectively, which is considered as base figures for the GTP-2.

1.3 Sanitation

With respect to sanitation, the coverage has increased since 1990s. Accordingly, reports show that national, rural and urban sanitation coverage grew from 13%, 6% and 57% in 1994 to 60%, 57% and 75% in 2011 (MoWR, 2011). On the other hand, a study conducted by UNICEF in 2015 on the country's water and sanitation status show that Ethiopia's sanitation coverage has increased to about 68% (UNICEF, 2016). However, the 2014 survey reports from Joint Monitoring Program for water supply and sanitation (JMP) and Central Statistics Agency (CSA) showed that discrepancies exist on national, rural and urban sanitation coverage conducted (Abebe B. et al, 2015). Table 1-1 depicts results of the two surveys.

Table 1-1: Urban, Rural and National Sanitation Coverage in 2014

S.No	Category	Coverage	
		JMP	CSA
1	Urban	68	48
2	Rural	29	2
3	National	38	10

The discrepancies in the results are attributed to approaches, methods and tools deployed in analysing sanitation. In most cases, sewerage system, onsite sanitation, solid waste management and hygiene education are regarded as components of sanitation service. Coverage and access have quite different implications in the trend and status of sanitation in the country. The most commonly utilized sanitation facilities in Ethiopia are dry pit latrines (improved pit latrine and pit latrine). Traditional latrines with slab and sub and super structures are commonly considered as improved latrine type.

Despite the immense available accessible and potential water resources, the urban water supply coverage of Ethiopia is lower than the concurrent demand. In addition, the sanitation coverage is even lower than water supply coverage. Therefore, a lot of work is required to be undertaken to attain full urban water supply and sanitation coverage targets. One of those efforts is allocating the required amount of finance for undertaking development of new water supply and sanitation projects, expansion and refurbishment of existing infrastructure and improvement of services. Resources confirm that the development of urban water supply and sanitation projects demand an investment of more than US\$6.15 billion annually (MoWIE, 2015). Of this estimated amount 31% of the budget is expected to be covered from donors in the form of loan and/or grant whereas beneficiary communities and utilities are expected to cover 5% and 11% of the finance, respectively.

1.4 Project Appraisal Objective

The general objective of project appraisal is to provide all the necessary information to make decisions on lending by ascertaining the credit worthiness of each proposed or prospective urban water supply and sanitation project and to ensure its implementation in line with the cost recovery principle. The specific objectives of the appraisal are to:

- Check that every urban water supply and sanitation project proposed for financing is technically, financially, , socially, environmentally, commercially and institutionally feasible; and
- Empower the WRDF's technical staff through on job training and transfer of the appraisal skill on water supply and sanitation project.

2 Water Resource Development Fund (WRDF)

2.1 Establishment of WRDF

The Water Resources Development Fund (WRDF) was established by government of Ethiopia in January 2002 by proclamation number of 268/2002 and amended by Proclamation No. 581/2008. This institution serves on behalf of the Ministry of Water, Irrigation and Energy (MoWIE) as financing intermediary of government budget as well as donor funds for rehabilitation, expansion and new development of urban water supply and sanitation systems and irrigation development. The WRDF is contributing to the implementation of the projects under the WASH program to enhance urban clean water supply and sanitation coverage and accessibility as well as irrigation projects of WUA by the government in line with the Second Growth and Transformation Plan (GTP-2) to promote the development of viable and sustainable water and sanitation services in Ethiopia.

2.2 WRDF Scopes

According the operational guideline of the WRDF prepared in March 2003, the Fund provides loans obtained from International grants and loans, budgetary allocations by the central government and other sources to urban water utilities to support the implementation of the adopted policy of the government for the development and growth of the Water Sector. All autonomous entities/urban water and sanitation utilities responsible for providing water supply and sanitation services (WSS) are eligible to borrow money from WRDF if they demonstrate that they have the financial capacity to repay the loan and if they have got projects ready for implementation with completed detailed design reports and tender documents. By providing the loans, WRDF aims to accomplish the following objectives:

- ✓ Enable water and sanitation services providers to be fully self-sufficient in the provision of reliable and sustainable water supply service to the community.
- ✓ Make significant contribution in the course of development efforts directed towards attaining food self-sufficiency by expanding and ensuring the sustainability of irrigation development
- ✓ Create favorable conditions for the realization of the above objectives by granting long term loans on the basis of the principle of cost recovery.
- ✓ Ensure fair and equitable allocation of resources among different regions and users of the fund through the application of appropriate access rules and conditions for loans.
- ✓ Ensure fair access and benefit by everyone with the use of transparent and consistent operational guidelines.

2.3 Organizational structure of WRDF

The organizational structure of the WRDF is charted on the basis of business process Re-engineering approach. Accordingly, it has a management board which is accountable to the Ministry of Water, Irrigation and Electricity.

The board is the highest supreme body of WRDF. The next higher body is the Director General of the Fund. There are three directorates, three professionals with level grade IV, two directors II and one legal advisor and executive secretary which directly report to the Director General. The existing organizational structure of WRDF is depicted in the following Figure.

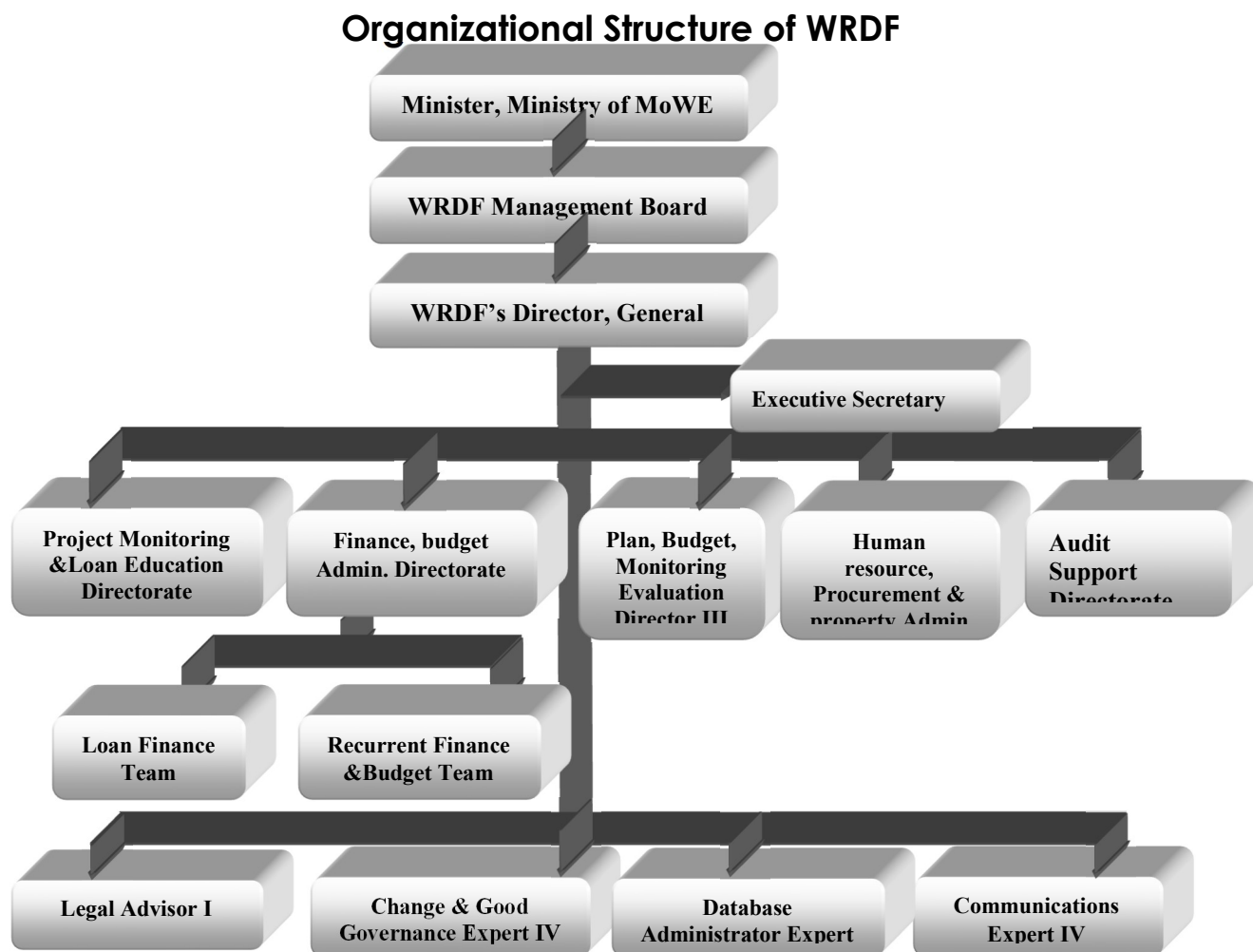


Figure 2-1 WRDF's Organizational Structure

2.4 Beneficiary Institution

The following are institutions involved in loan and grant process as per the proclamation

- ✓ Government urban water supply and sanitation service providers sometimes called utilities and,
- ✓ Water users' association engaged in irrigation development.

2.5 Source of Fund

Loans and grants are obtained from

- ✓ Foreign governments
- ✓ International multi-and bi-lateral financiers
- ✓ General government budget allocation and others Financing Institutions.

3 The Appraisal Manual

3.1 Purpose of the Appraisal Manual

A well formulated and thoroughly appraised project will have a good follow-through on the subsequent stages of the project cycle and certainly achieve its goals. Appraisal involves a careful checking of the basic data, assumptions and methodology used in project preparation (feasibility study and detailed design), an in-depth review of the work plan, cost estimates and proposed financing, an assessment of the project's organizational and management aspects, and finally the validity of the financial, economic and social benefits expected from the project and in general achievement of its intended objectives. On the basis of such an assessment, a judgment is reached as to whether the project is technically sound, financially justified and viable from the point of view of the economy as a whole. The rationale behind the project appraisal is to provide adequate and completed information to the decision- makers from different aspects of project sustainability.

The primary purpose of WSS Project Appraisal Manual is to set out the principles, procedures, and practices as to how and what the WRDF concerned experts should do to effectively and efficiently appraise implementable projects for decision in a sustainable condition. It helps as a framework and a base upon which appraisers to work from the same perspective to the same purpose. Apart from these, this manual is also essential from the point of view of:

- **Comprehensive:** all the necessary aspects of project appraisal process are considered;
- **Setting the systems and the specifics:** systems and tools used are reputable and in line with best practice
- **Create consistency:** - become a standard document that is commonly understood by all who use it, promote consistency and consequently a key to provide a successful and credible service.
- **Training Material:** - It serves as a training material for the new employee
- **Saving Time:** -It is a reference material both for the experienced and less experienced workers.
- **Quality control:** it serves as a quality control and minimize mistakes
- **Enhance value of the WRDF:** - it adds more perceived value in the eyes of government, development partners, borrowers, private sector and other concerned stakeholders.

3.2 Steps in Project Appraisal Process

The following steps are used in the project appraisal aspects.

- **Objectives of appraisal** – to assess and confirm the objective the project for which the loan is intended

- **Legal Appraisal** – to assess and look at the legal and regulatory requirements of the project in relation to the national, regional and general policy, strategy and the conditions for obtaining the loan and its repayment
- **Institutional and Management Appraisal** – assess the institutional and management capacity and capability of the borrowing utility to manage the water supply and sanitation project implementation, operation and management of the system
- **Technical appraisal**- to assess and review of the technical viability of the project components and the project as a whole
- **Financial and Economic appraisal** – assess the financial and economic viability of the project for which the loan is intended
- **Environmental and Social Appraisal**-assess the positive and adverse environmental and social impact of the project and forward mitigation measure
- **Commercial Appraisal** –indicate whether the project document is compliant with relevant procurement policies, adequate capability, expertise and experiences of the procuring utility.

3.3 Basic Requirement for Project Appraisal

Basically, project appraisal for water supply and/or wastewater management will be carried out after the water utility has passed the loan eligibility criteria sated by the WRDF. Upon fulfilling the eligibility requirement, the utility tasked to provide all the necessary information and documents to proceed to the appraisal stage. The document includes but not limited are: feasibility study, design documents, business plan report, national and regional standards and policy and regulatory and project related document.

The appraisal team will thoroughly collect data through primary and secondary sources. In the meantime, if the team finds that the project feasibility study and detailed design for water supply and wastewater management has not properly covered and clearly discuss the required components; then the appraisal process will be discontinued. Consequently, the appraisers forward suggestions to the water utility to complete the requirements. Likewise, the appraisal team will follow the same procedure as stated above when appraising wastewater projects studies which may not properly enclosed alternative wastewater treatment systems/vacuum truck/ sludge disposal and treatment system.

3.4 Appraisal Techniques and Methods

The manual employed practically implemented Multi Criteria Analysis (MCA) appraisal method to assess the potential success, viability and appropriateness of the project vis-à-vis the designed objectives. The methods broadly include, Borrowers and Project eligibility, Technical Analysis, Financial Feasibility, Economical Analysis, Institutional and Management study, Legal Aspect, Environmental and Social Impact Assessment and Commercial study.

The methods to be followed during the appraisal can be diversified depending on the type and magnitude of the project. The following are key methods to be followed in an appraisal process:

- Collect all the relevant information regarding the project study and design documents
- Carry out review of the study and detail design documents related to the project
- Carefully examine the objective of the project vis-à-vis the borrowing of the loan in order to address the need of the beneficiaries
- Conduct site visit and verify the designed project sites and areas of the project to be covered
- Conduct meetings with the utility and other concerned institutions in order to establish common ground regarding the project to be implemented with the loan, know the contributions of the different stakeholders and the community; prepare minutes of meetings, list of peoples met, etc
- Prepare appraisal report covering the sub-topics listed in the project appraisal process as described in Chapter 4.

3.5 Basic Data for Project Appraisal

The sources of data for the appraisal are both secondary and primary sources. The secondary source of data include: feasibility study, detail design report and tender documents, business plan, willingness to Pay, capacity need assessment, potential concerned stakeholders offices at urban /wereda & region levels, beneficiary community and private sector, Social Impact Assessment, Environmental and Sanitation Management Plan, Urban Water Utilities Tariff Setting guideline, water supply and sanitation policy and proclamation documents, and Central Statistics Agency (CSA) data, etc. The primary source data are discussion outcome with water board members, water utility manager, water utility staff at different levels and beneficiary representatives.

Though the mandate of wastewater management is incorporated within proclamation of the water and sewerage service enterprise establishment, in practice this service has been undertaking by city municipalities. Moreover, at national level, wastewater collection through sewer system is very limited. Alike with this, regional water bureaus and all (except Hawassa and Harare) urban water utilities experience concerning sewer line installation, construction of wastewater treatment plant and providing pit emptying service is very limited until this manual preparation period. Hence, the consultant developed key sanitation apprising components based on the local and international experience.

3.6 Composition and Qualification of Project Appraisal Team

Project appraisal will be carried out by a team of diverse professionals simultaneously up to the preparation of appraisal report. Each expert is closely working and sharing data and information in the process of appraisal. The appraisal team will be composed of experts in the fields of water supply /sanitation engineer, economist/ financial expert, environmental expert as main /core team with support from legal expert, management expert and others as necessary from the head office or outsourced.

The appraisal Team Leader has to be an employee from the WRDF office with sufficient knowledge of the rules and procedures of the WRDF and the others can be outsourced

or from the WRDF itself depending on the availability of qualified staff. It is advisable the team leader to be a water supply /sanitation engineer or economist /financial expert. The number of core appraisal team can be increased depending on the complexity and magnitude of the project like if it is bigger towns or when the proposed water sources are more than one types (groundwater, dam, etc), the system comprises a lot of electro-mechanical works, etc.

4 Project Appraisal Components

4.1 General

A project that satisfy both borrowers and project eligibility criteria will proceed to project appraisal stage. In line with this, the project needs to have a complete detailed design report for water supply and/or wastewater management. Analogy to this, projects that require relatively small loans to improv their service like to construct new structure or installation of electro-mechanical equipment will have to be pass the same step of feasibility study and detail design stage and show the creditworthiness of the project.

The basic elements that must be taken into account in the appraisal process are the following:

- **Project Logical Framework Analysis**
- **Legal Appraisal**
- **Institutional and Management Appraisal**
- **Technical Appraisal**
- **Financial Appraisal**
- **Economical Appraisal**
- **Social Desirability Appraisal**
- **Environmental Impact Appraisal**
- **Commercial Appraisal**
- **Conclusion and Recommendation**

4.2 Project Logical Framework Analysis (LFA)

The Project Logical Framework as indicated in the below table need to be formulated during the project appraisal. The narrative description of the contents is given in the following sub-sections.

NARRATIVE DESCRIPTION	VERIFIABLE INDICATORS	MODE OF VERIFICATION	ASSUMPTIONS
SECTORAL GOAL			
PROJECT OBJECTIVE			
PROJECT OUTPUTS			
INPUTS/ACTIVITIES			

4.2.1 Overall (Sectoral) goal

The Overall Goal represents the "*higher order objective*" to which the project, combined with others, will contribute to achieve. This is usually a program or sector objective. The project appraisal team must consult the Country Sector Program and other documents

(sector reviews or studies, sector policy) to familiarize themselves with the goals which the government has set for the sector concerned. It should be noted that very often a portfolio of projects in the same sector or sub-sector may share a common goal statement.

4.2.2 Project Objective (Why)

The Project Objective(s) describe WHY the project is being undertaken. They describe the desired impact the project is expected to have, or how a given situation will be changed as a result of improving the project's service. The number of project objectives should be kept as low as possible to make the project efforts effective and strong.

4.2.3 Outputs (What)

Outputs are WHAT the project is to accomplish. These are DELIVERABLES or TERMS OF REFERENCE for the project, the results for which the project team will be held directly accountable and for which it is given resources. If there is more than one objective, outputs should be listed by objective.

4.2.4 Activity Groups for Achieving each Output (How)

Activities define HOW a project will be implemented, the main action groups the project team must implement to achieve a set of outputs. How many activities should be included depends on the project design. The important thing to remember is to list all activities needed to achieve each output. Activities related to Project management should also be included, especially if there is a cost attached to each of them (e.g., monitoring and evaluation, financial reports and audit etc.).

4.2.5 Verify the Vertical Logic with the If / Then Test

The main concept underlying the vertical Matrix structure is "*Cause and Effect Relationships*". The better the cause and effective linkages between objectives outputs and activities, the better the project design. By definition, each project has this If/Then or cause-and-effect logic embedded in it. If a project will produce certain outcomes under certain conditions, then certain other outcomes would be expected to result.

4.2.6 Verifiable Indicators

Goal Level Indicators: The Goal level indicators often describe the program or sector objectives to which the proposed project and several others will contribute. For this reason, the Goal level indicators may include targets beyond the scope of the proposed project.

Project Objective Level Indicators: The project Objective is the primary reason why a project is undertaken and why outputs are produced. It is important to have verifiable indicators as well defined as possible for obvious reasons: getting good clarity on Project Objective(s) level targets makes setting Output targets much easier.

Output Level Indicators: By definition these indicators establish the terms of reference for the project. If a project team is responsible for all the Outputs, then these indicators define the deliverables for which the project team is answerable.

Activity Level Indicators: The verifiable indicators at the Activity level are usually the resources or the Budget. It is essential that costs be related directly to activities and that the total amount is equal to total project cost.

4.2.7 Means of Verification (MOV)

The MOVs describe the sources of information that will demonstrate what has been accomplished. A clear identification of the necessary sources of information will help the project team redefine activities and related costs. As a rule of thumb, the indicators chosen for measuring the objectives must be verifiable by some means (and preferably reliable ones). If they are not, then find another indicator.

4.2.8 Assumptions / Risks at Each Level

Assumptions/Risks are external conditions which, in principle, are outside the control of the project. They are conditions which the project team cannot or chooses not to control. They describe the risks and assumptions under which the project operates. The achievement of objectives and outputs, and the implementation of activities depend on whether or not Assumptions / Risks hold true. In working with projects assumptions about the degree of uncertainty between different levels of objectives is made. Commonly, risks are outside the control of the project team, however, some risks which can substantially be mitigated through project management efforts; the section on "Assumptions/Risks in the appraisal report should clearly state what are the measures being undertaken to reduce or mitigate the effects of some identified risks. The lower the uncertainty that certain Assumptions / Risks will hold true, the stronger would the project design. Checklist which is important to consider during the logical framework preparation is attached as an Annex 1.

4.3 Borrowers and Project Eligibility

The borrowers and project eligibility have to be carried out based on an independent standard manual called Eligibility Criteria Manual and qualify to consider for appraisal step. Hence, the appraisal team ensure whether the water utility qualify the eligibility criteria to begin the appraisal process.

4.4 Policy and Legal Aspect

The Ethiopian Water Resources Policy and Water Sector Strategy adopted by the Government in 1999 and 2001 respectively have pertinent provisions that have direct relevance to the WRDF as the main designated government entity engaged in financing town water supply and service providers as well as irrigation water users' associations through long-term loans.

The Water Resources policy mainly provides for decentralized management of town water supply and sanitation services as well as the promotion of self-financed town water utilities based on full cost recovery and the need to establish progressive tariff rates in urban water supplies tied to consumption rates. These policy provisions are in line with the objectives and mandate of the WRDF in providing long term loans to town water utilities. The objectives of the WRDF under its establishment Proclamation is to enable institutions which are engaged in water supply and sanitation services to be fully self-sufficient in the provision of reliable and sustainable water supply services to the community and to

provide long term loans to this effect on the basis of cost recovery. This implies that the urban water supply and sanitation utilities should aim at cost recovery in order to pay back the loan provided to them by the WRDF and to enable it to be a sustainable source of finance for urban water supply and sanitation projects. In view of this, the WRDF should have a more stringent and appropriate eligibility conditions and criteria in order to determine the technical and financial soundness of urban water supply and sanitation institutions borrowing from the Fund and for it to be able to have a continuous flow of funds.

The Water Sector Strategy, as an instrument to translate the policy into action, also has several relevant provisions that should inform the WRDF as the major financing institution. The following are the main provisions of the Strategy provided under the section "Financial and Economic Aspects".

- Consider water sector as important as other crucial sectors of the economy while making financial resource allocation decisions at the national level.
- Establish financial management rules and feasible arrangements for resource allocation cost-sharing and accessing funds for demand driven WSS systems. Ensure self-reliance, through the promotion of local self-financing of programs and projects, based on the overall socio-economic development conditions of local communities, and through appropriate incentive mechanisms.
- Subsidies the capital costs only for communities that are unable to cover the cost of the basic services so as to ensure social equity; establish financial resource allocation criteria to access these subsidies based on local socio-economic factors, and implement phasing out mechanisms of such programs (to promote self-reliance).
- Establish and implement cost-sharing arrangements to share the capital, O&M and capacity building costs between government, local communities, consumers, external support agencies and non-governmental organizations.
- Promote the 'user pays' principle in accordance with the user's willingness and ability to pay for the service, based on costs of services vis-à-vis given socio-economic conditions of the beneficiaries/users.
- Establish criterion to access the financial resources from the government budget to expand the coverage of WSS services both in urban and rural areas.
- Set tariffs in rural areas with the aim of recovering operation and maintenance costs; while, in urban areas, aim at total cost recovery through time (which covers operation & maintenance costs, depreciation and debit servicing).

The above provisions of the WRM strategy indicate that water should be recognized as an economic good with a value attached to the resources; "user pays" principle should be applied taking into account willingness and ability to pay for the services on the basis of cost of the services and socio-economic conditions of the beneficiaries; financial resource allocation criteria need to be established to access financial resources based on local socio-economic factors; external funds are to be channeled to build infrastructure and carrying out feasibility studies while government resources are to be directed to strengthen capacity building for Operation and Maintenance expenditures as well as to support community based initiatives; tariff setting in urban areas should aim at total cost recovery (O&M as well as investment and expansion costs).

It may be noted here, that the capacity for urban water supply and sanitation utilities to repay the loans provided by the Fund will ultimately depend on their ability to raise sufficient revenues in order to cover their costs of service provision as well as to meet their loan obligations. The WSS services are therefore expected to be self-sufficient with adequate autonomy given to them to make their own decisions, at least in the medium term, as regards determining tariffs levels to be collected from their customers and developing their own business plans. When determining an appropriate project appraisal, therefore, the appraisal team should ensure it's the utilities have the capacity to repay their loans.

4.5 Management and Institutional Appraisal

Institutional framework appraisal criteria for water supply and sanitation is an important aspect/tool of the whole appraisal systems and procedures. This is a statement and a questionnaire which looks at the major elements of strategic and institutional environment and organizational challenges, problems/limitation, strengths and opportunities.

Hence, a wide range of tools and methods can be developed to assess and appraise institutional arrangement and this procedure will continue to be a dynamic and evolving discipline. There is not "best way to tackling" this but it may be helpful to think of looking at the major component parts of the water institution and to assess each in turn.

A summary version of key tools is shown in the next pages and accordingly every information, observation, field visits, document review, etc shall be assessed, checked and contemned.

1. Instruction / Guidelines (General)

- ✓ Check and confirm the strategic and institutional environment of the water supply and wastewater service office and the project office in particular, i.e. systems and procedures making and using capacity, accountability, good governance, arrangement, key stakeholders' participation, statements of vision, mission, goals and objectives, annual plan and implementation plan,
- ✓ Ensure the Human Resource Management system, i.e. identification of satisfaction and commitment of employees, pay scales, investment in training, performance appraisal system etc.
- ✓ Review the structure of the TWSSO i.e. check the presence of organizational chart, lines of accountability or span of control (should not exceed more than 12), degree of decentralization, delegation of authority and responsibility, number of staff, balance between personnel and operating costs.
- ✓ Check and confirm the management system, i.e. their documentation system, use of different manuals (procurement, store, HRD, financial, operation and maintenance, etc), etc
- ✓ Check whether there is a performance management contract system put in place or not.
- ✓ Ensure the institutional and staff capacity strengthening system, i.e. career development plan, training plan, educational system in practice, working material and facilities arrangement etc.

2. Institutional Appraisal Criteria's are described below in detail

A. Strategic and institutional Environment

- ✓ Check bureaucratic pressures and cultural influences
- ✓ Observe ask /interview and confirm the offices responsiveness to the needs, complaints and interest of customers and communities.
- ✓ Assess what other donors support the TWSSSO.
- ✓ Assess and confirm whether the TWSSSO has identified the priority tasks and allocated necessary resources in accordance with priority needs.

B. Strategies/ Plans, Roles and Responsibilities

- ✓ Assess and check the presence of 3- or 5-years strategic plan, business plan or other document which sets out goals, objectives, (vision, mission, values), and strategy for the TWSSSO.
- ✓ Check whether the roles and responsibilities of TWSSSO are defined clearly and understood by key management staffs of the office.
- ✓ Check the presence or absence of an implementation plan or an action plan.

C. Human Resource Management

- ✓ Assess the human "outputs" i.e. identification of satisfaction and commitment or dedication such as rates of absenteeism and labour turnover (through interviews and document review); pay scales
- ✓ Check the relationship between management staffs and employees; the relationship between the board and management staffs, etc.
- ✓ Verify the application/ use of performance appraisal system in practice.
- ✓ Check and verify whether the office is investing on people/ employees i.e. are employees trained in different work systems, is career development put in place, etc.
- ✓ Are working instruments, tools, facilities available for the employees, i.e. computers, tables and chairs, offices, canteen, tool kits, transportation facility (vehicle), etc.?
- ✓ Check and verify the use of reward systems, i.e. whether good performers are motivated or rewarded and bad performers are penalized or other actions are taken like transfer or training systems are applied or not.
- ✓ Check and confirm if there is delegation of authority and responsibility.

D. Organizational Structure

- ✓ Assess and observe if there is an up-to-date organizational chart.
- ✓ Check who has approved the structure
- ✓ Verify and check the existence of an up-to-date job description and assess whether employees are provided, their job descriptions or not.
- ✓ Assess and check the average span of control (Should not be more than 12 for the General Manager).
- ✓ Check and confirm the establishment of Board for TWSSSO. Their composition and number according to the proclamation.

E. Manpower Planning

- ✓ Assess and confirm the number of vacant key position. i.e. Management staffs, key employees like operator, plumber, electrician, sanitation engineer, or sanitarian, etc.
- ✓ Check and confirm the presence of manpower planning.
- ✓ Check what numbers of employees have the relevant Degree, Diploma, Certificate, and assess the skills needed for the TWSSSO.

F. Performance Appraisal/ Evaluation System

- ✓ Check whether employees are appraised or evaluated at an interval of 6 months.
- ✓ Confirm the application of performance evaluation for management staffs every year (yearly).
- ✓ Check and confirm whether evaluated staffs are given regular feedback on their performances or not.
- ✓ Verify and check whether there are complaints of favoritism on performances evaluation or not.
- ✓ Check and verify for what purpose are performance appraisal or evaluation used.

G. System and procedures

- ✓ Check and confirm the presence of different working manuals. i.e. Board working manual, Administration and Human Resource policy, Store management manuals, Procurement manual, operation and maintenance manual, performance management contract
- ✓ Check if there is an exist form for employees leaving the institution.
- ✓ Check the management information system used and for what purpose. i.e.IT application
- ✓ Check whether manuals, reports, correspondences, annual plan are documented properly or not.
- ✓ Try a random check on how a specific system as being used in practices i.e. recruitment, promotion transfer, etc.
- ✓ Check whether dates are gathered, analyzed and used in decision.

H. Property Management and Supplies

- ✓ Check whether items/ supplies or stocks are given number and shelved accordingly or not.
- ✓ Check the presence of a register book for assets.
- ✓ Check and confirm the process or system employed to control stocks
- ✓ Check and confirm the system of inventory taking
- ✓ Know and register (take note) on problems of property administration.
- ✓ Assess and observe any stock holdings i.e. presence of excessive, obsolete or in appropriate stocks and actions or measures taken against obsolete and inappropriate stocks/items.

- ✓ Check the procurement system and verify against the relevant procurement systems or manuals.

I. Key Stakeholders Identification

- ✓ Verify the key stakeholders' identification
- ✓ Check whether their roles and responsibilities are clearly described to them or not.
- ✓ Confirm the establishment of "customer forum" or "common forum" for stakeholder's consultation.
- ✓ Check and verify the creation of smooth relationship among staffs or TWSSSO and key stakeholders.

J. Labor union and Collective Agreement

- ✓ Check if the labor union is organized and established formally and approved is given by concerned authority i.e. observes the certificate.
- ✓ Verify the presence of collective agreement i.e. check the document

K. Accountability

- ✓ Confirm whether the office is accountable to its roles and responsibilities i.e. verify if activities responsibilities.
- ✓ Verify management staff's accountability to the general manager and their duties and responsibilities i.e. check if there is standard reporting format and periodic reporting.

L. Good Governance

- ✓ Check the leadership style through interviewing employees i.e. if there is smooth relationship among management staffs
- ✓ Verify if there is shared responsibility and authority i.e. stable management
- ✓ Check and confirm the existence and practice of vision, mission, values, goals and objectives i.e. understood and shared by employees and verify if there is commitment and focus on the part of employees and management staffs.
- ✓ Verify if there is proper manpower utilization i.e. idle manpower, placement of the right person in the appropriate position.

4.6 Technical Appraisal

The technical appraisal on the designed water supply and sanitation components need to be carefully examined to ensure that the projects are technically suitable to achieve its objectives and sustainable to serve the beneficiaries as intended. The appraisal team need to carefully and thoroughly assess the design documents, drawings, tender documents (general conditions, specifications for materials and workmanship), bill of quantities and engineering cost estimates as well as the routes and locations of the different water supply and sanitation components. The appraisal will be carried out for water supply and sanitation projects and areas to focus are as described below.

4.6.1 Technical Appraisal for Urban Water Supply Projects

In the process of appraising an urban/ town water supply and wastewater project for the WRDF financing the technical part need to be carefully assessed and appraised by the Appraisal team. The following are the major issues that need to be assessed and appraised and be included in the appraisal report to be prepared by the appraisal team:

- 1) **Location of the town for which the water supply project is required** – It is important to give description of geographical location, region and district in which the town is located, climate and other relevant information including its economic and social development status and potential.
- 2) **Project objective** – Describe the objective of the project from the national and regional development strategy and policy point of view and its contribution to the coverage, poverty alleviation and addressing of the issues of vulnerable group in the town
- 3) **Description of the existing water supply system** – provide description of the existing water supply system including, type of source and capacity, existing water supply components and capacity, coverage of distribution network, water supply service sustainability and reliability, area coverage, the level of the NRW of the existing system, etc and identify the gaps that is to be addressed under the implementation of the project being appraised.
- 4) **Water supply coverage and planned target** – state the existing level of water supply coverage in terms of population served, service availability in the form of number of customers in the mode of existing service category and planned target, coverage at the end of the design horizon.
- 5) **Soundness of the design criteria** – Adequacy of the design horizon for which the intended water supply will adequately serve, population projection methods, allocated per capita water demand, projection of the water demand over the design horizon, system design working hours, classification of beneficiaries into mode of services, provision for vulnerable groups,
- 6) **Appraisal of the proposed water supply system** – the selected water supply system may be composed of a number of components starting from the sources up to the end user part which is a public fountain. The urban water utility may require loan for the whole water supply system or limited components of the water supply system. The appraisal under the proposed water supply system will encompass the following
 - **Site Locations and Land Acquisition** – assess the location of the different components of the water supply system and make on site confirmation of the same and securing the land and accessibility of the components, right-off-way and compensation issues;
 - **Water sources** – describe the proposed or selected water sources type, its capacity, reliability, operating hour and total production capacity and assess its adequacy with the demand by its own or in synchronization of existing sources. If surface water source check the intake type, location and its capability of diverting the required amount of water, the structural stability of

- the intake and its functionality in terms of water diverting, flushing, flood protection, operational accessibility; if groundwater source check the location of the drilling site/s, accessibility to the site, confirmation of the potential yield from the test wells, number of boreholes that need to be drilled, the appropriateness of the well design, the proposed distance between wells to avoid interference,
- **Transmission from source to Treatment plant or Reservoir** – describe the type of transmission pipeline, type and material of pipe and its appropriateness, diameter, length, design capacity, class of pipe and velocity in the pipe, pipe route and its laying conditions and trench soil condition and provision of all the necessary appurtenances such as anchor and trust blocks, flushing and line valves, air release valves, necessary manholes, etc
 - **Water Treatment plant** – review based on the design reports and drawings the selection of appropriate technology for the water treatment system in relation to the quality of water to be treated, capacity of the treatment plant units in relation to the volume of water abstraction from the water sources, location, site arrangement and set-up of the treatment units, simplicity in arrangements for operation and maintenance works, provision of stand-by units, soundness and appropriateness of the structural design, mechanism of backwashing and backwash water disposal mechanism, etc
 - **Reservoirs** – assess the provided clear water, booster station, break-pressure and service reservoirs for their capacity, necessity appropriateness of the location in terms of the type of function of the reservoir, structural soundness,
 - **Distribution networks** - describe the type of distribution network pipeline, type and material of pipe and its appropriateness, diameter, length, design capacity, class of pipes and maximum and minimum pressure in the system, pressure zoning if any, pipe route and its laying conditions and trench soil condition and provision of all the necessary appurtenances such as anchor and trust blocks, flushing and line valves, necessary manholes, area coverage of the distribution network in the town, incorporation of the existing distribution network, etc
 - **Electro-mechanical works** – The electro-mechanical works include submersible pumps, surface pumps, piping arrangement for the pumps, power supply and control system for the pumps, dosing pumps, control centre for pumps, flow meter, fitting arrangements at the reservoirs, pump stations, dosing rooms, water hammer gadget, availability of power supply and provision of stand-by generator,
- 7) **Tender Documents** – Tender documents can be prepared as one complete tender /bid for the supply of pipelines, supply and installation of electro-mechanical as well as civil works construction in order to avoid unnecessary project delays when different actors are involved. From experience separate contracts for supply are seen in most cases affecting the progress of civil works contract thereby affecting the overall project completion time schedule due to many actors playing in terms of opening Letter of credit from banks, transporting of the supplied goods, taking

action at their own time without considering the schedule of the other contracts, etc. This situation is exacerbated when the project financing is from or through local financing or when it is handled by the regional water bureau or utilities. Making separate tender or bid for the supply of pipes, supply and installation of electro-mechanical works and civil works when the financing is from outside sources and purchase of the supply is mainly from abroad. Such situation has to be considered at the time of project appraisal and the tender documents have to be assessed accordingly for completeness of design documents, specifications, workmanship requirements, conditions of contract and implementation plan. There is need to properly check the volume of work to be accomplish in a given time frame without being biased towards completion of work rather than focusing on the quality of the work and efficient utilization of allocated resources and budget (time value of money).

- 8) **Engineering cost estimation** – The project engineering cost estimation for the water supply components is based on the bill of quantities of the different works and accuracy of measurement or estimation of the quantities in the right units of measurement and the cost estimation has to be reviewed and update to the current level at the time of appraisal. The engineering cost estimation has to incorporate general or a preliminary item in accordance to the water works general experience and standard such as FIDIC or other similar ones. Provisional and lump sum items need to be clearly indicated and sufficient amounts have to be included in the tender /bid document BOQs. The engineering cost estimation has to show the need for foreign and local portion expenses in the summary of the cost estimation to help to estimate the need for foreign currency budget. The VAT and other taxes have to be shown separately in the total cost estimate.
- 9) **Project scheduling** – It is important to review the proposed project procurement and construction planning in terms of tendering period, supply of materials and construction period, commissioning and defects liability period in the appraisal process.

Utilities may wish to borrow money to improve certain portion or part of the water supply system such as NRW, purchase of pumps, replacement of sand, old fittings, valves in the filters or in the reservoirs, etc. The WRDF has to consider such need for loans and assist the utilities by providing appropriate loans. In such cases the water utilities should prepare the necessary project study that explains the benefit of the planned improvement works in order to carry out the appraisal of such projects. The appraisal procedures described above can be applied as there is not much difference in the project intensions. The following items are considered for which the utilities may acquire loans and has to be appraised:

- **NRW** – The NRW improvement works in urban areas need to be appraised in line with the benefits and improvements that the project will bring to the utility. The type and completeness of work to be implemented, volume of water to be saved and distributed to customers, the number of additional connections that can be made, the improvement in the time of service as a result of saving the water loss, the additional revenue that will be generated as a result of the improvement,

- **Additional Water Source Development** – Some utilities may require to develop a borehole or spring based additional water sources to improve the water production capacity of the system hence may seek loan from WRDF. The appraisal of the additional water resources development has to be carried out following the procedures for the water supply components described above under the proposed water supply systems. The source development may include water source, transmission line to reservoir and electro-mechanical works as described above.
- **Expansion of distribution network to new areas** – utilities may want to expand the distribution network to new areas and construction of additional reservoir in a given town or urban centre and may seek loan from WRDF. The expansion of the distribution network and the need for additional reservoir study and design has to be properly done prior to requesting loan from WRDF. Then appraisal for the loan will be carried out following the procedures established in this appraisal manual as described above for similar components. The expansion of distribution network to new areas may include, purchase of pipes and fittings, installation works, valves, manholes, construction of service reservoir with all the necessary fittings hence the technical appraisal has to consider in the assessment all such components and make the appraisal accordingly.
- **Rehabilitation /replacement /installation of new water meters, valves and fittings** – water utilities may try to improve their water supply service management by improving the water distribution through the supply network especially in the situation where water is being rationed and the NRW is on a higher side. In such case utilities may require loan from WRDF to replace old gate valves and fittings, install new gate valves and fittings for the management of the water distribution, replacement of bulk and customer water meters to reduce NRW. For this the utilities seeking loan have to prepare detailed project study that justify the installation works of such appurtenances. The appraisal team has to then evaluate the technical importance of the appurtenances to be installed, type and appropriateness of the location identified for installation, the advantage to be captured as a result of the installation in terms of volume of water or revenue generated, improvement in water service delivery schedule, contribution in the reduction of NRW of the system, etc

4.6.2 Technical Appraisal for Urban Sanitation Projects

In the process of appraising sanitation project (water borne sewerage system or use of vacuum truck) for the WRDF financing, similar to the water supply project, the technical part for the sanitation need to be carefully assessed and appraised by the Appraisal team. A town may require financing to improve the sanitation service of the town in the form of water borne sewerage system with a wastewater treatment plant covering the whole town or part of the town and to provide the service by using vacuum trucks with sludge disposal site. The following are the major issues that need to be assessed and appraised and be included in the appraisal report to be prepared by the appraisal team:

- 1) **Location of the town for which the sanitation project is required** – It is important to give description of geographical location, region and district in which the town is

located, climate and other relevant information including its economic and social development status and potential.

- 2) **Project objective** – Describe the objective of the project from the national and regional development strategy and policy point of view and its contribution to the coverage, poverty alleviation and addressing of the issues of vulnerable group in the town
- 3) **Description of the existing sanitation system** – provide description of the existing sanitation system including, type of on-site and off-site sanitation facilities in use, public, private, communal, institutional (schools and health institutions), estimated volume of wastewater that is generated from the different sector of the community, wastewater collection mechanism such as sewer system, vacuum truck and its service provider, wastewater treatment method and capacity, coverage of sewer network and its service sustainability and reliability, number of sewer connected customers, etc and identify the gaps that is to be addressed under the implementation of the project being appraised.
- 4) **Sanitation coverage and planned target** – state the existing level of sanitation coverage in general and by type of sanitation service in particular in terms of population served, service availability in the form of number of customers and area and planned target, coverage at the end of the design horizon.
- 5) **Soundness of the design criteria** – Adequacy of the design horizon for which the intended sewerage system will adequately serve, population projection methods, current and projection of the wastewater generation volume over the design horizon, classification of beneficiaries into type of sanitation system, provision for vulnerable groups,
- 6) **Appraisal of the proposed sewerage system** – the selected sewerage system may be composed of a number of components starting from the customer connection up to the last disposal point part which is a treated wastewater effluent. The urban water utility may require loan for the whole sewerage system or limited components of the sewerage system. The appraisal under the proposed sanitation (sewerage) system will encompass the following
 - **Site Locations and Land Acquisition** – assess the location of the different components of the sewerage system and make on site confirmation of the same and securing the land and accessibility of the components, right-of-way and compensation issues;
 - **Customer connections to sewerage system** – describe the proposed customer connection number and potential over the design period, responsibility to make connections, area that is covered by the sewerage system, and assess its adequacy with the wastewater demand.
 - **Sewer networks** - describe the type of sewer network pipeline, type and material of pipe and its appropriateness, diameter, length, design capacity, manholes, pipe route and its laying conditions including slopes of the sewer lines and trench soil condition and provision of all the necessary appurtenances such

as customer connection and sewer manholes, area coverage of the sewer network in the town, incorporation of the existing sewer network if any, etc

- **Wastewater Treatment plant** – review based on the design reports and drawings the selection of appropriate technology for the wastewater treatment system in relation to the quality of effluent water to be discharged, capacity of the treatment plant units in relation to the volume of wastewater generated from through sewer lines and by vacuum trucks, location, site arrangement and set-up of the treatment, simplicity in arrangements for operation and maintenance works, soundness and appropriateness of the design and effluent water disposal mechanism, etc
 - **Electro-mechanical works** – The electro-mechanical works include sludge pumps, wastewater pumps, piping arrangement for the pumps, power supply and control system for the pumps, control centre for pumps, effluent flow measuring devices, fitting arrangements at the wastewater pump stations, availability of power supply and provision of stand-by generator,
- 7) **Tender Documents** – the conditions and procedures described for water supply project can also be applied for sanitation / (water borne sewerage) system when carrying out the appraisal
 - 8) **Engineering cost estimation** – The project engineering cost estimation for the sanitation components has to also be appraised similar to the water supply project regarding the cost estimation.
 - 9) **Implementation Schedule** - It is important to review the proposed project procurement and construction planning in terms of tendering period, supply of materials and construction period, commissioning and defects liability period in the appraisal process.

Utilities may wish to borrow money to improve certain portion or part of the sanitation system such as purchase of vacuum trucks and construction of sludge disposal site and drying beds, etc. The WRDF has to consider such needs for loans and assist the utilities by providing appropriate loans. In such cases the water utilities should prepare the necessary project study that explains the benefit of the planned works in order to carry out the appraisal of such projects. The appraisal procedures described above can be applied as there is not much difference in the project intensions. The following items are considered for which the utilities may acquire loans and has to be appraised:

- **Purchase of Vacuum Trucks and Construction of Sludge Drying Beds** – In order to improve the sanitation condition of the urban area a utility may require vacuum trucks to empty septic tanks and latrines and dispose the sludge at appropriate treatment site/ sludge drying beds. The need to purchase vacuum trucks and construction of sludge drying bed need to be appraised in line with the benefits and improvements that the project will bring to the community. The type and capacity of the vacuum truck to be purchased, capacity of the truck, number of communities to benefit, volume of sludge to be emptied and disposed, the type and area of sludge drying bed, its location and sludge management method, the improvement in terms of sanitation service as a result of vacuum truck availability,

the operational and maintenance cost and the revenue that will be generated as a result of the improvement, etc,

- **Expansion of sewer network to new areas** – utilities may want to expand the wastewater sewer network for collection of wastewaters from newly developed areas in a given town or urban centre and may seek loan from WRDF. The expansion of the sewer network study and design has to be properly done prior to requesting loan from WRDF. Then appraisal for the loan will be carried out following the procedures established in this appraisal manual as described above for similar components. The expansion of sewer network to new areas may include, purchase of sewerage pipes and fittings, installation works, construction of customer and junction/slope change manholes, hence the technical appraisal has to consider in the assessment all such components and make the appraisal accordingly.

4.7 Financial Appraisal

4.7.1 Objective of Financial Appraisal

The main objective of financial appraisal is to thoroughly ensuring whether the feasibly study/business plan properly examine the financial feasibility of the project or not. The appraisers scrutinize the financial soundness of water supply and sanitation project to cover the capital and operating costs, earns sufficient margin of profits to be able to pay interest on its long-term debts and debt repayment installments and the inclusive of sensitivity analysis based on key sensitive indicators to show the level of safety margin.

4.7.2 Financial Appraisal Method

The financial appraiser uses the widely accepted model called Cost Benefit Analysis (CBA) to measure the quantitative benefits and costs of the proposed project. Project revenues, costs and net benefits will be calculated on with and without-project over the project design period to determine the additional financial benefits and costs of the TWU attributable to the project. The model computes the financial feasibility measures such as Financial Net Present Value (FNPV), Financial Internal Rate of Return (FIRR), Debit Service Cost Ratio (DSCR), Financial Benefit-Cost Ratio (FBCR), Sensitivity Analysis and analyses for implementation decision.

4.7.3 Financial Appraisal Components

- ✓ The Current water supply financial operation system
- ✓ Water utility financial performance at least in the last three years
- ✓ Basic Water supply and/or wastewater management financial analysis assumptions
- ✓ Water supply and/or wastewater management Project Investment Cost
- ✓ Source of Water supply and/or wastewater management Finance and Financing plan
- ✓ Water supply and/or wastewater management Replacement Costs
- ✓ Water supply and/or wastewater management Depreciation Cost
- ✓ Water supply and/or wastewater management Residual Values
- ✓ Water supply and/or wastewater management Operation and Maintenance Cost

- ✓ Existing and proposed Water supply and/or wastewater management project Tariff
- ✓ Water Supply: - Revenue Setting (revenue from water sale, material sale, connection & reconnection service, water meter, penalty etc.)
- ✓ Wastewater: - Revenue Setting (revenue from the wastewater disposal, sewerage connection service, material sale, penalty etc.)
- ✓ Expenditure Setting: Water supply and/or wastewater management facilities development
- ✓ Water supply and/or wastewater management Financial Statements (Income Statement, Financial Cash Flow)
- ✓ Water supply and/or wastewater management discounting ratio, discounted cash flow (cost and benefit), Profitability and Viability Test such as Financial Net Present Value (FNPV), Financial Internal Rate of Return (FIRR), Debit Service Cost Ratio (DSCR) and Financial Benefit-Cost Ratio (FBCR).
- ✓ Water supply and/or wastewater management Sensitivity Analysis
- ✓ Water supply and/or wastewater management summarization of findings and drawing appropriate conclusions.

1) Financial Operation System and Performance - The appraisers ensure that the following components are assessed during the appraisal:

- ✓ Whether the water utility uses single/double entry accounting system.
- ✓ In house or out-sourced computerized bill preparation system
- ✓ The revenue collection efficiency
- ✓ Financial report preparation system, reporting type and auditing

2) Basic Financial Study Assumption - The success of financial plan of any project depends on important assumptions made. Hence the financial appraisal expert ensures whether the basic financial study assumption is well articulated in the Water supply and/or wastewater management reports and incorporate/revised if necessary, in the financial appraisal report. Major components of the basic assumption as indicated in the Annex 2.

3) Total Investment Costs - The financial appraiser verifies whether the total project cost for water supply and/or wastewater management is properly identified and listed in the report. The total cost of the project categorized into two: Capital investment cost and Operation and Maintenance cost. The capital investment cost divided into two: Indirect and Direct Project Cost. This cost varies from utility to utility depending on the type of water supply and sanitation system recommended in the feasibility study. Moreover, the examiner review whether the study identify and list separately if the investment requires foreign component. For the detail refer Annex 5 Excel Sheet.

4) Replacement Costs - In some projects, the project investment components economic life time elapsed before the project design period is completed and need replacement cost. For this case, the appraisal team needs to ensure whether such components are properly identified and the replacement cost is also included in the

total investment cost. The economic life span of each investment component should be properly listed as a reference.

- 5) **Breakdown of Source of Finance** - The appraiser needs to properly examine envisaged project investment cost and identify the source of finance and the loan and grant/equity proportion and responsible financier. The assessment also verifies the source of finance for capacity building component (loan/grant) if any. In addition, the examiner checks if part of operation and maintenance/working capital cost is covered from the loan. For the detail refer Annex 5 Excel Sheet.
- 6) **Project Financing Period** - The appraisal team verify and define and clearly indicate the project financing period based on the construction time frame. In the meantime, the examiner ensures whether the proposed time is realistic and acceptable to the utility.
- 7) **Loan Repayment Schedule** - The examiner needs to clearly indicate the loan repayment period, interest rate and grace period based on the WRDF policy and procedure. Along with this the appraiser confirms if the loan capitalizes the interest accrue during the construction period. For the detail refer Annex 5 Excel Sheet.
- 8) **Depreciation Cost** - The appraiser in the financial appraisal has to use the straight-line depreciation which is widely applied as it involves simple allocation of an even rate of depreciation every year over the economic service life of the asset. Depreciation cost is the sum of the cost of the item plus price contingencies (5%), physical contingencies (5%) and VAT (15%). The appraiser will include where necessary replacement cost item at the right period/year in the depreciation schedule. The economic lifespan of different physical components is described by the Ministry of Water, Irrigation and Electricity Design Criteria report. For the detail refer Annex 5 Excel Sheet.
- 9) **Residual /Salvage Values** - The examiner will include the residual /salvage value in the financial analysis. These project assets are considered as a benefit in the project benefit cost analysis. This is obtained by adding all the project item value serving beyond the design project period up to the project item life time. In the meantime, it is also important to consult the client for confirmation.
- 10) **Operation and Maintenance (O & M) Costs** - The appraiser will clearly identify the operation and maintenance (O & M) costs comprise all costs, which are not an investment in nature since they are consumed within a given accounting period. The operation cost includes chemical, energy, water meter, personnel and administration expenses in the case of water supply whereas operation, maintenance and administration with respect to wastewater aspect. The appraiser will then use the O & M costs in the assessment of tariff together with the investment and other costs. For the detail refer Annex 5 Excel Sheet.
- 11) **Tariff Setting** - The objective of tariffs setting is for:
 - ✓ Financial sustainability of water utilities - Providing sufficient revenues to cover the justified costs obligations for sustainable WSS service provision.
 - ✓ Distributive justice and affordability of WSS service- Ensuring a minimum quantity of water is affordable particularly to low income consumers

- ✓ Consumer protection, economic efficiency and fair pricing- Protecting the consumers from paying for inefficiencies of service providers and unfair charges.
- ✓ Ensuring that the process is transparent, simple to understand and predictable

The appraiser will follow the Ethiopian Government Water Resources Management policy' of 1999 regarding tariff setting and the Ethiopian National Guideline for Urban Water Utilities Tariff Setting document developed by Ministry of WoWIE in 2013 in setting water supply, sewerage and pit emptying tariffs. The WSS tariff considers government policies, willingness to pay and affordability to pay of the town population.

Water Supply

Data required to check water supply tariff settings:

- I. Annual Projected Water Production Less Annual Projected Volume of Water Consumed (water tariff must be calculated on the basis of water consumed not on water Produced).
- II. Annual Deprecation cost
- III. Annual Interest rate for loan
- IV. Annual Operation and Maintenance cost
- V. Average monthly income and Willingness to Pay

The sum of annual depreciation costs (annual depreciation divided by average annual total water to be sold equals depreciation per m³), annual interest on loan and annual operation and maintenance cost gives the cost of water at recovery tariff level. Then, the appraiser will check whether the full cost recovery water tariff developed is based on the principle of progressive tariff rate.

In line with this, subsidies are needed to assure that the poor have access to reliable water which leads to a system of cross-subsidy. Cross subsidies are needed to be provided to consumers who use public fountains and for domestic connections for basic needs. The examiner confirms whether the social tariff/m³ (total annual operation and maintenance cost divided by total annual water sold) is the basis for other water tariff and apply for public fountain and first block water tariff for residential connection. The appraiser has to also bear in mind that if some proportion of investment cost is covered as a grant/matching fund this would be deducted from the total investment cost and consequently reduce depreciation cost. The interest rate is also omitted from the water tariff computation if the loan program doesn't incur interest.

The examiner properly checks whether the proposed tariff blocks is based on the level of town water utility grade (medium and large). The MoWIE tariff setting guideline recommended the number of blocks should not exceed 5 and less than 3 blocks for medium and large towns. The appraiser refers the MoWIE tariff setting guideline.

Wastewater

I. On-site wastewater management systems

Fecal sludge collection services can be made available on a scheduled basis or on a call-for-service basis (also known as on-demand, on-request or non-scheduled services) using vacuum trucks. Septic tank/pit emptying service has been provided by the government/municipality and/or private sector with service charges varying from town to town and among the service providers.

As wastewater management service is dominantly provided by municipalities, very few (Addis Ababa, Dire Dewa, Gondar, Harar and Mekele) towns water supply and sewerage enterprises are collecting, transporting and dumping sewage wastes.

From national and international experience, major factors considered in appraising sewage tariff include, investment cost of vacuum truck, operation and maintenance expense, construction of waste disposal site cost/any charge related to this, target beneficiary average monthly income and willingness to pay. Alike to the water supply service tariff, the on-site wastewater disposal charge is also expected to consider social aspect.

II. Off-site/Sewer line wastewater disposal system

Off-site wastewater management is conveying sewage to treatment plant through pipe sewer line. Though, the construction of sewer line infrastructure is relatively active after the implementation of government housing development policy, the coverage as well as the service of sewer line wastewater management is still very limited at national level. With respect to service charge, sewer line wastewater tariff has not been designed and effected even in the capital city, Addis Ababa until this manual preparation period.

Thus, international experience revealed that the tariff is set at the total average cost per unit of wastewater processed (including conveyance cost as well as treatment). Capital investment cost includes: land, building construction cost, equipment cost, construction fee, network installation: pipes fee and sewage facilities, design cost; environmental cost, social cost; Maintenance and Operation Cost (electricity, chemical cost, personnel cost: salary and training, reparation, network maintenance (such as leakage mitigation, pump). Data required to check wastewater (sewer line and treatment) tariff settings:

- I. Annual projected wastewater generated/the total volume of water consumed (80% of the consumed water considered as wastewater)
- II. Annual Deprecation cost
- III. Annual Interest rate for loan
- IV. Annual Operation and Maintenance cost
- V. Average monthly income and Willingness to Pay

The appraiser has to also bear in mind that if some proportion of investment cost is covered as a grant/matching fund this would be deducted from the total investment cost and consequently reduce deprecation cost. In the meantime, the interest rate is also omitted from the wastewater service charge tariff computation if the loan program doesn't incur interest.

12) Willingness and Affordability to Pay - The Ethiopian Water Supply and Sanitation polices, strategy, programs, and different guidelines have clearly suggested that any town water supply and sanitation project's tariff should be developed with full cost

recovery bases to sustain the services for the designed time horizon. Equally, it is very essential to examine whether the study documents have properly assessed the willingness to pay of the beneficiaries for the envisaged project. In the meantime, the appraiser ensures if the ability to pay of beneficiaries' visa vis their income. According to the World Bank study "a tariff is affordable as long as the bill does not exceed 5% of the household's budget". An immediate shift from low-level tariff rate to a very high-level rate (e.g. more than 100% increase) might not be accepted by decision makers and by high tariff payers too.

13) Expenditure- The cash flow statement embraces both capital and operational expenditures for water supply and/or wastewater management. Capital expenditures are simply the expenditures of those items needed to set up or establish the project so that it can be operated. Operating expenditures are those incurred in operating and maintaining the project. Capital expenditures for water supply and/or wastewater management usually cover items related to construction of facilities, including site preparation and other civil costs; plant and equipment, vacuum truck comprising not only the acquisition cost but also the cost of transport, installation and testing; vehicles; and working capital.

14) Setting Revenue -The examiner ensures whether the source of water supply and wastewater revenue is properly elaborated. The cash flow statement sets out the revenues to be derived from a project.

Water Supply: The source of revenue of water supply comprises revenue from water sale from different mode of services (the average tariff multiplied by the annual project water demand of each mode of service), connection and reconnection fee, water meter rent and from material sold to customer. The study team verifies whether the revenue is done based on the proposed tariff.

Wastewater

Sewer line wastewater management: revenue generated from annual projected volume of wastewater discharged/volume of water used multiplied by average cost per unit of wastewater processed (including conveyance cost as well as treatment), sewer connection fee, operation and maintenance and related income. The sewerage service charge would be also collected through billing system.

On-site wastewater management: revenue generated from annual projected volume of wastewater produced from residence, commercial and institutional customers multiplied by average cost per unit of wastewater produced (including capital investment cost as well as operation and maintenance). The on-site wastewater service charge collects through receipt upon the demand of the customer.

15) Financial Statement - The Financial statements (or financial report) is a formal record of the financial activities of the Water Utility. Appraising the financial statements is essential to ensure the ability of a water utility to generate cash, and the sources and uses of that cash and to confirm whether the water utility has the capability to pay back its loan. Hence, the appraiser will prepare the following financial statements and ensure its completeness: For the detail refer annexed Excel Sheet table.

Income/Profit and loss (P&L) statement - The fundamental constituent of income statement is the summary of revenue, expense, gross and net profit accounts. The statement shows the financial position of the Town Water Utility over a particular period. The water supply project income statement is prepared based on the projected water demand, water tariff, depreciation, interest and O&M costs for the designed project period. On the other hand, the wastewater management project income statement is based on projected wastewater volumes generated; collection service charge both from sewerage network and pit emptying of septic tanks and pit latrines, depreciation, interest, O & M cost over the project timeframe.

Cash Flow Statement - Cash Flow Statement shows the inflows and outflows of cash caused by the utility's activities from water supply and/or wastewater management during a stated period. This is important to reveal the Town Utility future cash proceeds and cash outlays expected to be induced because of project implementation.

Balance sheet - The balance sheet shows the utility's assets, liabilities, and equity as of the report period from water supply and/or wastewater management. It is produced based on investment costs, repayment schedule, and income statement and discounting cash flows. The computation indicates as assets must always equal liabilities plus equity. Balance sheet is important for water utility or/ any concerned outsiders to visualize the utility financial positions.

16) Financial Feasibility /Viability Test - The purpose of the financial appraisal is to ensure the water supply and/or wastewater management project is financially feasible or not. In such a manner, the appraiser will ensure whether the financial analysis of the project is made by employing discounted cash flow method. Project revenues, costs and net benefits will be calculated on with and without-project over the project design period to determine the additional financial benefits and costs of the TWU attributable to the project. The financial feasibility indicators include: Financial Net Present Value (FNPV), Financial Benefit-Cost Ratio (FBCR), and Financial Internal Rate of Return (FIRR).

Financial Net Present Value (FNPV) - Financial Net Present Value of a project is the actual worth of the project taking its future flow of cash proceeds and outlays into account. The project's financial Net Present Value (NPV) is computed based on the discounted cash flow before and after financing.

Discounted Cash Flow before financing costs - The project's financial Net Present Value (NPV) before financing is computed using net profit, depreciation, interest, investment and outflow/inflow. This is important to indicate the financial status of the utility before financing loan.

Discounted Cash Flow after financing costs - The project's financial Net Present Value (NPV) after financing is computing using net profit, depreciation, interest, loan repay, investment and equity. This is important to indicate the financial status of the utility after financing loan.

Financial Benefit- Cost- Ratio Analysis - Benefit - Cost Ratio analysis is defined as the technique used to evaluate project Cost and Benefit so that decisions can be made accordingly. It is also used to evaluate Project Benefit vis-à-vis Project Cost. In relation to this, it can be determined by discounted Benefit against present worth of total Cost.

Financial Internal Rate of Return (FIRR) - The Internal Rate of Return of a project is the rate that makes the Project Net Present Value equal to zero. As feasibility measures, investment tolerance criterion of Financial Internal Rate of Return is greater than the discount rate. The Internal Rate of Return analysis can be computed both by discounting cash flow before and after financing. The FIRR analysis vividly show whether the project is viable and can be sustainably operated both before and after financing of the loan.

Debt Service Coverage ratio (DSCR) - Debt Service Coverage ratio (DSCR), is one of the leverage/coverage ratios, calculated in order to know the cash profit availability to repay the debt and interest. This ratio suggests the capability of cash profits to meet the repayment of the financial loan. This is very important for WRDF to indicate the loan repayment capability of the utility. In the meantime, it clearly shows the utility financial condition across the project life period.

Payback period - The appraiser will ensure whether the financial analysis incorporates the non-discounted method of analysis i.e. payback period to show the length of time required to recoup the initial cash outlay on the project. It indicates that the shorter the payback period, the more desirable for investment positions.

17) Sensitivity Analysis based on Key Variables – The project cash outlays and cash proceeds are the one that could be affected by the price fluctuation. Therefore, the purpose of conducting sensitivity analysis is intentionally to tolerate the probability of future adverse changes of the project operation and maintenance costs as well as prices of project benefits. There are common expected adverse effects to test the sensitivity of the project and its effect on sustainability and the appraiser can crosscheck by combining more than one indicator to further ensure the project sustainability across at the following different challenging conditions:

- ➔ Revenue decreased by 10%.
- ➔ Initial Project Investment Cost increased by 10%,
- ➔ Operation and Maintenance cost of the project increased by 10%, and
- ➔ Revenue decreased by 10% and Initial Project Investment Cost increased by 10%,
- ➔ Initial Project Investment Cost increased by 10%, and Operation and Maintenance cost of the project increased by 10%, and

4.8 Economic Appraisal

Appraising financial profitability does not necessarily examine reliable estimates of the value of a project from a "social" point of view, as they focus rather on the water utility's perspective. Whereas, economic appraisal assesses the desirability of the project from the national economic point of view in general and the benefit of the project to the beneficiaries in particular. Most of the inputs in economic analysis are valued at opportunity cost or on the principle of willingness to pay.

The standard economic appraisal technique, which helps to assess the socio-economic desirability of the project, is Cost-Benefit Analysis (CBA) which quantitatively measure the benefit and cost and Cost-Effective Analysis (CEA) in charge of appraising the qualitative of the welfare change due to the envisaged project. The data collected in financial

appraisal is the base for economic appraisal. Economic appraisal covers the following key factors:

- i) Impact of the project on the National Economy: effective and efficient utilization of scarce resources and its alignment with the national objective;
- ii) Cost-Benefit Analysis: quantitatively measure economic cost and benefit, conversion factor, Economic Net Present Value (ENPV), Cost-Benefit Ratio (BCR) and Economic Internal Rate of Return (EIRR);
- iii) Cost Effectiveness Analysis: to appraise the qualitative welfare changes of the envisaged project (non-quantifiable benefits) and
- iv) External costs and benefits and its linkage effects

4.8.1 Objective of Economic Appraisal

The objective of economic appraisal is to undertake a comprehensive investigation of the economic feasibility of the proposed project before considering implementing an intervention. To ensure whether interventions are designed to maximize positive impacts and minimize negative impacts. Economic appraisal verifies whether the quantifiable and non-quantifiable costs and benefits of projects are properly examined so that the decision maker is convinced to accept or reject the project.

4.8.2 Economic Appraisal Components

- 1) **Shadow Price** – Costs and benefits used in the financial analysis are valued at the prices that the project entity is expected to pay for them. Usually these are prices set by the market. However, these prices do not necessarily reflect economic costs to society. The economic values of both inputs and outputs may differ from their financial values because of market distortions created. In order to remove market distortion of project input and output price and arrive at its economic price, the current market prices of goods and services need to be converted into Shadow Prices using the standard conversion factors issued for Ethiopia by Ministry of Finance and Economic Development (MoFED). Therefore, the appraiser verifies whether the study uses this Conversion Factor as appropriate to adjust the market price of cost and benefit. Table below shows the National Standard Conversion Factor related to this sector.

Table 4-1: National Standard Conversion Factors

No.	Description	Conversion Factor
1	Foreign exchange	1.00
2	Standard Conversion Factor	0.9
3	Urban water (the second most heavily subsidized sector)	2.26
4	Skilled Labor	0.76
5	Urban Unskilled labor	0.33
	Chemical and chemical product	0.79
6	Hydro- power	0.8
7	Diesel and Lubricants	0.94
8	Fuel Oil	0.78

9	Economic Discount Rate	10.23
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Source: MoFED, June 2008

2) Appraising Economic Project Cost – The initial step in conducting economic analysis of a project is to identify, quantify and value the economic costs and benefits. Financial Investment cost is a good starting place for identifying economic costs and benefits. Two types of adjustment need to be made on the financial calculation:

- ✓ Some costs and benefits should exclude from the financial analysis and
- ✓ Some inputs and outputs have to be revalued if their shadow and market prices differ

The appraiser ensures whether the water supply and wastewater economic cost consider the following key factors:

- ✓ The investment and Operating & Maintenance Costs of water supply project
- ✓ The investment and Operating & Maintenance Costs of wastewater management project
- ✓ Check if the foreign currency investment cost component is properly identified.
- ✓ The cost of the imported input is the sum of imported price plus the cost of transport and handling to the good). The cost of transport and handling of goods should be excluded from the actual cost for the purpose of economic analysis.
- ✓ Ascertain whether the foreign exchange price converted into domestic value (ETB), at the official exchange rate in the course of the study period.
- ✓ Ensure the total investment cost (both local and foreign components) are adjusted based on the Standard Conversion Factor
- ✓ The operating and maintenance costs adjusted by Standard Conversion Factor 0.9.
- ✓ Physical contingency is considered as economic cost as it is part of the expected value of the project's costs.
- ✓ Depreciation cost which is needed to replace the asset in financial analysis is excluded from the economic cost because it doesn't entail the cash outlays what matters on economic cost.
- ✓ Interest payments and repayment of principal is a transfer of cost between the Utility and WRDF so that the economy as a whole is no different as a result. So, it is not considered an economic cost.
- ✓ Capitalized interest during construction is a transfer payment and is omitted from the economic accounts.
- ✓ Price contingences is not considered as economic cost as it is the transfer of control of resource from one body to another.

- ✓ The wage rate of urban skilled labor and urban unskilled labor are converted to economic cost using shadow price proposed by the Ministry of Finance and Economic Cooperation in 2008.
- ✓ Value added tax (VAT) is deducted from the initial investment cost.
- ✓ Impact of inflation is omitted to attain constant input and output price for the analysis.

3) Appraising Economic Benefits – In the appraisal the incremental economic benefit and Cost-Effective Analysis (CEA)/ Saving Benefits are found to be the two significant Economic Benefits of the town Water Supply and Sanitation Project.

I. Incremental Economic Benefit

Water supply Incremental Economic Benefit is benefits expected to be generated from Water Sales, Water Meter rent and service charge revenues induced as a result of project implementation intended to cover new water demands of the town. On the other hand, Cost Saving Project Benefit is an Economic Project Benefit that could be obtained outside of the primary project objective. Therefore, the appraiser ensures whether the water supply economic benefits of the project is properly identified and incorporated in the economic analysis.

- ✓ The average water tariff computed in the financial analysis for each mode of service should be converted into economic tariff by using the conversion factor of 2.26 as recommended for water sector - urban water supply by MoFEC, 2008. Then, this tariff multiply by projected annual water demand of each mode of service to get the total economic revenue.
- ✓ The economic value of incremental water which is derived from the willingness to pay as a proxy is the source of consumer surplus. The difference between the weighted average cost of water without project and the tariff for water with the project is WTP.
- ✓ Non-revenue water (NRW) is water that has been produced and is "lost" before it reaches the customer. The losses categorized real losses mostly due to leakage and/or apparent losses through illegal connection or water meter inaccuracy. The economic benefit considers apparent lose assuming that this part of water is consumed.
- ✓ The average wastewater tariff computed in the financial analysis for sewer line customer should be converted into economic tariff by using the conversion factor of 2.26 as recommended for water sector by MoFEC, 2008. Then, this tariff multiply by projected annual wastewater generated from sewer line to get the total economic revenue.
- ✓ The average wastewater tariff computed in the financial analysis for on-site/pit latrine/septic tank emptying service should be converted into economic tariff by using the conversion factor of 2.26 as recommended for water sector by MoFEC, 2008. Then, this tariff multiply by projected annual wastewater generated from on-site/pit latrine/septic tank to get the total economic revenue.

II. Cost Effective Analysis (CEA)/ Saving Benefits

Cost Effective Analysis (CEA)/ Saving Benefits is a Project Benefit that could be obtained outside of the primary project objective. Due to problems in measurement and quantification/valuation, and also because of substantial variability of the data, many indirect benefits of the interventions are not quantified. Hence, commonly, the indirect benefit generated due to the improvement of water supply and sanitation project has discussed qualitatively. The expecting benefits include:

- ✓ Reduce direct medical expenditures for illness treatment; time reduce to collect water, employment opportunity, environmental impact
- ✓ Reduce indirect costs resulting from illness, which includes the value of time lost from work, improve human productivity, reduce money spent in care giving and premature death pain and improvement in health and reduce suffering associated with illness,
- ✓ Potential for encouraging structural change related to livelihood, socio economic development and other externalities and its linkage effects.

Moreover, the following cost saving benefit estimation method is designed based on the local and international experience in this sector.

Table 4-2 Key indicators to estimate Cost Saving Benefit

Project Town	Indicators	Source of Data
Pw	*Number of waters born and water related disease cases	Project town or nearest hospital/health center
Pt	Number of total cases	Project town or nearest hospital/health center
Ht	Number of total households	CSA/City Administration/Health office
Cm	Average household medical cost	Computed based on project town or nearest hospital/health center data
Vp	Venders' water price	Socio-economic baseline survey/business plan study
Ti	Investment based water tariff rate	Feasibility study/business plan
Vw	Volume of venders' annual water sale	Socio-economic baseline survey/business plan study
Ulswr	Shadow wage rate of unskilled labor	Ministry of Finance & Economic Commission Standard Conversion Factor
Dwd	Average household daily water demand	Feasibility study/design report

* There are five different routes of infection for water-related diseases: water-borne diseases (e.g. cholera, typhoid), water-washed diseases (e.g. trachoma), water-based diseases (e.g. schistosomiasis), water-related vector-borne diseases (e.g. malaria, filariasis and dengue), and water-dispersed infections (e.g. legionellosis), WHO(2000) [Global Water Supply and Sanitation Assessment](#). World Health Organization. Geneva

I. Money no longer paid to water venders

$$\text{Consumers' Surplus} = [V_{np} + U_{Lwr}]C_v$$

Where

V_{np} = A net margin of Venders' price and affordable/investment-based tariff rate for a unit m^3 of piped water

UL_{wr} = Wage rate of unskilled labor paid to transport a unit m^3 of water

C_v = Annual volume of water consumed by water vender users (m^3)

II. Benefits of household Medical Cost reduction

Reduced Household Medical Cost = $12C_{mh}N_{ht} (P_w / P_t)$

Where

P_w = Total number of cases due to water born, water related and water-based diseases a year

P_t = Total number of cases diagnosed as patients of any illness and get treatment in a year

N_{ht} = Total number of households in the town whose currently primary modes of water source is non-piped water (unprotected spring, river, pond, lake etc)

C_{mh} = Monthly average medical cost of a household

III. Costs saved as a result of shortened water fetching distance

Opportunity Cost of Time = $365N_{ct}T_fUL_{wr}$

Where

N_{ct} = Total number of non-connected households whose primary water source is outside of compound

T_f = Average time elapsed to fetch water (in day)

UL_{wr} = Per day wage rate of unskilled labor

- 4) Economic Viability Test- Cost Benefit Analysis** – The: Alike to financial viability, the appraiser examines whether the economic analysis of water supply and/or wastewater project is properly carried out based on the discounting cash flow method. The economic viability indicators include: Economic Net Present Value (ENPV), Economic Benefit-Cost Ratio (EBCR), and Economic Internal Rate of Return (EIRR). In the computation of economic viability test, it is recommended to use quantifiable and readily available data. Once economic costs and benefits of the project are appraised, analogous procedure is followed for appraising Economic Viability Test.

The appraiser ensures the employed opportunity cost of capital recommended by Ministry of Finance and Economic Commission. i.e 10.23%;

Economic Net Present Value (ENPV) - ENPV is one of the economic analysis indicators verified by the appraisal team. ENPV helps to measures the creation of economic value out of the investment needed. The computation is undertaking by computing the total Economic Project Cost Present Value and gross Economic Project Benefit Present Value at 10.23 discount rate. The acceptance criterion of Economic Net Present Value is greater than or equal to zero

Economic Benefit- Cost- Ratio Analysis - Benefit-Cost Ratio analysis is one of the basic measures of economic project viability parameter. It is used to compare discounted economic Cost vis-à-vis the corresponding discounted project Benefit. An evaluator examines whether the economic Benefit and Cost Ratio analysis has conducted in the study to evaluate the project economic outlay against the economic proceeds for decision maker. The acceptable investment criterion of this viability is greater than or equal to 1.

Economic Internal Rate of Return (EIRR) -The EIRR is an indicator used to evaluate the attractiveness of a project from the wellbeing of the beneficiaries' point of view. It is computed by equating the present value of economic costs (as cash out-flows) and the present value of economic net incomes (as cash in-flows). EIRR is the rate that makes the Project Net Present Value equal to zero. With this respect, the evaluator confirms whether the computed EIRR is as per the acceptable method.

5) Economic Sensitivity Analysis – As depicted in the financial appraisal part, the economic sensitivity analysis is the investigation of potential changes and errors of economic cost and economic benefit and their impacts on conclusions to be drawn from the study. Alike to in the financial appraisal, the evaluator examines whether the economic viability test has undertaken sensitivity analysis based on the commonly expected adverse effects to test the sensitivity of the project and its effect on sustainability. Accordingly, the three expected adverse effects expected to be happened sometimes in the future during implementation and operation phases of the project are The

- ✦ Economic initial Project Investment Cost increased by 10%
- ✦ Economic Project Operating Cost increased by 10% and
- ✦ Cash proceeds projected under normal condition of the planning time horizon decreased by 10%

4.9 Social Desirability and Gender Impact

4.9.1 Objective of social appraisal

The objective of social appraisal is to verify whether the social assessment document properly identified the needs and aspirations of the beneficiary communities and key stakeholders and ensure the designed project sustainably address the existing shortcomings.

4.9.2 Methodology and Procedures

The appraiser has to examine both quantitative and qualitative data in appraising the social desirability of the intended project. The methodology includes review of existing studies and documents, discussions and interview with stakeholders and a Household Survey to determine willingness to pay.

The appraiser has to use the following key indicators to ensure the social desirability and gender impact of the envisaged project is well addressed.

- ✓ Check if the socio-economic baseline information of the project area and its structure in general and the livelihood target community in particular are properly identified and presented in the document.
- ✓ Ascertain that the on-going and/or planned development activities of the project areas are incorporated in the study.
- ✓ Check whether the study examined water consumption and water demand of the target groups.
- ✓ Assess whether the attitude of the community towards the proposed development project and expected role and contribution at project implementation and monitoring and evaluation stage assessed.
- ✓ Verify whether the willingness to pay and affordability of the community at different levels of service are properly described in the report.
Check that whether the study takes in to account the poor and disadvantages people during tariff setting.
- ✓ Ensure that the study includes the level of participation, partnership and role and responsibilities among stakeholders. Level of commitment of potential stakeholders to minimize the possible adverse impact.
- ✓ Assess whether the gender issues (the role, needs and contribution of women and men) on reproductive, productive and community managing aspect in the town are well described in the study.
- ✓ Confirm the overall potential impact of the project on:
 - Strengthening socioeconomic development through reduced incidence of water-borne diseases,
 - Reduce cost of treatment and the productivity losses as a result of illness,
 - Increasing water supply and sanitation coverage to all the urban population in general and low-income group in particular.
 - Reduced time spent to collect water which increase opportunities for engagement in productive activities
 - Increasing incomes, especially for those communities who are engaged with different income generating activities.

4.10 Environment appraisal

4.10.1 General

Any WS&S system needs to have a sustainable supply of clean water, and a safe means of disposing of waste. WS&S projects in the urban community may need to be supplied from a city-wide utility which abstracts large quantities of water from major surface water or groundwater sources. Similarly, waste may be removed by drains and sewers connecting to major systems and discharged to surface water bodies with or without treatment.

The implication for WS&S program is that water resources used for potable supplies (now or potentially in the future) need to be protected against future depletion and degradation by an effective water resources management and control system for hazardous pollutants. Thus, it is important that the environmental impact of developments, the management of water resources, and pollution control measures are addressed at early stages of developmental projects.









The effective management of water resources through available resources and balancing the various demands on them using a rational and open policy is an issue that needs to be given due attention. All abstractors need to be licensed and regularly inspected to ensure that over abstractions are not taking place. In the absence of such arrangements water shortages and conflicts between users are likely. It is important that all abstractors are subject to some degree of demand management so that excessive and/or wasteful uses can be curbed.

Hence WRDF and its partners are seeking to ensure that any WS&S program which emerges is effectively integrated into a national water resources management strategy and that projects will be designed to contribute to water quality protection and environmental improvement objectives through protection of water supply sources from pollution and controlling pollution from sanitation systems.

To meet this water quality protection and environmental improvement objectives, this Environmental Appraisal Manual that deals on environmental perspectives which are specifically relevant for WS&S projects and provides guidance on procedures to be followed when appraising ESIA reports of Utilities' water supply and sanitation projects is designed. The manual highlights major issues and potential impacts that should be taken into account during the ESIA preparation and assessment phases. The appropriate enhancement and mitigation measures which should be integrated as early as possible, preferably in the project design.

4.10.2 Objective

This manual is prepared with the objectives of:

-  providing a consistent approach for appraising ESIA reports of urban water supply and sanitation projects;
-  deciding whether there is sufficient information on the background of the project and its environmental setting, alternatives, impacts, mitigation and monitoring;
-  ensuring that all relevant information has been analyzed and presented based on appropriate methodologies;
-  ensuring the points of view of all stakeholders have been taken into account;
-  guiding the reviewing process and facilitating decision making;
-  indicating a comprehensive information requirement;
-  evaluating the reports in a systematic and objective manner; and
-  providing a structured environmental appraisal template for interpreting the information that will be provided in the report.

4.10.3 Appraisal Methodology

The recommended appraisal methodology is that the environmental team reviews the project document and other related documents, conduct site visits, hold discussion with communities in and around the project area and all other concerned institutions and make analysis of the project planning process and environmental assessment procedures applied. The Standard environmental appraisal template (Table 5) should be used by the reviewers as a main guide to identify environmental factors which may potentially be affected by the development activity, or which might place significant constraints on the proposed development. The appraisal should be carried out by experts who are familiar with the ESIA process and other environmental requirements of the country. After reviewing the environmental assessment report using the appraisal toolkit the team will produce environmental appraisal report with recommendations regarding the environmental aspect of the project.

4.10.4 Appraisal Components

Development of schemes in the water sector usually brings with them water use conflicts and compatibility, management of renewable and non-renewable resources, disturbances in the aquatic and terrestrial ecosystem, needs for resettlements and dislocation, soil erosion and noise pollution, etc. The intended project should conserve natural resources, maximize the likely positive benefits, minimize adverse effects, sustain development and ensure improved efficiency in the use and management of resources.

According to the operational guidelines of WRDF, projects to be financed by the organization are expected to have positive environmental impacts and will need to meet environmental objectives, standards and evaluation criteria based on Ethiopian legislation, environmental impact assessment rules based on the Ethiopian Environment Protection Authority Guidelines. These include proving that:

- a) The project improves environmental conditions as the impact of solid waste and sewage is lessened, environmental liabilities are eliminated, land use plans are instituted and associations of municipalities are strengthened in the environmental protection area. Any adverse environmental or social impacts of the projects would be localized and generally minimal.
- b) No negative environmental impact is noted in respect to physical environment, biological environment, public health and socio- economic environment.
- c) Viability of any negative environmental impacts' mitigation measures.

Thus, review of environmental issues should be considered during project appraisal to:

- ✓ ensure integration of environmental concern into project planning process,
- ✓ ensure that the term of reference for such studies have been followed and that the national and funding institutions requirements have been met,
- ✓ check the environmental assessment procedure,
- ✓ review the institutional arrangement for environmental management, and

- ✓ ensure that the environmental Impact Assessment (EIA- report) has been adequately compiled for decision markers with the objectives to ensure the integration of environmental concern in to the project planning process.

To clearly anticipate the likely environmental risks and benefits and to implement risk averting and/or mitigating actions, potential environmental effects of the water supply & sanitation projects should be assessed against the background of the existing environmental conditions & environmental & social management plans & environmental & social monitoring plans should also be prepared.

The primary purpose of conducting an Environmental Impact Assessment is to ensure that the environmental effects of proposed activities are adequately and appropriately considered before decisions are taken. The Environmental Impact study should serve as a key aid in the decision-making process for relevant authorities by providing comprehensive information on the environmental consequences of the development.

Ethiopia has ratified quite a large number of water resources, natural resources and environmental protection related legislative frameworks and policies expected to implement and enforce the employment of various proclamations, regulations, policies and acts and to regulate the activities of the different executing parties as given in the Annex.

Accordingly, the appraising team need to investigate the documents submitted for appraisal and evaluate their compliance with objectives and principles of any relevant legislative frameworks and shall assess the potential impacts of the proposed project and should obtain such information listed below:

➤ **Water use**

- ◆ Has an assessment been made of the potential yield of the aquifer?
- ◆ Does the utility has the right to abstract water from the proposed source?
- ◆ Does the utility has the right to develop water supply system components on the proposed area?
- ◆ Does the proposed water source is/shall be protected?
- ◆ Does the proposed water supply amount meet minimum requirements set by national standards?
- ◆ Shall the water quality of the proposed water sources meet national and/or WHO's standards?
- ◆ Does the development plan guarantee for source and water quality protection and integrity and sustainability of systems?
- ◆ Does the intended project affect downstream water use?
- ◆ Could the project affect local underground water potential?
- ◆ Will the proposed surface water abstraction together with any existing abstractions be less than the reliable yield of the river basin?
- ◆ Will the proposed ground water abstraction together with any existing abstractions from the same aquifer be less than the long-term recharge?

➤ **Public Health and Sanitation**

- ◆ Does the utility have the right to develop sanitation facilities on the proposed area?
- ◆ Does the project plan consider long-term capacity of facilities, protection of water resources, safeguarding of public and environmental health, and integrity and sustainability of systems?
- ◆ Does design of sanitation facilities convenient for operation and maintenance and acceptable to users?
- ◆ Does the proposed project/component has proper operation and monitoring responsibility and control plan?
- ◆ Does the sanitation component pose any significant threat to water quality in local watercourses?
- ◆ Could the scheme cause significant pollution of local groundwater sources?
- ◆ If wastewater is to be discharged to a watercourse is there evidence that possible effects on the watercourse have been assessed in a rational way?
- ◆ Is the river basin vulnerable to pollution from existing or future planned activities within the catchment area?
- ◆ Is the aquifer vulnerable to pollution from existing or future planned activities in the source catchment?
- ◆ Are water treatment project proposals based on reliable information about raw water quality?
- ◆ Will potentially hazardous chemicals be used in the treatment process?
- ◆ Have provisions been made for the satisfactory treatment and disposal of residues from the treatment process?

➤ **Community Participation**

- ◆ Does the proposed project/component development consider the vulnerable group?
- ◆ Does the proposed project/component development consider the project area's social and cultural traditions?
- ◆ Will the project encourages of inter-visitation between villages in project area's

➤ **air pollution and nuisance noises**

- ◆ Will it have significant pollution on local air;
- ◆ Does it consider methods for air and noise pollution prevention and/or control?

➤ **vegetation cover & animal life**

- ◆ Will the project affect the natural balance of the biodiversity of the area?
- ◆ Will it have considerable negative impacts on the vegetation cover and animal life of the area?

- ◆ Does it consider methods for vegetation conservation, animal life protection and biodiversity balance sustainability?
- **land use**
 - ◆ Will it cause dislocation people and loss of properties?
 - ◆ Will the project affect the stability and cause erosion of the proposed project area's soil?
 - ◆ Will it cause significant land use patterns changes?
 - ◆ Are there any implementable mechanisms proposed to mitigate such negative impacts on people, soil, properties?
- **cultural heritage**
 - ◆ Could the intended project/component negatively affect historical or cultural important places, properties, etc?
 - ◆ Could the project/component has mitigation measures to protect historical or cultural places?
- **sustainability**
 - ◆ Are proposed project components according the structural /development /master plans of the local area?
 - ◆ Are there any methods to integrate the project with management of other utilities, road, house and land?

The team shall evaluate qualitatively impacts of the intended project on such issues listed above using a risk assessment methodology that can be applied by giving a rating in terms of likelihood and consequence. The likelihood and consequence ratings are detailed as follow:

Table 4-3 Qualitative likelihood measure

Qualitative measure of likelihood (how likely is it that this event/issue will occur after control strategies have been put in place)	
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances

Table 4-4 Qualitative consequences measure

Likelihood	Consequence				
	Minor	Moderate	High	Major	Critical
Highly Likely	Medium	High	High	Severe	Severe
Likely	Low	Medium	High	High	Severe
Possible	Low	Medium	Medium	High	Severe
Unlikely	Low	Low	Medium	High	High
Rare	Low	Low	Low	Medium	High
Qualitative measure of Consequences (how likely is it that this event/issue will occur after control strategies have been put in place)					
Minor	Minor incident of environmental damage that can be reversed				
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts				
High	Substantial instances of environmental damage that could be reversed with intensive efforts				
Major	Major loss of environmental amenity and real danger of continuing				
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage				

The likely and consequence ratings are then combined in a table as shown below and project related risk ratings of low, medium, high or severe are identified. Risks with 'low' risk ratings will usually require significantly less management than 'medium', 'high' and 'severe' risks. Based on such evaluation results, the appraising team shall make recommendations regarding project feasibility and amount of resources required to make risks averted or reduced.

Environmental management plans describe how an action might impact on the natural environment in which it occurs and set out clear commitments from the person taking the action on how those impacts will be avoided, minimized and managed so that they are environmentally acceptable.

With this background during the review of the environmental assessment of the proposed water project the following will be assessed in detail.

- ◆ Justify that the baseline study sections give an overall picture of present conditions and trends in the various sectors, and include ongoing and proposed development activities in the area as well as the quality of the data and completeness of the database used;
- ◆ Make sure that the project proposal is complete regarding all environmental aspects that may affect the project in the future and the actions to be taken to mitigate these risks;
- ◆ Check in the relevant section whether due consideration of probability has been given to impacts prediction and evaluation;

- ◆ Verify that the environmental assessment categorization made reflect the significance of the issues and the magnitude of the proposed measures;
- ◆ Check the project proposal is in compliance with national and regional government policies and legislation on social and environmental matters such as the protection cultural heritage and conservation areas and the disposal of solid and liquid wastes;
- ◆ Ensure the adequacy of and other environmental issues relevant to the proposed projects;
- ◆ Verify that the study document and its executive summary have properly presented the environmental issues of the project area, the type and intensity of their impacts, measures to mitigate the impacts and environmental management, monitoring and evaluation systems.
- ◆ Review that the conclusions are well drawn and recommendation are appropriate and are clearly stated for decision makers.

To deal with the above indicated activities the environmental team will study the project document and review other related documents, conduct field assessment, hold discussion with communities in and around the project area and all other concerned institutions and make analysis of the project planning process and environmental assessment procedures applied.

Standard appraisal template based on the WRDF's appraisal guidelines and other formats that go along with the national /international legal frameworks and guidelines is prepared for environmental appraisal. After reviewing the environmental assessment using the prepared appraisal template the team will produce environmental appraisal report with recommendations regarding the environmental aspect of the project. Environmental appraisal template is given in the Environmental Annex.

4.11 Commercial Appraisal

4.11.1 General

Appraising commercial issue is a vital component to verify the availability of necessary inputs and services and capacity required for the implementation of the intended project and its sustainability in the project operation life period. Functions, staff skills and experiences, adequacy for implementing the project and interaction between the project's staff responsible for the procurement and the local and international market system and relevant government agencies are important commercial issues for successful implementation of the project. Therefore, the capacity of a utility and availability of potential team members required to implement the project smoothly should be evaluated by the appraising team.

WRDF financed projects should be realistically prepared based on actual local and national conditions and in accordance with the Procurement Policies of the financing institutions. Therefore, a proposed project has to pass an appraisal for procurement aspects. This section describes objectives, mythologies and components of commercial appraisal.

4.11.2 Objective of Commercial Appraisal

Different procurement methods and project sizes require the procuring utility's specific levels of knowledge, skill, experience and resource requirements on strategic planning for commercial efforts, procurement processes, use of technology processes and tools on different aspects. Thence, the procuring utility should have adequate capability and capacity to undertake commercial and procurement efforts smoothly.

The objective of commercial appraisal is to verify whether the project document is compliant with relevant procurement policies and the procuring utility has adequate capability, expertise and experiences required to meet project objectives and requirements, and implement the project efficiently and effectively.

4.11.3 Methodology of Commercial Appraisal

Project Documents Review - The appraising team has to evaluate capacity and resources availability through key questions. Such evaluation questions shall include:

- ✓ Is there adequate resource within the client to manage the preferred delivery model?
- ✓ What is the level of oversight that the client is able to provide?
- ✓ What is the client's ability to manage a particular delivery model?
- ✓ What is the client's ability to develop or administer a new form of contract that has not been used previously?
- ✓ Does the client have experience in delivering the type of project envisaged?

In undertaking such rigorous evaluation, the appraisal team shall assess the following major issues.

- ✓ Confirm if the project study has adequately assessed the availability and price of goods and services locally.
- ✓ Check whether the capabilities of local manufacturing and construction industries are entirely assessed in the study.
- ✓ Verify if local regulations, policies and procedures governing procurement and importation are properly discussed in the study;
- ✓ Ensure if the organizational responsibilities for carrying out procurement activities are clearly defined in the study.
- ✓ Confirm whether the required works, goods and services for the proposed project and the arrangement for their procurement are adequately and properly listed out.
- ✓ Verify if the size, number and types of contracts to be awarded during implementation are properly estimated and categorized in the study.
- ✓ Check whether the provision of appropriate timetable for procurement is well developed and ensure the procurement procedures are clear and workable to effectively implement the intended project as per the designed period.

- ✓ Examine the developed procurement methods and recommend appropriate procedures with justification.
- ✓ Confirm whether the overall procurement plan remains efficient and free from any restrictions.
- ✓ Confirm whether the overall procurement method is in accordance with the financier (government and/or donor) rules and regulations or procedures

Key Informant Interview - The appraising team shall undertake key informant interview with water board, utility management and staff to exploit adequate information related with the proposed project and existing conditions.

Focus group and stakeholder's discussion - The team shall conduct focus group and stakeholder's consultation meeting with water user's forum and other potential stakeholders to get sufficient insight if the project is customer driven.

Personal observation - To verify the above secondary and primary information collection approaches, the appraisal team shall undertake field visit and access relevant information and make understanding of the actual issues.

4.11.4 Commercial Appraisal Components

Procurement documents - The appraising team should strictly evaluate the completeness of a procurement document. A tender document must include:

- A. Invitation to tender;
- B. Instructions to bidders;
- C. Procuring utility's requirements;
- D. Evaluation criteria;
- E. Terms and conditions of contract.

A. Invitation to bidders - The team should carefully study if invitations to bid are subject to be publicized for sufficient duration and circulated on public media in accordance with the applicable procurement guidelines. The invitation must be sufficiently detail enough and shall give information on:

- ✓ Name and address of the procuring utility
- ✓ Source of finance for intended project
- ✓ Type (s) of works, supplies, services invitation is made for
- ✓ Method (s) of and procedures for selection of competent bidders
- ✓ Proposed submission time, date and place
- ✓ Proposed opening, time, date and place
- ✓ Qualification requirements

B. Instructions to bidders - On the other hand, although instructions to procurements shall vary between different types of procurement contract, the appraising team

shall assess that if the instruction to bidders includes and clearly defines the followings

- methodology of evaluating all bids and the criteria for that evaluation;
- an indication that the bidders should include in their offer the type of item and the name of the producer, country of origin, model number and year of manufacture;
- the requirement that bidders have a Certificate of Registration in the suppliers list;
- the requirement bidders shall put their name, signatures and addresses in offers
- an indication that the bidders shall not alter or amend and that they shall not withdraw their tender after the opening ceremony;
- an indication that bidders who attempt to influence the tender shall be disqualified from that contract, future Government contracts and shall forfeit its bid security;
- the place and the time where any samples will be openly shown to bidders and an indication that the samples shall be returned to unsuccessful bidders;
- the time and place of delivery;
- the validity date of the tender;
- an indication of bid and performance securities required;
- the date and time of the closing deadline for bids and the opening of those bids;
- the requirement that bidders shall undertake to observe the country's laws against fraud and corruption (including bribery) as listed in the bidding documents during the procurement process.
- Is there potential for community disruption and opposition?
- What are the interfaces with adjacent assets, operation, works or supply contracts?
- Are there any existing commitments made to stakeholders and the public?

C. Procuring utility's requirements - The procuring utility's requirements for procurement is vital component of the project document to specify for the works, supplies and services, successfully define the scope (s) of works, supplies and services, to avoid or lessen likely disputes as well as efficiently and effectively complete the project. Therefore, the desired functional attributes, outputs and end uses of the works, goods or services that are to be procured, including those attributes relating to required technical capabilities, operating characteristics and performance standards should be clearly stipulated in a bid document.

The level of detail in the employer's requirements shall be very variable. However, the appraising team should assess whether the followings are vividly elaborated in the procuring utility's requirements.

Construction

- A project overview;
- Site information;
- Scope of works, supplies and/or services required;
- The form of contractor's proposals required;
- Procedures that will be adopted upon award of the contract;
- Performance specifications required from competing bidders;
- Existing design drawings (if they exist);
- Programme of works, supplies and/or services;
- Construction, manufacturing, modification, assembly, erection, installation, and/or delivery processes (including phasing);
- Procedures for inspection, testing, commissioning and handover;
- Responsibility for statutory approvals (such as planning permission and building regulations approvals);
- Construction, assembly, erection, installation and liabilities;
- Requirements for warranties;
- Workmanship types, quantities, expertise, experience, indemnity and other insurance requirements;
- Working machineries and equipment types, quantities, capacities, indemnity and other insurance requirements;
- Allocation of risk;
- Tender pricing document (or form for contract sum analysis);
- Pre-construction Information;
- Client policies (such as environmental or health and safety policies);
- Request for details of named or nominated sub-contractors;

Supply

- A project overview;
- Site information;
- Scope of supplies and/or services required;
- The form of contractor's proposals required;
- Procedures that will be adopted upon award of the contract;
- Performance specifications required from competing bidders;
- Existing design drawings (if they exist);
- Programme and construction, manufacturing, assembly, erection, installation, and/or delivery process (including phasing);

- Procedures for inspection, testing, commissioning and handover;
- Responsibility for statutory approvals (such as planning permission and building regulations approvals);
- Design, manufacturing and supply liabilities;
- Requirements for warranties.
- Professional expertise, experience, indemnity and other insurance requirements
- Allocation of risk.
- Requirements for samples and items for comment or approval.
- Tender pricing document (or form for contract sum analysis).
- Client policies (such as environmental or health and safety policies).
- Collaborative practices.
- Request for details of named or nominated sub-contractors.
- Any other additional requirements

Services (consultancy and non-consultancy services)

- A project overview;
- Site information;
- Scope of services required;
- The form of contractor's proposals required;
- Procedures that will be adopted upon award of the contract;
- Performance specifications required from the competing bidders;
- Existing study documents (if they exist);
- Programme and service provision process (including phasing);
- Procedures for inspection, testing, commissioning and handover;
- Responsibility for statutory approvals (such as planning permission and other approvals);
- Design liability;
- Requirements for warranties;
- Professional types, quantities, expertise, experience, indemnity and other insurance requirements;
- Tender pricing document (or form for contract sum analysis);
- Client policies (such as environmental or health and safety policies);
- Collaborative practices;
- Employer's information requirements for building information modelling;

- Request for details of named or nominated sub-contractors;
- Any other additional requirements

D. Evaluation Criteria - The evaluation criteria shall help to judge if bidders meet requirements of the procuring utility and ensure they are capable to provide the services efficiently and effectively and play pivotal role in bringing positively and sustainable impacts. Therefore, evaluation criteria for a procurement should be clearly defined and made available to all interested bidders. The criteria shall include:

1. Responsiveness to bid (acceptance of terms and conditions, Key personnel and machineries/equipment, financial security to bid, validity and completeness of the bid, financial security to bid, source of country of bidder or proposed supply, etc)
2. Compliance with legal and statutory requirements (trade and related registrations, etc)
3. Technical and functional issues and abilities (workmanship, machineries, equipment, general and specific experiences to the envisioned project, etc)
4. Ability to complete the works and/or deliver the services in required schedule (program of works, etc)
5. environmental and social management plan,

The appraising team need to assess such criteria set to evaluate competing bids for the intended project or its components.

E. Terms and conditions of the contract - Terms and conditions of contract are compulsory parts of a contract. The commercial appraisal team shall assess the bid documents for the general and particular conditions of a proposed contract. Key clauses such as inspection and acceptance procedures, delivery time, terms of payments for works/supplies/services, warranty requirements, liquidated damages, dispute and settlement/arbitration mechanisms and the force major should be clearly stipulated. The contract itself must include the following:

General - Definitions, laws governing the contract, currencies of contract, taxes and duties and other relevant regulations must be included in the document.

Commencement, completion, modification and termination - The appraising team shall evaluate the contract document if it intensely details effective, commencement, and completion dates. In addition, it should explain how modification and termination of the contract shall be effective. Force majeure issues should also be explained.

Authority and Responsibilities of the contractor/supplier/consultant - The team has to evaluate that the authority and responsibility of the contractor/supplier/consultant on contract issues such as liability, confidentiality of the project, insurance of works and services, prohibition of conflict of interest, bidders' actions requiring procuring utility's or his representative's approval, preparation of payment requests, workmanship requirements, and other matters are clearly stipulated.

Authority and Responsibilities of the procuring utility - Alike the authorities and responsibilities of the contractor/supplier/consultant, the appraising team should assess if the contract document clearly defines the authorities and responsibilities of the procuring utility or the employer. In executing such assessments, the team shall evaluate if issues related with delegation of management and contract administration, right of way, certification of payments, counterpart staff, and other related authorities and responsibilities are detail enough.

Settlement of Disputes - The amicable settlement, arbitration, rule of procedures, and other related issues need to be evaluated by the appraising team.

Procurement plans - All procurement activities are guided by the plan based on the requirements and available budget. A procurement plan presents procurement types and their predicted procurement budgets, procurement methods, and procurement dates. The thresholds for the Procurement Procedures for works, for goods, for consultancies and for non-consultancy service will be adopted from respective guidelines. Based on financiers' guidelines and procedures for threshold of procurements, bidding types shall be international competitive, limited international, national competitive, shopping, direct contracting and force account bidding types. Therefore, it facilitates smooth and timely tendering activities and is a good basis for project monitoring progress and performance. The template developed in a separate document can be used to prepare procurement plans particular to a project.

The procuring town shall follow the standard guidelines for the "Procurement of Goods, Works, consultancy and/or Non- Consulting Services" approved by the development partner the WRDF has committed contracted with for the finance. Procurement plans shall also follow the procedures set out in the Ethiopian Federal Government Procurement and Property Administration Proclamation no 649/2009 except for some provisions (which shall be clearly stated in the Financing Agreement) that are not consistent with Bank Guidelines.

The appraisal team shall assess if nature and size of the proposed tender, method of the procurement, the proposed budget and the procurement schedules are consistent and shall meet with the requirements of the procurement guidelines and standards of a financing institute.

4.12 Conclusion and Recommendation

The appraisal team draw a specific and clear conclusion from findings, assessment, observations and interview and develop a persuasive recommendation based on the assessed, verified, confirmed and reviewed documents, reports, annual plans, and other findings with respect to technical, legal, management and institution, financial, economical, social, environmental and commercial aspects of the appraisal components. Moreover, key issues that need due attention should also be vividly identified and listed in the appraisal document to thoroughly consider prior to the intended project implementation phase.