FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF WATER AND ENERGY

NATIONAL GUIDELINE

FOR

URBAN WATER UTILITIES CATEGORIZATION

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TABLE OF CONTENTS

TITLE **PAGE**

1. INTRODUCTION

1.1. GENERAL

Since the implementation of civil service reform program like Strategic Plan and Management (SPM), Business Process Reengineering (BPR) and Balanced Score Card (BSC), the performances of water supply utilities have been getting improved in terms of service delivery. However, these improvements are not similar among regions and utilities and sustainability of these improvements are still under question because of high staff turnover and inadequate professional staff. As per the water resources policy of the country, water supply utilities are expected to operate at full cost recovery, while none of them in the country has attained this level. This indicates that much has to be done in sustaining the started improvements registered and also bring them to a higher performance level uniformly across the nation. In this regard, national guidelines for performance measurement, organizational set up for different grades/categories of utilities including staffing plan, incentive mechanisms, and so on will help in bringing uniformity in performance and its measurement. Accordingly, this guideline deals with how utilities has to be categorized nationally so that similar levels of utilities can learn from each other in sharing their best practices and the way they solve challenges in day to day operation. The basic criteria in doing so is the extent and quality of the service they deliver, which mainly varies with the population (number of their customers), in which the number of servants to be determined by the number of customers. Therefore, the objective of categorizing urban water supply utilities nationally is to introduce similar organizational set up and management (to identify utilities to be administered under board and others) and it has no or less relationship with salary structure as salaries and incentives are negotiated between utility board and the utility management periodically based on their performance. Thus, this classification accepts the existing payment structure as it is but re considers utilities grades to prepare level ground for future performance measurement, fair competition among similar utility sizes, promotion, staffing and management set up among utilities at national level to avoid major discrepancies.

1.2. EXISTING TAXONOMY OF THE WATER UTILITIES

The experiences of the four major regions namely: Oromia, Amhara, SNNP and Tigray Regions indicate that the existing categorization of the water utilities are mainly based on number of population of the towns, the number of customers those who have house and/or yard connection, water supply system complexity, net income of the utility, the political and socio-economic significance of the towns. Of course, some regions use additional criteria like: the capacity of paying back the investment cost, service rendering efficiency, human resources composition, non revenue

water, the asset that the utility owned and water production and supply issues.

Although the existing taxonomies/classifications in different regions have many criteria in common, they are not uniform and vary from region to region. This indicates there is no national guideline as a country to categorize the utilities on the same ground. Therefore, this fact has demanded the development of categorization criteria as a country to be used as a guideline for all regions. Having these common categorization criteria will play a great role in Benchmarking, establishing similar organizational structures for similar category utilities, creating competitive environment among the utilities across the country.

1.3. OBJECTIVES

The main objective of this study is to develop criteria for the categorization of water utilities in Ethiopia at National level that helps measurements of the utilities performances based on similar ground. This in turn creates healthy competitive environment for better service delivery of the utilities.

The specific objectives of categorizing and grading of utilities are:

- To establish generic organizational structures to all grade of utilities at National level;
- To strengthen the utilities to run and manage their systems effectively and efficiently;
- To establish benchmarking and create healthier competition among the utilities to improve their performances;
- To identify and assign key performance indicators for measuring performances against the targets set;
- To develop a monitoring and evaluation system based on categorization and their performances;
- To establish rewarding system for best performed utilities at national level on similar criteria;

2. CRITERIA FOR CATEGORIZATION

2.1. KEY CRITERIA

In order to categorise the utilities for the aforementioned objectives, there are three main criteria proposed for the town utilities categorisation. These are:

1. Population of the Town;
2. Operational Performance of the Utility and
3. Political and Socio-economic Importance of the Town

2.2. DEFINITION AND PURPOSES OF THE CRITERIA

The definition and the purposes (the reasons why these criteria are selected) are as detailed here under.

2.2.1. POPULATION

The population considered for the criteria of utility categorization is the total population of the respective town and the adjacent community including the population of all the institutions (universities/colleges, military camps etc.) in the towns that the water utility is currently serving or strives to serve. These data of the population will be that of the census of the Central Statistics Authority (CSA) or the projection based on the CSA count and growth rate set by the same. Officially and timely updating of the population of the institutes in the town is also the main concern to be noted here.

The main reason or purpose to use population as one of the main criteria is that the work load, the level of responsibility and the required manpower of the utility are directly proportional with the number of population the utility serves or try to serve. On top of that the population number is also the indirect indicative of public infrastructures in that town like number of school, health and other social institutes in the town that the utility has to serve. Thus, it helps to evaluate the utility with the effort and the work loads. That means, the one with a bigger load will have higher responsibility and accordingly deserves higher merit point to be categorized in higher grade utility category.

2.2.2. OPERATIONAL PERFORMANCE OF THE UTILITY

Operational performance of the utility means the level of efficiency and effectiveness of the utility to serve the respective population using the available resources optimally in order to achieve the target set in potable water supply and sanitation facilities. The operational performance of the utility will be measured based on six selected key performance indicators (SKPI).

These selected key performance indicators are:

1. Access Addressed/ percentage of the community that get access to water supply;
2. Non-Revenue Water;
3. Cost Recovery;
4. Service Quality or availability of water supply;
5. System Complexity and
6. Customers Number Ratio.

   Each of these indicators has been given scoring weight of 100% and converts to 30% as criteria for categorization of utilities. The definition of each of the selected key performance indicators are as follows.

2.2.2.1. Access Addressed

Water supply access addressed is the estimate of the proportion (percentage) of the population that have got access to a minimum of 20 litres per capita per day (l/c/d) at 500 m radius of the water supply facility. As the merit point for the utility will be valued based on the percentage addressed, the higher the access addressed in the town, the higher the merit point will be given for the utility. This urges the utility to address (perform) more in order to get more points to fall in higher category.

2.2.2.2. Non-Revenue Water

Non-Revenue Water (NRW) is defined as the difference between the volume of water supplied and the volume of water billed/revenue. NRW represents water that has been produced and is 'lost' before it reaches the customer (either through leaks, theft or through legal usage for which no payment is made). This indicator captures not only physical losses but also commercial losses due to inefficient billing or illegal connections. Thus, high levels of NRW may indicate poor system management and poor commercial practices as well as inadequate network maintenance.

Whilst the unaccounted-for water is the part of NRW that remains after deducting unbilled but authorized consumption. For example such consumption is the water used for backwashing, flushing of pipes, for operators, fire fighting etc.

There is debate as to the most appropriate measure of non revenue water. A percentage approach can make utilities with high levels of consumption or compact networks; appear to be better performing than those with low levels of consumption or extensive networks. To capture these different perspectives we will report three measures - NRW expressed as a percentage, as volume lost per unit length of network per day and as volume lost per connection per day.
It is calculated and expressed in three different ways:

- The standard approach is to express NRW as a % by dividing the volume of water lost (volume of water produced minus volume of water sold) by the volume into produced;
- As a specific value in m^3/d per km length of the network – called infrastructure leakage Index;
- As a specific value m^3/connections/day.

The lesser the NRW indicates the better performance of the utility that automatically deserves better merit point allocated for this selected key performance indicator.

2.2.2.3 Cost Recovery

It is the ratio of the total annual revenue collections from the billed service and subsides to the total annual operational expenses (excluding depreciation and debt-related expenditures). This indicator measures the tariff cost recovery of the utility. This is a key measure of a utility's ability to cover its operating and maintenance costs (excluding interest and depreciation) from revenues, without reliance on external subsidies, and is generally perceived as an indication of a commercial approach to the provision of a public service.
This criterion concurred with the national water supply and sanitation policy that utilities gradually meet the principle of full cost recovery. Regarding to this principle, to meet the policy, it is required to accustom as criteria for utility categorization.

2.2.2.4 Service Quality/Service Availability in a Day

It is defined as average number of hours per day during which customers can access water supply services. It is expressed as Hrs/day.
Providing water supply 24-hour in a day and 7 days a week make the customer satisfy and linked with coverage. So, it is a very important criterion to categorizing water utilities. The maximum score will be offered to which utility delivered the service quality for 24 hours in a day.

Less-than-24-hour water supply exposes consumers to high health risk from contamination entering distribution pipes during vacuum conditions created when water is absent. There is evidence that more water is consumed with intermittent supply because people leave their taps open to fill storage, which can often then overflow to waste. The poor suffer the most as they cannot afford the dual system of individual storage and pumping that provides 24-hour supply to the home of the richer segment of the population.

2.2.2.5 System Complexity

It can be defined as the sophistication of the multi input water sources to that of a single water source. A complex system demands high human resources, investments, operation and maintenance activities. It lays higher load on the operators and the management than non-complex system. Thus, it has been taken as one of the criteria to categorize and grading of the utility.

2.2.2.6 Customer Number Ratio

Customer number is defined as the households, institutions, commercial and industries that have direct agreement with the water utilities to get the service of supply of potable water in the responsible area of the respective towns. The customers can be distinguished as domestic and

non-domestic. Further, domestic customers disintegrated as house connected, yard connected and shared yard connected. While the non-domestic customers can be categorized as institutional, commercial and industrial. It is expressed the total customer number divided by the total households in the responsible town areas. For simplicity, the customer number ration will be measured as total customer number to total household ratio.

Generally the operational performance of the utility is selected as one of the criteria for the categorization town water utility in order to encourage the high performer water utilities and bring the moderate and low performing ones to a better performing level. In other word it is to give high merit point for high performer to fall in higher grade utility.

2.2.3. TOWN'S POLITICAL AND SOCIO-ECONOMIC IMPORTANCE

Town's political and socio-economic significance is the town's strategically importance for good governance, its social and economical benefit of the respective region as well as the country. It can be described as Federal Capital, Federal town, Region Capital, Zone Capital, Towns under Municipality, Woreda Capital and non administrative towns. Town's political and socio-economic significance has a direct relation with the investment, social infrastructures in the town, development and industrialization that in turn related with the high water demand. In sight of this, strong utility with better status is required for the respective management of the water schemes designed to satisfy the demand in such towns. Therefore, the political and socio-economic importance/significance of the towns is considered as one of the criteria for the categorization of town's water utility grade.

2.3. MERIT POINTS ALLOCATION FOR THE CRITERIA

The merit points for the key criteria set are allocated based on the level of importance of the criteria for better categorization of the utilities. Accordingly, the following merit points are allocated for the key criteria.

I.N	Key Criteria	Allocated Merit Point
1	Population	70%
2	Performance of Utility	30%
3	Town's Political and Socio-economic Significance	10%
	Total	100%

2.4. SCORING OF THE MERIT POINTS

Scoring of the merit points within the criterion is to be carried out in the following manner.

2.4.1. Population

In setting the scoring system of the merit points of population, the prevailing number of populations of the towns in the country and the minimum number of population for urban population (as set by the Ministry of Construction and Urban Development) are taken into consideration. In addition, some villages with population less than 2000 persons those are politically decided to be considered as towns (mostly in emerging regions) are also taken into account.

I. N	**Population of the town**	**Merit Point (%)**
1	≥ 500,000	60
2	200,000 -499,999,	55
3	100,000 -199,999	45
4	50,000-99,999	30
5	20,000-49999	20
6	8000-19999	10
7	2000-7999	5
8	Politically decided town with population <2000	4

N.B.
The merit point allocation here (for the population) has considered the prevailing conditions of the towns.

2.4.2. OPERATIONAL PERFORMANCE OF THE UTILITIES

The compressive operational performance of the utilities expressed in aforementioned six selected key performance indicators. These selected key performance indicators have allocated weighting score out of 100% then converted into 30% in overall score for categorization of utility.

The detail scoring is the following:

Table – Weight Score for the Selected Key performance Indicators

1	**Consumer Satisfaction**	**50%**
	Access Coverage	20%
	Service Quality/Water Availability	20%
	Customer number	10%
2	**Water Resources Management**	**30%**
	NRW	20%
	System Complexity	10%
3	**Financial Resource Management**	**20%**
	Cost Recovery	20%
	Total	**100%**

Table --Summary of weighting criteria for selected KPIs

No	Categorization Criteria	Individual weight (%)
1	**Access Coverage**	**20%**
1.1	100%	20%
1.2	80% - 99.9%	15%
1.3	60% - 79.9%	10%
1.4	50% - 59.9%	5%
1.5	< 50%	0%
2	**Cost Recovery**	**20%**
2.1	> 1.40	20%
2.2	1.3 - 1.4	10%
2.3	1.01 - 1.29	5%
2.4	< 1.0	0%
3	**Non-Revenue Water**	**20%**
3.1	< 20%	20%
3.2	20% - 25%	15%
3.3	25.1% - 30%	10%
3.4	30.1% - 35%	5%
3.5	>35%	2%
4	**Service Quality/Service Availability in a Day**	**20%**
4.1	20-24 hours	20%
4.2	16 - 19.9 hours	15%

4.3	12 - 15.9 hours	10%
4.4	8 - 11.9 hours	5%
4.5	< 8 hours	0%
5	**System Complexity**	**10%**
5.1	River/Dam Intake + WTP+ BHs	10%
5.2	River/Dam Intake + WTP	8%
5.3	BHs only	7%
5.4	Spring - Pumping	6%
5.5	Spring- Gravity	5%
6	**Customer Number/ Total HH ratio**	**10%**
6.1	≥ 90%	10%
6.2	75% - 89.9%	8%
6.3	50% - 74.9%	6%
6.4	20% - 49.9%	5%
6.5	< 20%	4%
	Total Weight	**100%**

Then the scoring of the merit points for the operational performance of the water utility is given by dividing the performance level into high performer, moderate performer and low performer utility based on their score of the selected key performance indicators.

I.N	**Performance Level of Utility**	**Point (%)**
1	High Performer (with SKPI score ≥85%)	30
2	Moderate Performer (with SKPI score 50-84.99%)	20
3	Low Performer (with SKPI score <50%)	10

2.4.3. TOWN'S POLITICAL AND SOCIO-ECONOMIC IMPORTANCE

The scoring of the merit point for the town's political and socio-economic significance is made by classifying the towns as set in the following table.

I.N	**Towns**	**Merit Point (%)**
1	Federal Government capital	10
2	Federal city	9
3	Regional Capital	8
4	Zone Capital	6
5	Towns under municipality	6
6	Woreda Capitals	5
7	Non-administrative towns	3

3. GRADING OF UTILITIES

I. N	Total Score (%)	Grade	Management Setup	Remark
1	≥90	Special	Board	
2	80-89.9	1	Board	
3	60-79.9	2	Board	
4	40-59.9	3	Board	
5	20-39.9	4	Board	
6	< 20	5	Board	

Note that:

- According to this manual it is impossible to have an organizational set up under or over the criteria set in this guideline.
- Towns with urban category should operate on the basis of full cost recovery
- Towns under categories of grade 1, 2, 3, should repay any investment budget allotted to them from any source
- Towns with category 4, 5 can qualify for grant if the fund is available.

4. ROLE OF THE REGULATORY BODIES

In order to realize the objective of the categorization of the utilities on the same ground, all the respective regulatory bodies should have to play their own roles. Accordingly, the role of water board, the role of the regional water bureaus and that of the Ministry of Water and Energy are set as briefly indicated here under.

4.1. ROLE OF TOWN WATER BOARD

The town water board is the closest regulatory body to the utility. Thus, the role of this board is significant and critically important for the practicality and appropriately categorization of the respective utility. The water board should play a role in evaluating the utility on proper data handling, financial management (monthly and/or yearly incomes and expenses, appropriateness of the expenses), water resources management (how the utility handles the non revenue water and keep the water sources from pollutions), approval of water tariff, auditing, fairness in distribution of the available water among the respective users, how the utility handles the claim of the customers and evaluate the customer satisfaction level on regular time basis. The town water board should also monitor and take action on the professional mix of the man power of the utility against the organizational structure set and the recommended staffs. The board should also develop devices how to control/fight the bureaucratic procedures and rent seeking mentality in the utilities. Developing utility specific rewarding system within the framework of the system developed across the country to encourage best performers is

also among the roles that the board can play in bringing the goal of this guideline.

4.2. ROLE OF REGIONAL WATER BUREAUS

The regional water bureaus should also play their own role in providing technical assistances for the utilities via trainings, discussion panels, and preparation of experience sharing forums within and out of the region. Establishing and strengthening utility associations and assisting in developing their bylaws, evaluating customer satisfaction, creating healthier competitive environment among the utilities and developing rewarding system for the best performing ones should also one of the roles expected from the regional bureaus. Introducing the utilities with modern cost and time effective technologies, developing database of the utilities, updating and dissemination of the data for the benefit of the utility or the respective community, developing proposal and assessing financial or technical assistances particularly for incapable utilities are the role to be played by the regional bureaus. Regular and refresher training for the water boards and capacity building works should be carried out by the regional water bureaus for the sustainability of the water and sanitation schemes run by the utilities. Enforcing the national policies, rules and regulations, developing region specific rules and regulation for the utility and closely monitoring the respective outcomes is also what to be done by the regional bureaus.

4.3. ROLE OF MINISTRY OF WATER AND ENERGY

The Ministry of Water and Energy shall also play its role by developing country wide policy and strategies that the utilities should follow. Developing and updating water supply, sanitation and hygiene guidelines, manuals, standards, undertaking researches and dissemination of the research outputs for the benefit of the communities are also expected from the Ministry Water and Energy. Developing national database of utilities, creating country wide competitive environment, encouraging innovators, developing rewarding system, awarding best performers, playing leading role in introducing latest technologies, working on alternative energy sources for the utilities are among the roles to be played by the ministry. Providing financial, logistic and technical support for drought prone area utilities and utilities in the emerging regions are also the role of the Ministry. Coordination of loan via the water resources development fund office is also among the roles to be played by the Ministry.

5. CATEGORIES/GRADES OF UTILITIES

List of some sample Utilities with their Grades are attached based on the above criteria with the following considerations.

Considerations:

- ✖ All the utilities are with moderate operational performances
- ✖ Taking CSA population of 2011;
- ✖ No institutional populations (universities, colleges, military camps etc) and adjucent rural communities using water from the town water utilities are considered;

Note:

This sample list of utilities is only for the purpose of practicing the procedure as the actual performances of the utilities are not yet known (the bench marking and the performance indicator project underway is finalized).