

APPENDIX. A-16  
SUBMITTED AND APPROVED MBP  
AND HRDP DOCUMENTS





# Lusaka Water and Sewerage Company Ltd.

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 Lusaka, Zambia

## THE COMPANIES ACT NO. 10 OF 2017 OF THE LAWS OF ZAMBIA

### LUSAKA WATER AND SEWERAGE COMPANY LIMITED


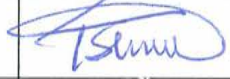


### WRITTEN RESOLUTION OF THE BOARD OF DIRECTORS

We, the undersigned, being the eligible members of the LWSC Board and being entitled to attend and vote at meetings of the Company, pursuant to Section 77 of the Companies Act No. 10 of 2017 of the Laws of the Republic of Zambia, hereby **AGREE** and **RESOLVE** the following to take effect as if it had been passed as a special resolution of the Company at a meeting duly convened and held:

That the Board **APPROVES** the implementation of the Midterm Business Plan and Human Resource Development Plan developed with support from the Japanese International Cooperation Agency (JICA) as per attached submission:

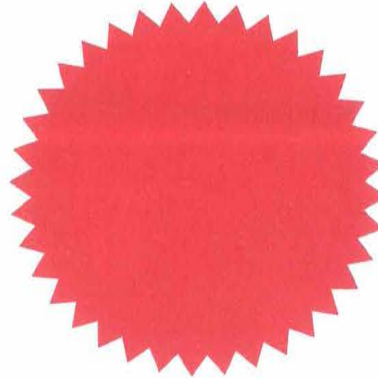
#### DIRECTORS

TITLE	NAME	SIGNATURE
Chairperson	Captain Benny Muyobela	<i>[Signature]</i> 24/1/19
Vice Chairperson	Mr Chapa Chikamba	<i>[Signature]</i>
Member	Ms. Mwaka Ngoma	<i>[Signature]</i> 28/01/19
Member	Ms. Mumbi Chocho	<i>[Signature]</i> 28/01/19
Member	Ms. Mirriam Chiyaba	<i>[Signature]</i>
Member	Mr Miles Sampa	<i>[Signature]</i> 31/01/19
Member	Mr Jacob Mkandawire	<i>[Signature]</i> Agreed
Member	Mr Chilufya Sampa	<i>[Signature]</i> 21/1/19
Member	Eng. Oswell Katooka	<i>[Signature]</i> 31/1/19

Member	Eng. Ngenda Situmbeko	
Member	Mr. Thomas Mabwe	
Member	Ms. Claire Limbwambwa	
Member	Eng. Jonathan Kampata	

Dated this 31<sup>st</sup> day of January 2019.

Duly Certified:  \_\_\_\_\_  
**Company Secretary**





**Table1 Prioritizing challenges, Goal and Proposed projects on PIs for Mid-term Business Plan of LWSC**

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
P-1	P10: NRW ratio	NRW ratio is 36% - 50%.	1	NRW will be reduced from 46% (current) to 30%.	(1) NRW Reduction Project (1-1) Establishment of District Metered Area (DMA)  (1-2) Replacement of deteriorated pipes  (1-3) Leak management  (1-4) Installation of water meter  (1-5) Implementation of awareness-raising activity.	(1) (1-1) -Establishment of 30 DMA -Procurement of water flow meter -Installation of sluice valve (1-2) -Replacement of deteriorated pipes for 200km (1-3) -Leak detection and repairing (1-4) -Installation of 25,000 water meter (1-5) -Implementation of PR activity for water saving	MCC has the project for NRW reduction  It is necessary to consider the demarcation with MCC.
P-2	P11: Customer meters	Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	1	Installation ratio of customer meter will be increased from 67% (current) to 100%.			
P-3	P19: Awareness-raising on NRW reduction, collection of water charges, etc.	A few effective awareness-raising activities have been implemented.	1	A system for effective awareness-raising activities is established.			

**Table 2 Prioritizing challenges, Goal and Proposed Projects for Human Resource Development Plan of LWSC**

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
M-1	M13: Self-learning Support System	There is no a self-learning system.	2	Training by utilizing a self-learning system is conducted.	(2) Self-learning system	(2) -Establishment of self-learning system -Training how to utilize the self- learning system -Procurement of personal computer	

**Project Schedule for Five Years (2019-2023) and Annual Cost in LWSC**

As of 31<sup>st</sup> July 2018


Project	2019	2020	2021	2022	2023	Sub total (ZMW)
<b>A. Midterm Business Plan</b>						
<b>(1) NRW Reduction Project: Established of 30 DMAs</b>						
(1-1) Team Leader (60MM)	6,760,000	6,760,000	6,760,000	6,760,000	6,760,000	33,800,000
(1-2) Distribution Management (5MM)	2,500,000					2,500,000
(1-3) Construction Supervision (55MM)	2,500,000	6,250,000	6,250,000	6,250,000	6,250,000	27,500,000
(1-4) Procurement of portable flow meter (1 unit)	70,000					70,000
(1-5) Installation of boundary valves diameter 200mm to 300mm (320 units)	1,920,000	1,920,000	1,920,000	1,920,000	1,920,000	9,600,000
(1-6) Replacement of deteriorated pipes (200km)	48,800,000	48,800,000	48,800,000	48,800,000	48,800,000	244,000,000
(1-7) Installation of customer meters (25,000 units)	11,500,000	11,500,000	11,500,000	11,500,000	11,500,000	57,500,000
(1-8) Leakage management )(10 MM)	1,470,000	1,470,000	1,960,000			4,900,000
(1-9) PR activity (15MM)	1,230,000	1,230,000	1,230,000	1,230,000	1,230,000	6,150,000
<b>Sub total (ZMW)</b>	<b>76,750,000</b>	<b>77,930,000</b>	<b>78,420,000</b>	<b>76,460,000</b>	<b>76,460,000</b>	<b>386,020,000</b>
<b>B. Human Resource Development Plan</b>						
<b>(2) Establishment of self-learning system</b>						
(2-1) Project Manager (2MM)						1,000,000
(2-2) Establishment of the system (1.5MM)		750,000				750,000
(2-3) Procurement of PC (20 units)		100,000				100,000
<b>Sub total (ZMW)</b>		<b>1,850,000</b>				<b>1,850,000</b>
<b>Total (ZMW)</b>	<b>76,750,000</b>	<b>79,780,000</b>	<b>78,420,000</b>	<b>76,460,000</b>	<b>76,460,000</b>	<b>387,870,000</b>
<b>Funding Level (ZMW)</b>	<b>Annually 465,000,000 in the past five year (2012-2016)</b>					




**15.0 APPROVAL**

This Mid Term Business Plan and Human Resources Development Plan is hereby approved

this 17<sup>th</sup> day of December, 2018.

  
Patricia M. M. Mulasikuwanda

**Board Chairperson**

  
Charles Mwale

**Company Secretary**



# WESTERN WATER AND SEWERAGE COMPANY LIMITED

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# Mid-Term Business Plan & Human Resource Development Plan 2019 - 2023

DECEMBER 2018

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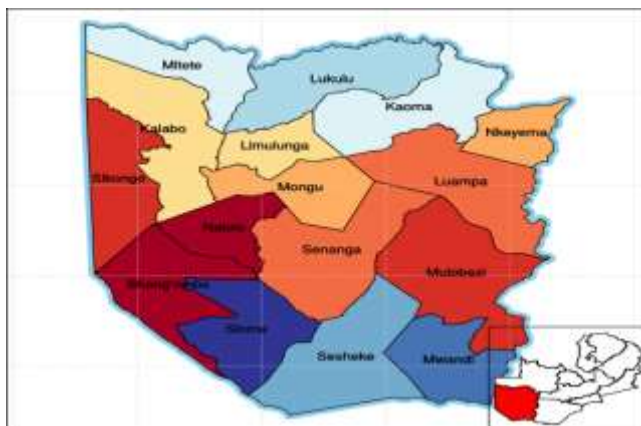
## 1.0 Abbreviations

AfDB	-	African Development Bank
BoD	-	Board of Directors
DANIDA	-	Danish International Development Plan
DMAs	-	District Metered Areas
DMRS	-	Digital Meter Reading System
DTF	-	Devolution Trust Fund
GIZ	-	Germany Technical Cooperation
GRZ	-	Government of the Republic of Zambia
HRDP	-	Human Resource Development Plan
JICA	-	Japan International Cooperation Agency
KfW	-	Kreditanstalt für Wiederaufbau
LA	-	Local Authority
MD	_	Managing Director for Western Water and Sewerage Company Ltd
MDP	-	Midterm Business Plan
MWDSEP	-	Ministry of Water Development, Sanitation and Environmental Protection
NRW	-	Non-Revenue Water
NRWS	-	National Rural Water and Supply
NWASCO	-	National Water Supply and Sanitation Council
WARMA	-	Water Resource Management Authority
WASAZA	-	Water Sanitation Association of Zambia
WWSC	-	Western Water and Sewerage Company Limited
YEO	-	Yachiyo Engineering Company Limited
ZESCO	-	Zambia Electricity Supply Cooperation Limited

## 2.0 INTRODUCTION

WWSC was formed by the Ministry of Local Government and Housing through the statutory instrument no. 92 of 2000, under the Water Sector reforms of 1994 and under Cap 388 of the Laws of Zambia which saw the Local Authorities devolve the function of water supply and sanitation to commercial utilities for purposes of fulfilling the seven sector principles in the National Water Policy. Western Water and Sewerage Company operates in thirteen (13) districts/stations areas namely: Mongu, Kaoma, Senanga, Sesheke, Lukulu, Kalabo, Limulunga, Namushakende, Mouyo, Mwandia, Katima, Mandanga and Shangombo. The company is regulated by the National water Supply and Sanitation Council (NWASCO) and operates in Western Province under the legal framework as outlined in the Water Supply and Sanitation Act no. 28 of 1997.

In 2017, the company commenced the process of developing the Mid Term Business Plan and the Human Resource Development Plan. The Mid-term Development Plan and the Human Resources Development Plan was developed with the help of JICA, the Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP) and the National Water Supply and Sanitation Council (NWASCO). The Company will use this document to lobby for funding from donors to reduce Non-Revenue Water (NRW) from 54% to 40% and also build capacity of the employees in various aspects. The Plan will run for a period of five (5) years and has a total budget of Two hundred and Sixty One Million, Seven Hundred and Seventy Thousand kwacha (**ZMW 261,707,000**)



### **3.0 COMPANY BACKGROUND**

The geography of Western Province is dominated by the Barotse floodplain of the Zambezi River, extending from the confluence of the Zambezi with the Lungwebungu and Kabompo Rivers at the northern border of the province, to a point below Senanga and above the Ngonye Falls in the south. This floodplain is inundated from December to June, and is fed by other rivers with their own floodplains, and serves as a vast reservoir storing the waters of the Zambezi. The seasonal flooding is very important to agriculture in the province, providing natural irrigation for the grasslands on which huge herds of cattle depend, and bringing water to the settlements along the edges of the plain. Away from the Zambezi and its tributaries, much of the landscape is a gently undulating series of fossil sand dunes from a previous extension of the Kalahari Desert, with numerous lagoons, pans and seasonal swamps in hollows between the dunes.

Western Water and Sewerage Company (WWSC) was registered on 1<sup>st</sup> March 2000 through statutory instrument no. 92 of 2000, and since inception it has been operating dilapidated water supply and sewerage assets in Mongu, Kaoma, Lukulu, Kalabo, Senanga, Limulunga, Namushakende and Sesheke. Western Water and Sewerage Company managed to extend its services to Shangombo, Mwandu, Katima, Mouyo and Mandanga as sub-centres. The company is earmarked, through an Annual General Meeting (A.G.M.) to have new districts of Nkeyema, Sioma, Mulobezi, Sikongo, Mitete, Limulunga, Luampa, Mwandu and Nalolo incorporated in its shareholding structure after an approval by its Board of Directors.

Despite the fact that Western Water and Sewerage Company Limited has been in existence for over 18 years, the company has had perpetual performance-related challenges. The company has not made significant impact in serving the population in its domain. Western province is still beset with numerous water shortages and sewerage deficiencies in all district towns.

In 2017 the national average for urban water service coverage was at 84.3%, Western Water and Sewerage Company recorded 62.9% service coverage. The company's NRW is still high above 50%. Other Key Performance Indicators include Water Quality Compliance, Metering

Ratio, Sanitation Coverage, Hours of Supply, Staff Costs in relation to Billing and Collections, Revenue Collection Efficiency, and O& M Cost Coverage by Collection.

Western Water and Sewerage Company has a ten (10) member Board of Directors which is responsible to the shareholders who are the Local Authorities in Western Province. The Board of Directors provides corporate governance through Board Meetings and Committee meetings. Currently there are three committees that meet quarterly namely: Finance Administration and Human Resource Committee, Technical Committee and Audit and Risk Management (ARM) Committee.

The water supply infrastructure is in a dilapidated state as no major rehabilitation projects have been implemented since 1984 when NORAD overhauled all the urban water schemes in Western Province. The inadequate investment in infrastructure over this period has resulted in acute poor service delivery. In 2017, Western Water and Sewerage Company produced 6.8 million cubic meters of water. Despite this relatively high production figure, the service coverage is low due to the high level of non-revenue water of 52% and an overgrown population whose demand for water and sewerage services far outstrip the worn out capacities in the water infrastructure. The dilapidated network leads to high operational costs especially energy and repair/replacement costs.

## 4.0 GLOSSARY

**Commercial Audit:** In the context of NRW reduction programmes, commercial audit refers to the detailed survey of the water utility customers in a specified zone or area. The survey will obtain relevant customer data, water usage and check the status of water services, including function of water meters. The audits can be used to provide advice and guidance to customers on water security and the practice of good water use, limiting waste.

**District Metered Area:** A district metered area (DMA) is a supply area that is hydraulically isolated in terms of water inflows and outflows, enabling the estimation of water loss within the DMA. DMAs are usually smaller sub-systems within larger operating zones.

**Field Audit:** These are field surveys in selected parts of the water utility service area to obtain data and information on water delivery status. This includes assessing surface leaks, the status of delivery network and identifying illegal connections.

**Infrastructure Leakage Index (ILI):** This is an internationally accepted indicator of physical losses developed by the International Water Association, one that takes into account how the network is managed. It is the ratio of the current annual volume of physical losses to minimum achievable annual physical losses. The ILI is computed via the water balance analysis and can be used as a target KPI for NRW management. The lower the ILI the better, and utilities aspire to reduce ILI to under 10 and preferably under 5.

**Natural Rate of Rise:** There is a permanent tendency in all water distribution networks for physical losses (leakage) to increase with time. The rate of increase will normally be fairly consistent unless the network deteriorates rapidly due to a change in climate or the network reaching the end of its life. This rate is called 'the Natural Rate of Rise' (NRR). Unless the level of resources for the detection and particularly the repair of leaks is sufficient to save an amount of water greater than that lost due to NRR, leakage does not decrease even when resources are employed to locate and repair leaks.

**Water Balance:** Water balance is the analysis undertaken to compute water losses within a defined service area or zone. This is usually done based on measured water flow data, billed consumption and estimates of commercial losses. It is the method of estimating leakage recommended by the International Water Association (IWA) and is used throughout the world.

## **5.0 Executive Summary**

Western Water and Sewerage Management developed a strategic plan to guide the direction of the company in the five (5)-year period from 2016 - 2020. This plan will direct the company to overcome some of the major challenges it has faced in the past. At a time when the national average for urban water service coverage was 84%, the CU only managed 62.9% coverage. At a time when the national urban sanitation coverage was 60% western water registered only 39%. The company is not 100% metered. Its cost coverage is way below 70%. It has consistently fallen among the three least performing water companies in the country in the past few years. The strategic plan was therefore a desperate bid to change the company's fortunes starting with the first five years, 2016-2020, with the aim of improving performance.

This Mid-Term Business Plan and the Human Resource Development Plan has been developed as a resource for Western Water and Sewerage Company to support the implementation of Non-Revenue Water (NRW) reduction projects and capacity development for employees in maintenance of mechanical and electrical facilities of water plants, pump and flow meters, communication & negotiation skills and information management. Before detailing the components involved, it is important to understand why Non – Revenue Water (NRW) reduction is a critical step towards the financial viability of Western Water and Sewerage Company, and how it can contribute to improved service provision.

Over the years, Western Water and Sewerage Company has been losing high level of water losses which has now become one of the major challenges facing the Company. These losses are in form of a) physical losses, due to leaks and theft of water from the system; and b) commercial losses, due to, water that is unbilled or incorrectly billed because of poor metering or poor customer records as well as unpaid bills.

NRW has posed a very serious negative effect on Western Water and Sewerage Company's vision which is "To become financially viable and be the most customer centred water and sewerage utility company in Zambia" through lost revenue, lost water resources, and increased operational costs. High levels of NRW reduce the company's capacity to fund necessary expansion of services, especially for low-income consumers in peri-urban and low income

areas. It is for this reason that Western Water and Sewerage Company has strategically adopted reduction of NRW as a key performance indicator for the next five years and beyond.

In order for Western Water and Sewerage Company to attain its vision of becoming financially viable and being the most customer centred water and sewerage utility company in Zambia in the next three to five years, efforts indeed must be channelled towards reducing the Non-Revenue Water from the current 54% to 40% It is in this manner that Western Water and Sewerage Company can contribute to achieving that which has been set out in the 7<sup>th</sup> National Development Plan and the country's vision 2030.

The capacity of Human Resources at Western Water and Sewerage Company has also contributed to the many challenges the company is currently experiencing in that there has been no deliberate efforts to build the capacity of the human resource due to budget constraints. The goal of the Human Resource Development plan is to ensure the following;

- Human Resource development plan is prepared for engineers/technicians who can formulate plans to raise the surplus capacity to maximum design capacity of less than 10%.
- Mechanical and Electrical engineers/technicians are trained to install major mechanical and electrical equipment that are malfunctioning.
- Executive Officers, Managers and Supervisors are trained to make them understand the necessity of negotiation and coordination with staff and or customers.
- Employees are trained on how to collect, develop and utilize data for the water supply services.



## Vision

*“To become a financially viable and be the most customer centered water and sewerage utility company in Zambia”*

## Mission Statement

*“To effectively and efficiently provide adequate and potable water supply and sewerage services to all the population in the urban and peri-urban areas of Western Province of Zambia”*

## Core Values

Western Water and Sewerage Company shall uphold the following key corporate values:

- **Integrity and honesty:** The company shall endeavor to uphold honesty, honor and reliability and to be accountable in all its dealings between itself, its customers, suppliers and stakeholders
- **Act with Transparency and communicate openly:** The company shall promote transparency by ensuring that laid down procedures are followed and it shall improve communication at all levels in its operations.
- **Innovation:** Realizing that Western Water and Sewerage Company operates in a constantly changing environment, it shall encourage innovation that contributes to improved performance. Western Water and Sewerage Company shall be committed to results and encourage initiative in its dealings. It shall endeavor to recognize innovation.
- **Team spirit and respect:** Western Water and Sewerage Company shall endeavor to promote team work as a way of enhancing participation, unity of purpose and efficiency

- **Customer focus and value:** Its customers are the main reason for its existence; it shall endeavor to do everything to ensure service to its customers takes precedence.
- **Be professional:** The organization shall always conduct itself in a professional manner
- **Uphold confidentiality:** Western Water and Sewerage Company shall always uphold corporate confidentiality and act in appropriate way
- **Be gender sensitive:** Western Water and Sewerage Company shall always promote gender balance in all its day to day dealings.
- **Be environmentally friendly:** Western Water and Sewerage Company shall strive hard to create an environment which is friendly to its customers and other stakeholders in all its dealings
- **Have Zero tolerance to fraud and corruption:** Fraud and corruption are evil and shall always be avoided.
- **Keep time:** Western Water and Sewerage Company shall always keep time knowing that time wasted can never be recovered.
- **Meet deadlines:** In its quest to exceed customers' service expectations, Western Water and Sewerage Company shall try hard to meet deadlines at all cost.

**Motto:**

*“Exceeding Our Customer’s Service Expectations”*

## **6.0 ENVIRONMENTAL SCAN**

The environment in which WWSC is operating is analysed in order to understand the challenges and opportunities existing at the time of formulating this Business Plan. The process of planning utilizes two tools, namely PEST (Political, Environmental, Socio-economic and Technical) and SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis.

### **7.0 PEST Analysis**

The pest analysis has been used to scan the environment in which WWSC is operating in at the time of formulating this strategic plan.

#### **Political**

- ❖ Privatisation Policy
- ❖ Promotion of public – private cooperation to develop Infrastructure.
- ❖ The Sixth National Development plan is in existence
- ❖ Stepped up efforts to meet Millennium Development Goals (No. 7)
- ❖ The Government has pledged to increase investment in the Water Supply and Sanitation sector, and has called for accelerated improvement in services
- ❖ Formation of the Ministry of water Development, Sanitation and Environmental Protection can influence WWSC business environment.

#### **Environmental**

- ❖ Climate change influencing unpredictable changes to climate e.g. Floods and droughts
- ❖ Western Province is endowed with abundance of ground water
- ❖ Changes in water quality, both surface and ground water
- ❖ Increase risk of pollution of ground Water from Pit latrine and poorly constructed septic tanks in urban and peri-urban areas.
- ❖ Water borne diseases remains a challenge in Western Province
- ❖ Drying up of water sources
- ❖ Tougher environmental Legislation
- ❖ Encroachment on urban and peri-urban water supply systems.

## Socio Economic

- ❖ High poverty levels in Western Province
- ❖ Increase/sprouting of peri-urban areas
- ❖ High level of unemployment in Western province
- ❖ Increased economic activity in the informal sector supported by favourable economic policies
- ❖ Single digit inflation rate
- ❖ Inadequate level of social service may discourage skilled staff coming to work in Western Province
- ❖ Western province has a high HIV/AIDS Prevalence rate. This can affect workforce and ability of families to pay for water.
- ❖ The long distance from Lusaka and poor inter district roads network increases cost of doing business.

## Technical

- ❖ Availability of modern technology in water sector for improved delivery of services. Geographical Information System (GIS), ICT, Billing and Accounting Packages, Bulk SMS etc.
- ❖ Availability of technical standards in water sector and best practices in the water sector; International Water Association (IWA) guidelines on reduction of non-revenue water, NWASCO regulatory guidelines

### 8.0 SWOT Analysis

The following are the results of the SWOT analysis carried out during the Strategic Planning Workshop:-

<b>STRENGTH</b>	<b>WEAKNESSES</b>
✓ Experienced artisans in the Company	✓ Low metering ratio

<ul style="list-style-type: none"> <li>✓ Well Qualified Top Management Staff</li> <li>✓ Monopoly of water business in Western Province.</li> <li>✓ Improved ICT Infrastructure exists and in operational; Computerized billing system and Accounting System, LAN.</li> <li>✓ Existing water supply network</li> <li>✓ Existing adequate water sources</li> <li>✓ High collection efficiency and willingness of people to pay their bills.</li> <li>✓ Functional Financial Management system which can enable the company access private funding.</li> <li>✓ Rehabilitation of water works in Mongu, Sesheke, Senanga and Kaoma under the ADB Project</li> <li>✓ Ongoing metering Project in all the districts</li> <li>✓ Commercial Services Department with staff skilled in customer service.</li> <li>✓ Strong Human Resource and Administration Department.</li> <li>✓ Improved governance: business code of ethics, board charter</li> </ul>	<ul style="list-style-type: none"> <li>✓ Huge amounts owing to ZRA and to ZESCO for electricity.</li> <li>✓ Water supply networks in Sesheke, Senanga, Kalabo, Lukulu, and Limulunga are old and costly to maintain.</li> <li>✓ Sewerage network mostly non-existent</li> <li>✓ Large outstanding GRZ Water bills negatively affecting liquidity.</li> <li>✓ Service level Agreements mostly not being met resulting in failure to increase the tariffs.</li> <li>✓ Work culture not oriented to customer service; poor image from inadequate response to customers complaints</li> <li>✓ Huge debt owed to creditors</li> <li>✓ Inadequate response to customers complaints resulting in poor corporate image</li> <li>✓ Inadequate transport fleet.</li> <li>✓ Inadequate office space</li> <li>✓ Low coverage of operational and maintenance costs.</li> <li>✓ Inadequate working capital</li> <li>✓ Low water supply and sanitation coverage.</li> <li>✓ Lack of insurance cover for key assets</li> </ul>
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	<ul style="list-style-type: none"> <li>✓ Lack of Insurance cover for key Assets.</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>✓ Supportive policy and legislative environment i.e, National Water Policy, Water Supply and Sanitation Act, PPP policy and Act</li> <li>✓ Opening up of new service areas by councils eg. Kasima in Mongu.</li> <li>✓ NWASCO annual performance rating system a platform for improved performance and image change (RBI)</li> <li>✓ Customers willing to pay for good and services</li> <li>✓ Availability of Government grants, i.e kaoma Emergency project. Kalabo project etc</li> <li>✓ Increased demand due to population increase</li> <li>✓ Adequate water source (surface &amp; ground)</li> <li>✓ Representation of BRE on Board</li> <li>✓ Opportunity to build modern water network</li> <li>✓ Setting Bottled Mineral Water.</li> <li>✓ Opportunity to work with several donors.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Encroachment of Company land by squatters</li> <li>✓ Danger of donor withdraw</li> <li>✓ Frequent power outages by ZESCO resulting in disruption of water supply and damage to equipment</li> <li>✓ Increased electricity tariffs</li> <li>✓ Political/stakeholder interference</li> <li>✓ Poor township planning affecting network and installation</li> <li>✓ Delayed payment of bills by Govt. institutions can negatively affect liquidity.</li> <li>✓ Customers sinking own boreholes resulting in revenue loss.</li> <li>✓ Vandalism of property &amp; installation</li> <li>✓ Increasing cost of materials/inputs locally/imported against inadequate tariff adjustment.</li> <li>✓ Risks of the company being taken over due to poor performance</li> <li>✓ Logistical disadvantage due to geographical location.</li> </ul>

<ul style="list-style-type: none"> <li>✓ Availability of new technology for efficient management of water supply network.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Long distance and bad roads network between towns in western province.</li> <li>✓ Possibility of public riots/ conflicts can affect business environment.</li> </ul>
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**9.0 CURRENT STAFF ESTABLISHMENT**

Western Water and Sewerage Company operates in eleven (11) districts/stations of Western Province with a total staff establishment of 155 (127 males and 28 females) salaried employees against a total corporate staff establishment of about 250 employees. Among the 155 employees, 6 have separated but are still maintained on the payroll as a requirement by law passed by parliament in 2015. The company has a total of 39 unskilled employees representing 25% of staff establishment of which 68% are from Technical Department while 32% are shared among other departments. Most of these employees are those found in between grades WWSC 6 and WWSC grade 8 of the company’s salary structure scale.

List of employees showing their qualifications

#	QUALIFICATION	MALE	FEMALE	TOTAL
1	Master’s degree holder	-	-	0
2	Degree Holders	5	3	8
3	Diploma Holders	20	5	25
4	Certificate Holders	40	14	54
5	Non-Tertiary Holders (Grade 12)	32	5	37
6	Grade Holders (grade 9 and below)	25	2	25
<b>7</b>	<b>TOTAL</b>			<b>149</b>

Western Water and Sewerage Company inherited a number of Staff from the Councils who are not qualified and with very minimal qualifications. These employees are either up to Grade Nine or even below. This has contributed to poor performance of the utility, as they are untrainable. This has also led to increased cost of preventative maintenance, poor quality of water in some cases, unaccounted for water due to poor workmanship. It is for this reason that the Human Resource Development plan will address some of these challenges.



**10.0 CURRENT SITUATION**

Western Water and Sewerage Company has developed this mid-term business (MDP) and the Human Resources Development Plan (HRDP) to gain a better understanding of the reasons for NRW and the factors which influence its components. This document will also build employee’s capacities through training activities that have been planned. With the help from cooperating partners such as JICA, techniques and procedures have been developed and tailored to the specific characteristics of the network and local influencing factors, to tackle each of the components in order of priority. This diagnostic approach, followed by the practical implementation of solutions which are practicable and achievable, have been identified and are easy to follow and apply.

Realising that Western Water and Sewerage Company has operated without a formulated strategy on NRW, this Mid Term Business Plan and the Human Resource Development Plan becomes the first of its kind. During the situation diagnosis, the following questions about the network and operating practices were asked and later examined:

**How much** water is being lost?

**Where** is it being lost from?

**Why** is it being lost?

**What** strategies can be introduced to **reduce** losses and **improve** performance?

**How** can we **maintain** the strategy and **sustain** the achievements gained?

**11.0 SITUATION DIAGNOSIS TABLE**

QUESTION	PROPOSED ACTION
<p><b>1. HOW MUCH WATER IS BEING LOST?</b></p> <p>Western Water and Sewerage Company loses over 50% of water. The ratio seems to be underestimated as there are no sufficient Bulk</p>	<p><b>WATER BALANCE</b></p> <ul style="list-style-type: none"> <li>- Improve estimation/measurement techniques by installing Bulk Meters</li> <li>- Develop Meter calibration policy</li> <li>- Intensify Meter checks</li> <li>- Identify improvements to recording procedures</li> </ul>

<p>Meters installed in the distribution network and or District Metered Areas (DMAs).</p> <p>At the time of situation diagnosis, Western Water and Sewerage Company had 346 non-functioning mechanical water meters in areas of operation, and WWSC does not replace water meters with new ones regularly due to budget limitations and as such WWSC bills such customers with defective meters based on average water consumption where a three months past period is averaged.</p> <p>WWSC has no robust Billing system hence limitation in terms of reporting for effective decision making.</p> <p>Errors on Meter Reading</p>	<ul style="list-style-type: none"> <li>- Create District Metered Areas (DMAs)</li> <li>- Install and replace valves required for creating DMAs</li> <li>- Calculate NRW ratio based on accurate flow rate measured by bulk meters</li> <li>- Replace non-functioning water meters</li> <li>- Procure a robust billing system</li> <li>- Procure Digital Meter Reading system or a Walk by Meter Reading System.</li> <li>- Procure and install pre-paid meters.</li> </ul>
<p><b>2. WHERE IS IT BEING LOST FROM?</b></p> <p>Western Water and Sewerage Company has not quantified leakage and apparent losses. However, the assumption is that NRW is mainly caused by leakages due to deteriorated AC pipes. The leakages are mostly reported by Meter Readers and the general public through WhatsApp, Facebook and direct reports at Customer Service Centres. The Company has an electric leak detector and a pipe locator, but has currently not used them, while a</p>	<p><b>NETWORK AUDIT</b></p> <ul style="list-style-type: none"> <li>- Conduct frequent leakage studies at the reservoirs, transmission mains, distribution network and customer properties.</li> <li>- Check and record customer meter functionalities.</li> <li>- Meter all customer connections.</li> <li>- Put measures in place to curb illegal connections and any form of vandalism</li> </ul>

<p>distribution pipeline of about 183 km stretch is deteriorated.</p>	
<p><b>3. WHY IS IT BEING LOST?</b></p> <p>Western Water and Sewerage Company has no know-how on a series of NRW reduction activities as well as their concept and objectives.</p>	<p><b>REVIEW OF NETWORK OPERATING PRACTICES</b></p> <ul style="list-style-type: none"> <li>- Investigate: historical reasons</li> <li style="padding-left: 40px;">poor practices</li> <li style="padding-left: 40px;">quality management procedures</li> <li>poor materials/infrastructure</li> <li>local/political influences</li> <li>cultural/social/financial factors</li> <li>- Conduct frequent awareness meeting on illegal connections, vandalism etc.</li> </ul>
<p><b>4. HOW TO IMPROVE PERFORMANCE?</b></p> <ul style="list-style-type: none"> <li>- Design a strategy, action plans and budgets</li> </ul>	<p><b>UPGRADING AND STRATEGY DEVELOPMENT</b></p> <ul style="list-style-type: none"> <li>- Update records systems</li> <li>- Introduce zoning</li> <li>- Introduce leakage monitoring</li> <li>- Address causes of apparent losses</li> <li>- Initiate leak detection/repair policy</li> <li>- design short/medium/long term action plans</li> </ul>
<p><b>5. HOW TO MAINTAIN THE STRATEGY?</b></p>	<p><b>POLICY CHANGE, TRAINING AND O&amp;M</b></p> <p>Training: improve awareness</p> <p style="padding-left: 40px;">Increase motivation</p> <p>transfer skills</p>

	<p>introduce best practice/technology</p> <p>O&amp;M: Community involvement</p> <p>Water conservation and demand management programmes</p> <p>Action plan recommendations</p> <p>O&amp;M procedures</p>
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**12.0 PROGRAMME IMPLEMENTATION**

NO	PROJECT	SOURCE OF FUNDS	GOAL	TIME FRAME IN QUARTERS																			
				2019				2020				2021				2022				2023			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>MID TERM BUSINESS PLAN</b>																							
NRW Reduction project: Replacement of deteriorated pipes																							
1	Engagement of Team Leader	AfDB	Recruitment of team leader done.	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█				
2	Distribution Management	AfDB	183km of main pipe lines replaced		█				█				█				█						
3	Construction Supervision	AfDB	183km of main pipe lines replaced		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█				
4	Replacement of deteriorated pipes (183km)	AfDB	183km of main pipe lines replaced		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█				
5	PR activity	AfDB	Report on PR activities																		█	█	
<b>HUMAN RESOURCE DEVELOPMENT PLAN</b>																							
Training for maintenance of mechanical/electrical facility of water treatment.																							
8	Project Management inclusive of preparations of manuals	AfDB/ Other	1)Recruitment of Project Manager 2) Availability of manuals																				█



The Mid-term Business Plan and the Human Resource Development Plan will enable Western Water and Sewerage Company to lobby for funds from would be donors to finance the projects. Currently, the biggest donor on non-revenue water reduction is through the anticipated AfDB project which will be implemented in four (4) priority towns of Mongu, Kaoma, Senanga and Sesheke. It is expected that once the four priority towns are done, the company will increase its revenue and increase the service coverage areas to other non-priority towns.





**Table 1 Prioritizing challenges, Goal and Proposed projects for Mid-term Business Plan of WWSC**

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
<b>(1) NRW Reduction Project</b>							
1.	P4: Transmission and distribution mains	Asbestos, old cast iron and old steel pipes make up 75% of main pipelines	3	Ratio of deteriorated pipes will be reduced to 45%.	(1-1) Replacement of deteriorated pipes (1-2) Implementation of PR activity	(1-1) -Replacement of the deteriorated pipes of 183km. (1-2) -Implementation of awareness-raising activity for water conservation and cholera's preventive measures such as oral rehydration solution, boiling water before drinking	AfDB has the project for NRW improvement. -Installation of water, etc.
2.	P10: NRW ratio	NRW ratio is more than 50%	1	NRW rate will be reduced from 54% (current) to 40%	(1-1) Replacement of deteriorated pipes (1-2) Implementation of PR activity		
3.	P19: Awareness-raising on NRW reduction, collection of water charges, etc.	No or minimal effective awareness-raising activities have been implemented.	2	A system for effective awareness-raising activities is established.			

**Table 2 Prioritizing challenges, Goal and Proposed Projects for Human Resource Development Plan of WWSC**

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
<b>(2) Training for maintenance of mechanical/ electrical facility of water treatment</b>							
4.	P3: Surplus purification capacity	Surplus capacity to maximum design capacity is less than - 30%.	2	Human Resources Development Plan is prepared for engineers who can	Training on maintenance of mechanical/ electrical facility	-Training on maintenance of mechanical/ electrical facility of water treatment	AfDB has the project for NRW improvement. -Network Rehabilitation

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
				formulate plans to raise the surplus capacity to maximum design capacity less than -10% and human resources is developed.	of water treatment	-Development of O&M procedural manuals	-Installation of water, etc.
<b>(3) Training for maintenance of pump and flow meter</b>							
5.	P6: Mechanical and electrical equipment	More than 30% of installed major mechanical and electrical equipment are malfunctioning	3	Mechanical and electrical engineers can be trained.	Training on maintenance of pumps and flow meters	-Training on maintenance of pumps and flow meters	
<b>(4) Training for communication &amp; negotiation skills</b>							
6.	[Manager] C4: Executive Officers, Managers and or Supervisors: Capacity to convince the third Parties to understand different Ideas and Opinions	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training to make staff understand the necessity of negotiation and coordination with staff and/or customers is conducted.	Training on communication & negotiation skills	-Training on communication & negotiation skills	

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
7.	[Human Resources and Administration Department] C4: Executive Officers, Managers and or Supervisors: Capacity to convince the third Parties to understand different Ideas and Opinions	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training to make staff understand the necessity of negotiation and coordination with staff and/or customers is conducted.			
<b>(5) Information management training</b>							
8.	[Manager] C5: Executive Officers, Managers and or Supervisors, and General Officers: Capacity to collect data and to apply for analysis for the water supply service	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	1	Training on how to develop and utilize data is conducted.	Information management training	(5-1) Date management by IT (5-2) How to utilize data	

**Project Schedule for Five Years (2019-2023) and Annual Cost in WWSC**

Project	2019	2020	2021	2022	2023	Sub total (ZMW)
<b>A. Midterm Business Plan</b>						
<b>(1) NRW Reduction Project: Replacement of deteriorated pipes</b>						
(1-1) Team Leader						
				4,504,000	6,756,000	11,260,000
(1-2) Distribution Management						
	625,000	625,000	625,000	625,000		2,500,000
(1-3) Construction Supervision						
	5,003,000	5,003,000	5,003,000	5,003,000		20,012,000
(1-4) Replacement of deteriorated pipes (183km)						
	56,000,000	56,000,000	56,000,000	56,000,000		224,000,000
(1-5) PR activity						
					2,045,000	2,045,000
<b>Sub total (ZMW)</b>	<b>61,628,000</b>	<b>61,628,000</b>	<b>61,628,000</b>	<b>66,132,000</b>	<b>8,801,000</b>	<b>259,817,000</b>
<b>B. Human Resource Development Plan</b>						
<b>(2) Training for maintenance of mechanical/electrical facility of water treatment</b>						

(2-1) Project Manager (1MM) incl. preparation of manuals								<input type="checkbox"/>			500,000	500,000
(2-2) Trainer (Mechanical) (9 days)								<input type="checkbox"/>			150,000	150,000
(2-3) Trainer (Electrical) (9 days)								<input type="checkbox"/>			150,000	150,000
<b>Sub total (ZMW)</b>								<input type="checkbox"/>			<b>800,000</b>	<b>800,000</b>
<b><u>(3) Training for maintenance of pump and flow meter</u></b>												
(3-1) Project Manager (13days)								<input type="checkbox"/>			500,000	500,000
(3-2) Trainer (Mechanical) (9 days)								<input type="checkbox"/>			150,000	150,000
(3-3) Trainer (Electrical) (9 days)								<input type="checkbox"/>			150,000	150,000
<b>Sub total (ZMW)</b>								<input type="checkbox"/>			<b>800,000</b>	<b>800,000</b>
<b><u>(4) Training for communication/negotiation skills</u></b>												
(4-1) Trainer (10days)								<input type="checkbox"/>			170,000	170,000
<b>Sub total (ZMW)</b>								<input type="checkbox"/>			<b>170,000</b>	<b>170,000</b>
<b><u>(5) Information management training</u></b>												
(5-1) Trainer (7 days)								<input type="checkbox"/>		120,000		120,000

<b>Sub total (ZMW)</b>							
<b>Total (ZMW)</b>	<b>61,628,000</b>	<b>61,748,000</b>	<b>61,628,000</b>	<b>66,132,000</b>	<b>10,571,000</b>	<b>261,707,000</b>	

## 15.0 APPROVAL

This Mid Term Business Plan and Human Resources Development Plan is hereby approved

this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

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**Board Chairperson**

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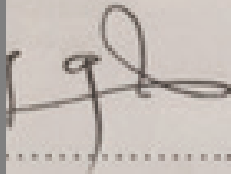
**Company Secretary**



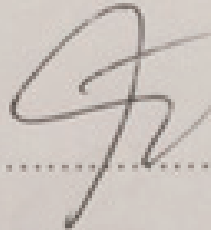


**Resolution 5: Approval of the MBP and the HRDP under JICA  
funding**

At a meeting held on 24<sup>th</sup> December 2018, the Board of Directors resolved that the Mid-term Business Plan and the Human Resources Development Plan under JICA funding, for The Project for Strengthening Capacity for Urban Water Supply Infrastructure, be approved as submitted.



**CHEEK KAOMA**  
**CHAIRMAN**



**CANON ENG KENNETH CHENSE**  
**BOARD SECRETARY /**  
**MANAGING DIRECTOR**

**Table 1 Prioritizing challenges, Goal and Proposed projects for Mid-term Business Plan of LpWSC**

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
<b>(1) NRW Reduction Project</b>							
1.	P2: Overall Water Supply Coverage	Less than 50%	1	Overall water supply coverage will be increased from 35.7% to 38.0 %.	(1-1). Replacement of the deteriorated pipes (1-2). Elimination of flat rate	(1-1) -Replacement of the existing asbestos pipes with PVC pipes of 105km (1-2). -Replacement of the water meters	AfDB has the project for NRW improvement. -Network Rehabilitation -Installation of water, etc.
2.	P10: NRW Ratio	More than 50%	1	NRW ratio will be reduced from 70% to 63%.			
<b>(2) Repair of Water Treatment Facility</b>							
3.	P3: Surplus Purification Capacity	Less than -30%	1	Surplus capacity to maximum design capacity is more than 0%.		-Rehabilitation of the existing water treatment plant.	AfDB has the project for increasing hours of water supply. -Construction/ Rehabilitation of water infrastructure

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Table 2 Prioritizing challenges, Goal and Proposed Projects for Human Resource Development Plan of LpWSC

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
<b>(3) Training for maintenance of pump and flow meter</b>							
4.	P6: Mechanical and Electrical Equipment	More than 30% of installed major mechanical and electrical equipment (such as pumps, electrical transformers and generators) are not operated due to serious failures.	3	Mechanical and electrical engineers can be trained.		Training on O&M of pumps and flow meters	AfDB has the project for training program to LpWSC
<b>(4) Training for maintenance of mechanical/ electrical facility of water treatment</b>							
5.	P14: Cost Recovery Level	Only part of the O&M costs (excluding depreciation of water supply facilities) are covered by water tariff. 'Annual Billed Revenue for Water / Total Annual Operating Costs for Water Excluding Depreciation and Financing Tariff < 1	2	Water supply facilities can be well-maintained and repaired.		Training on O&M of mechanical and electrical equipment in water treatment facilities	
<b>(5) Trainees' effort evaluation system</b>							
6.	M14: Evaluation of Trainee's Efforts	Trainees' efforts have not been evaluated.	2	A system for trainees' effort is established.		-Establishment of trainees' effort evaluation system. -training for trainees' effort evaluation	
<b>(6) Training program for manager on HRD</b>							
7.	[Manager] C1: Executive Officers: Capacity	Performance is still insufficient in terms of standards of current post.	2	Training on how to lead staff is conducted.		-Training on how to lead staff	




No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
	to achieve goal and to raise the Standards of the Leadership	Therefore, staff must make an effort to work well.					
8.	[Manager] C3: Executive Officers, Managers and or Supervisor: Capacity to improve Qualification of Staff in terms of Post and Job Description	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training to make staff understand the necessity of human resource development is conducted.			
<b>(7) Training for communication/ negotiation skill</b>							
9.	[Manager] C4: Executive Officers, Managers and or Supervisors: Capacity to convince the third Parties to understand different Ideas and Opinions	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training to make staff understand the necessity of negotiation and coordination with staff and/or customers is conducted.			
10.	[Technical Department] C4: Executive Officers, Managers and or Supervisors: Capacity to convince the third Parties to understand different Ideas and Opinions	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	1	Training to make staff understand the necessity of negotiation and coordination with staff and/or customers is conducted.		-Training on communication and negotiation skill	

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No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
11.	[General officer] C6: General Officers: Capacity to communicate with Customers in order to provide them with high Quality Water Supply Service	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training to make staff understand the necessity of communication with customers is conducted.			
<b>(8) Training program for engineer on HRD</b>							
12.	[Technical Department] C2: Managers and or Supervisors: Capacity to supervise Staff efficiently and effectively and to strengthen the Division and or Department	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training on how to lead staff is conducted.		-Training on how to lead junior staff	
<b>(9) Information management training</b>							
13.	[Technical Department] C5: Executive Officers, Managers and or Supervisors, and General Officers: Capacity to collect data and to apply for analysis for the water supply service	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	1	Training to make staff understand the necessity of development and utilization of data is conducted.		-Training on information management 1. Date security 2. Database management by IT	

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
11.	[General officer] C6: General Officers: Capacity to communicate with Customers in order to provide them with high Quality Water Supply Service	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training to make staff understand the necessity of communication with customers is conducted.			
<b>(8) Training program for engineer on HRD</b>							
12.	[Technical Department] C2: Managers and or Supervisors: Capacity to supervise Staff efficiently and effectively and to strengthen the Division and or Department	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	2	Training on how to lead staff is conducted.		-Training on how to lead junior staff	
<b>(9) Information management training</b>							
13.	[Technical Department] C5: Executive Officers, Managers and or Supervisors, and General Officers: Capacity to collect data and to apply for analysis for the water supply service	Performance is still insufficient in terms of standards of current post. Therefore, staff must make an effort to work well.	1	Training to make staff understand the necessity of development and utilization of data is conducted.		-Training on information management 1. Date security 2. Database management by IT	

Project	2019	2020	2021	2022	2023	Sub total (ZMW)
(4-1) Project Manager (10days)				170,000		170,000
(4-2) Trainer (Mechanical) (3 days)				50,000		50,000
(4-3) Trainer (Electrical) (3 days)				50,000		50,000
<b>Sub total (ZMW)</b>				<b>270,000</b>		<b>270,000</b>
<b>(5) Trainees' effort evaluation system for MD and manager</b>						
(5-1) Project Manager (2MM)				1,000,000		1,000,000
(5-2) Establishment of the system (1.5MM)				750,000		750,000
(5-3) Procurement of PC (10 units)				50,000		50,000
<b>Sub total (ZMW)</b>				<b>1,800,000</b>		<b>1,800,000</b>
<b>(6) Training programe for manager of HRD</b>						
(6-1) Trainer (7days)				120,000		120,000
<b>Sub total (ZMW)</b>				<b>120,000</b>		<b>120,000</b>
<b>(7) Training for communication/negotiation skill</b>						
(7-1) Trainer (5days)			80,000			80,000
<b>Sub total (ZMW)</b>			<b>80,000</b>			<b>80,000</b>
<b>(8) Training progam for engineer on HRD</b>						
(8-1) Trainer (3days)					50,000	50,000
<b>Sub total (ZMW)</b>					<b>50,000</b>	<b>50,000</b>

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**LUAPULA WATER AND SEWERAGE COMPANY LIMITED**

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**Proposed  
2019-23 STRATEGIC PLAN**

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## List of Acronyms and abbreviations

AfDB	African Development Bank
CU	Commercial Water Utility
CNCEC	China National Complete Engineering Cooperation
CRIDF	Climate Resilient Infrastructure Development Facility
CSR	Corporate Social Responsibility
DANIDA	Danish International Development Agency
DEWATS	Decentralized Waste water Treatment System
DTF	Devolution Trust Fund
DWSS	Department of Water Supply and Sanitation
EIAs	Environmental Impact Assessments
EPB	Environmental Project Briefs
GIZ	German Technical Cooperation
GRZ	Government of the Republic of Zambia
ISTWSSP	Integrated Small Towns Water Supply and Sanitation Program
LA's	Local Authorities
JICA	Japan International Cooperation Agency
LpWSC	Luapula Water and Sewerage Company
MWDSEP	Ministry of Water Development, Sanitation and Environmental
NAPSA	National Pensions Scheme Authority
NRW	Non- Revenue Water
NWASCO	National Water Supply and Sanitation Council
NRWSSP	National Rural Water Supply and Sanitation Program
NUWSSP	National Urban Water Supply and Sanitation Program
SaRAF	Save Rural Africa Foundation
SLA	Service Level Agreement
SLG	Service Level Agreement
WASHE	Water, Sanitation and Health Education
WSS	Water Supply and Sanitation
ZAFFICO	Zambia Forestry And Forest Industries Corporation Limited
ZEMA	Zambia Environmental Management Agency
ZESCO	Zambia Electricity Supply Company
ZISC	Zambia State Insurance Cooperation

## **Executive Summary**

Luapula Water and Sewerage Company (LpWSC) is the commercial utility mandated to provide water and sanitation services to all urban and Peri urban areas of Luapula Province. It was incorporated in December 2008 as a private company limited by shares, under the Companies Act (Cap 388 of the Laws of Zambia). The shareholders are the local authorities in Luapula Province. These participating local authorities have transferred assets and liabilities to the Company. The company became operational in September 2009 although actual operations started in November 2009.

This third strategic plan 2019 to 2023 is a build-up of the past two strategic plans for LpWSC. The current strategic plan has incorporated operational objectives that are key to the functioning and delivery of services which LpWSC is mandated to. A total resource envelope of K2.04 billion (USD205m) of capital investment is required to expand the revenue base 7,934 connections to 20,000 connections to cover all the districts in the province. This will enable the company to reach and exceed its breakeven point, and attain financial sustainability, by increasing revenues from K8.8m/year to K33m/year.

## 1.0 Introduction

### 1.1 The Company Background

Luapula Water and Sewerage was incorporated in December 2008 as a private company limited by shares, under the Companies Act (Cap 388 of the Laws of Zambia). The company was set up to provide water and sewerage services to all urban districts of Luapula Province. The shareholders are the Local Authorities in Luapula Province. These participating local authorities have transferred assets and liabilities to the Company, even though the Statutory Instrument legalizing the transfer has not yet been affected. The company began operations in November 2009.

### 1.2 The Services and Service Delivery

The company is currently operational in 5 districts namely, Mansa, Samfya, Mwense, Kawambwa and Nchelenge out of the twelve districts in the province. Operations in Milenge, Mwansabombwe, Chipili, Chembe, Lunga, Chifunabuli and Chiengi are scheduled to commence after new water supply and sanitation infrastructure has been constructed in the Centre's. A feasibility study in the non-operational districts was finalized by the consultant that includes water supply and sewerage infrastructure construction. Four new districts namely Mwansabombwe, Chipili, Lunga and Chembe were created in 2013 and Chifunabuli in 2018. Proposals and memorandum of Understandings have been signed between the Ministry of Water Development, Sanitation and Environmental protection and cooperating partners for different financing packages.

### 1.3 The Water Supply and Sanitation Sector

Water supply and sanitation in Zambia is characterized by achievements and challenges. Among the achievements are the creation of regional commercial utilities; the establishment of a regulatory agency, National Water and Sanitation Council (NWASCO) that has substantially improved the availability of information on service provision in urban areas; the establishment of a Devolution Trust Fund (DTF) to focus donor support on poor Peri-urban areas; and an increase in the access to water supply in rural areas.

Among the challenges are a low rate of cost recovery despite tariff increases in urban areas; limited capacity in the sector; insufficient progress in increasing access to sanitation; a high level of non-revenue water registering 77% in the 2017 sector report;

Due to the need to better the water sector, a new Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP) was established and Gazetted on 18<sup>th</sup> November 2016 to preside over among others, Water Resource Management and Development, Water Supply and Sanitation, and Environmental Protection and Pollution control policies and associated matters.

Institutions/bodies under the Ministry are:

- ✓ **National Water Supply and Sanitation Council (NWASCO)** –Established by the Water Supply and Sanitation Act to regulation the provision of water supply and sanitation services.
- ✓ **Zambia Environmental Management Agency (ZEMA)** – Established by the Environmental Management Act No. 12 of 2011 for the protection of the environment. The Statutory Instrument No.

112 of 2013, of EM Act No. 12 of 2011. The Environmental Management (Licensing) Regulation of 2013; sets limits and standards for environmental protection.

- ✓ **Water Resources Management Authority-** (WARMA) Established by Resources Management Act No.21 of 2011 – for management, conservation, protection and preservation of the water resource and its ecosystems.
- ✓ **Water Commercial Utilities** (CUs) – Established under Company Act Cap 388 of the Laws of Zambia by the Local Authorities to provide water supply and sanitation services. All CUs are licensed and regulated by NWASCO. NWASCO also regulates Private Schemes that provide water supply and sanitation services to their employees as a fringe benefit.

The Ministry of Water Development, Sanitation and Environmental Protection is in charge of sector policies. Within the Ministry, the Department of Water Supply and Sanitation (DWSS) is responsible for water supply and sanitation infrastructure planning and resource mobilization. The DWSS has established a specific Rural Water Supply and Sanitation Unit (RWSSU) in 2017 and shortly thereafter also a unit for peri-urban water supply and sanitation.

According to the 1994 National Water Policy seven principles govern the state's policy in water and sanitation

- Separation of water resources management from water supply and sanitation
- Separation of regulatory and executive functions
- Devolution of authority to local authorities and private enterprises
- Achievement of full cost recovery for the water supply and sanitation services in the longrun.
- Human resources development leading to more effective institutions.
- The use of technologies more appropriate to local conditions
- Increased budget spending to the sector

By 2008 at least the first three principles had been put into practice. However, full cost recovery was far from being achieved and budget spending remained far below what is needed to achieve the Sustainable Development Goals for the sector.

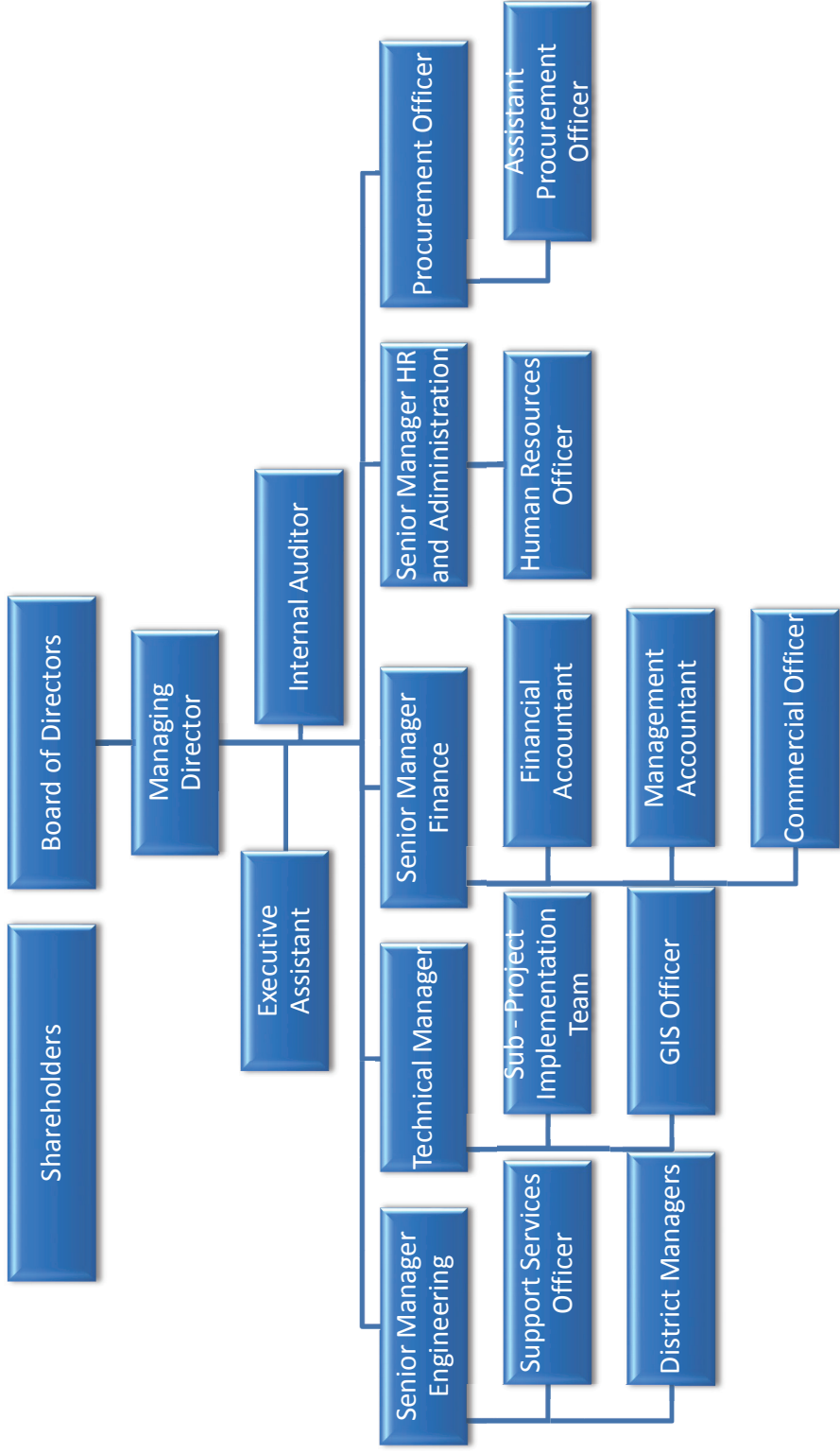
In 2010 the national water policy was revised in order to take into account "current international developments", to integrate cross-cutting issues such as gender, HIV/AIDS and climate change, and to introduce modern principles of water resources management.

## 2.0 Corporate Governance

### 2.1 The Board of Directors

The Board of Directors is appointed by the shareholders to oversee the operations of the company. At law, they are the physical biological embodiment of the person of the company. The Board is assisted by the Managing Director and the Internal Auditor. For day to day administrative purposes, the Internal Auditor reports to the Managing Director.

## 2.2 The Organisational Structure



## **2.3 Managing Director**

The Managing Director is appointed by the Board of Directors to handle the day to day operations of the company. The current Managing Director has been on site since February 2016. The availability of the MD for this length of time has given the utility some level of stability and in a large part contributed to the successes scored by the company so far. The MD is assisted by Senior Manager Engineering, Senior Manager Finance and Commercial, Senior Manager Human Resources and Administration, Technical Manager, the Procurement Officer and the Executive Assistant. The Managing Director provides information for decision making to all the Committees of the Board and to the Board itself. Additionally, he is the Board Secretary.

## **2.4 Managers**

The Senior Manager Engineering is responsible for the overall operation and maintenance of the water supply and sanitation infrastructure in the Luapula Water and Sewerage Company. He is key to Asset Management by ensuring that all water supply and sanitation facilities are properly maintained in all districts by carrying out periodic inspections and preventive maintenance. The Senior Manager Engineering assisted by the Support Services Officer and District Managers. The Senior Engineering Manager reports to the Managing Director and provides information to the Engineering Committee of the Board.

The Technical Manager is responsible for all projects being under taken in-house and by Contractors & supervised by Engineering Consultants. He is in charge of new project scoping and preparation of cost estimates for internal projects. He is assisted by the GIS Officer and the Sub Project Implementation Team. The Technical Manager reports to the Managing Director and provides information to the Technical Committee of the Board.

The Senior Manager Finance is responsible for the financial and commercial operations of the Company. His focus is on financial statements accounts preparation, billing and debt management (collections), cost control, and stores control. The Senior Manager Finance reports to the Managing Director and provides information to the Finance Committee.

The Senior Manager Human Resources and Administration is responsible for recruitment, development and implementation of human resource management instrument to ensure industrial harmony in the Company. The Senior Manager Human Resources and Administration is assisted by the Human Resources Officers. The Senior Manager Human Resources and Administration reports to the Managing Director and provides information to the Remuneration and Compensation Committee.

The duties of Internal Auditor include providing support to the Board of Directors by making available providing audit reports to provide quality checks on the implementation of company policies and utilization of resources. He reports to the Managing Director for day to day administrative purposes.

The Procurement officer is responsible for ensuring that all procurements are in line with the Zambia Public Procurement Authority procurement Act. The Procurement Officer reports to the Managing Director and provides information to the Finance Committee.

## 2.5 Human Capital

Human capital in this context can be defined as the skills, knowledge, and experience possessed by an individual or population, viewed in terms of their value or cost to LpWSC as a Company.

The concept of **human capital** recognizes that not all labor is equal and that the quality of employees can be improved by investing in them; the education, experience and abilities of employees have economic value for employers and for the economy as a whole.

LpWSC has ninety two (92) established positions on its organizational structure.

In view of the approved Urban Onsite Sanitation and Faecal Sludge Management framework for provision and regulation in Zambia, LpWSC will reorganize its structure to carry out the additional responsibilities.

## 3.0 SITUATIONAL ANALYSIS

### 3.1 Introduction

This chapter gives an overview of the performance of the company in the past planning period of the strategic plan in order to identify gaps that need to be covered during the next planning period.

### 3.2 Review of the Performance of the 2014 – 2018 Strategic Plan

QUALITY OF WATER SUPPLY SERVICES	OBJECTIVE	STATUS
Strategic Objective 1	<b><i>By 2018 LpWSC will have optimised technical operations in its existing water supply infrastructure</i></b>	
Operational objectives 2014	▶ To document infrastructure needs with related costs across the province	This was done in 2016 through a consultancy by Gauff
	▶ To Sensitize, enroll and retain new customers on the LpWSC system and to bring back disconnected customers through a promotion program	All disconnected customers were reconnected in 2016
	▶ To reduce Non-Revenue water through 100% metering, auditing all meters to check functionality and usage, check illegal reconnections and connections and establish customer database, to conduct a water balance program, Check illegal connection	100% metering was attained.  Meter readers check the functionality of meters on a monthly basis.
Operational objectives 2015	▶ To establish and implement training programme in O&M	The maintenance plan was put in place in 2017
Operational objectives 2016	▶ To undertake a database clean up ▶ To secure water resources for future expansion	The data base was clean up in 2015
Operational objectives 2017	▶ To establish District meter zones to account for NRW	This was not done due to lack of funds
Operational objectives 2018	▶ To carry out verification exercise for all the customers after 100% metering in our catchment area.	The customer base was verified
SANITATION COVERAGE	OBJECTIVE	STATUS
Strategic Objective 2	<b><i>By 2018 LpWSC will have introduced faecal sludge management system</i></b>	
Operational objectives 2014	▶ To conduct a study of the existing waste stabilisation pond in Mansa	This was done in 2015
	▶ To conduct a household sanitation survey	This was carried out in 2017
	▶ To dialogue on sanitation with donors/NGOs	The dialogue is in progress to attain the SDG target



SANITATION COVERAGE	OBJECTIVE	STATUS
Operational objectives 2015	▶ To engage local authorities in the construction of on-site facilities by developers	The dialogue was initiated through the City wide Sanitation process in 2018
	▶ To develop a sanitation and hygiene sensitization program	Sensitization programmes were held in Mwense and Samfya
Operational objectives 2016	▶ To identify areas for pilot sanitation activities	Mansa was identified as a pilot area
Operational objectives 2017	▶ To develop sanitation marketing program and mobilise resources needed	The Citywide Sanitation Plan will form the basis for sanitation marketing
Operational objectives 2018	▶ To implement sanitation marketing program	This activity will be prioritized in the next phase
INNOVATIVE RESOURCE MOBILISATION	OBJECTIVE	STATUS
Strategic Objective 3	<b><i>By 2018, LpWSC will have increased and reduced business viability and vulnerability respectively.</i></b>	
Operational objectives 2014	▶ To develop a resource mobilization strategy	A bankable document was produced in 2016 through a consultancy by Gauff
	▶ To develop and implement a debt reduction strategy	Prepaid meters were installed in 2015 for debt recovery in Mansa and Kwambwa
	▶ To develop and implement a strategy for improved billing and collection	This was done in 2016
Operational objectives 2015	▶ To establish and work with a provincial water liaison committee	The P-WASHE focal person was appointed
	▶ To develop a utility wide capital investment plan as a basis to attract/lobby investment	A bankable document was produced in 2016 through a consultancy by Gauff
	▶ To develop a number of project proposals on water supply as marketing tools for potential donors	A bankable document was produced in 2016 through a consultancy by Gauff
Operational objectives 2016	▶ To develop a community based approach to project implementation	This was implemented in Kashikishi, Kaole, Kashiba-Lukwesa projects
	▶ To conduct open days strategically within the province in order to disseminate information to the public.	Open days were conducted in Lubunda, Mwamfuli
COMMERCIAL TRANSFORMATION	OBJECTIVE	STATUS
Strategic Objective 4	<b><i>By 2018, LpWSC will be managed as a typical commercial business entity</i></b>	
Operational objectives 2014	▶ To develop and implement a customer services charter / minimum service guarantee	The 2015-17 service charter was formulated and implemented
	▶ To develop and implement a customer complaints system To develop and implement a Customer interface plan	The system of handling customer complaints is in implementation at each district

SANITATION COVERAGE	OBJECTIVE	STATUS
	▶ To develop and implement a customer service thought for the day	A message is placed on the customer bills every month
Operational objectives 2015	▶ To develop and launch a customer service training manual	Customer service training was outsourced
	▶ To decentralise the billing system	This was foregone due to lack of funds
Operational objectives 2016	▶ To develop and implement an employee recognition program	An appraisal system is in place to assess employees for recognition
Operational objectives 2017	▶ To implement an employee recognition program	Labour day awards were given 2016
Operational objectives 2018		
HUMAN CAPITAL RELIABILITY	OBJECTIVE	STATUS
Strategic Objective 5	<i>By 2018 LpWSC will have a self- motivated, professional, performance orientated workforce.</i>	
Operational objectives 2014	<ul style="list-style-type: none"> <li>▶ To Enhance staff motivation <ul style="list-style-type: none"> <li>▪ Daily rotational staff motivation by managers</li> <li>▪ Reward system</li> <li>▪ Team building</li> <li>▪ Participatory management</li> <li>▪ Valuing individual worth/ humility</li> </ul> </li> </ul>	A reward by incentives in in place under the ISTWSSP
	<ul style="list-style-type: none"> <li>▶ To develop and implement system to improve Professionalism <ul style="list-style-type: none"> <li>▪ To develop and implement performance management system</li> <li>▪ Performance management contracts signed and implemented</li> <li>▪ Improve remuneration and compensation package and present to the board by December</li> </ul> </li> </ul> <p>Nb. Professionalism is defined by staff as <b>(completeness, counter-checking for facts)</b></p>	<p>Members of staff meet once a week to enhance a professional approach to work</p> <p>The performance management system was developed and implemented</p>
Operational objectives 2015	<ul style="list-style-type: none"> <li>▶ Develop and implement a continuous training programme</li> <li>▶ To affiliate all members of staff to professional bodies</li> <li>▶ To develop a system of training exchange with other CUs</li> </ul>	Training programmes were not implemented due to lack of funds
Operational objectives 2016	▶ Establish an Ethics Committee	The ethics code for the Board was developed
	▶ To engage donor technical agencies such as GIZ for capacity building	GIZ sponsored programmes on gender and HIV AIDS
Operational objectives 2017	▶ To have business managers in place in the new districts	District managers were appointed for each district
Operational objectives 2018	▶ To operationalise activities in the new districts	Activities in the seven new districts have not yet commenced

### 3.3 Past Performance

#### Capital Investment

The capital investment profile for the company from its inception is USD15.25m as depicted in the table below. There was no capital investment in the company for the past three year planning period 2016-2018.

SN	Narration	Type	Amount USD'000	Year of Disbursement in USD'000										
				2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
1	GRZ	Grant	50								50			
2	Royal Danish Embassy	Grant	5,100				2,500	2,600						
3	BADEA	Grant	10,100				1,075	4,075	3,375		1,575			
4	Total	Grant	15,250				3,575	6,575	3,375		1,625			

#### Income Statement Outcomes

The Table of Parameters below shows a snapshot of the company performance.

#### Table of Parameters

Parameter	2015	2016	2017	2018
Customers	5,899	6,210	7,489	7,934
Production in m3 x 1,000	2,400	4,500	4,900	5,000
Revenues in ZMK x 1,000	4,032	5,965	7,941	8,841
Collections in ZMK x 1,000	4,032	4,100	5,700	7,400
Costs in ZMK x 1,000	9,065	10,862	11,694	12,056
Profit/Loss IN ZMK x 1000	(5,033)	(2,945)	(3,753)	(3,425)

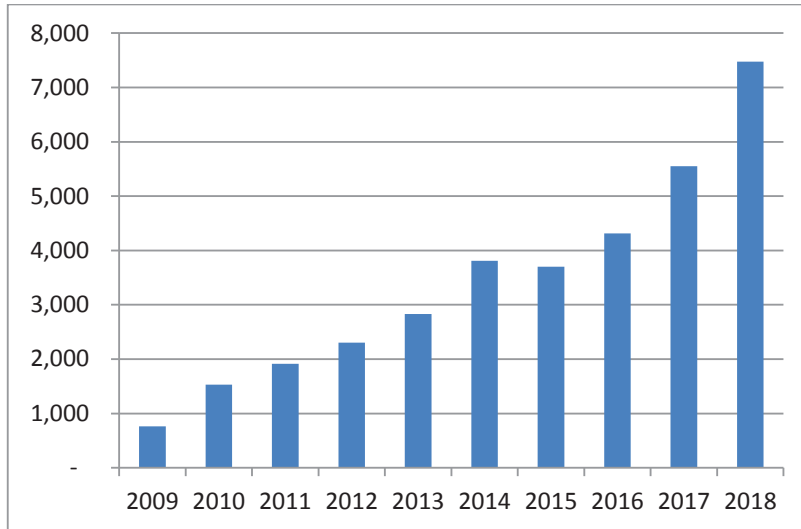
Cover By Revenue	44%	60%	62%	73%
Cover By Collections	37%	51%	53%	62%
Profitability margin	-163%	-37%	-9%	

On the one hand, the number of customers increased by more than 34%; from 5,899 in 2015. On the other hand, the production doubled from 2015 and remained stable during the planning period 2016-18. The factors that contributed to this were the completion of the BADEA project in Mansa and Kawambwa, the reduction of load shedding by ZESCO, the installation of new pumps and motors in Mwense and repair of pumps and motors in Samfya and Nchelenge.

Revenues took an upward trend after a policy decision was made to reconnect all disconnected customers, who accounted to close to 50% of the customer base as at 31<sup>st</sup> December 2015. The company, however, encountered a setback in 2018 when Mansa General Hospital and Mansa Hotel withdrew from the company service in preference for their own supply using boreholes.

Having grown the revenues to a decent limit by 2017, the company focus in 2018 was to increase the collection efficiency. The collections increased drastically in 2018 through door to door campaigns at customer premises and electronic advertisement by phone and radio. By comparison to 2015, the revenues and cash collections more or less doubled by 2018 through these efforts.

**Figure 1: Revenue Collection in K'000**



The costs were kept in check as the company implemented a survival budget to match the costs with revenues. The result of this stewardship frugal approach was an improvement in the cost coverage by revenue from 44% in 2015 to 73% in 2018; and cost coverage by collections from 37% in 2015 to 62% in 2018. The austerity measures have also resulted in a positive trend of profitability margin from -163% to -9% by 2017 as reported in the Annual Joint Water, Sanitation and Environment Sector Report.

### 3.4 SWOT Analysis

The SWOT analysis is an assessment of the strengths and weaknesses which are internal to the organisation, and opportunities and threats that are in the operating environment. The Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis provides a summary of the potential and challenges in the advancement of the company's mandate..

<b>STRENGTHS</b>	<b>WEAKNESS</b>
<ul style="list-style-type: none"> <li>• Monopoly advantage</li> <li>• Qualified and skilled personnel</li> <li>• Disciplined and determined workforce</li> <li>• Metering Ratio – 100%</li> <li>• Work force is energetic and vibrant</li> <li>• Supply water 18Hrs on average.</li> <li>• Strong Core values</li> <li>• Goodwill by Sponsors and key stakeholder</li> </ul>	<ul style="list-style-type: none"> <li>• Low customer base</li> <li>• Dilapidated infrastructure</li> <li>• Limited financial resources</li> <li>• High NRW</li> <li>• Low economic activities</li> <li>• Failure to meet our obligations due to low revenue base</li> <li>• Unaudited Financial Statements</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>• Potential customer base</li> <li>• Abundant water bodies to draw water from</li> <li>• Huge demand for water</li> <li>• Funding from Donors</li> <li>• Tariff review</li> <li>• Moderate Population Growth</li> <li>• Political Support for Infrastructure development</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in regulatory framework</li> <li>• Climate change</li> <li>• Competitors – wells and boreholes drilled within the urban centers</li> <li>• Low economic activities in the region</li> </ul>

#### 3.4.1 Internal Environment (SW)

The situational analysis presented above provides a general picture of the operating environment for the LpWSC and more importantly highlights some of the key factors that the company should be addressing in order to remain true to its mission. On the other hand, the SWOT analysis of LpWSC gives indicators on the strength of the company, the opportunities it can take advantage of to consolidate its work and the challenges that could impede its success. The priority strategic issues form the basis for the strategic directions which LpWSC will take in the next 5 years. Possible action points to resolve the issues were proposed.

#### 3.4.2 Strengths

The company has amongst its internal strengths which includes qualified management, determined and energetic staff coupled with high metering ratio, 18hrs average water supply hours and hardworking staff. This has earned LpWSC recognition during the last two sector reports for the year 2016 and 2017. The staff performance will be enhanced through motivation and training.

LpWSC is mandated to supply water and sewerage services to all the areas in Luapula Province. This was recently enhanced by the approval of the On-site Sanitation and Sludge Management Frame work for all sanitation programs in the province. Therefore the company has a competitive advantage in the provision of water and sanitation services to all stakeholders.

The utility has shown capacity to make consistent and rapid improvements once funding is availed. For instance, the utility has made big improvements in revenue collection indicating that financial incentives can work to bolster even greater performance. This is evident from the period 2016-2018 where revenue base was ZMW239,000 per month in January 2016 and this tremendously increased to an average of ZMW870,000 per month as of October 2018.

### 3.4.3 External Environment (OT)

Threats Identified

#### **Operating Environment Issues**

The utility has to operate in one of Zambia's poorest provinces, with limited economic activity. The economic activities of the province were stimulated by the Luapula-Expo.

#### **Technical Issues**

Raw water source quality is an issue especially in Nchelenge, Mwense, Mansa and Kawambwa. The natural high turbidity of this water coupled with pollution from activities by the surrounding communities, means that the utility has to spend significantly large amounts of money on chemicals. Whilst the problem may not be as severe in the other towns, the issue of encroachment and pollution of watershed areas affects all the towns and can only be expected to get worse as the towns expand. The effects of climate change threaten to dry up the water bodies. Measures for securing and protecting natural water resources need to be adopted, for the survival and viability of the utility.

The company is threatened, additionally, by the fact that the many residents use shallow wells to avoid bills from the company.

Opportunities identified

Despite the threats identified above, LpWSC also has some key opportunities to take advantage of.

#### **Capital Funding**

The capital funding received from for Mansa, Samfya, Mwense and Kawambwa on the African Development Bank supported Integrated Small Towns Water Supply and Sanitation Project will improve the financial and technical viability of the company further. Additionally the government has funded the rehabilitation and expansion programme for Nchelenge and Chiengi. Furthermore, a contract has been signed for the installation of water and sanitation facilities in Lunga. Earmarked projects financing will enhance the expansion program for the company. MOUs have been signed with Save Africa Foundation (SaRAF) and China National Engineering Complete Corporation (CNECC). JICA has prepared a Human Development Plan and a Mid-term Business Plan with the purpose of reducing non revenue water through capacity building in infrastructure and human resource.

#### **Positive Tariff Adjustment**

The utility got tariff adjustments from NWASCO in 2015/2018 thereby creating some much needed fiscal space. The utility organized community tariff meetings with a view of applying for an increase in water tariff for the year 2019. This was approved. It is intended that a tariff and affordability study be conducted by the consultant in the year 2019 for the three year tariff block application of 2020/23, in order to justify the

business viability for the utility. The utility will fully and effectively utilize this space so that future tariff adjustments are made easier.

***Young and growing Population***

The province has a young and fast growing and under-served population which creates a potential market for the utility. In particular, the utility will focus on expanding its customer base by prioritizing those areas that can be readily connected to the network. The utility also has the advantage of being the only licensed service provider in the province, meaning that potentially the entire market can be for the utility. The utility is also operating in an area in which the centers to be served are in relatively close geographic proximity with each other. This will make service delivery more cost effective.

***Availability of Water Resources***

The fact that raw water resources most of which are of relatively good quality and not too far from where the water is needed, are readily available means that the utility can exploit these much cheaply to serve its population. However, there is need to take deliberate steps to protect and assure future availability of these resources.

***Goodwill***

Being new, and the youngest utility in the country, the company enjoys good will from sector players including the MWDSEP and other cooperating donors that wish to see the utility succeed. The positive performance of the utility in the past three years has helped to enhance this goodwill further.

### 3.5 Stakeholder Analysis and Relationships

Stakeholder	Roles and Concerns/Responsibilities	Area of operation (district)	Collaborating Partners	Civil, Public or Private	Primary, Secondary, Key and they have they have Veto powers
Department of Water and Sanitation Services	Policy direction Funding <ul style="list-style-type: none"> <li>● Execute Government policy on the provision of water supply and sanitation services.</li> <li>● Provide timely and professional advice on the company.</li> <li>● Report on the performance of the company</li> <li>● Ensure efficient and sustainable WSS service provision.</li> <li>● Reasonable and quality services by the citizenry</li> </ul>	Luapula	Cooperating Partners	Public	Key with veto powers
Regulators (NWASCO, WARMA & ZEMA, ZRA, NAPSA WORKERS COMPENSATION BOARD)	Regulation <ul style="list-style-type: none"> <li>● To ensure enforcement and collaboration to various required standards and regulations in service delivery</li> <li>● Harmonisation of procedures and standards.</li> </ul> Exchange of knowledge and experiences.	Luapula	GRZ	Public	Key
Share holders	Support & strategic planning Approval of salary increments	Luapula	GRZ	Civil, public & private	Key



	<p>Lobby for funding</p> <ul style="list-style-type: none"> <li>• Equity investment interest</li> <li>• Maximise returns earnings for future business growth</li> </ul>	Luapula	Board of directors Customers Suppliers		Primary
<p>Employees</p>	<p>Execution of day to day activities in order to achieve strategic objectives</p> <ul style="list-style-type: none"> <li>• Directors and Managers concerned about their salary, promotion prospects and potential benefits they may receive in the long term.</li> <li>• Employees who take keen interest in earning high wages and keeping their jobs</li> </ul>	Luapula			
<p>Customers</p>	<p>Settling of bills Reporting faults Reporting illegal activities</p> <ul style="list-style-type: none"> <li>• Enhanced service delivery.</li> <li>• Value for money - reasonably priced, quality and reliable services.</li> <li>• Protection from exploitation by service providers.</li> <li>• Prompt resolution of complaints.</li> <li>• Improved information dissemination</li> </ul>	Luapula	Employees	Public	Primary
<p>Financiers</p>	<p>Project funding Operational support</p> <ul style="list-style-type: none"> <li>• Interested in loan fund repayments on time and in full, and with interest</li> </ul>	Luapula	GRZ, CU, civil society	Private/public	Key

Suppliers	Provision of goods and services	Luapula	CU	Private	Secondary
Community (CivilSociety/NonGovernmental Organisations )	<ul style="list-style-type: none"> <li>• business continuity to buy their products and services,</li> <li>• keeps them with a degree of security and honoured contracts and deals</li> </ul> <ul style="list-style-type: none"> <li>• Improved and extended service delivery.</li> <li>• Lobby and engagement of the public in regulatory decisions.</li> <li>• Collaboration in coordination of sector information and advocacy.</li> <li>• Taking care of the interests of the marginalised – pro poor.</li> <li>• Transparency and fairness in discharging organisation's functions and compliance to various regulatory frames</li> </ul>		Civil, public & private	Key	

### 3.6 Conclusions

The SWOT analysis creates a basis for strategic objective formulation. LpWSC wish to take advantage of strengths and opportunities and diminish it weaknesses and strengths to maximize its operation to ensure that the customer is left satisfied.

### 3.0 Strategic Direction

#### 3.1 Vision

**To be a world class provider of water and sanitation services to the people of Luapula through sustainable and economical water resource management.**

#### 3.2 Mission

**To deliver clean drinking water and satisfactory sanitation services to all stakeholders through prudent sustainable water resources and environmental management for the benefit of all stakeholders**

#### 3.3 Values/Behaviours/Philosophy/Culture

SN	Core Values	Brief Description
1	Result Oriented	Endeavor to deliver in all areas of operation to satisfy our customers using the available resources
2	Professionalism	Uphold ethics in all facets of business in our dealings
3	Stakeholder involvement	We will involve all stakeholders in reaching decisions and executing assignments that affect them.
4	Teamwork	We will endeavor to involve staff at all levels of operation in achieving the set objectives
5	Innovativeness	In all we do, we will endeavor to apply principles of continuous improvement (Kaizen)

#### 3.4 Company motto

*“Clean water, better health”*

## 4.0 Strategic Objectives

### 4.1 Introduction

Based on the SWOT analysis presented in this policy document, LpWSC strategic plan has **five (05)** main strategic objectives, forming a basis for contributing towards the mission statement and subsequent attainment of the organisation business vision.

Objective 1: Mitigate the effects of Climate Change

Objective 2: Reduce NRW from 77% to 25%

Objective 3: Increase the water service coverage from 38% to 100%

Objective 4: Increase safely managed sanitation from 14% to 80%

Objective 5: Increase the operations and maintenance cost coverage by collections from 45% to 100%

### 4.2 Action Plan

Action plans that will lead to effective execution of the 2019-23 strategic objectives, tied with agreed performance indicators, schedules and available resources are summarised herewith.

Priority Action	Activities	Performance Indicators	Timeframe Years	2019 K' m	2020 K' m	2021 K' m	2022 K' m	2023 K' m	Total K' m
<b>Objective 1: Mitigate Against the Effects of Climate Change</b>									
1 Operational Mitigation	Adjust the Al <sub>2</sub> SO <sub>4</sub> dosage from 1,150kg to 3,000kg	<5 NTU of final water	5	1	1	1.5	1.7	2.2	7.4
	Enter into one year contracts with suppliers	Contracts for chemicals	5	1	1	1	1	1	5
	Sub Total			4	4	4.5	4.7	5.2	12.4
	Abstract water from Lake Bangweulu in Samfya	New abstraction plant	1					200	200
	Extend the	Intake point	0.1		0.5				0.5

Priority Action	Activities	Performance Indicators	Timeframe Years	2019 K' m	2020 K' m	2021 K' m	2022 K' m	2023 K' m	Total K' m
<b>Objective 1: Mitigate Against the Effects of Climate Change</b>									
	intake further into Lake Bangweulu in Samfya	extended							
	Consultancy to recommend alternative water sources in Kawambwa	New water source found	1			10		200	210
	Extend the intake further into Lake Mweru Bank in Nchelenge	Intake point extended	0.1			0.5			0.5
	Sub Total			0	0.5	10.5	0	400	411
Total: <b>Mitigate Against the Effects of Climate Change</b>				4	4.5	15	4.7	405.2	423.4

Priority Action	Activities	Performance Indicators	Timeframe Years	2019 K' m	2020 K' m	2021 K' m	2022 K' m	2023 K' m	Total K' m
<b>Objective 2: Reduce Non Revenue Water from 76% to 25%</b>									
2 Install zone meters	Mansa	Mansa 4,	4		2	2	2	1	
	Samfya	Samfya (Lupili,	4		1	1	1	1	
	Mwense	Chibolya,	4		1	1	1	1	
	Kawambwa	Mwanfuli &	4		1	1	1	1	
	Nchelenge	Hospital- 5,	3	1	1	1			
	Other	Kawambwa (Matero, Saint Mary's, Messengers, Medium & Low Density 6 Mwense (Low Density, Shingwe, Messengers & Roads 4) and Nchelenge 9	5						
	Sub Total				1	1	1	1	1
3 Replace aged net pipes	Mansa	100 km of aged pipes replaced	4		30	30			
	Samfya		4		20	20			
	Mwense		4		10	10			
	Kawambwa		4		10	10			
	Nchelenge		3	10	10				
	Other		3			1	1	1	
	Sub Total								
4 Replace malfunctioning and aged meters	Mansa	7,500 malfunctioning and aged meters replaced	2		2	2			
	Samfya		2		1	1			
	Mwense		2		1	1			
	Kawambwa		2		1	1			
	Nchelenge		2		1	1			
	Other		2				1	1	
	Sub Total								
5 Operate DMAs	Mansa	Trained of caretakers in DMAs Caretakers equipped for first aid approach Quarterly Community Sensitization meetings	5	3	3	3	3	3	
	Samfya		5	1	1	1	1	1	
	Mwense		5	1	1	1	1	1	
	Kawambwa		5	1	1	1	1	1	
	Nchelenge		5	1	1	1	1	1	
	Other		5	1	1	1	1	1	
	Sub Total								
Total									

Priority Action	Activities	Performance Indicators	Timeframe Years	2019 K' m	2020 K' m	2021 K' m	2022 K' m	2023 K' m	Total K' m	
<b>Objective 3: Increase Water Coverage from 38% to 100%</b>										
6 Expand production plants	Mansa	1,000m <sup>3</sup> /hr additional production capacity			24	32	24			
	Samfya				15	30	10			
	Mwense				10	20	10			
	Kawambwa				10	20	10			
	Nchelenge				40	10				
	Sub Total				0	99	112	54	0	265
7 Install production plants	Chembe	6 production plants installed			10	10			20	
	Milenge				10	10			20	
	Lunga			10	10				20	
	Chifunabuli			0.5	10	10			20.5	
	Mwansabombwe					10	10			20
	Chiengi			10	10					20
	Other							35	35	70
Sub Total			20.5	60	40	35	35	190.5		
8 Expand the pipe network	Mansa	150km of pipes installed				30	30		60	
	Samfya					20	20		40	
	Mwense						10	10		20
	Kawambwa						10	10		20
	Nchelenge						15			15
	Other			7.5	35	35	35	35	35	147.5
Sub Total			7.5	50	105	105	35	302.5		
9 Increase the number of billed customers	Mansa	7,000 additional billed customers				4	4		8	
	Samfya					2	2		4	
	Mwense						1	1		2
	Kawambwa						1	1		2
	Nchelenge						2			2
	Other						2	2	2	6
Sub Total			0	0	12	10	2	24		
Total				28	209	269	204	72	782	

Priority Action	Activities	Performance Indicators	Timeframe Years	2019 K' m	2020 K' m	2021 K' m	2022 K' m	2023 K' m	Total	
<b>Objective 4: Increase Safely Managed Sanitation from 14% to 80%</b>										
10 Install sewage pipes in unserviced areas	Mansa	200km of sewers installed				60	60			
	Samfya					30	30			
	Mwense						20	20		
	Kawambwa						20	20		
	Nchelenge						25			

Priority Action	Activities	Performance Indicators	Timeframe Years	2019 K' m	2020 K' m	2021 K' m	2022 K' m	2023 K' m	Total
	Other			7.5	35	65	65	65	237.5
	Sub Total								
11 Provide safely managed sludge facilities in all districts	Mansa	Standard drawings for on-site facilities		2	2	2	2	2	
	Samfya			1	1	1	1	1	
	Mwense			1	1	1	1	1	
	Kawambwa	Sludge safely transported		1	1	1	1	1	
	Nchelenge			1	1	1	1	1	
	Other			1	2	3	4	5	
	Sub Total								
Total									

Priority Action	Activities	Performance Indicators	Timeframe Years	2019 K' m	2020 K' m	2021 K' m	2022 K' m	2023 K' m	Total K' m
<b>Objective 5: Increase Operations and Maintenance Cost Coverage by Collections from 45% to 100%</b>									
12 Increase the number of customers from 7,500 to 17,000	Mansa	7,500 new customers connected				4	4		8
	Samfya				2	2		4	
	Mwense				1	1		2	
	Kawambwa				1	1		2	
	Nchelenge				2			2	
	Other				2	2	2	6	
	Sub Total				1	2	3	4	5
13 Install prepaid meters to increase collection efficiency to 100%	Mansa	15,000 prepaid meters installed		2	2	2	2	2	10
	Samfya			1	1	1	1	1	5
	Mwense			1	1	1	1	1	5
	Kawambwa			1	1	1	1	1	5
	Nchelenge			1	1	1	1	1	5
	Other					2	2	2	6
	Sub Total				1	2	3	4	5
Total				2	4	6	8	10	30
Grand Total				66.5	384.5	584	435.7	576.2	2046.9



A-14-3 Submitted and Approved MBP and HRDP Documnt (LpWSC)

## 5.0 Strategic Plan Implementation

### 5.1 Introduction

Implementation of this Strategic Plan policy document will ensure a more prioritised, structured approach to planning, linked to more accurate and transparent budgeting, implementation and monitoring, building on the strengths and capabilities of centralised planning and drawing improved funding into the Company.

### 5.2 Capital Investments

As a means to seeking financial assistance, Luapula Water and Sewerage Company will undertake full participation in scoping of works that will lead into feasibility studies for all possible projects. The company will identify gaps in the past funded projects like the BADEA, DTF and MWSDEP force account funded projects where projects can be built on.

Objective	Description	Budget in K'000					
		2019	2020	2021	2022	2023	Total
Objective 1	Mitigate Against the Effects of Climate Change	2.0	2.5	13.0	2.7	403.2	423.4
Objective 2	Reduce Non Revenue Water from 76% to 25%	20.0	101.0	92.0	16.0	15.0	244.0
Objective 3	Increase Water Coverage from 38% to 100%	28.0	209.0	269.0	204.0	72.0	782.0
Objective 4	Increase Safely Managed Sanitation from 14% to 80%	14.5	68.0	204.0	205.0	76.0	567.5
Objective 5	Increase Operations and Maintenance Cost Coverage by Collections from 45% to 100%	2.0	4.0	6.0	8.0	10.0	30.0
Total		66.5	384.5	584.0	435.7	576.2	2,046.9

### 5.3 Financial Projections

The abridged Comprehensive Statements of Income for the planning period are shown below. It is envisaged that the revenue base will grow from the current 7,950 to 20,000 by 2023. The revenues from operating activities will increase from K8.841m to K32.345m by the end of the planning period. This will cause for the company to begin to breakeven on revenues and costs.

ABRIDGED COMPREHENSIVE INCOME STATEMENTS FOR THE PLANNING PERIOD					
YEAR	2019	2020	2021	2022	2023
<b>REVENUES</b>					
Revenues from Operating Activities	11,268	14,086	17,746	22,296	32,345
Revenues from Grants	10,947	5,083	5,776	6,607	6,604
Total Revenues from all Activities	22,215	19,169	23,521	28,903	38,949
<b>COSTS</b>					
Operations and Maintenance Costs	15,418	18,759	22,947	27,221	31,627
Total Grants Amortisation	10,947	5,083	5,776	6,607	6,604
Total Costs	26,365	23,842	28,723	33,827	38,231
<b>PROFIT AND LOSS</b>					
Profit And Loss	(4,150)	(4,673)	(5,202)	(4,925)	718
<b>INDICATORS</b>					
COST COVER BY REVENUE	66%	68%	71%	77%	97%
COST COVER BY COLLECTIONS	56%	58%	61%	65%	83%
END OF YEAR NO. OF CUSTOMERS	8,260	9,070	11,380	13,690	20,000

### 5.3 Human Resources

The Human resource strategic plan is an elaborate and systematic plan of action developed by a human resource department. This tells us that an HR strategy includes detailed pathways to implement HRM strategic plans and HR plans. The HRM strategic plan as the major objectives the organization wants to achieve, and the HR plan.

### 5.4 Business Relations

Essentially, business relations are all of the entities with which LpWSC is connected or expects to have a connection, whether internal or external. This will be looked at from both external and internal perspectives.

### **Economic Relations**

The macroeconomic environment is fluctuating with inflation rates, exchange rates and interest rates on the rise and is likely to adversely affect the cost of doing business. There is increased demand for individual household connections arising from improvement in housing infrastructure and increased household income in Peri-urban areas.

### **Political Relations**

Increased political will by Government to improve funding in the water sector could leverage funding for Peri-urban, urban and rural intervention. The current political environment is stable.

The Government has prioritised WSS and hence a strong focus on implementing the decentralisation policy. General elections will be held in the year 2021 and Government changes could have implication on existing policies for the water sector as a whole.

Currently the Water Supply and Sanitation Act no. 28 of 1997 is under review. This might have a bearing on the future of LpWSC.

However the integration of the fund into LpWSC, while keeping autonomous management and committee structures, could enhance the financial position of the Company. Furthermore Government recently approved an on-site Sanitation and Sludge Management Framework that will require the involvement of the utility to have oversight of all sanitation and management programme in the province.

### **Social Relations**

The demand for better basic services in the peri-urban, urban and rural areas where the CU is operating has resulted in higher per capita cost for projects affecting the projected number of people provided with services. Communities continue to demonstrate little and no care for the environment and vandalism of WSS infrastructure is common.

Poor water management, encroachment of settlements and livelihood activities around WSS facilities have affected strategic water zones. This has affected the quality and availability of water. The low focus on sanitation (sewerage) in general has resulted in insufficient interventions. However the later will change with the implementation of an on-site Sanitation and Sludge Management Framework

### **Technological situation**

Necessary technologies to foster effectiveness and efficiency for water supply services are mostly available. There has been steady growth in the number of manufacturers and distributors of WSS technologies. The market itself allows competition for lower price and better quality products and services. Consultations and pilots on adaptation of necessary sanitation technologies are currently under way. There is utilisation of new technologies for WSS service delivery such as water pre-paid meters for water supply and advanced leak detection equipment that can be used for CU's with high NRW. However, the waste water treatment technologies and infrastructure are currently unable to cope with the ever increasing loads of sewage. If necessary attention is not paid to this area, the resultant effect will be deterioration in the quality of the environment and freshwater resources and aquatic biodiversity. There is still a need to adopt technologies that will reduce the cost of service delivery such as installing storage facilities. Recent frequent power outages have adversely affected WSS service delivery hence the CU may need to find alternative forms of energy.

### **Environmental Relations**

Global warming and climate change on the country's water bodies and resources are yet to be fully examined and assessed. Therefore is an urgent need to further mainstream and also integrate climate

change and global warming in water and sewerage management so that adaptive rather than reactive policies can be formulated.

Pollution of water bodies and sources is very rampant, especially in towns where there is high industrial activity. In the case of LpWSC, it faces a risk of groundwater pollution through poorly constructed onsite sanitation facilities as a result of low sewerage service coverage in the province.

More drive towards environmental friendly projects is recognized internationally. The availability of Environmental Impact Assessments (EIAs) and Environmental Project Briefs (EPB) guidelines provide an opportunity for compliance with regulatory authorities. Increased effluent and water quality regulation carried by ZEMA, WARMA and NWASCO respectively may result in restriction of application of certain technologies.

#### **5.4 Risk Management**

A risk can be defined as any internal or external situation or event that has the potential to negatively impact upon the company, preventing it from successfully achieving its objectives, delivering its services, capitalizing on its opportunities or carrying out its planned activities.

Risk management is simply the practice of systematically identifying and understanding risks and the controls that are in place to manage them. Ultimately the process gets you to a point of deciding whether, in the context of a particular strategy, activity or function, a risk is acceptable or requires further action.

LpWSC risk management programme will be aligned to its strategic goals and objectives and will be integrated with the overall planning and management functions of the organization to make it more effective.

The management of risk will lead to an integral part for good management of the company. There is a direct relationship between risk and opportunity in all business activities, and as such, LpWSC needs to be able to identify, measure and manage its risks in order to be able to capitalize on those opportunities and achieve its goals and objectives.

- i. Risk identification,
- ii. Risk analysis,
- iii. Risk response planning,
- iv. Risk monitoring and control.

This section identifies the various risks facing LpWSC and the measures to be taken to Eradicate or minimise such risks.

## 5.5 Risks Assessed and Mitigation Measures

No	Description	Risk	Likelihood	Impact	Mitigation
1	Objective 1: Mitigate Against the Effects of Climate Change	Delay to source funds for an alternative water source in Mwense	Medium	High	Expedite the progress of existing MOUs
		Delay to find alternative water sources in Kawambwa	Medium	High	Reduce NRW from 76% to 25%
2	Objective 2: Reduce Non Revenue Water from 76% to 25%	Poorly designed DMAs	Medium	High	Network physical verification
		Inaccurate Billing leading to commercial losses	Medium	High	Utilize digital meter reading and GIS
3	Objective 3: Increase Water Coverage from 38% to 100%	Delayed payments	Medium	High	Assign a dedicated PIT to handle paperwork
		Compromised quality of works	Medium	High	Appoint a reputable supervision Consultant
4	Objective 4: Increase Safely Managed Sanitation from 14% to 80%	Accidents in deep trenches	High	High	Appoint a SHEQ officer
		Lack of cooperation by the community	Medium	High	Hold quarterly community meetings
5	Objective 5: Increase Operations and Maintenance Cost Coverage by Collections from 45% to 100%	Low collection efficiency	High	High	Install prepaid meters
		Costs exceed revenue collected	High	High	Match costs with revenue collected

Emerging risks will be assessed during the course of the strategic planning period by way of bi-annual updates of the risk registers. A risk register will be maintained by each of the Heads of Department and District Managers. The Internal Auditor will monitor the performance of management of risks and report to the Managing Director on a monthly basis. In this way, Management will manage the risks all levels of the company hierarchy. The high level risks will be managed by the Board through the Risk Management Committee, the Managing Director, Internal Auditor and Senior Managers through quarterly reports.

## 6.6 Financial Management

In its current form, Luapula Water and Sewerage Company will receive grants from government, and other cooperating partners in order to rehabilitate, expand and construct facilities that are necessary for cost-effective service delivery. With the proposed capital investments the company will need to:

### i) Provide Resources for capital investment plans

- Provision of resources for undertaking proper operations and maintenance of the water supply and sanitation systems to ensure funds are used for the right project and in line with the project needs.
- To implement prudent and efficient financial systems in line with the donors' policies and Financial Reporting.
- The use of systems to ensure efficient invoicing of customers and minimize fraud possibilities across LpWSC.

### ii) Reinforcement of internal controls

Finance department will put in place accounting and administrative controls. In view of this, accounting controls in expending funds necessary to ensure that activities associated with authorizing, processing, recording, and reporting financial transactions are properly controlled and that the information resulting from these activities is reliable and useful.

Administrative controls will be implemented to ensure that all resources, including personnel, are properly obtained, maintained, and used; so that decisions regarding the expenditure of funds are made based on reliable information; and that budgets for each project to be undertaken are properly developed and monitored to ensure consistency between planned and actual expenditures. This will be strengthened by regular internal audits and year end external audits. A clear internal audit plan will be implemented to lead to the annual external audit.

## 6.0 Monitoring and Evaluation

Monitoring and evaluation helps with identifying the most valuable and efficient use of resources. Monitoring and evaluation together provide the necessary data to guide strategic planning, to design and implement programmes and projects, and to allocate, and re-allocate resources in better ways. LpWSC intends to develop a monitoring and evaluation plan in all its daily operational works, financial and management of projects

### 6.1 Operational

LpWSC will produce monthly, quarterly and annual report templates for the districts to monitor the progress of implementation. The Evaluation of the Strategic Plan will be done every years and at mid-period (three years).

### 6.2 Financial

Reporting formats will be developed to monitor and evaluate the progress of implementation. Controls will be developed and capacity building of all personnel in the management and handling of the scarce resources will be done for the capital resource envelope of K2.05m (USD205m).

Note: Exchange rate USD 1.00 = ZMK10.00

## Appendices

### I. Projected Financial Statements

Year	2019	2020	2021	2022	2023
<b>REVENUES</b>					
Water	9,558	12,033	15,456	19,735	26,162
Sanitation	526	631	757	908	4,360
Other	108	130	156	187	224
<b>Total Operating Revenues</b>	<b>10,191</b>	<b>12,794</b>	<b>16,369</b>	<b>20,830</b>	<b>30,745</b>
Add Fixed Meter Charges	1,077	1,292	1,377	1,466	1,599
<b>Total Revenues from Operating Activities</b>	<b>11,268</b>	<b>14,086</b>	<b>17,746</b>	<b>22,296</b>	<b>32,345</b>
RBI	1,177	1,177	1,412	1,695	2,034
Grants – ISTWSSP	1,620	1,620	1,620	1,620	1,620
GRZ Revenue Grants Salaries	8,150	2,286	2,743	3,292	2,950
Total Grants	10,947	5,083	5,776	6,607	6,604
<b>Total Revenues from all Activities</b>	<b>22,215</b>	<b>19,169</b>	<b>23,521</b>	<b>28,903</b>	<b>38,949</b>
<b>COSTS</b>					
<b>WATER</b>					
Direct Expenses - Water	2,979	3,763	4,755	6,011	7,600
Repairs and Maintenance	223	259	312	376	453
Operational Consumables	12	12	14	17	21
Services by Subcontractors	157	157	188	226	271
<b>SANITATION</b>					
Direct Expenses - Sanitation	2	2	2	3	3
Repairs and Maintenance	2	2	3	3	4
Operational Consumables					



Year	2019	2020	2021	2022	2023
	6	7	9	10	12
Services by Subcontractors	38	46	55	66	79
Direct expenses - Vehicle running	165	198	238	997	1,197
Personnel Costs	10,707	12,848	15,467	17,036	18,768
Communications	53	69	90	116	151
Insurance	89	116	150	196	254
Bank Charges	18	23	30	40	51
Administrative Costs	1,127	1,465	1,904	2,476	3,219
<b>Total O&amp;M Costs</b>	<b>15,418</b>	<b>18,759</b>	<b>22,947</b>	<b>27,221</b>	<b>31,627</b>
RBI	1,177	1,177	1,412	1,695	2,034
Grants - ISTWSSP	1,620	1,620	1,620	1,620	1,620
GRZ Revenue Grants Salaries	8,150	2,286	2,743	3,292	2,950
Total Grants Amortisation	10,947	5,083	5,776	6,607	6,604
Total Costs	26,365	23,842	28,723	33,827	38,231
<b>Profit/Loss</b>	<b>(4,150)</b>	<b>(4,673)</b>	<b>(5,202)</b>	<b>(4,925)</b>	<b>718</b>
NARRATION	2019	2020	2021	2022	2023
COVER BY REVENUE	66%	68%	71%	77%	97%
COVER BY COLLECTIONS	56%	58%	61%	65%	83%

**LUAPULA WATER AND SEWERAGE COMPANY LIMITED**

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**Proposed  
2019 BUDGET**

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## **Executive Summary**

The objective of the 2019 budget is to cover the inflation rate to maintain the cost coverage by collections of 56%. This will be accomplished by a tariff increase of 25% and a modest customer growth of 500.

The revenues have been on an upward trend in the last three years; from K6.055m (2015) to K8.084m (2018). The 2018 performance was better than the 2017 performance by 11% and was better than the 2016 performance by 52%.

The cost coverage by collections have been on a steady increase; 35% (2015), 39% (2016) and 48% (2017) and 56%(2018). The company continues to receive grants from the Ministry of Water Development, Sanitation and Environmental Protection to cover cash deficits. The low cost coverage will increase to more than 80% by 2023 once the AfDB funded Integrated Small Towns Water Supply and Sanitation Project (ISTWSSP) is completed. Other programmes such as the Nchelenge/Chiengi project and the JICA project will increase the cost coverage further.

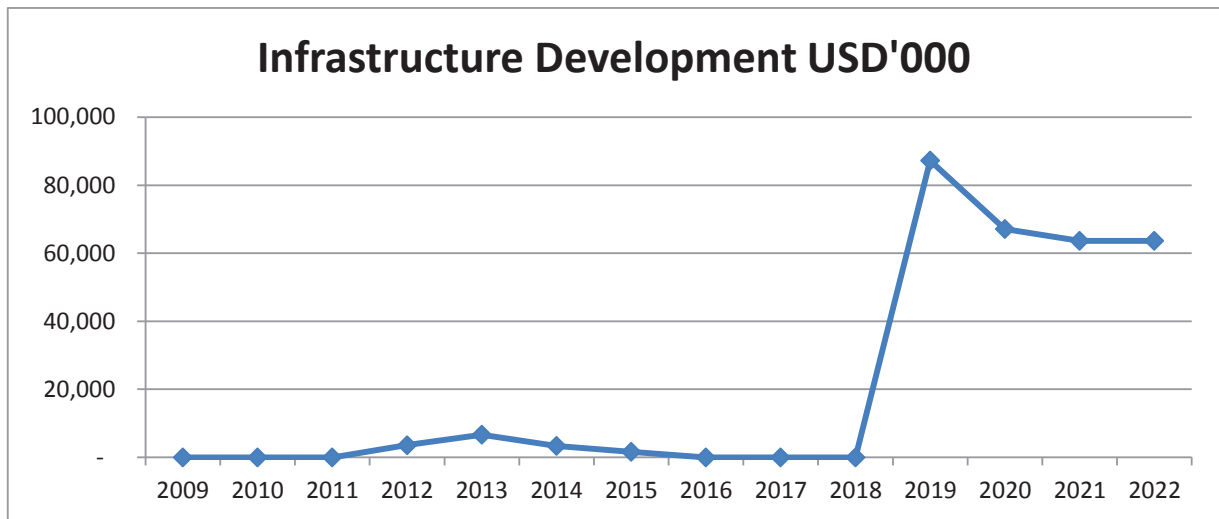
**1. Objectives for the Budget**

**1.1 Budget Objective**

The **primary budget objective** is to cover the inflation in order to maintain the cost coverage by collections at 56%. This will be accomplished by implementing a tariff increase of 25% and a modest organic customer growth of 500. The improvement in the cost coverage by revenue collections over the years is shown in the table below, particularly in the rescue of the declined ratio of 35% to the current 56%.

NARRATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
COVER BY COLLECTIONS	21%	48%	46%	46%	42%	46%	35%	51%	53%	56%	56%

The **limiting factor of the budget** is the number of customers connected to the system. The company is currently on a survival budget and is undertaking capital projects to increase the revenue (customer) base. The cost coverage by collections is expected to exceed 97% by 2023 after the completion of the capital expenditure on the Integrated Small Towns Water Supply and Sanitation Programme (ISTWSSP), JICA NRW Reduction Programme, Nchelenge/Chiengi Rehabilitation and Expansion Programme. The historical picture and future outlook of infrastructure development is depicted in the graph below.



The **second budget objective** is to fill 17 vacant positions on the authorized company organogram in a progressive manner over a period of three years, as contained in the proposed 2019-23 Strategic Plan document. Being mindful of the fact that the volume of customers will increase in year 4 and 5,

the progressive filling of the organogram will prevent the shock tariff increase impact on customers over a three year horizon.

**The third budget objective** is to dismantle the salary arrears of K2.3m through revenue grants from GRZ. The budget has made provisions for GRZ to cover the deficit in cost coverage by cash collection of 44% in the current year.

## 1.2 Other Budget Objectives

The other budget objectives are as follows.

- 2.1.1. Maintain Cost Coverage by Revenue at 66% with a collection efficiency of 85%.
- 2.1.2. Control the O&M costs to fall below K15.5 million.
- 2.1.3. Increase water quality monitoring from 80% to 90%.
- 2.1.4. Implement 85% planned maintenance works.

## 2. Abridged Statement of Income

The 2019 Budget for Luapula Water and Sewerage Company (LpWSC) Limited is shown in the table below. Comparatives have been made with the achievements in 2017 and 2018.

Table 1 Abridged Statement of Income, in K'000

Narratives	2019 Budget	2018 Actual	2017 Actual
Revenues	11,268	8,841	7,941
Grants	10,947	1,790	
Revenues and Grants	22,215	10,631	7,941
Operations & Maintenance Costs	15,418	12,266	11,694
Grants Amortisation	10,947	1,790	
Total Costs	26,365	14,056	11,694
<b>Profit/Loss</b>	<b>(4,150)</b>	<b>(3,425)</b>	<b>(3,753)</b>

The Company is will incur a loss of K4,150, 000, which is less favorable than the 2018 loss of K3,425,000. This adverse variance will come about to fulfill the three year plan, as contained in the proposed 2019-23 Strategic Plan document, to cover the cost of filling the vacancies on the company organogram. The Company projects to increase revenue by 27% from the 2018 actual of K8,841,000 to the 2019 budget of K11,268,000. This will be accomplished by a tariff increase of 25% and coupled with an organic increase by 500 billed customers. The revenue grants will increase

from the K1,790,000 in 2018 to K10,947,000; and are anticipated to come from the ISTWSSP, JICA NRW reduction programme, Nchelenge/Chiengi Rehabilitation and Expansion Programme. This includes the GRZ budgetary support to dismantle salary arrears and terminal benefits for employees.

Operations and maintenance costs are projected to be K15,463,000, based on anticipated price fluctuations, representing an increase of 26% from an actual of K12,266,000. It is anticipated that production cost inputs will go up by more than 35%, but the administrative costs will be controlled to within 10% on the basis of price fluctuations. The only volumetric increase is the labour increase is aimed at filling the organogram in a progressive manner over a period of three years.

## 2.1 Revenue Budget

The Company's revenue structure comprises revenue from water sales; revenue from sewerage services which is a function of water sales; revenue from other operating activities which includes reconnection fees, sales from services of unblocking sewer, water meter testing services and raw water sales. The revenue is summarized in the table below.

Table 2 Revenue Summary

	2019 Budget	2018 Actual	2017 Actual
<b>Revenue</b>			
Water Revenue	9,558,000	7,645,000	7,007,475
Sewerage Revenue	526,000	438,000	293,105
Other Revenue	108,000	-	-
	<b>10,191,000</b>	<b>8,804,000</b>	<b>7,300,581</b>
<b>Add: Fixed Meter Charge</b>	1,077,000	757,000	640,080
<b>Revenue</b>	<b>11,269,001</b>	<b>8,841,000</b>	<b>7,940,661</b>
<b>Grants</b>			
ISWSSP	1,620,000	1,472,000	-
GRZ – Revenue	8,150,000	318,075	2,261,250
GRZ – Capital	-	-	591,260
RBI	1,177,000	-	-
<b>Total Grants</b>	<b>10,947,000</b>	<b>1,790,075</b>	<b>2,780,510</b>
<b>Total Revenue and Grants</b>	<b>26,365,000</b>	<b>10,631,075</b>	<b>10,721,170</b>

The 2019 operating revenue performance is projected to be better than 2018 by 27%. In comparison to 2017, the 2018 performance was better by 11%. The performance would have been better than 11% had it not been for the unfavourable economic situation in 2018 which caused key customers

to withdraw from the company water supply in preference for own borehole supply, to avoid bills from cumulating, e.g. Mansa General Hospital, Mansa Hotel and some government institutions.

### 2.1.1 Water Sales

403 customers were added to the system in 2018 to bring the total to 7,918. In 2019, the customer growth is forecasted to grow to 8,418 as at 31<sup>st</sup> December 2019. Connections totaling to 500 are envisaged in 2019.

In the 2019 FY budget, the Company plans water sales of 2,188.614 m<sup>3</sup> compared to the 2018 FY reported sales of 1,750,891 m<sup>3</sup>, as shown in the table below, without increasing the production volume.

**Figure 1: Billing Volume, in m<sup>3</sup>**

Narration	Mansa	Samfya	Mwense	Kawambwa	Nchelenge	Company
Post-paid Customers	882,449	284,520	175,089	27,358	180,561	1,366,416
Pre-paid Customers	403,360	-	-	238,276	-	641,637
<b>Total Water Sales (m<sup>3</sup>)</b>	<b>1,285,810</b>	<b>284,520</b>	<b>175,089</b>	<b>262,634</b>	<b>180,561</b>	<b>2,008,053</b>
Contribution (%)	56%	13%	8%	12%	11%	100%

### 2.1.2 Sewerage Sales

LpWSC manages a small sewerage revenue base of about 300 households due to lack of investment in this area. In 2019, the sewerage revenue budget is projected to be K526,757, compared to an actual of K438,050 in 2018.

### 2.1.3 Other Revenue

In 2019, the Company plans to generate K 107,743 from other operating revenue activities with reconnection fees, revenue from unblocking sewer and meter testing among others; representing an increase of 13% compare to K 93,690.00 in 2018.

### 2.1.4 Fixed Meter Charge

Fixed meter charge is a charge levied on each and every customer who is metered. This pool of funds is meant for meter repairs and replacements that arise from time to time. In 2019, the Company plans to generate K 1,077,000.00 of which K883,140.00 will be realised from domestic customers and K 198,060 from non-domestic customers.



### 2.1.5 Grants

In 2019, the amount of K1,620,000 is anticipated to be received on the ISTWSSP project in support of program activities, disbursed under the special account. There is a provisional amount of K1,177,000 under the ISTWSSP for the Regulation By Incentives (RBI). The Government grant of K8,150,000 has been budgeted to bridge the deficit for salary payments. Other programmes such as JICA and SaRAF are expected to begin unfolding in 2019; but have not been included in the budget for the sake of prudence.

## 2.2 Cost Budget

The Company's cost structure is shown in the table below.

Cost Element	2019	2018	2017
Direct Expenses Water	3,371	2,036	2,220
Direct Expenses Sanitation	2	2	2
Direct expenses - Vehicle running	165	523	156
Personnel Costs	10,787	9,310	8,685
Communications	53	35	52
Insurance	9	2	2
Bank Charges	18	18	18
Administrative Costs	1,127	370	631
<b>Total O&amp;M Costs</b>	<b>15,418</b>	<b>12,266</b>	<b>11,694</b>

The costs will generally go up by 26% from K12.266m in 2018 to K15.418m in 2019.

**Direct Expenses Water:** In addition to the price fluctuations, a component of subcontractors has been added to bring the cost from K2.036 in 2018 to K3.371m in 2019.

**Direct Expenses Sanitation:** There are hardly any activities other than inspections.

**Direct Expenses-Vehicle Running:** The ISTWSSP will take up the expenses for the motor vehicles bought under the project. The project vehicle expenses will appear under the ISTWSSP revenue grant amortization line.

**Personnel Costs:** The salary increases will be kept at not more than 10%. A provision has been made to recruit labour to fill 17 vacant positions in a progressive manner over a period of three years to 2021. The total outcome is an increase in cost of 16% from K9,310 in to K10,787 in 2019.

**Administrative Costs:** The Board has been newly appointed and costs to cover the Board and Committee meetings have been provided for in the budget. Additionally, fees for an External Auditor have been provided as well.

### 2.3 O&M Cost Coverage by Revenue

In the 2019 FY budget, the Company’s O&M cost coverage by revenue is 66%; which is the 2018 status quo; but better than the 62% in 2017 and the 44% achieved in 2015.

**Figure 2: Operations & Maintenance Cost Coverage by Revenue**

Narration	2019 budget	2018 Actual	2017 Budget
Operating Revenue	10,191,000	8,840,825	7,940,660
O&M Costs	15,463,325	12,268,191	11,686,756
<b>Cost Coverage by Revenue</b>	<b>66%</b>	<b>66%</b>	<b>62%</b>

### 2.4 2019 O&M Cost Coverage by Collections

In the 2019 FY budget, the Company’s O&M cost coverage by collection is projected to be 56%; as in 2018, but better than the 53% in the 2017 FY budget 35% achieved in 2015.

**Table 3: O&M Cost Coverage by Collection**

Narration	2019 Budget	2018 Actual	2017 Actual
Revenue Collected	9,578,650.85	8,840,825.00	5,558,951.19
Operations & Maintenance Costs	15,463,325.17	12,268,191.12	11,686,756.19
<b>Cost Coverage by Collections</b>	<b>62%</b>	<b>61%</b>	<b>58%</b>

The improvement in the cost coverage by revenue collections over the years is shown in the table below, particularly in the rescue of the declined ratio of 35% to the current 56%.

NARRATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>COVER BY COLLECTIONS</b>	21%	48%	46%	46%	42%	46%	35%	51%	53%	56%	56%

The limiting factor of the budget is the number of customers connected to the system. The company is currently on a survival budget and is undertaking capital projects to increase the revenue (customer) base. The cost coverage by collections is expected to exceed 97% by 2023 after the completion of the capital expenditure on the Integrated Small Towns Water Supply and Sanitation

Programme (ISTWSSP), JICA NRW Reduction Programme, Nchelenge/Chiengi Rehabilitation and Expansion Programme, Save Africa Foundation (SaRAF), CNECC, CRIDF and GIZ/GFA.

### 3. Cash Expenditure Budget

The Company projects that out of the total revenue budget of K11,269,001 a minimum of 85% will be collected translating to a total of K9,578,650 compared to K9,488,271 in the 2018 budget.

The company will continue to rely on grants from the Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP) to meet the operational cash budget deficit of 44%. Other obligations amounting to K14, 599,876.85 are envisaged to be funded through the 10% Government counterpart funding in the AfDB Loan Agreement for the Integrated Small Towns Water Supply and Sanitation Project (ISTWSSP). These obligations relate to salary arrears, staff gratuity, statutory obligations (NAPSA, ZRA and Workers' Compensation) and support to procure standby equipment.

#### Statutory Obligations

NAPSA	1,862,993.21
ZRA	5,863,353.17
Workers Compensation	224,048.44

#### Salary Accruals

Outstanding salaries	2,362,114.29
Gratuities	1,298,648.12
Leave pay	1,532,920.87
Pensions	1,271,958.14
Union	183,840.71
<b>Total K</b>	<b>14,599,876.95</b>

#### 4. Revenue Expansion Programmes

##### 5.1 Introduction

The company purposes to increase its service coverage from five districts to all the 11 districts of Luapula Province. Detailed designs for the eleven districts were completed by June 2017. Bankable documents are available for financing. The capital project cash flow to develop the water and sanitation infrastructure in all the districts of Luapula Province by 2020 is shown in the table below.

S N	in USD '000 Narration	Type	Project Amount	Year of Disbursement			
				2019	2020	2021	2022
1	ISTWSSP	Loan	39,000	9,750	9,750	9,750	9,750
2	Nchelenge Chiengi Project	Grant	11,200	11,200			
3	JICA NRW Reduction in Mansa	Grant	7,000	3,500	3,500		
4	Prepaid Metering Disbursement	Loan	20,000	12,500	2,500	2,500	2,500
5	GIZ Technical Support	Grant	6,000	300	1,400	1,400	1,400
6	KfW Rural Sanitation	Grant	TBA				
7	CRIDF Border Town Project	Grant	TBA				
8	CNECC Water and Sanitation	Loan	TBA				
9	Saraf Water and Sanitation	Loan	200,000	50,000	50,000	50,000	50,000
10	Total		298,450	87,250	67,150	63,650	63,650

##### 5.2 Integrated Small Towns Water Supply and Sanitation Project

The Government of the Republic of Zambia (GRZ) signed a loan agreement in November 2016 in the sum of USD135 million for the Integrated Small Towns Water Supply and Sanitation Project (ISTWSSP) to be implemented in Luapula, Muchinga, Northern and Western Provinces. On 25th July, GRZ on lent USD33.5 million and on granted USD 6.7 million to Luapula Water and Sewerage Company (LpWSC) for the purpose of financing components 1 and 2 of the Integrated Small Towns Water Supply and Sanitation Programme to expand the services in the four towns from 45% to 100%. The procurement for a Consultant and the recruitment of the Project Implementation Team is in progress. This programme is envisaged to double the number of customers from 8,000 to

16,000 by 2023. This will have an impact on the cost coverage by increasing the ratio from 56% to more than 100%; thus lifting the company from its current budget deficit situation.

### **5.3 Nchelenge And Chiengi**

Detailed designs to service Nchelenge and Chiengi were completed in 2016. The bidding process for the two districts resulted in the selection of Zhengtai Contractor, at USD112,000, who commenced mobilisation in September 2018. The installation works in Chiengi will enable LpWSC to enter into a sixth district for operations in 2019. The project has, however, stalled due to non disbursement of the 25% Advance Payment by GRZ. Another financier, Climate Resilient Infrastructure Development Facility, has shown interest to refinance the Nchelenge component at USD80,000.

### **5.4 JICA NRW Reduction Programme in Mansa**

This is a grant of USD7.0m to undertake a non revenue water (NRW) reduction programme in Mansa over a period of 4 years commencing in 2019. All the aged pipes will be replaced. Employees will also be trained in various aspects of operations and maintenance, with a focus to reduce NRW.

### **5.5 Prepaid Metering Programme**

The USD20m project is at project scoping stage. The objective of the project is to increase the collection efficiency from 85% to 100%. Additionally, customer arrears are expected to be collected at a rate of 25%.

## APPENDICES

### **1. Budgetary Control**

#### **Budgetary Control Reports**

In order to ensure adherence to the 2019 FY budget we shall maintain a system of budgetary control reports. By the 10<sup>th</sup> of the subsequent month, financial reports will be prepared and distributed timely comparing actual revenue and expenditure with budgeted amounts.

#### **Authorisation of Budget Adjustments and Amendments**

The budget is meant to be a dynamic rather than a static plan. As such it requires adjustments and formal amendments as circumstances arise. Therefore proposed changes such as increases in total departmental appropriations, increase in personnel cost budgets, authorized positions and similar activities will require board approval.

#### **Authorisation of Budget Realignment**

Departments and Districts wishing to transfer allocations from one line item to another within the same activity/project must submit a budget amendment request. The Senior Manager – Finance and Managing Director shall review and approve all requests for budget realignments. If the proposed budget realignment involves a donor funded project, the Managing Director shall seek authorisation from the concerned funder before the proposal is allowed. Adjustments for appropriations that have been obligated, committed or reserved for a designated purpose shall not be transferred until a formal de-obligation occurs. The de-obligation of the budget allocation to a specific project will only occur after completion of the project/activity or when such a project/activity and budget funding are no longer needed.

#### **Budget Execution Guidelines**

- The responsibility of budget execution rests with the Company's Heads of Departments and District Managers. They must account for the expenditures and programme outputs. All Heads of Departments and District Managers must ensure that budget allocation is done at activity level and that each budget expenditure is monitored to each allocation;
- The responsibility for monitoring shall rest with the Senior Manager – Finance and Managing Director;

- Prior to raising a purchase requisition, order or any spending request, the budget holder must ensure:
  - i. that there is a budget available in that budget line,
  - ii. that there is sufficient funding available in the line item and that the budget is not exceeded,
  - iii. For donor funded projects and high value items the requisition must be forwarded to accounts for availability of funds and to check the appropriate chart fields,
- In case of budget insufficiency and the purchase request needs to be executed because of emergence/urgency, the Budget Controller will send a memo to the Head of Department, that there is no budget in the particular expense line item.

When the Head of Department receives the memo, he/she may or may not request for the budget transfer from Managing Director.

**It is important for the Budget Controller to always check availability of funds to ensure there is a budget on a particular budget line item before executing the above process.**

- All expenditure within the activity must be charged to the appropriate category and with budget controllers (DMs at District level) ensuring that the requisition/order amount is added to the cumulative year to date expenditure and compared to the budget allocation to determine if there are sufficient funds to pay for the intended expense.
- All payments or expenses must be checked by Finance Department or someone charged with the responsibility of budget compliance assurance to ensure that they are in accordance with the approved budget.
- All spending should be within the budget limits.
- No budget transfers will be allowed between under spent budgets and overspent budgets. Any variance must be justified and explained for each budget heading.
- Prior to being spent a particular budget expense line item must be planned for and included in the monthly cash flow plan. This will ensure adequate cash is available before undertaking on any expenses.

- All Engineering/Construction expenditure must be certified by the Technical/Project Manager or the Senior Manager – Engineering.

### **Specific Budget Needy Areas**

The following areas shall require serious attention in order to make the 2018 budget work:

- **Accountability of collections**

All collections received will be required to be duly receipted and banked. Separate receipt books for the respective customer categories shall be opened to enhance accountability and such shall include receipt books for each customer category (domestic, commercial, institutional, kiosks and communal taps) on post-paid metering and receipt books for each customer category on prepaid metering. Other revenue collections such as reconnection fees shall be receipted in a separate receipt book.

- **Daily collections summary reports**

At close of business, each District through the office of the Customer Services Assistant (CSA) shall be required to compile a summary of the daily collections to be emailed to the Financing Accountant stationed at Head Office. The information on the collections summary report shall be as shown in the format provided in the appendices.

- **Weekly submission of cash deposit schedules**

In order to complete the weekly collection reconciliations, Districts shall make arrangements to send the cash deposit batches to the Financing Accountant by the following Monday of the week in which the collections in question are made.

- **Monthly inventory reports from the Main Stores, Head Office and Districts**

In order to fully account for inventory movements, detailed inventory reports shall be made available from the Main Company Stores and Districts. Chemical usage, repair materials, stationary among other materials shall be reported on to show consumption levels and amounts in stock.



Monthly reports on the electricity units used in the water treatment plants across the operational Districts shall also be made available for financial cross checks to obtain prospects for cost reduction.

- **Pool vehicle mileage and fuel analysis reports**

The Company shall identify pool vehicles for operations in order to fully account for fuel consumption on each vehicle. The office of the Senior Manager – Human Resources and Administration shall coordinate and compile weekly mileage and fuel consumption reports for each motor vehicle in the Company. This shall be the prerequisite to drawing the next consignment of funds for fuel.

- **Adherence to Procurement Procedures**

All procurement requirements above K 2,000 shall be subjected to the normal procurement procedure. Use of general imprest shall be highly discouraged unless under special circumstances deemed fit by the Managing Directors.

- **Quarterly performance monitoring inspections**

In order to enhance performance at both Head Office and Districts, designated officers from Head Office shall conduct quarterly inspections. Programmes of the specific inspection deliverables shall be set out and approved by the Managing Director. Upon return, inspection finding reports shall be availed to the Managing Director from which action points shall be drawn to address specific needy areas identified.

- **Labour requirements**

All labour engagements shall be done through the office of the Senior Manager – Human Resources and Administration (SMHRA). Monthly labour engagement proposals shall be submitted to SMHRA for verification of the labour needs by the applicant who could be an Office at Head Office or the District. Once satisfied and upon confirmation of funding availability in the budget, the application shall be forwarded to the Managing Director for approval. Approved copies from the Managing Director shall then be availed to the SMHRA. The office of SMHRA shall compile a write up to Finance stating how many workers are going to be recruited by a specified District, how much will be expected to be paid, effective when and for how long.

This write up shall be the basis upon which Finance shall generate the labour journals for each given month.

No write up for the purposes of labour journals shall be forwarded directly to Finance without proof of approval by the Managing Director and the office of SMHRA.

- **Retirement of Business Travel and General Imprest**

Business travel and general imprest shall be retired within 48 hours following the return of a member of staff from operations that warranted the payment of business travel imprest. In the same fashion, general imprest paid to a member of staff shall be required to retired within 48 hours following the date of return from operations and/or date of the actual acquisition of the item applied for.

Members of staff, who will not have met the retirement criteria above, shall not be paid additional imprest unless Finance had duly processed a recovery of the retirable sum from the payroll.

## 2. District Budgets

### 1.1. Mansa District 2019 Projected Income Statement

Revenue	2019 Budget	2019 Stretched	2018 Budget
<b>Water Sales:</b>			
Metered	3,718,885.75	4,462,662.90	2,911,199.99
Prepaid Water Supply	1,361,025.00	1,633,230.00	1,987,144.49
Mansa General Hospital	163,323.00	195,987.60	313,826.50
<b>Total Water Revenue</b>	<b>5,243,233.75</b>	<b>6,291,880.50</b>	<b>5,212,170.98</b>
Operating Income - Sewerage Sales	347,196.50	416,635.80	520,260.00
Other Operating Income	107,743.50	129,292.20	36,000.00
<b>Total Revenue before Fixed Meter Charges</b>	<b>5,698,173.75</b>	<b>6,837,808.50</b>	<b>5,746,895.34</b>
<b>Fixed Meter Charge:</b>			
Domestic Customers	573,584.51	688,301.41	458,867.61
Non-Domestic Customers	94,992.06	113,990.47	75,993.65
	<b>668,576.57</b>	802,291.88	<b>534,861.25</b>
<b>Grand Total Revenue from Operating Activities</b>	<b>6,366,750.32</b>	<b>7,640,100.38</b>	<b>6,303,155.34</b>
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	768,506.22	922,207.46	1,585,524.20
Total Personnel Cost	907,876.56	1,089,451.87	1,565,537.07
Total Administrative Cost	187,538.05	225,045.66	83,596.00
<b>Total Operational &amp; Maintenance Cost</b>	<b>1,863,920.83</b>	<b>2,236,705.00</b>	<b>3,234,657.27</b>
<b>Projected Profit from Operating Activities</b>	<b>4,502,829.49</b>	<b>5,403,395.39</b>	<b>3,068,498.07</b>
<b>Projected O&amp;M Cost Coverage by Revenue</b>	<b>178%</b>	<b>178%</b>	<b>178%</b>

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## 1.2. Samfya District 2019 Projected Income Statement

	2019 Budget	2019 stretched	2018 Budget
<b>Revenue</b>			
<b>Water Sales:</b>			
Metered	1,487,056.89	1,784,468.27	1,364,746.18
<b>Total Water Revenue</b>	<b>1,487,056.89</b>	<b>1,784,468.27</b>	<b>1,364,746.18</b>
Other Operating Income	31,810.68	38,172.82	24,000.00
<b>Total Revenue before Fixed Meter Charges</b>	<b>1,518,867.57</b>	<b>1,822,641.08</b>	<b>1,388,746.18</b>
<b>Fixed Meter Charge:</b>			
Domestic Customers	201,150.00	241,380.00	160,920.00
Non-Domestic Customers	38,700.00	46,440.00	30,960.00
	<b>239,850.00</b>	<b>287,820.00</b>	<b>191,880.00</b>
<b>Grand Total Revenue from Operating Activities</b>	<b>1,758,717.57</b>	<b>2,110,461.08</b>	<b>1,580,626.18</b>
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	545,141.46	654,169.75	486,904.60
Total Personnel Cost	963,658.53	1,156,390.24	914,006.39
Total Administrative Cost	195,816.92	234,980.30	39,951.00
<b>Total Operational &amp; Maintenance Cost</b>	<b>1,704,616.91</b>	<b>2,045,540.29</b>	<b>1,440,861.99</b>
<b>Projected Profit from Operating Activities</b>	<b>54,100.66</b>	<b>64,920.79</b>	<b>139,764.19</b>
<b>Projected O&amp;M Cost Coverage by Revenue</b>	<b>110%</b>	<b>132%</b>	<b>85%</b>

## Mwense District 2019 Projected Income Statement

	2019 Budget	2019 Stretched	2018 Budget
<b>Revenue</b>			
<b>Water Sales:</b>			
Metered	997,333.25	1,196,799.90	902,390.03
Prepaid Water Supply			-
<b>Total Water Revenue</b>	<b>997,333.25</b>	<b>1,196,799.90</b>	<b>902,390.03</b>

Other Operating Income	10,650.00	12,780.00	8,520.00
Total Revenue before Fixed Meter Charges	1,007,983.25	1,209,579.90	910,910.03
Fixed Meter Charge:			
Domestic Customers	84,600.00	101,520.00	67,680.00
Non-Domestic Customers	12,900.00	15,480.00	10,320.00
	97,500.00	117,000.00	78,000.00
Grand Total Revenue from Operating Activities	1,105,483.25	1,326,579.90	988,910.00
Operational and Maintenance Cost			
Total Direct Operating Cost	394,253.11	473,103.73	368,751.32
Total Personnel Cost	749,512.19	899,414.63	709,290.02
Total Administrative Cost	93,769.02	112,522.82	41,972.00
Total Operational & Maintenance Cost	1,237,534.32	1,485,041.18	1,120,013.34
Projected Profit /Loss from Operating Activities	-	-	-
	132,051.07	-158,461.28	-131,103.31
Projected O&M Cost Coverage by Revenue	89%	89%	88%

### Kawambwa District 2018 Projected Income Statement

Revenue	2019 Budget	2019 Flexed	2018 Budget
Water Sales:			
Metered	90,446.40	1,085,356.80	72,357.12
Prepaid Water Supply	1,171,312.57	14,055,750.84	864,835.20
Total Water Revenue	1,261,758.97	15,141,107.64	937,192.32
Other Operating Income	9,112.50	109,350.00	7,290.00
Total Revenue before Fixed Meter Charges	1,270,871.47	15,250,457.64	944,482.32

<b>Fixed Meter Charge:</b>			
<b>Domestic Customers</b>	<b>125,400.00</b>	<b>1,504,800.00</b>	<b>100,320.00</b>
Non-Domestic Customers	19,200.00	230,400.00	15,360.00
	<b>144,600.00</b>	<b>1,735,200.00</b>	<b>115,680.00</b>
<b>Grand Total Revenue from Operating Activities</b>	<b>1,415,471.47</b>	<b>16,985,657.64</b>	<b>1,060,162.32</b>
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	573,459.07	6,881,508.84	413,314.60
Total Personnel Cost	856,585.36	10,279,024.32	812,156.54
Total Administrative Cost	128,932.41	1,547,188.92	34,172.00
<b>Total Operational &amp; Maintenance Cost</b>	<b>1,558,976.84</b>	<b>18,707,722.08</b>	<b>1,259,643.14</b>
<b>Projected Profit /Loss from Operating Activities</b>	<b>-143,505.37</b>	<b>-1,722,064.44</b>	<b>-199,480.82</b>
<b>Projected O&amp;M Cost Coverage by Revenue</b>	<b>91%</b>	<b>91%</b>	<b>39%</b>

**1.5. Nchelenge District 2019 Projected Income Statement**

<b>Revenue</b>	<b>2019 Budget</b>	<b>2019 Flexed</b>	<b>2018 Budget</b>
<b>Water Sales:</b>			
Metered	898,295.02	1,077,954.02	799,105.73
Kiosk	5,000.00	6,000.00	4,000.00
<b>Total Water Revenue</b>	<b>903,295.02</b>	<b>1,083,954.02</b>	<b>803,105.73</b>
Other Operating Income	22,350.00	26,820.00	17,880.00
<b>Total Revenue before Fixed Meter Charges</b>	<b>925,645.02</b>	<b>1,110,774.02</b>	<b>820,985.73</b>
<b>Fixed Meter Charge:</b>			
Domestic Customers	86,100.00	103,320.00	68,880.00
Non-Domestic Customers	20,100.00	24,120.00	16,080.00
	<b>106,100.00</b>	<b>127,320.00</b>	<b>84,960.00</b>
<b>Grand Total Revenue from Operating Activities</b>	<b>1,031,745.02</b>	<b>1,238,094.02</b>	<b>905,945.73</b>
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	537,459.07	644,950.88	536,358.40
Total Personnel Cost	856,585.36	1,027,902.43	725,126.45
Total Administrative Cost	105,490.15	126,588.18	37,352.00
<b>Total Operational &amp; Maintenance Cost</b>	<b>1,499,534.58</b>	<b>1,799,441.50</b>	<b>1,298,836.85</b>
<b>Projected Profit /Loss from Operating Activities</b>	<b>-467,789.56</b>	<b>-561,347.47</b>	<b>-392,891.12</b>
<b>Projected O&amp;M Cost Coverage by Revenue</b>	<b>69%</b>	<b>69%</b>	<b>56%</b>

### 3. Departmental Budgets

#### 3.1. Finance, Commercial & ICT 2019 Expenditure Budget

Revenue	2019 Budget	2019 Flexed	2018 Budget
<b>RBI</b>	1,177,000.00	1,177,000.00	
<b>GRZ Revenue Grant</b>	1,620,000.00	1,620,000.00	1,472,000.00
<b>GRZ Capital Grant</b>	<u>2,286,000.00</u>	<u>2,286,000.00</u>	<u>102,000.00</u>
<b>Total Grants</b>	<b>5,083,000.00</b>	<b>5,083,000.00</b>	<b>1,574,000.00</b>
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	-	-	-
Total Personnel Cost	1,763,658.53	2,116,390.24	1,984,257.69
Total Administrative Cost	128,932.41	154,718.89	373,790.20
<b>Total Operational &amp; Maintenance Cost</b>	<b>1,892,590.94</b>	<b>2,271,109.13</b>	<b>2,405,179.09</b>
<b>Projected Profit from Operating Activities</b>	<b>4,893,740.06</b>	<b>2,425,828.02</b>	<b>831,179.20</b>

#### 3,2. Human Resources & Administration 2018 Expenditure Budget

	2019 Budget	2019 Flexed	2018 Budget
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	394,253.11	473,103.73	348,187.20
Total Personnel Cost	1,713,170.71	2,055,804.85	1,806,719.57
Total Administrative Cost	<u>246,143.69</u>	<u>295,372.43</u>	<u>607,588.00</u>
<b>Total Operational &amp; Maintenance Cost</b>	<b>2,353,567.51</b>	<b>2,824,281.01</b>	<b>2,762,494.77</b>

### 3.3 Engineering 2019 Expenditure Budget

	2019 Budget	2019 Flexed	2018 Budget
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	394,253.11	473,103.73	51,512.00
Total Personnel Cost	963,658.53	1,156,390.24	1,138,005.60
Total Administrative Cost	82,047.90	98,457.48	43,920.00
<b>Total Operational &amp; Maintenance Cost</b>	<b>1,439,959.54</b>	<b>1,727,951.45</b>	<b>1,333,437.60</b>

### 3.4 Procurement 2019 Expenditure Budget

	2019 Budget	2019 Flexed	2018 Budget
<b>Operational and Maintenance Cost</b>			
Total Direct Operating Cost	71,682.38	86,018.86	47,131.20
Total Personnel Cost	321,219.38	385,463.26	399,948.22
Total Administrative Cost	23,442.26	28,130.71	27,200.00
<b>Total Operational &amp; Maintenance Cost</b>	<b>416,344.02</b>	<b>499,612.82</b>	<b>474,279.42</b>

## 4. Revenue % Contribution per District

Mansa	6,366,750.32	56%
Samfya	1,858,717.69	13%
Mwense	1,065,483.25	8%
Kawambwa	1,070,873.47	12%
Nchelenge	1,031,745.02	11%
<b>Total</b>	<b>11,269,001.00</b>	<b>100%</b>

## 5. Collections % Contribution per District

District	Collection Target	% Cont.
Mansa	5,357,682.04	56%
Samfya	1,343,532.32	14%



Mwense	840,057.37	8%
Kawambwa	901,134.97	9%
Nchelenge	770,053.87	8%
<b>Total</b>	<b>9,488,271.86</b>	<b>100%</b>

#### 6. O&M Cost Allocation to Profit / Cost Centres (%)

<b>District</b>	<b>O&amp;M Cost</b>	<b>% Cont.</b>
Mansa	1,863,567.31	18%
Samfya	1,982,590.94	9%
Mwense	1,499,534.32	7%
Kawambwa	1,237,534.32	8%
Nchelenge	1,704,616.91	9%
Finance	1,863,920.83	16%
HR & Admin	2,353,567.51	21%
Engineering	1,439,959.54	9%
Procurement	416,344.02	3%
<b>Total</b>	<b>15,463,351.00</b>	<b>100%</b>



**Table 1 Prioritizing challenges, Goal and Proposed projects for Mid-term Business Plan of KWSC**

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
P-1	P4: Transmission and Distribution Mains	More than 75% of transmission and distribution mains are asbestos pipes, old cast iron pipes (excluding ductile cast iron) or old steel pipes, with rust significantly blocking flow.	3	Ratio of aged pipes will be 64%.	(1) NRW Reduction Project (1-1) Replacement of deteriorated pipes	(1) (1-1) -Replacement from Asbestos pipes to other pipes such as PVC etc. for 119km (1-2) -Implementation of PR activity for water saving (1-3) -Preparation of Manual about meter reading, billing, tariff collecting -Training about meter reading, billing, tariff collecting	
P-2	P10: NRW Ratio	More than 50%	1	NRW ratio will be reduced from 67% to 40%.	(1-3) Preparation of manual about meter reading, billing, tariff collecting.	(1-4) - Upgrade of system for management of customer information -Training for management of customer information.	
P-4	P19: Awareness-raising on NRW reduction, water saving, collection of water charges, etc.	No or minimal effective awareness-raising activities have been implemented.	2	A system for effective awareness-raising activities is established.	(1-4) Implementation of training on management of customer's information		
M-1	M7: Utilization of Manual of Meter Reading, Billing and Tariff Collection	There are no manual, or even if there is a manual, it has not been used at all.	1	Necessary manuals are prepared.			
M-3	M15: Customers'	Customers'	1	Customers'			

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
	Development of Customer's Information	information has not been developed at all.		information can be developed.			

No.	Items	Challenges	Priority	Goal	Proposed Project	Detail	Remarks
P-3	P15: Collection Ratio	Less than 60%	2	Collection ratio will be increased from 55% to 80%.	(2) Training meter reading	(2) -Training for meter readers	

**Project Schedule for Five Years (2019-2023) and Annual Cost in KWSC**

As of 31<sup>st</sup> July 2018

Project	2019	2020	2021	2022	2023	Sub total (ZMW)
<b>A. Midterm Business Plan</b>						
<b>(1) NRW Reduction Project</b>						
(1-1) Team Leader (36MM)	1,689,000	6,756,000	6,756,000	5,067,000		20,268,000
(1-2) Distribution Management (3MM)	1,500,000					1,500,000
(1-3) Construction Supervision (33MM)	2,500,000	3,500,000	3,500,000	3,500,000	3,500,000	16,500,000
(1-4) Replacement of deteriorated pipes (130km)	31,720,000	31,720,000	31,720,000	31,720,000	31,720,000	158,600,000
(1-5) PR activity (9MM)				3,682,000		3,682,000
(1-6) Project manager for the manual (2MM)	1,000,000					1,000,000
(1-7) Preparation of the manual (1.5MM)	750,000					750,000
(1-8) Establishment of customer information management system (1.5 MM)	750,000					750,000
<b>Sub total (ZMW)</b>	<b>39,909,000</b>	<b>41,976,000</b>	<b>41,976,000</b>	<b>43,969,000</b>	<b>35,220,000</b>	<b>203,050,000</b>
<b>B. Human Resource Development Plan</b>						
<b>(2) Training for meter readers</b>						
(2-1) Trainer (11 days)		180,000				180,000
<b>Sub total (ZMW)</b>		<b>180,000</b>				<b>180,000</b>
<b>Total (ZMW)</b>	<b>39,909,000</b>	<b>42,156,000</b>	<b>41,976,000</b>	<b>43,969,000</b>	<b>35,220,000</b>	<b>203,230,000</b>
<b>Funding Level (ZMW)</b>	<b>Annually 185,000,000 in the past five year (2012-2016)</b>					



APPENDIX. A-17  
PRESENTATION MATERIALS OF  
VARIOUS MEETINGS





# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## **[Session-1]: WORKSHOP ON SHARING CHALLENGES & POSSIBLE SOLUTION**

### Agenda

1. Opening Remarks by Ms. Selenia Matimelo, Principal Community Development Officer (Project Manager), Department of Water Supply and Sanitation, MWDSEP
2. Introduction of Participants
3. Briefing on Conducting Evaluation based on Evaluation Manual & Analyzing Result of Evaluation by JICA Expert Team
4. Explanation of Outline & Challenges for Evaluation Result (1) by LWSC & KWSC

[Tea Break]

5. Explanation of Outline & Challenges for Evaluation Result (2) by WWSC & LpWSC
6. General Overview for Evaluation Result by NWASCO
7. Question and Answer Session
8. AOB (Any other Business)
9. Closing Remarks by Project Manager

[Lunch Time]

Afternoon: Session-2 "3<sup>rd</sup> JCC"



# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## **[Session-2]: THIRD JOINT COORDINATING COMMITTEE (3<sup>rd</sup> JCC)**

### Agenda

1. Opening Remarks by Project Manager
2. Address by JICA Zambia Office
3. Address by Eng. Oswell Katooka, Acting Director (Project Director), Department of Water Supply and Sanitation, MWDSEP
4. Introduction of Participants
5. Briefing on Schedule & Activities of the Project by JICA Expert Team
6. Project Monitoring Sheet (MS) Ver. 2 by MWDSEP
7. Confirmation of Evaluation Report by NWASCO
8. Schedule to be Implemented by JICA Expert Team
9. Question and Answer Session
10. Approval of MS Ver.2 by JCC Member
11. AOB (Any other Business)
12. Closing Remarks by Project Manager

End



# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## 1-3: Briefing on Conducting Evaluation based on Evaluation Manual & Analyzing Result of Evaluation

[Session-1]

12<sup>th</sup> December 2017

Mr. Hideyuki IGARASHI

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

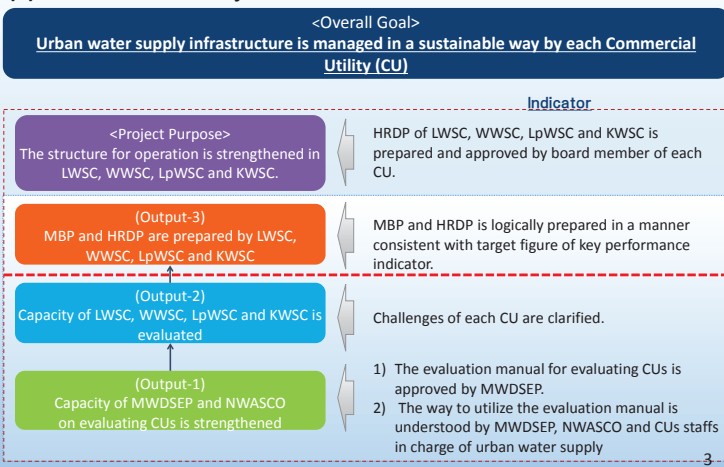
National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

## Contents

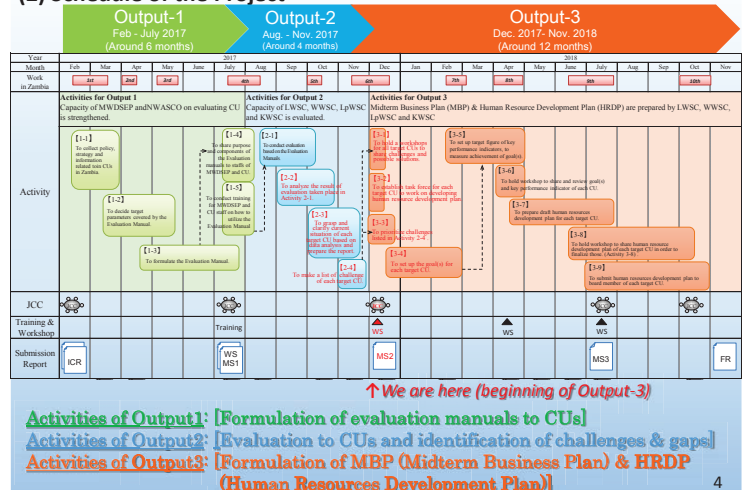
1. Brush up the Project
  - (1) Outlines of the Project
  - (2) Schedule of the Project
2. Brush up Evaluation Manual
3. Procedure of Workshop
  - (1) Composition of Position by CU
  - (2) Evaluation Result for Individual Level

## 1. Brush up the Project

### (1) Outlines of the Project



## 1. Brush up the Project (2) Schedule of the Project



## 2. Brush up Evaluation Manual

Evaluation Manual was Approved at 2<sup>nd</sup> JCC in August 2017

### (1) Performance Indicators (PIs) for Water Supply Service

→ 21 indicators

### (2) Evaluation Items for Management Capacity

→ 19 items

### (3) Evaluation Items for Communication & Negotiation Capacity

→ 6 items

Evaluation & Analysis were held from August to November 2017

### Activity-2: Evaluation to CUs and identification of challenges & gaps

- [2-1] To conduct evaluation based on the Evaluation Manual
- [2-2] To analyze the result of evaluation taken place in Activity 2-1
- [2-3] To grasp and clarify current situation of 4CUs based on data analysis & prepare report

### Activity-3: Formulation of MBP & HRDP

- [3-1] To hold WORKSHOP for 4 CUs to share challenges and possible solutions

→ This Workshop

## 3. Procedure of Workshop

### Purpose of Workshop

→ To share challenges and possible solutions for 4 CUs

### [Procedure]

#### (1) Briefing on this Workshop

→ This presentation

#### (2) Explanation of Outline & Challenges for Evaluation Result

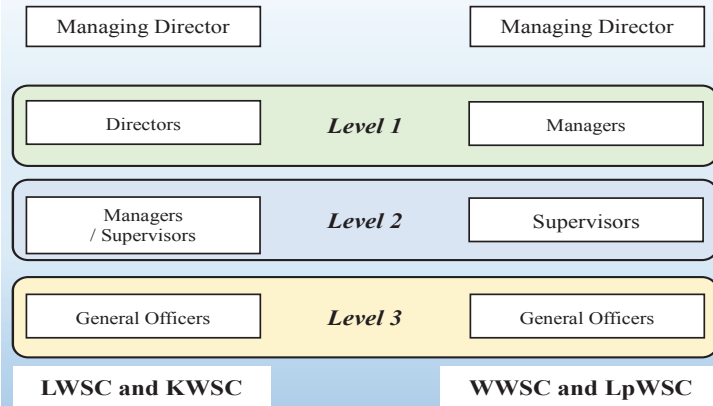
→ by each CU

#### (3) General Overview for Evaluation Result

→ by NWASCO

#### 4. Consideration on Evaluation

##### (1) Composition of Position by CU



#### 3. Consideration on Evaluation

##### (2) Evaluation Result for Individual Level

Some Evaluation Results for Individual Level are NOT shared.



Submitted Evaluation Report to CUs has some mark-out in black

→ Because

Individuals may be identified

in the section of Evaluation Result for Individual Level.

**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**4 (1): Evaluation of Outline for Evaluation Result by Lusaka Water and Sewerage Company (LWSC)**

[Session-1]

12<sup>th</sup> December 2017

Mr. Christopher Walimuntu

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

**1. Overview of CU**

CU <sup>s*</sup>	Established Year	Number of Connections <sup>***</sup> (As at 2016) 1)	Number of Staff <sup>**</sup> (As at 2016) 2)	Number of staff per 1000 connections 3) =2)/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4)/2) x 100
LWSC	1989	97,008	899	9.3	23	2.6
WWSC	2000	13,288	133	10.0	24	18.0
LpWSC	2009	7,355	81	11.0	16	19.8
KWSC	2000	61,438	601	9.8	19	3.2
Total		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\*Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWS C	LpWS C	KWSC
Directors (Managers for LpWSC and WWSC) (Level 1)	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	Sub-Total	5	4	4	4

3

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWS C	LpWS C	KWSC
Managers (Supervisors for LpWSC and WWSC) (Level 2)	Human Resource and Administration	1	2	-	-
	Technical Engineering	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
	Sub-Total	14	16	9	8
General Officers (Level 3)	All Department	4	4	3	7
	Sub-Total	4	4	3	7
<b>Total</b>		<b>23</b>	<b>24</b>	<b>16</b>	<b>19</b>

4

**3. Result of Capacity Assessment**

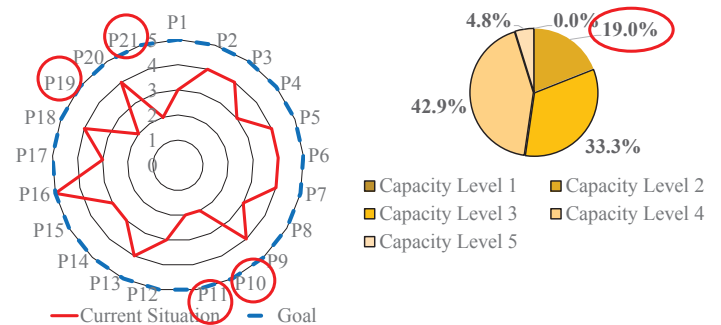
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that zero (0.0%) and four (19.0%) out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



5

6

## 'Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P10: NRW ratio is 36-50%.	By Capacity Development (Technical Aspect)	NRW occurs due to meter inaccuracy and leaks. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. Water meters are not calibrated because of non-existence of test bench, etc. CU has not enough leak detectors and there exists deteriorated pipes which may cause leaks.

7

## 'Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P11: Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	By Capacity Development (Technical Aspect)	Budget is insufficient to install customer meters.
P19: A few effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	Detail reasons are not available. Project Team assumes that awareness-raising activities is low priority judging from the current condition of frequency of newsletter's issue.
P21: Average year of work that staff have experience on water supply service is 8-15 years.	By General Aspect	Now a days, lots of staff leave CU because of low salary and mandatory retirement.

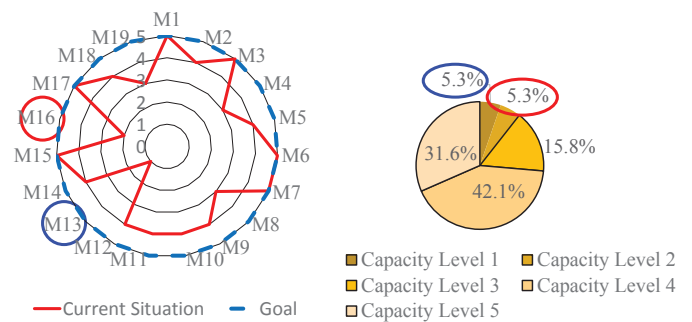
8

## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that **one (5.3%)** and **one (5.3%)** out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

### Distribution of Result on Management Capacity:



9

10

## 'Very Serious ' and 'Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
[Very Serious]		
M13: There is no a self-learning system.	Governance, Management and Human Resource	There are no training programs on how to use a self-learning support system.
[Serious]		
M16: It takes a week to respond to customer's complaint.	Customer Relation	There are no training programs on how to manage a quick action.

11

## 3.2 Individual Level

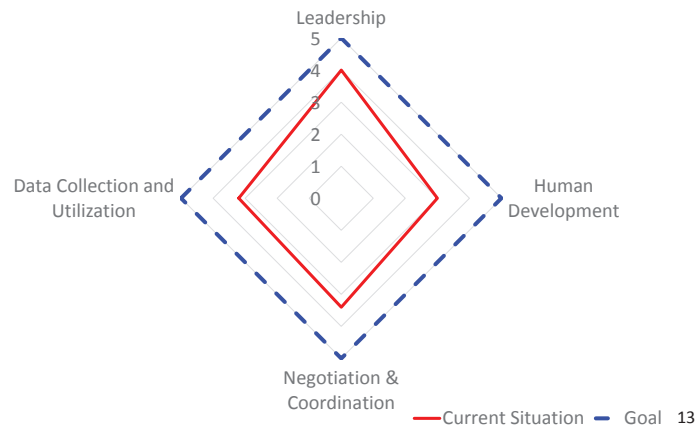
### (1) Communication & Negotiation Capacity

#### Challenges on Communication & Negotiation Capacity:

Neither of 'Very Serious' nor 'Serious' was observed in Directors, Managers and General Officers' level.

12

## Distribution of Result on Communication & Negotiation Capacity at Director Level:



**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

5 (1): Evaluation of Outline for Evaluation Result by Western Water and Sewerage Company (WWSC)

[Session-1]

12<sup>th</sup> December 2017

Ms. Pauline Sakala

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO) Japanese Experts

1

**1. Overview of CU**

CU*	Established Year	Number of Connections*** (As at 2016) 1)	Number of Staff*** (As at 2016) 2)	Number of staff per 1000 connections 3) =2)/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4)/2) x 100
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Total		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\* Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Directors (Managers for LpWSC and WWSC) (Level 1)	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	Sub-Total	5	4	4	4

3

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Managers (Supervisors for LpWSC and WWSC) (Level 2)	Human Resource and Administration	1	2	-	-
	Technical Engineering or	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
	Sub-Total	14	16	9	8
General Officers (Level 3)	All Department	4	4	3	7
	Sub-Total	4	4	3	7
<b>Total</b>		23	24	16	19

4

**3. Result of Capacity Assessment**

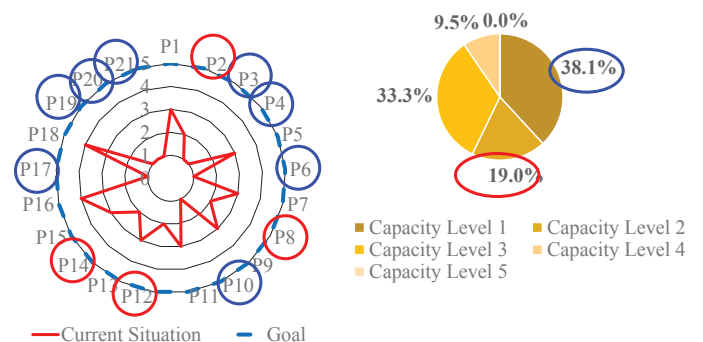
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that eight (38.1%) and four (19.0%) out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



5

6



### 'Very Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P3: Surplus capacity to maximum design capacity is less than -30%.	By Facility Investment	Most of intake facilities and treatment plant are not only deteriorated but also maintained due to budget constraint. CU has no the skilled staff to plan, and design intake & treatment plant, and to supervise their construction. In addition, NRW is one of causes for lack of purification capacity.
P4: Asbestos, old cast iron and old steel pipes make up 75% of main pipelines.	By Facility Investment	CU has no the skilled staff to plan, and design intake & treatment plant, and to supervise their construction. One of the main causes is lack of budget for replacing the existing pipes.

7

### 'Very Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P6: More than 30% of installed major mechanical and electrical equipment are malfunctioning.	By Facility Investment	The existing equipment are not replaced with new ones because of lack of budget, skilled staff for planning and or designing and supervision. It is also difficult to procure spare parts in Zambia. In addition, CU has neither skilled staff nor budget to maintain equipment.

8

### 'Very Serious ' Challenges on PIs-3:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P10: NRW ratio is more than 50%.	By Capacity Development (Technical Aspect)	NRW occurs due to meter inaccuracy and leaks. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. Water meters are not calibrated because of non-existence of test bench and lack of skilled staff, etc. CU has not enough leak detectors and the skilled staff to detect water leaks, and there exists deteriorated pipes (asbestos pipes) which may cause leaks.
P17: Training is quite rare or not provided at all.	By Capacity Development (Non-Technical Aspect)	There are no training implementation system and trainers. CU also faces lack of budget to conduct the training.

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### 'Very Serious ' Challenges on PIs-4:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P19: No or minimal effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	Budget is insufficient to employ the skilled staff to implement awareness-raising activities.
P20: Sewer coverage is zero.	By Program Approach	Because of lack of budget, development of sewer system is low priority in CU.
P21: Average year of work that staff have experience on water supply service is zero to seven years.	By General Aspect	CU is relatively new organization.

10

### 'Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P2: Overall service coverage is 50-69%.	By Facility Investment	CU faces function depression due to deterioration of intake facilities and difficulties in maintaining them due to budget constraint and lack of the skilled staff. Capacity of transmission & distribution facilities is insufficient due to deterioration, while budget and the skilled staff are not sufficient to maintain the facilities. In addition, CU has no the skilled staff to plan, and design water supply facilities, and to supervise their construction.
P8: CU has O&M manuals which are not effective.	By Capacity Development (Technical Aspect)	There are no staff to prepare O&M manual and utilize it.

11

### 'Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	By Capacity Development (Technical Aspect)	There are no budget to install bulk meters and no skilled staff to plan & design the bulk meters' installation. In addition, CU has no the skilled staff to maintain the bulk meters as well.
P14: All O&M costs apart from depreciation of water supply facilities are fully covered by water tariff.	By Capacity Development (Non-Technical Aspect)	Revenue is low because of much leakage. High O&M cost is caused by deterioration of water supply facilities.

12



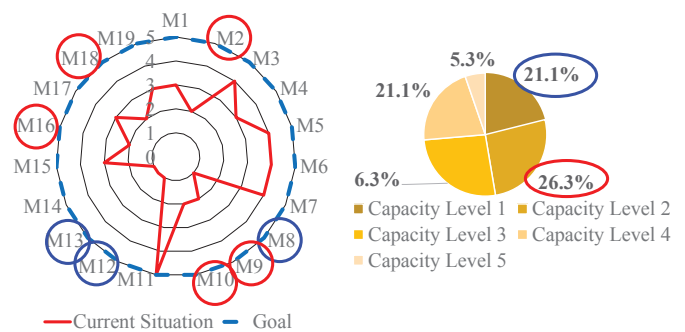
## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that three (15.8%) and five (26.3%) out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

13

## Distribution of Result on Management Capacity:



14

### 'Very Serious' Challenges on Management Capacity:

Challenges on Management Capacity	Category	Summary of Causes
M8: Average length of service with current CU is less than five years.	Governance, Management and Human Resource	CU is relatively new organization.
M12: There is no a self-evaluation system.	Governance, Management and Human Resource	There are no training programs on how to conduct a self-evaluation.
M13: There is no a self-learning system.	Governance, Management and Human Resource	There are no training programs on how to use a self-learning support system.

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### 'Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
M2: Evaluation method has not been established.	Internal Policy and Planning	There are no training programs on how to prepare evaluation method and to evaluate activities.
M9: Recording system for the working time has been developed but the working time for all the staff has not been recorded yet.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of working record.
M10: Evaluation system for work performance is under development.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of work performance evaluation.

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### 'Serious' Challenges on Management Capacity-2:

Challenges on Management Capacity	Category	Summary of Causes
M16: It takes a week to respond to customer's complaint.	Customer Relation	There are no training programs to make staff understand the necessity of a quick action and on how to manage the quick action.
M18: Customer survey has never been conducted but the survey is under consideration.	Customer Relation	There are no budget to contact surveyor.

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## 3.2 Individual Level

### (1) Communication & Negotiation Capacity

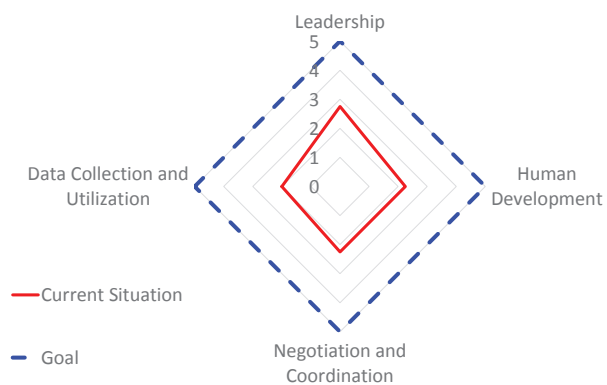
#### Challenges on Communication & Negotiation Capacity:

■ 'Very Serious' challenges were NOT observed in Managers, Supervisors and General Officers' level.

■ 'Serious' challenges were observed at Managers' level throughout WWSC and supervisor' level of the particular departments

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## Distribution of Result on Communication & Negotiation Capacity at Managers' Level:



**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**5 (2): Evaluation of Outline for Evaluation Result by Luapula Water and Sewerage Company (LpWSC)**

[Session-1]

12<sup>th</sup> December 2017

Mr. Bernard Chama

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

**1. Overview of CU**

CU*	Established Year	Number of Connections** (As at 2016) 1)	Number of Staff*** (As at 2016) 2)	Number of staff per 1000 connections 3) =2)/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4)/2) x 100
LWSC	1989	97,008	899	9.3	23	2.6
WWSC	2000	13,288	133	10.0	24	18.0
LpWSC	2009	7,355	81	11.0	16	19.8
KWSC	2000	61,438	601	9.8	19	3.2
Total		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\*Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Directors (Managers for LpWSC and WWSC) (Level 1)	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	Sub-Total	5	4	4	4

3

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Managers (Supervisors for LpWSC and WWSC) (Level 2)	Human Resource and Administration	1	2	-	-
	Technical or Engineering	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
Sub-Total	14	16	9	8	
General Officers (Level 3)	All Department	4	4	3	7
	Sub-Total	4	4	3	7
<b>Total</b>		23	24	16	19

4

**3. Result of Capacity Assessment**

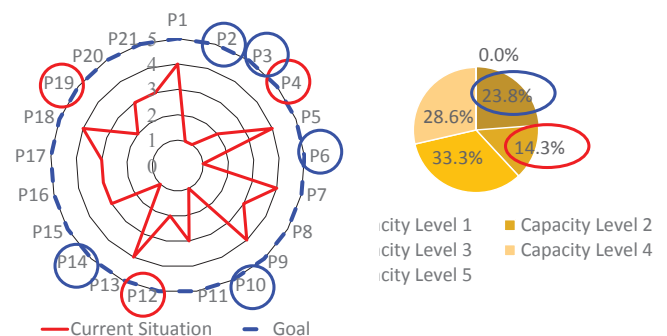
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that five (23.8%) and three (14.3%) out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



5

6

### 'Very Serious ' Challenges on Pls-1:

Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P2: Overall service coverage is less than 50%	By Facility Investment	CU faces not only function depression due to deterioration of treatment plant but also NRW such as leaks and illegal connections.
P3: Surplus capacity to maximum design capacity is less than -30%.	By Facility Investment	Production capacity is insufficient because treatment plant is not maintained appropriately, while the plant is deteriorated.
P6: More than 30% of installed major mechanical and electrical equipment are malfunctioning.	By Facility Investment	Budget is insufficient in order to replace equipment with new ones and to maintain equipment.

### 'Very Serious ' Challenges on Pls-2:

Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P10: NRW ratio is more than 50%	By Capacity Development (Technical Aspect)	NRW occurs due to apparent loss such as illegal connections & meter inaccuracy, and leaks. Illegal connections are caused by lack of PR activities to optimize water supply service and lack of patrol by CU's staff under difficulties in identifying illegal connections. Water meters are not calibrated because of test bench, etc. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. In addition, there are no budget to replace asbestos pipes with other types of pipes.

### 'Very Serious ' Challenges on Pls-3:

Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P14: Only part of the O&M costs excluding depreciation of water supply facilities are covered by water tariff.	By Capacity Development (Non-Technical Aspect)	O&M cost is higher than revenue because of high NRW ratio. High O&M cost is caused by deterioration of water supply facilities without appropriate maintenance. Lack of budget and skill made inappropriate maintenance.

### 'Serious ' Challenges on Pls-1:

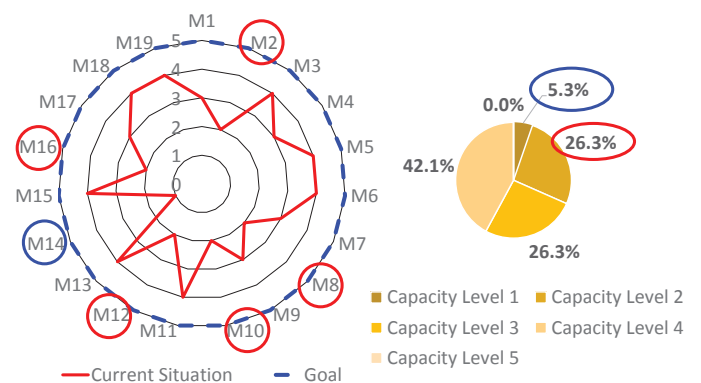
Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P4: Asbestos, old cast iron and old steel pipes make up 50-75% of main pipelines.	By Facility Investment	There are no budget to replace asbestos pipes with other types of pipes.
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	By Capacity Development (Technical Aspect)	There are not budget to formulate plan and to install bulk meters.
P19: A few effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	The training to raise awareness on NRW reduction, water conservation and tariff collection is insufficient.

## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that **one (5.3%)** and **five (26.3%)** out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

### tribution of Result on Management Capacity:



### 'Very Serious' Challenges on Management Capacity:

Challenges on Management Capacity	Category	Summary of Causes
M14: Trainees' effort have not been evaluated.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of trainees' effort and on how to evaluate it.

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### 'Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
M2: Evaluation method has not been established.	Internal Policy and Planning	There are no training programs on how to evaluate activities.
M8: Average length of service with current CU is five to 10 years.	Governance, Management and Human Resource	Lots of staff retired are not interested in CU.
M10: Evaluation system for work performance is under development.	Governance, Management and Human Resource	There are no training programs on how to evaluate work performance. In addition, CU has no budget to employ the staff to evaluate work performance.

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### 'Very Serious' Challenges on Management Capacity-2:

Challenges on Management Capacity	Category	Summary of Causes
M12: A self-evaluation system is under development.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of a self-evaluation and on how to conduct a self-evaluation.
M16: It takes a week to respond to customer's complaint.	Customer Relation	CU has no budget to employ the skilled staff to manage quick actions to customers' complaint.

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### 3.2 Individual Level

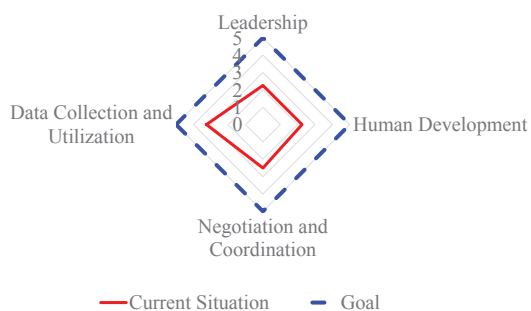
#### (1) Communication & Negotiation Capacity

#### Challenges on Communication & Negotiation Capacity:

- 'Very Serious' challenges were NOT observed in Managers, Supervisors and General Officers' level.
- 'Serious' challenges were observed at Managers' level throughout LpWSC and Supervisor' and General Officers' level of the particular departments.

16

### Distribution of Result on Communication & Negotiation Capacity at Managers' Level:



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**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**4 (2): Evaluation of Outline for Evaluation Result by Kafubu Water and Sewerage Company (KWSC)**

[Session-1]

**12<sup>th</sup> December 2017**

**Mr. Brian Ng'onga**

**Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)**

**National Water Supply and Sanitation Council (NWASCO) Japanese Experts**

1

**1. Overview of CU**

CU <sup>*</sup>	Established Year	Number of Connections <sup>***</sup> (As at 2016) 1)	Number of Staff <sup>***</sup> (As at 2016) 2)	Number of staff per 1000 connections 3) =2)/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4)/2) x 100
LWSC	1989	97,008	899	9.3	23	2.6
WWSC	2000	13,288	133	10.0	24	18.0
LpWSC	2009	7,355	81	11.0	16	19.8
<b>KWSC</b>	2000	61,438	601	9.8	19	3.2
<b>Total</b>		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\*Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWSC	LpWSC	<b>KWSC</b>
<b>Directors (Managers for LpWSC and WWSC) (Level 1)</b>	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	<b>Sub-Total</b>	5	4	4	4

3

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWSC	LpWSC	<b>KWSC</b>
<b>Managers (Supervisors for LpWSC and WWSC) (Level 2)</b>	Human Resource and Administration	1	2	-	-
	Technical Engineering or	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
	<b>Sub-Total</b>	14	16	9	8
<b>General Officers (Level 3)</b>	All Department	4	4	3	7
	<b>Sub-Total</b>	4	4	3	7
<b>Total</b>		23	24	16	19

4

**3. Result of Capacity Assessment**

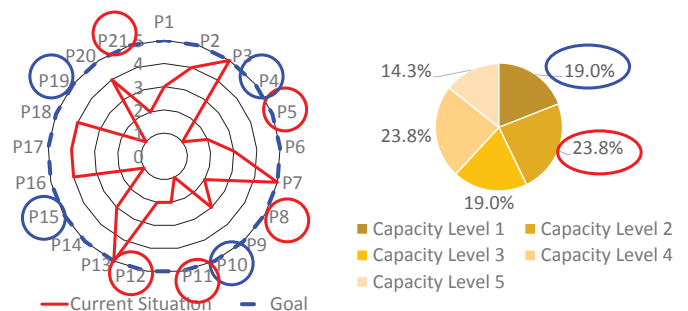
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that **four (19.0%)** and **five (23.8%)** out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



5

6

### 'Very Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P4: Asbestos, old cast iron and old steel pipes make up 75% of main pipelines.	By Facility Investment	The existing asbestos pipes cannot be replaced with other types of pipes, because budget to replace the pipes is insufficient and staff are not aware of hazard for human health.
P10: NRW ratio is more than 50%.	By Capacity Development (Technical Aspect)	NRW occurs due to apparent loss such as illegal connections & meter inaccuracy, and leaks. Illegal connections are caused by lack of PR activities to optimize water supply service and lack of patrol by CU's staff. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. In addition, there are no budget to manage water leak reduction and to replace asbestos pipes with other types of pipes.

7

### 'Very Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P15: Collection ratio is less than 60%.	By Capacity Development (Non-Technical Aspect)	Detail reasons are not available. Project Team assumes that tariff collection system at organizational level is not developed well as one of the causes.
P19: No or minimal effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	The training to raise awareness on NRW reduction, water conservation and tariff collection is insufficient.

8

### 'Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P5: 80-94% of house connections are more than 25 years old.	By Facility Investment	There are no regulation and plans to replace service pipeline with new ones. Even though CU has a plan to replace service pipelines, there are no budget.
P8: Facilities have O&M manuals which are not effective, leading to O&M deficiency.	By Capacity Development (Technical Aspect)	There are no O&M manuals because of lack of budget and skill to prepare it. In addition, staff's awareness on manual usage is insufficient.

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### 'Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P11: Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	By Capacity Development (Technical Aspect)	PR activities such as awareness meeting in order to make customers understand the necessity of customer meters is not conducted.
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	By Capacity Development (Technical Aspect)	Appreciation of staff on the necessity of bulk meters is insufficient.
P21: Average year of work that staff have experience on water supply service is 8-15 years.	By General Aspect	CU is relatively new organization.

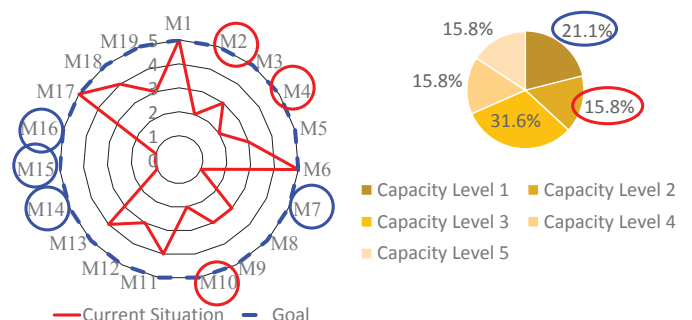
10

## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that **four (21.1%)** and **three (15.8%)** out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

### Distribution of Result on Management Capacity:



11

12



**‘Very Serious’ Challenges on Management Capacity-1:**

Challenges on Management Capacity	Category	Summary of Causes
M7: There are no manual, or even if there is a manual, it has not been used at all.	Finance	There are no training programs to make staff understand the necessity of manual.
M14: Trainees’ effort have not been evaluated.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of trainees’ effort and on how to evaluate it.

13

**‘Very Serious’ Challenges on Management Capacity-2:**

Challenges on Management Capacity	Category	Summary of Causes
M15: Customers’ information has not been developed at all.	Customer Relation	There are no training programs on how to develop customers’ information.
M16: It takes at least 10 days to respond to customer’s complaint.	Customer Relation	There are no training programs to make staff understand the necessity of an action quickly and on how to manage a quick action. On the other hand, CU faces much work load.

14

**‘Serious’ Challenges on Management Capacity-1:**

Challenges on Management Capacity	Category	Summary of Causes
M2: Evaluation method has not been established.	Internal Policy and Planning	There are no training programs on how to prepare evaluation method and to evaluate activities.
M4: Financial status has not been improved at all.	Finance	There are no training programs to make staff understand the necessity of analysis of financial status.
M10: Evaluation system for work performance is under development.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of work performance evaluation and on how to evaluate work performance.

15

**3.2 Individual Level**

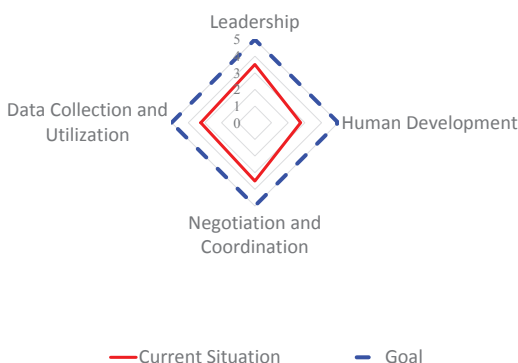
**(1) Communication & Negotiation Capacity**

**Challenges on Communication & Negotiation Capacity:**

Neither of ‘Very Serious’ nor ‘Serious’ was observed in Directors, Managers and General Officers’ level.

16

**Distribution of Result on Communication & Negotiation Capacity at Directors’ Level:**



17



**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**6: General Overview for Evaluation Result by NWASCO**

[Session-1]

12<sup>th</sup> December 2017

Mr. Peter Mutale/Mr. Kasenga Hara

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

1. Process of Evaluation

NWASCO conducted the training on how to evaluate CUs by using Evaluation Manual on 9 August 2017

Assistant Engineer as JICA Expert Team by the support of JICA Experts gave Directors (or Managers\*) the more details on how to self-evaluate CUs from September to October 2017

JICA Experts with the assistant engineer collected the results evaluated by CUs and checked if the results were figured out correctly from 11 to 23 October 2017

2

2. Observation and Improvement of Evaluation Manual through Evaluation of CUs

JICA Expert Team practically observed the following challenges required for improving Evaluation Manual.

- Actual causes that CU has been facing were not stated in Evaluation Manual.
- In case that 'Good' was selected, the causes were not clarified in the answer sheets.
- Some complements were furthermore required to figure out the particular PI.

Evaluation Manual will be finalized based on the above observations.

3

3. Days required from giving briefing to collect the result of self-evaluating CUs-1

- Project Team is confident that Evaluation Manual was well-designed in order for CUs easily to self-evaluate them.
- JICA Expert Team gave a brief by the meeting, phone conversation and or emails on how to evaluate CU by utilizing Evaluation Manual from 14 August 2017.
- CUs started self-evaluating after receiving a brief.

4

3. Days required from giving briefing to collect the result of self-evaluating CUs-2

CU	Date of giving a Brief	Date of completing Self-Evaluation	Days required for Self-Evaluation 1)	Number of evaluated Staff at Individual Level 2)	Days required for Self-Evaluation per evaluated staff 3) = 1)/2) x 100
LWSC	14 Aug.	20 Oct.	68 days	23	3.0 days/staff
WWSC	4 Oct.	12 Oct.	9 days	24	0.4 days/staff
LpWSC	6 Sep.	12 Oct.	37 days	16	2.3 days/staff
KWSC	26 Sep.	20 Oct.	25 days	19	1.3 days/staff

5

3. Days required from giving briefing to collect the result of self-evaluating CUs-3

According to some of CUs' executive officer and JICA Expert Team's observation, it seems that there are various factors such as:

- Time constraint to self-evaluate,
- Insufficient intelligibility of Evaluation Manual,
- Interest in evaluation of CUs,
- Motivation, etc.

6

#### 4. Performance Indicators that Common Challenges were observed among four CUs

- ◆ Challenges on PIs depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC.

Performance Indicators (PIs)	Summary of Main Factors
P4: Transmission and distribution mains	<ul style="list-style-type: none"> <li>• Existence of asbestos pipes</li> </ul>
P10: NRW ratio	<ul style="list-style-type: none"> <li>• Existence of asbestos pipes</li> <li>• Existence of Deteriorated pipes</li> <li>• Much leakage</li> <li>• Lack of leakage detection</li> <li>• Defect of monitoring system for illegal connections</li> <li>• Lack of awareness activities</li> </ul>
P19: Awareness-raising on NRW reduction, water saving, collection of water charges, etc.	<ul style="list-style-type: none"> <li>• Lack of awareness activities</li> </ul>
P21: Year of work experience on water supply service	<ul style="list-style-type: none"> <li>• Retirement</li> </ul>

7

#### 5. Parameters of Management Capacity that Common Challenges were observed among four CUs

- ◆ Challenges on Management Capacity also depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC.

Parameters of Management Capacity	Summary of Main Factors
M16: Time to respond to Customer's Complaint	There are no training programs to make staff understand the necessary of a quick action and on how to manage the quick action

8

#### 6. Parameters of Communication & Negotiation Capacity that Common Challenges were observed among four CUs

- ◆ Challenges on Communication & Negotiation Capacity also depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC at Directors' (or Managers'\*) and Managers' (or Supervisors'\*) Level.

Parameters of Communication & Negotiation Capacity	Summary of Main Factors
<b>Human Development</b>	
C3: Capacity to improve qualification of staff in terms of post and job description	There are no training programs to make executive officers understand the necessity of human resource development.

\* For WWSC and LpWSC

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# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## 2-5: Briefing on Schedule & Activities of the Project

[Session-2]

12<sup>th</sup> December 2017

Mr. Hideyuki IGARASHI

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

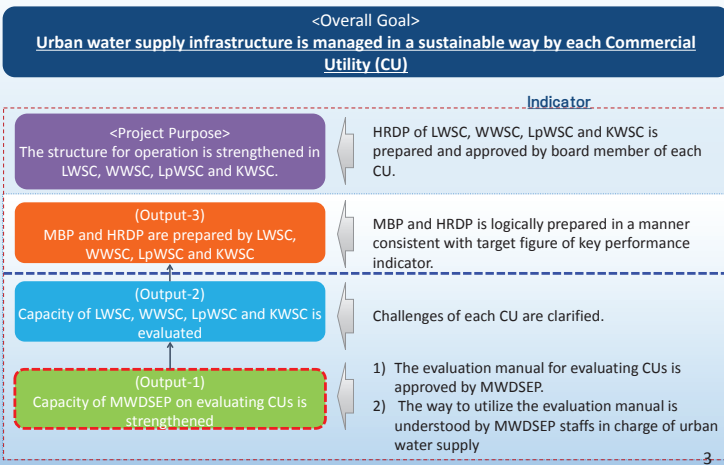
National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

## Contents

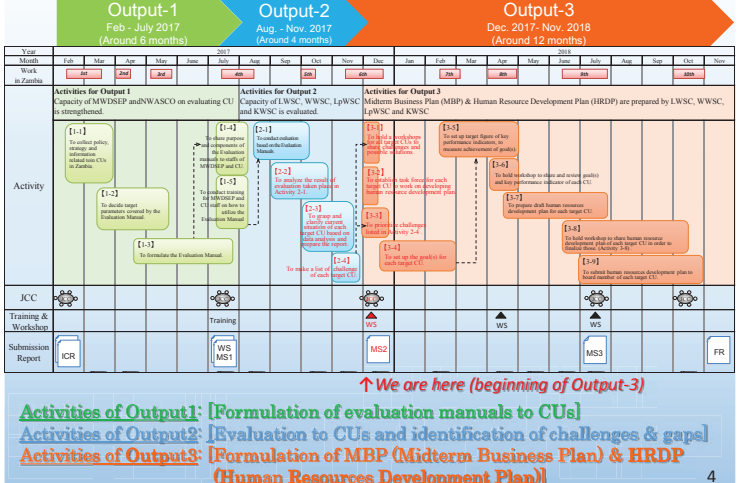
1. Brush up the Project
  - (1) Outlines of the Project
  - (2) Schedule of the Project
2. Activities from August to November 2017
3. Implementation Structure of the Project
4. Procedure of JCC

## 1. Brush up the Project

### (1) Outlines of the Project



## 1. Brush up the Project (2) Schedule of the Project



## 2. Activities from August to November 2017

### Activity-1: Formulation of evaluation manuals to CUs

→ **Evaluation Manual** was approved by 2<sup>nd</sup> JCC on 9<sup>th</sup> August 2017

### Activity-2: Evaluation to CUs and identification of challenges & gaps

- [2-1] To conduct evaluation based on the Evaluation Manual
- [2-2] To analyze the result of evaluation taken place in Activity 2-1
- [2-3] To grasp and clarify current situation of 4CUs based on data analysis & prepare report
- [2-4] To make a list of challenge of 4 CUs

### Activity-3: Formulation of MBP & HRDP

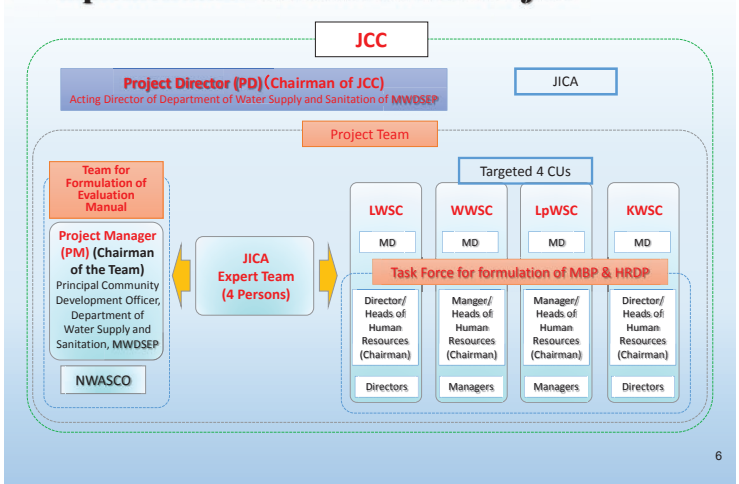
- [3-1] To hold **workshop** for 4 CUs to share challenges and possible solutions
- [3-2] To establish taskforce for 4 CUs to work on developing MBP & HRDP
- [3-3] To prioritize challenges listed in Activity 2-4
- [3-4] To set up the goal(s) for 4 CUs

→ [3-1] This morning session

→ [3-2] Taskforce was established by 1<sup>st</sup> JCC on 17<sup>th</sup> March 2017

→ [3-3] in progress

## 3. Implementation Structure of the Project



#### 4. Procedure of JCC

##### Purpose of 3<sup>rd</sup> JCC

→ *To Confirm Progress on Activities through MS Ver. 2*

##### [Procedure]

(1) Briefing on this JCC

→ *This presentation*

(2) Explanation of MS Ver. 2

→ *by MWDSEP*

(3) Confirmation of Evaluation Report

→ *by NWASCO*

(4) Approved of MS Ver. 2

→ *by JCC Member*

# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

2-6(1): Monitoring Sheet Ver.2  
(excluding Activity 1-2, 1-4, 2-1 & 2-2)  
[Session-2]

12<sup>th</sup> December 2017

Ms. Selenia M. Matimelo

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)  
National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

**【Overall Goal :** Urban water supply infrastructure is managed in a sustainable way by each Commercial Utility (CU).】

**【Project Purpose :** The structure for operation is strengthened in LWSC, WWSC, LpWSC and KWSC.】

**【Output 1 :** Capacity of MWDSEP on evaluating CU is strengthened.  
**Outline of Activity :** Formulate Evaluation Manuals for CUs

**【Output 2 :** Capacity of LWSC, WWSC, LpWSC and KWSC is evaluated.】

**Target :** Evaluate CUs and Identify Challenges and Gaps

**【Output 3 :** Midterm Business Plan and Human Resource Development Plan is prepared by LWSC, WWSC, LpWSC and KWSC】  
**Target :** Formulate Midterm Business Plan and Human Resources Development Plan

2

## Contents

### 1. Progress

#### 1-1 Progress of Input

#### 1-2 Progress of Activities

- Activity 1-1 to Activity 1-4
- Activity 1-5: To conduct training for MWDSEP and CU staff on how to utilize the Evaluation Manual
- Activity 2-1: To conduct evaluation based on the Evaluation Manual.
- Activity 2-2. To analyze the result of evaluation taken place in Activity 2-1.

3

## Contents

- Activity 2-3. To grasp and clarify current situation of 4CUs based on data analysis & prepare report.
- Activity 2-4. To make a list of challenges of 4 CUs.
- Activity 3-1. To hold a workshop for all target CUs to share challenges and possible solutions.
- Activity 3-2. To establish task force for each target CU to work on developing human resource development plan.
- Activity 3-3 to 3-9

4

### 1-3 Achievement of Output

#### 1-4 Achievement of the Project Purpose

#### 1-5 Changes of Risks and Actions for Mitigation

#### 1-6 Progress of Actions undertaken by JICA

### 1-7 Progress of Actions undertaken by Gov. of Zambia

### 2. Delay of Work Schedule and/or Problems

### 3. Modification of the Project Implementation Plan

5

### 1. Progress

#### 1-1 Input

##### [Zambian Side]- Project Personnel

- Project Director (PD): Acting Director of DWSS, MWDSEP:  
**Eng. Oswell Katooka**
- Project Manager (PM): Principal Community Development Officer, DWSS, MWDSEP:  
**Ms. Selenia M. Matimelo**
- Senior Engineer – Urban Water and Sanitation, DWSS, MWDSEP until middle of September 2017:  
**Eng. Kalapa B. Charles**
- Senior Engineer – Urban Water and Sanitation, DWSS, MWDSEP from the end of September 2017:  
**Eng. Michael Mwamba Museba**

To be continued

6

## 1. Progress

### 1-1 Input

#### [Zambian Side]- Project Personnel

- Managing Director (MD), Lusaka Water and Sewerage Company (LWSC) until the middle of July 2017:  
**Dr. Sylvester Mashamba**
- Managing Director (MD), Lusaka Water and Sewerage Company (LWSC) from the middle of July 2017:  
**Eng. Jonathan Kampata**
- MD, Western Water and Sewerage Company (WWSC):  
**Mr. Wamuwi Changani**
- MD, Luapula Water and Sewerage Company (LpWSC):  
**Eng. Kenneth Chense**
- MD, Kafubu Water and Sewerage Company (KWSC):  
**Eng. Athanasius K. Mwaba**

To be continued

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### 1-1 Input

- Acting Human Resource and Administration (HRA) Director, LWSC:  
**Mr. Christopher Walimuntu**
- Human Resources (HR) Manager, WWSC:  
**Ms. Pauline Sakala**
- HR Manager, LpWSC:  
**Mr. Barnard Chama**
- HR Director, KWSC until the end of August 2017:  
**Mr. Portipher Phiri**
- **Acting HRA Manager, KWSC from the beginning of September 2017 :**  
**Mr. Brian Ng'onga**

To be continued

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### 1-1 Input

- Chief Inspector, National Water Supply and Sanitation Council (NWASCO):  
**Mr. Peter Mutale**
- **Senior Inspector, NWASCO:**  
**Ms. Chola Mbilima**
- **Senior Inspector, NWASCO:**  
**Mr. Hara Kasenga**

To be continued

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#### [Zambian Side]- Office Space

- Office space in Ministry of Local Government (MLG) until the 21<sup>st</sup> July 2017
- Office space in LWSC from the 24<sup>th</sup> July 2017

#### [Japanese Side]- Project Personnel

- Chief Adviser/Water Supply Service Management 1:  
**Mr. IGARASHI Hideyuki**
- Deputy Chief Adviser/ Water Supply Service Management 2/ Strengthening of Organizational Capacity:  
**Mr. FUJIYAMA Taketoshi**
- Human Resources Development/ Evaluation:  
**Mr. WADA Yoshiharu**
- O&M of Water Supply Facility:  
**Mr. MIWA Shinji**

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## 1-2 Progress of Activities

### Activity 1-1: To collect Policy, Strategy and Information related to CUs in Zambia

- This Project commenced in accordance with the overall plan as contained in the National Water Supply and Sanitation Capacity Development Strategy (2015- 2020)
- The Strategy stated that the its objectives are related to the capacity development of Water and Sanitation Function of MWDSEP.
- MWDSEP and NWASCO are responsible for evaluation of CUs' organizational and individual capacity.
- In this Project, local CU counterparts comprise LWSC, WWSC, LpWSC and KWSC.
- Project Team had interviews with four CUs in order to identify various challenges on water supply service and examine evaluation indicators.

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### Activity 1-2: To decide Target parameters covered by the Evaluation Manual

**[By Eng. Michael Mwamba Museba]**

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### Activity 1-3: To formulate the Evaluation Manual

- In principle, each CU evaluates their own capacity at organizational and individual level by using Evaluation Manual.
- Project Team prepared Evaluation Manual in light of evaluation to be standardized, so that CUs evaluate the capacity quantitatively in the constant rule.

The Evaluation Manual is categorized into three;

- 1) Performance Indicators for water supply service,
- 2) Evaluation Items for Management Capacity and
- 3) Evaluation Items for Communication & Negotiation Capacity

To be continued <sup>13</sup>

### Activity 1-3: To formulate the Evaluation Manual

Each sheet in the Evaluation Manual consists of the following subjects.

#### 1) Subjects of Performance Indicators for water supply service

Definition, Purpose, Interviewee, Background and Concept, Evaluation Criteria, Causes, Points to be considered and Evaluation Example

#### 2) Subjects of Evaluation Items for Management Capacity & 3) Evaluation Items for Communication & Negotiation Capacity

Purpose of Indicator, Evaluation Criteria, Causes for Result of Evaluation and Points to be considered, etc.

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### Activity 1-4: To share Purpose and Components of the Evaluation Manual to Staffs of MWDSEP and CU

**[By Eng. Michael Mwamba Museba]**

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### Activity 1-5: To conduct Training for MWDSEP and CU Staff on how to utilize the Evaluation Manual

- NWASCO trained MWDSEP and CUs how to utilize the Evaluation Manual in support of JICA Expert Team. The training took place on 9th August 2017 in Lusaka.

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### Activity 2-1. To conduct evaluation based on the Evaluation Manual.

**[By Eng. Michael Mwamba Museba]**

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### Activity 2-2. To analyze the result of evaluation taken place in Activity 2-1.

**[By Eng. Michael Mwamba Museba]**

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### Activity 2-3. To grasp and clarify current situation of 4 CUs based on data analysis & prepare report.

Project Team prepared the report on evaluation results in accordance with the following contents.

#### **Report of Capacity Assessment based on Evaluation Manual - CONTENTS -**

1. Overview of CUs evaluated based on Evaluation Manual
2. Purpose of evaluating CUs (Capacity Assessment)
3. Composition of Position by CU
4. Method of Capacity Assessment
  - 4.1 Organizational Level
  - 4.2 Individual Level
  - 4.3 Process of Evaluation
  - 4.4 Observation and Improvement of Evaluation Manual through Evaluation of CUs
  - 4.5 Days required for self-evaluating CU

To be continued <sup>19</sup>

### Activity 2-3. To grasp and clarify current situation of 4 CUs based on data analysis & prepare report.

#### 5. Result of Capacity Assessment

##### 5.1 Organizational Level

(1) Performance Indicators (PIs)

1) LWSC, 2) WWSC, 3) LpWSC, 4) KWSC

(2) Management Capacity

1) LWSC, 2) WWSC, 3) LpWSC, 4) KWSC

##### 5.2 Individual Level

1) LWSC, 2) WWSC, 3) LpWSC, 4) KWSC

#### 6. Challenges based on the Assessment Result

##### 6.1 Organizational Level

1) LWSC, 2) WWSC, 3) LpWSC, 4) KWSC

##### 6.2 Individual Level

1) LWSC, 2) WWSC, 3) LpWSC, 4) KWSC

### Activity 2-4. To make a list of challenges of 4 CUs.

- For the reference of formulation of Midterm Business Plan (MBP) and Human Resources Development Plan (HRDP) which will be formulated in Output 3, the Project Team made the lists of not only challenges but also preliminary priorities in dealing with urgency and their solutions.

Refer to Session 2-7 for the detail of challenges.

To be continued <sup>21</sup>

### Activity 2-4. To make a list of challenges of 4 CUs.

The Challenges were summarized regarding the organizational level

#### [PIs]

- Three CUs faced

P10: high NRW ratio

as "Very Serious"

- Two CUs faced

P4: the existing asbestos and old pipes,

P6: malfunction of mechanical and electrical equipment

P19: lack of effective awareness-raising activities

as "Very Serious".

#### [Management Capacity]

- Two CUs faced

M13: no self-learning system

M14: no evaluation system for trainees' efforts

as "Very Serious".

<sup>22</sup>

### Activity 2-4. To make a list of challenges of 4 CUs.

The Challenges were summarized regarding the organizational level

#### [Communication & Negotiation Capacity of the individual level]

- Two CUs faced

C1: lack of leadership

C3: lack of qualification

C4: lack of communication and coordination

as "Serious" for the directors/managers' level (Level 1) and

C2: lack of leadership and supervision

C4: lack of communication and coordination

as "Serious" for the managers/supervisors' level (Level 2) of Technical Department.

<sup>23</sup>

### Activity 3-1. To hold a workshop for all target CUs to share the challenges and possible solution.

- Workshop for all target CUs to share the challenges and possible solution was held in the morning of 12<sup>th</sup> December.

<sup>24</sup>



### Activity 3-2. To establish task force for each target CU to work on developing human resource development plan.

- Task force for each Target CU to work on developing HRDP was established at 1st JCC held in March. According to current organization of each CU, Task force member are update at 3rd JCC.

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### Activity 3-3 to 3-9

- Activity 3-3 to 3-9 has not been done at this moment.

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### 1-3 Achievement of Output

[Output1. Capacity of MWDSEP on evaluating CUs is strengthened.]

Indicator 1-1: The Evaluation Manual for evaluating CUs is approved by MWDSEP.

- Component and evaluation items, etc. shown in the Evaluation Manual for CUs were approved by MWDSEP through the 2<sup>nd</sup> JCC on the 9<sup>th</sup> August 2017. Through conducting the evaluation, the challenges on the Evaluation Manual are identified, these will be reflected to the revision of the Evaluation Manual.

Indicator 1-2: The way to utilize the Evaluation Manual is understood by MWDSEP staff in charge of urban water supply.

- In the training session after the 2<sup>nd</sup> JCC, the way to utilize the Evaluation Manual for four CUs was introduced by NWASCO as well as MWDSEP who is responsible for evaluation.

To be continued <sup>27</sup>

[Output2. Capacity of LWSC, WWSC, LpWSC and KWSC is evaluated.]

Indicator 2-1: Challenges of each CU is clarified.

- Through Activity 2-1 to 2-5, challenges of each CU were identified. Challenges and gaps of each CU were shared in the workshop on 12<sup>th</sup> December 2017 as per Activity 3-1.

[Output3. Midterm Business Plan and Human Resources Development Plan is prepared by LWSC, WWSC, LpWSC and KWSC.]

Indicator 3-1: Midterm Business Plan and Human Resources Development Plan is logically prepared in a manner consistent with target figure of key performance indicator.

- Output 3 will be obtained in Activity 3-1 to 3-9 that is scheduled to take place from December 2017 to October 2018.
- Project Team will clarify challenges as Output 2 and formulate Midterm Business Plan and Human Resources Development Plan based on challenges.

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### 1-4 Achievement of the Project Purpose

Project Purpose: The structure for operation is strengthened in LWSC, WWSC, LpWSC and KWSC.

Indicator: Human Resources Development Plan of LWSC, WWSC, LpWSC and KWSC is prepared and approved by board members of each CU.

- Project Purpose will be achieved through activities of Output 3.

### 1-5 Changes of Risks and Actions for Mitigation

- No concerns for the Project implementation to date.

### 1-6 Progress of Actions undertaken by JICA

- No concerns for the Project implementation to date.

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### 1-7 Progress of Actions undertaken by Gov. of Zambia

#### (1) Office Space in MWDSEP

- MWDSEP provided the office for Japanese Experts in the building of MLG in February 2017.
- Since the office space being occupied by DWSS in Mukuba Pension House is limited, MWDSEP has not prepared office space for the Project yet.

#### (2) Office Space in LWSC

- LWSC provided the office which six members (four Japanese Experts and two Local staff) can use for the Project.
- Japanese Experts cannot utilize it throughout the term of the Project. During absence of four experts, LWSC will provide another office for local staff (Project Facilitator and Assistant Engineer).

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## 2 Delay of Work Schedule and/or Problems (if any)

### (1) Office Spaces

It may cause problems in case MWDSEP does not provide office spaces for the Japanese Experts.

### (2) Limited Manpower

It caused problems of activities for Output-1, particularly Activity 1-3 related to formulate the Evaluation Manuals. Project Team sometimes faced difficulties in efficiently managing the Project due to limited manpower of MWDSEP

#### Action to be taken:

##### (1) Office Spaces

LWSC has provided office spaces for the Japanese Experts in HQ of LWSC temporarily in July instead of MWDSEP, while MWDSEP will be supposed to provide the office spaces as well

##### (2) Limited Manpower

PM and staff of MWDSEP in charge of the Project have coped with occupying their assignments to formulate the Evaluation Manual in compliance with the Project schedule.

To be continued<sup>31</sup>

## 2 Delay of Work Schedule and/or Problems (if any)

### (3) Budget of Evaluation Activity

It caused problems of activities for Output-2, particularly Activity 2-1 related to conduct evaluation based on the Evaluation Manuals. Project Team sometimes faced difficulties in efficiently managing the Project, because the budget for the evaluation activities of the Project in FY2017 had not been estimated by NWASCO.

#### Action to be taken:

### (3) Budget of Evaluation Activity

The inspectors of NWASCO will follow-up the benchmarking for WWSC and LpWSC every three months. The budget for the evaluation activities for the Project will be secured from FY2018 by NWASCO.

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## 2 Modification of the Project Implementation Plan

Modification Document	Contents of Modification	Date
Amendment of RD	a) Change of Implementation agency from MLGH to MWDSEP	16 <sup>th</sup> March 2017
	b) Change of Assigned name of Japanese Experts	
	c) Deletion of Machinery and Equipment	
Revision of PDM	a) Change of Assigned name of Japanese Experts	17 <sup>th</sup> March 2017 (1 <sup>st</sup> JCC)
	b) Deletion of Machinery and Equipment	
Revision of PDM	a) Change of Implementation agency from MLGH to MWDSEP	9 <sup>th</sup> August 2017 (2 <sup>nd</sup> JCC)
	b) Change of Assigned name of Project Personnel from Zambian Side in accordance with change of Implementation agency from MLGH to MWDSEP	

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**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**2-6(2): Monitoring Sheet Ver.2  
(Only Activity 1-2, 1-4, 2-1 & 2-2)  
[Session-2]**

**12<sup>th</sup> December 2017**

**Eng. Michael Mwamba Museba  
Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)  
National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts**

**Contents**

**1. Progress**

1-1 Progress of Input

1-2 Progress of Activities

- Activity 1-1 to Activity 1-4
- Activity 1-5: To conduct training for MWDSEP and CU staff on how to utilize the Evaluation Manual
- Activity 2-1: To conduct evaluation based on the Evaluation Manual.
- Activity 2-2. To analyze the result of evaluation taken place in Activity 2-1.

**Contents**

- Activity 2-3. To grasp and clarify current situation of 4CUs based on data analysis & prepare report.
- Activity 2-4. To make a list of challenges of 4 CUs.
- Activity 3-1. To hold a workshop for all target CUs to share challenges and possible solutions.
- Activity 3-2. To establish task force for each target CU to work on developing human resource development plan.
- Activity 3-3 to 3-9

1-3 Achievement of Output

1-4 Achievement of the Project Purpose

1-5 Changes of Risks and Actions for Mitigation

1-6 Progress of Actions undertaken by JICA

1-7 Progress of Actions undertaken by Gov. of Zambia

**2. Delay of Work Schedule and/or Problems**

**3. Modification of the Project Implementation Plan**

**Activity 1-2: To decide Target Parameters covered by the Evaluation Manual**

Project Team conducted preliminary survey with using questionnaire and interview to decide target parameter by the evaluation manual. Survey result schematically are shown as following table.

**Activity 1-2: To decide Target Issues covered by the Evaluation Manual**

(1) LWSC-1:

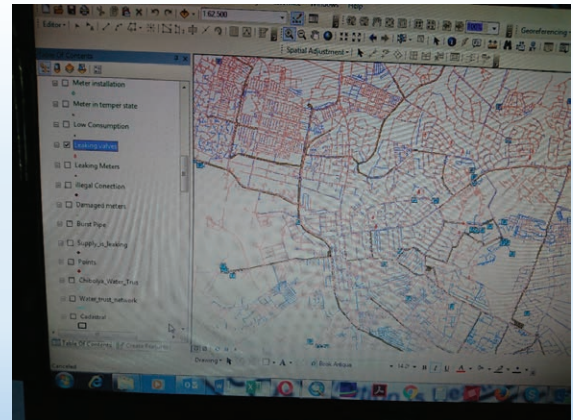
Issues	Causes
a) Number of PI ● Few PIs (10 in number).	● Using PIs as evaluation of the benchmark of NWASCO.
b) Geological Information System (GIS) Database ● Lack of pipe information in GIS Database.	● No linkage with the other Databases. ● Limited human resources.

## Activity 1-2: To decide Target Issues covered by the Evaluation Manual

(1) LWSC-2:

Issues	Causes
c) Pipe Location ● Un-certainly over exact location of the existing pipeline.	● Imprecise database of pipeline location.
d) NRW Management ● High Non-Revenue Water (NRW) ratio (46%*5).	<ul style="list-style-type: none"> <li>● Difficulties in reduction of apparent and real loss due to deteriorated water meters, deterioration of pipes and lack of leak detectors.</li> <li>● Lots of illegal connections due to easiness of illegal connections.</li> <li>● Lots of malfunctioning water meters because water meters were not checked without equipment such as test-bench that calibrates water meters.</li> </ul>

7  
(To be continued)



Pipe Information on GIS Database  
(Lack of Pipe Information)

8

(2) WWSC:

Issues	Causes
a) GIS Database ● Lack of pipe information in GIS Database.	● Limited human resources.
b) WTP Treatment Process ● Metal odor from tap water.	● Inappropriate treatment process.
c) NRW Management ● High NRW ratio (54%: NWASCO).	<ul style="list-style-type: none"> <li>● Lots of illegal connections due to easiness of illegal connections.</li> <li>● Non-implementation of NRW reduction due to lack of skilled staff for detecting leaks and lack of leak detectors.</li> <li>● Lots of malfunctioning water meters because water meters were not checked without equipment such as test-bench that calibrates water meters in addition to lack of skilled staff who can calibrate the water meters.</li> <li>● Lack of plumbers to repair leakage.</li> </ul>

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Leakage from Distribution Pipes

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(3) LpWSC-1:

Issues	Causes
a) GIS Database ● Lack of pipe information in GIS Database.	● Limited human resources.
b) O&M at Mansa WTP ● Difficulties in the response to sudden change of raw water quality.	● Inappropriate water treatment management due to lack of skilled staff for maintaining water supply facilities.
● Lack of management of service reservoir.	● Lack of skilled staff for maintaining water supply facilities.
c) NRW Management ● High NRW ratio (70%: NWASCO).	● Non-implementation of NRW reduction due to difficulties in identifying illegal connections and lack of staff to patrol illegal connections.
● Unreliable NRW ratio.	● Lack of bulk meters at service reservoirs due to no plan to install the bulk meters.

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(To be continued)

(3) LpWSC-2:

Issues	Causes
d) Leakage Management ● Wide spread leakage.	<ul style="list-style-type: none"> <li>● No visual leakage patrols <u>due to no a dedicated leakage management section.</u></li> <li>● no leakage report system by customers <u>due to no a dedicated leakage management section.</u></li> <li>● No Implementation leakage reduction <u>due to no a dedicated leakage management section.</u></li> </ul>
e) Arrear of Water Tariff ● Arrear of water tariff from large consumers.	● Difficulties in collecting from large water consumers due to insufficient training programs for staff to raise awareness on tariff collection.
f) Construction Management ● Lack of construction management.	● No construction supervisors in the CU.

Project Team supposed some of causes underlined in '(3) d)' from aspect of evaluation result by using Evaluation Manual, because of no information available

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Leakage from Distribution Pipes

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(4) KWSC:

Issues	Causes
a) O&M at ITAWA WTP <ul style="list-style-type: none"> <li>● Deterioration of the concrete structure at ITAWA WTP.</li> <li>● Malfunction of the filter control panel.</li> </ul>	<ul style="list-style-type: none"> <li>● Constructed in 1955.</li> <li>● Insufficient maintenance due to lack of skilled staff to maintain facilities appropriately.</li> <li>● Deterioration of equipment due to lack of skilled staff to maintain various equipment.</li> <li>● Inadequacy of equipment replacement due to lack of skilled staff to maintain equipment.</li> </ul>
b) Distribution Management <ul style="list-style-type: none"> <li>● Existence of asbestos pipes</li> </ul>	<ul style="list-style-type: none"> <li>● Insufficient intelligibility of staff concerning the importance of control panel.</li> <li>● Buried according to original design.</li> <li>● Non-implementation of asbestos pipe replacement due to lack of training concerning hazardous materials.</li> </ul>
<ul style="list-style-type: none"> <li>● Filtration by manual operation at filter basin on operator's experience.</li> <li>● Deterioration of distribution pipes.</li> </ul>	<ul style="list-style-type: none"> <li>● Non-implementation of distribution pipe replacement due to no plans to replace distribution pipe.</li> </ul>

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(4) KWSC:

Issues	Causes
c) O&M <ul style="list-style-type: none"> <li>● Malfunctioning flow meter.</li> </ul>	<ul style="list-style-type: none"> <li>● Insufficient intelligibility of some staff concerning water distribution management.</li> <li>● Inadequate O&amp;M for the flow meter due to lack of understanding of the necessity of flow meters. .</li> </ul>
d) Procurement of parts <ul style="list-style-type: none"> <li>● Delay of repairing leakage.</li> </ul>	<ul style="list-style-type: none"> <li>● No repair tools and materials to be procured promptly.</li> </ul>
e) NRW Management <ul style="list-style-type: none"> <li>● High NRW ratio (54%*7)</li> </ul>	<ul style="list-style-type: none"> <li>● Various reasons such as leakage, lots of illegal connections due to social aspects, meter inaccuracies due to no replacement of malfunctioning water meters.</li> </ul>

Note\*7: Source KWSC at the 2<sup>nd</sup> JCC

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Leakage from Distribution Pipes

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**Activity 1-4: To share Purpose and Components of the Evaluation Manual to Staffs of MWDSEP and CU**

- Project Team selected 21 PIs through the result of interviews with four CUs and examination of the INDICATORS FOR THE URBAN AND PERI-URBAN WATER SUPPLY AND SANITATION SECTOR REPORT of NAWASCO.
- Project Team proposed 19 evaluation items for management capacity and 6 items for communication & negotiation capacity.

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**Activity 2-1. To conduct evaluation based on the Evaluation Manual.**

Project Team together with NAWASCO staff evaluated LWSC, WWSC, LpWSC and KWSC in terms of PIs, Management Capacity and Communication & Negotiation Capacity. Actual evaluation was done by a self-evaluation of Managing Director, Department Directors/Managers. Moreover, Project Team verified whether CUs assessed their capacity properly on the basis of calculation especially in terms of PIs.

Through conducting the evaluation, the defects on the Evaluation Manual were identified as follows. These will be reflected to the revision of the Evaluation Manual.

- The causes which were not contained in the Evaluation Manual were mentioned.
- In case that the evaluation criteria was selected as "Good", some causes were not mentioned.
- It was difficult for CUs to evaluate because they were not familiar with some PIs apart from the indicators on the benchmarking by NAWASCO.

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**Activity 2-2. To analyze the result of evaluation taken place in Activity 2-1.**

Project Team analyzed the result of evaluation and sorted out CUs' challenges by items which were mentioned in Activity 1-2.

CUs evaluated 21 PIs and 19 parameters of Management Capacity at an organization level.

Capacity level is composed of five (5) categories; 'Very Serious', 'Serious', 'Not Good Enough', 'Good', and 'Very Good'.

To be continued

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**Activity 2-2. To analyze the result of evaluation taken place in Activity 2-1.**

The percentages of 'Very Serious' and 'Serious' challenges on PIs and parameters of Management Capacity are as shown in the following table.

CU	PI	Management Capacity
LWSC	19.0%	10.6%
WWSC	57.1%	47.4%
LpWSC	38.1%	31.6%
KWSC	42.8%	36.9%

Refer to Session 2-7 for the detail and causes of challenges .

To be continued<sup>20</sup>

**Activity 2-2. To analyze the result of evaluation taken place in Activity 2-1.**

Meanwhile, CUs evaluated six (6) parameters of Communication & Negotiation Capacity as an individual level. Capacity level is composed of five (5) categories, the same as that at an organization level. The ranges by categories of Communication & Negotiation Capacity are as shown in the following table.

CU	'Serious'	'Not Good Enough'	'Good'	Total
LWSC	0.0%	50.0%	50.0%	100%
WWSC	50.0%	50.0%	0.0%	100%
LpWSC	83.3%	26.7%	0.0%	100%
KWSC	0.0%	100.0%	0.0%	100%

Refer to Session 2-7 for the detail and causes of challenges .

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**THE PROJECT FOR STRENGTHENING CAPACITY  
OF URBAN WATER SUPPLY INFRASTRUCTURE  
IN THE REPUBLIC OF ZAMBIA**

**7: Confirmation of Evaluation Report by NWASCO**

[Session-2]

**12<sup>th</sup> December 2017**

**Mr. Peter Mutale/Mr. Kasenge Hara**

**Ministry of Water Development, Sanitation and  
Environmental Protection (MWDSEP)**

**National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts**

1

**1. Purpose of evaluating CUs  
(Capacity Assessment)**

- Learn the status-quo of water supply service of four CUs
- Formulate Midterm Business Plans and Human Resource Development Plans of four CUs based on the Status-quo.

2

**2. Composition of the Evaluation Report**

**- CONTENTS-**

1. Overview of CUs evaluated based on Evaluation Manual
2. Purpose of evaluating CUs (Capacity Assessment)
3. Composition of Post by CU
4. Method of Capacity Assessment
  - 4.1 Organizational Level
  - 4.2 Individual Level
  - 4.3 Process of Evaluation
  - 4.4 Observation and Improvement of Evaluation Manual through Evaluation of CUs
  - 4.5 Days required for self-evaluating CU
5. Result of Capacity Assessment
  - 5.1 Organizational Level
  - 5.2 Individual Level
6. Challenges based on the Assessment Result
  - 6.1 Organizational Level
  - 6.2 individual Level

3

**3. Evaluation Parameters**

**3.1 Performance Indicators (PIs)-1**

<b>1) Aspects to be improved mainly by Facility Investment</b>
<b>P1: Continuity of supply</b>
<b>P2: Overall water supply coverage</b>
<b>P3: Surplus purification capacity</b>
<b>P4: Transmission and distribution mains</b>
<b>P5: House connections</b>
<b>P6: Mechanical and electrical equipment</b>
<b>P7: Rate of facility utilization</b>
<b>2) Aspects to be improved mainly by Capacity Development (Technical Aspect)</b>
<b>P8: O&amp;M of the facilities</b>
<b>P9: Drawings of pipe facilities</b>
<b>P10: NRW ratio</b>

4

**3.1 Performance Indicators (PIs)-2**

<b>P11: Customer meters</b>
<b>P12: Bulk meters</b>
<b>P13: Water quality parameters tested at purification plants</b>
<b>3) Aspects to be improved mainly by Capacity Development (Non-technical aspects)</b>
<b>P14: Cost recovery level</b>
<b>P15: Collection ratio</b>
<b>P16: Number of staff working especially for water (Number/'000 water connections)</b>
<b>P17: Implementation of training</b>
<b>P18: Complaint handling</b>
<b>P19: Awareness-raising on NRW reduction, water saving, collection of water charges, etc.</b>
<b>4) Aspects to be improved mainly by Program Approach</b>
<b>P20: Sewerage coverage (including On-site Facilities)</b>
<b>5) General Aspect</b>
<b>P21: Year of work experience on water supply service</b>

5

**3.2 Parameters of Management Capacity -1**

<b>1) Internal Policy and Planning</b>
<b>M1: Review on Short, Middle and Long Term Plan</b>
<b>M2: Evaluation Method to achieve Goal</b>
<b>2) Finance</b>
<b>M3: Analysis on Annual Financial Status</b>
<b>M4: Financial Improvement Status towards achievement of Goal</b>
<b>M5: Status of Metered Rate</b>
<b>M6: Budget Arrangement based on Historical Record and Result of Management Evaluation</b>
<b>M7: Utilization of Manual of Meter Reading, Billing and Tariff Collection</b>
<b>3) Governance, Management and Human Resources</b>
<b>M8: Average Length of Service with CUs or Other Water Authority</b>

6

### 3.2 Parameters of Management Capacity -2

M9: Record of Working Time
M10: System to evaluate Work Performance Capacity towards Goal
M11: Allocation and Input of Staff according to the Work Load
M12: Self-evaluation System at Individual Level
M13: Self-learning Support System
M14: Evaluation of Trainee's Efforts
4) Customer Relation
M15: Development of Customer's Information
M16: Time to respond to Customer's Complaint
M17: Record for dealing with Customer's Complaints
M18: Customer's Survey
M19: Promotion of Customer's Awareness

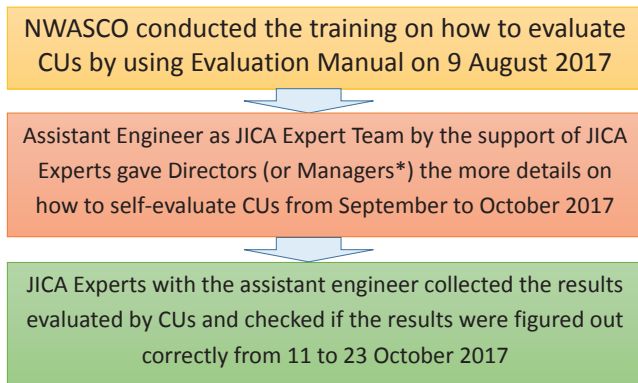
7

### 3.3 Parameters of Communication & Negotiation Capacity

Evaluation Parameters on Communication & Negotiation Capacity	Level 1	Level 2		Level 3
		HRA Dep.	Other Dep.	
1) Leadership				
C1: Capacity to achieve goal and to raise the standards of the leadership	X			
C2: Capacity to supervise staff efficiently and effectively and to strengthen the division and or department		X	X	
2) Human Development				
C3: Capacity to improve qualification of staff in terms of post and job description	X	X	X	
3) Negotiation and Coordination				
C4: Capacity to convince the third parties to understand different ideas and opinions	X	X	X	
4) Data Collection and Utilization				
C5: Capacity to collect data and to apply for analysis for the water supply service	X		X	X
5) Communication with Customers				
C6: Capacity to communication with customers in order to provide them with high quality water supply service				X

8

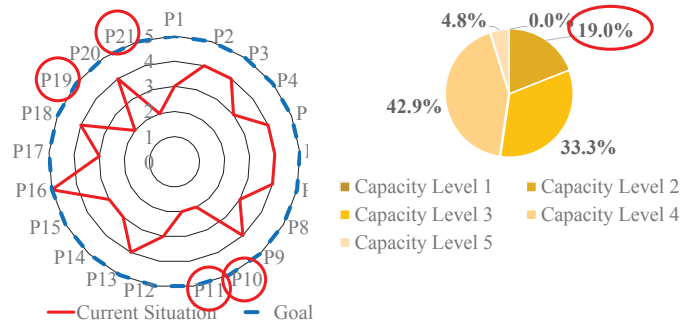
### 4. Process of Evaluation



9

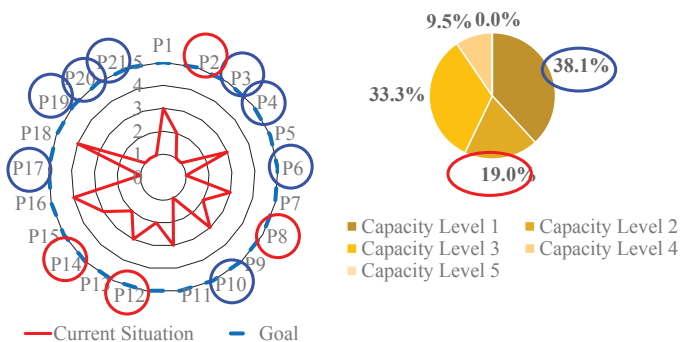
### 5. Evaluation Result

#### 5.1 Distribution of Result on PIs (LWSC):



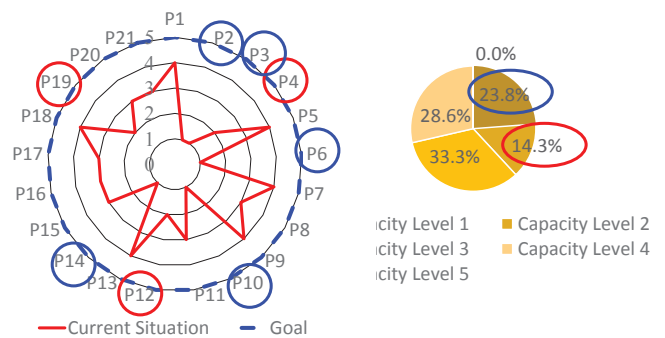
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#### 5.2 Distribution of Result on PIs (WWSC):



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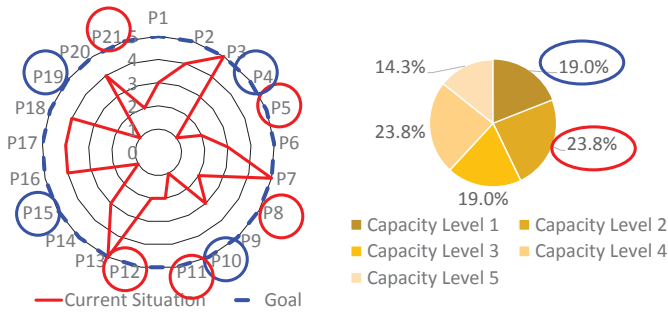
#### 5.3 Distribution of Result on PIs (LpWSC):



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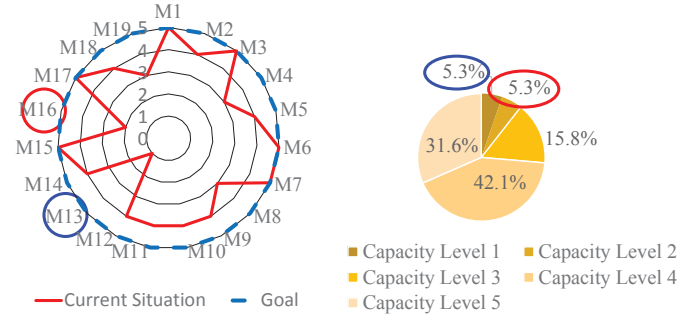


### 5.4 Distribution of Result on PIs (KWSC):



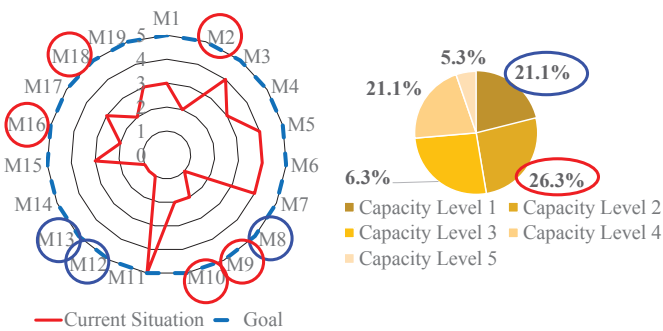
13

### 5.5 Distribution of Result on Management Capacity (LWSC):



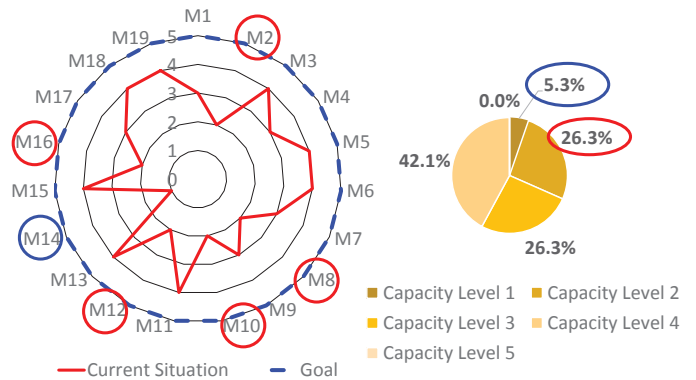
14

### 5.6 Distribution of Result on Management Capacity (WWSC):



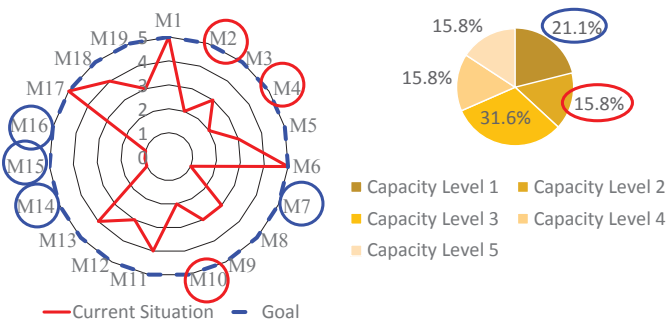
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### 5.7 Distribution of Result on Management Capacity (LpWSC):



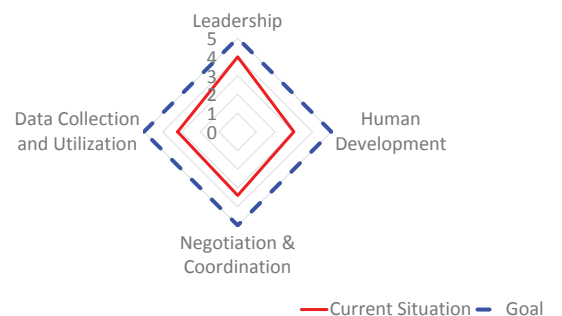
16

### 5.8 Distribution of Result on Management Capacity (KWSC):



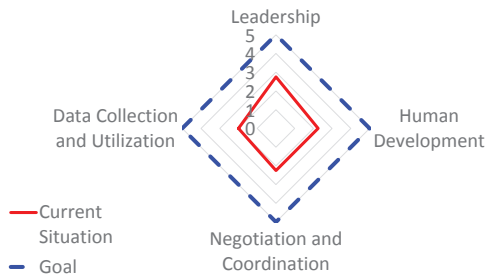
17

### 5.9 Distribution of Result on Communication & Negotiation Capacity at Director Level (LWSC):



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### 5.10 Distribution of Result on Communication & Negotiation Capacity at Manager Level (WWSC):



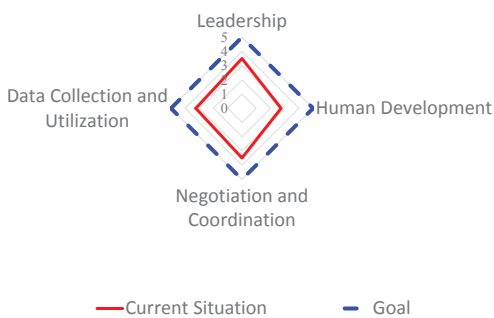
19

### 5.11 Distribution of Result on Communication & Negotiation Capacity at Manager Level (LpWSC):



20

### 5.12 Distribution of Result on Communication & Negotiation Capacity at Directors' Level (KWSC):



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### 6. Evaluation Result (Main Factors)

6.1 Performance Indicators that Common Challenges were observed among four CUs

- ◆ Challenges on PIs depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC.

Performance Indicators (PIs)	Summary of Main Factors
P4: Transmission and distribution mains	<ul style="list-style-type: none"> <li>Existence of asbestos pipes</li> </ul>
P10: NRW ratio	<ul style="list-style-type: none"> <li>Existence of asbestos pipes</li> <li>Existence of Deteriorated pipes</li> <li>Much leakage</li> <li>Lack of leakage detection</li> <li>Defect of monitoring system for illegal connections</li> <li>Lack of awareness activities</li> </ul>
P19: Awareness-raising on NRW reduction, water saving, collection of water charges, etc.	<ul style="list-style-type: none"> <li>Lack of awareness activities</li> </ul>
P21: Year of work experience on water supply service	<ul style="list-style-type: none"> <li>Retirement</li> </ul>

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### 6.2. Parameters of Management Capacity that Common Challenges were observed among four CUs

- ◆ Challenges on Management Capacity also depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC.

Parameters of Management Capacity	Summary of Main Factors
M16: Time to respond to Customer's Complaint	There are no training programs to make staff understand the necessary of a quick action and on how to manage the quick action

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### 6.3 Parameters of Communication & Negotiation Capacity that Common Challenges were observed among four CUs

- ◆ Challenges on Communication & Negotiation Capacity also depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC at Directors' (or Managers'\*) and Managers' (or Supervisors'\*) Level.

Parameters of Communication & Negotiation Capacity	Summary of Main Factors
<b>Human Development</b>	
C3: Capacity to improve qualification of staff in terms of post and job description	There are no training programs to make executive officers understand the necessity of human resource development.

\* For WWSC and LpWSC

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## 7. Challenges and Outline of Solution

### 7.1 PIs- LWSC

Challenges	Outline of Solution	Means to solve Challenge		
		Infra.	T.A.*	Pro.**
<b>Challenges that require Medium to Long-term Solutions</b>				
P10: NRW ratio is 36-50%.	Reduction of NRW		X	X
P11: Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	Replacement of customer meters		X	X
P19: A few effective awareness-raising activities have been implemented.	Conducting of the training on awareness-raising activities		X	
P21: Average year of work that staff have experience on water supply service is 8-15 years.	Accumulation of technologies		X	

\*Technical Assistance, \*\*Procurement

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### 7.2 PIs- WWSC-1

Challenges	Outline of Solution	Means to solve Challenge		
		Infra.	T.A.	Pro.
<b>Challenges that require Urgent Solutions</b>				
P3: Surplus capacity to maximum design capacity is less -30%.	Augmentation of Treatment plant capacity	X	X	
P4: ACP, old CI and old SP pipes make up 75% of main pipelines.	Replacement of ACPs	X		
P6: More than 30% of installed major mechanical and electrical equipment are malfunctioning.	Replacement of mechanical & electrical equipment		X	X
P10: NRW ratio is more than 50%	Reduction of NRW		X	X
P17: Training is quite rare or not provided at all.	Increase of the training		X	
P19: No or minimal effective awareness-raising activities have been implemented.	Conducting of the training on awareness-raising activities		X	
P20: Sewer coverage is zero.	Development of sewer system and or sanitation facilities	X	X	
P21: Average year of work that staff have experience on water supply service is zero to seven years.	Accumulation of technologies		X	

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### 7.2 PIs- WWSC-2

Challenges	Outline of Solution	Means to solve Challenge		
		Infra.	T.A.	Pro.
<b>Challenges that require Medium to Long-term Solutions</b>				
P2: Overall service coverage is 50- 69%.	Increase of service coverage	X	X	
P8: CU has O&M manuals which are not effective.	Preparation of O&M manuals		X	
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	Installation of bulk meters		X	X
P14: All O&M costs apart from depreciation of water supply facilities are fully covered by water tariff.	Reduction of O&M cost and or increase of revenue	X	X	

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### 7.3 PIs- LpWSC-1

Challenges	Outline of Solution	Means to solve Challenge		
		Infra.	T.A.	Pro.
<b>Challenges that require Urgent Solutions</b>				
P2: Overall service coverage is less than 50%	Increase of service coverage	X	X	
P3: Surplus capacity to maximum design capacity is less than minus (-) 30%.	Augmentation of Treatment plant capacity	X	X	
P6: More than 30% of installed major mechanical and electrical equipment are malfunctioning.	Replacement of mechanical & electrical equipment		X	X
P10: NRW ratio is more than 50%	Reduction of NRW		X	X
P14: Only part of the O&M costs excluding depreciation of water supply facilities are covered by water tariff.	Reduction of O&M cost and or Increase of revenue	X	X	

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### 7.3 PIs- LpWSC-2

Challenges	Outline of Solution	Means to solve Challenge		
		Infra.	T.A.	Pro.
<b>Challenges that require Medium to Long-term Solutions</b>				
P4: Asbestos, old cast iron and old steel pipes make up 50-75% of main pipelines.	Replacement of asbestos pipes	X		
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	Installation of bulk meters		X	X
P19: A few effective awareness-raising activities have been implemented.	Conducting of the training on awareness-raising activities		X	

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### 7.4 PIs- KWSC-1

Challenges	Outline of Solution	Means to solve Challenge		
		Infra.	T.A.	Pro.
<b>Challenges that require Urgent Solutions</b>				
P4: Asbestos, old cast iron and old steel pipes make up 75% of main pipelines.	Replacement of asbestos pipes	X		
P10: NRW ratio is more than 50%.	Reduction of NRW		X	X
P15: Collection ratio is less than 60%.	Strengthening of tariff collection system		X	
P19: No or minimal effective awareness-raising activities have been implemented.	Conducting of the training on awareness-raising activities		X	

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## 7.4 PIs- KWSC-2

Challenges	Outline of Solution	Means to solve Challenge		
		Infra.	T.A.	Pro.
<b>Challenges that require Medium to Long-term Solutions</b>				
P5: 80-94% of house connections are more than 25 years old.	Replacement of service pipelines	X	X	
P8: Facilities have O&M manuals which are not effective, leading to O&M deficiency.	Preparation of O&M manuals		X	
P11: Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	Replacement of customer meters		X	X
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	Installation of bulk meters		X	X
P21: Average year of work that staff have experience on water supply service is 8-15 years.	Accumulation of technologies		X	

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## 7.5 Management Capacity- LWSC

Challenges	Outline of Solution	Means to solve Challenge	
		T.A.	Pro.
<b>Challenges that require Urgent Solutions</b>			
M13: There is no a self-learning system.	Establishment of a self-learning system for staff	X	
<b>Challenges that solution is required for a certain period</b>			
M16: It takes a week to respond to customer's complaint.	Strengthening of customer service	X	

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## 7.6 Management Capacity- WWSC-1

Challenges	Outline of Solution	Means to solve Challenge	
		T.A.	Pro.
<b>Challenges that require Urgent Solutions</b>			
M8: Average length of service with current CU is less than five years.	Accumulation of technologies	X	
M12: There is no a self-evaluation system.	Establishment of a self-evaluation system for staff	X	
M13: There is no a self-learning system.	Establishment of a self-learning system for staff	X	

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## 7.6 Management Capacity- WWSC-2

Challenges	Outline of Solution	Means to solve Challenge	
		T.A.	Pro.
<b>Challenges that require Medium to Long-term Solutions</b>			
M2: Evaluation method has not been established.	Establishment of evaluation system for staff	X	
M9: Recording system for the working time has been developed but the working time for all the staff has not been recorded yet.	Encouragement of recording for working time	X	
M10: Evaluation system for work performance is under development.	Establishment of evaluation system for staff	X	
M16: It takes a week to respond to customer's complaint.	Strengthening of customer service	X	
M18: Customer survey has never been conducted but the survey is under consideration.	Conducting of the training on customer survey	X	

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## 7.7 Management Capacity- LpWSC

Challenges	Outline of Solution	Means to solve Challenge	
		T.A.	Pro.
<b>Challenges that require Urgent Solutions</b>			
M14: Trainees' efforts have not been evaluated.	Establishment of evaluation system for trainees' efforts	X	
<b>Challenges that require Medium to Long-term Solutions</b>			
M2: Evaluation method has not been established.	Establishment of evaluation system for staff	X	
M8: Average length of service with current CU is five to 10 years.	Accumulation of technologies	X	
M10: Evaluation system for work performance is under development.	Establishment of evaluation system for staff	X	
M12: A self-evaluation system is under development.	Establishment of a self-evaluation system for staff	X	
M16: It takes a week to respond to customer's complaint.	Strengthening of customer service	X	

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## 7.8 Management Capacity- KWSC-1

Challenges	Outline of Solution	Means to solve Challenge	
		T.A.	Pro.
<b>Challenges that require Urgent Solutions</b>			
M7: There are no manual, or even if there is a manual, it has not been used at all.	Preparation of O&M manuals for meter reading, billing & tariff collection, and conducting of their training	X	
M14: Trainees' efforts have not been evaluated.	Establishment of evaluation system for trainees' efforts	X	
M15: Customers' information has not been developed at all.	Development of database on customer information	X	
M16: It takes at least 10 days to respond to customer's complaint.	Strengthening of customer service	X	

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## 7.8 Management Capacity- KWSC-2

Challenges	Outline of Solution	Means to solve Challenge	
		T.A.	Pro.
<b>Challenges that require Medium to Long-term Solutions</b>			
M2: Evaluation method has not been established.	Establishment of evaluation system for staff	X	
M4: Financial status has not been improved at all.	Conducting of the training on financial analysis	X	
M10: Evaluation system for work performance is under development.	Establishment of evaluation system for staff	X	

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## 8. Observation and Improvement of Evaluation Manual through Evaluation of CUs

JICA Expert Team practically observed the following challenges required for improving Evaluation Manual.

- Actual causes that CU has been facing were not stated in Evaluation Manual.
- In case that 'Good' was selected, the causes were not clarified in the answer sheets.
- Some complements were furthermore required to figure out the particular PI.

Evaluation Manual will be finalized based on the above observations.

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## 9. Days required from giving briefing to collect the result of self-evaluating CUs-1

- Project Team is confident that Evaluation Manual was well-designed in order for CUs easily to self-evaluate them.
- JICA Expert Team gave a brief by the meeting, phone conversation and or emails on how to evaluate CU by utilizing Evaluation Manual from 14 August 2017.
- CUs started self-evaluating after receiving a brief.

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## 10. Days required from giving briefing to collect the result of self-evaluating CUs-2

CUs	Date of giving a Brief	Date of completing Self-Evaluation	Days required for Self-Evaluation 1)	Number of evaluated Staff at Individual Level 2)	Days required for Self-Evaluation per evaluated staff 3) = 1)/2) x 100
LWSC	14 Aug.	20 Oct.	68 days	23	3.0 days/staff
WWSC	4 Oct.	12 Oct.	9 days	24	0.4 days/staff
LpWSC	6 Sep.	12 Oct.	37 days	16	2.3 days/staff
KWSC	26 Sep.	20 Oct.	25 days	19	1.3 days/staff

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## 11. Days required from giving briefing to collect the result of self-evaluating CUs-3

According to some of CUs' executive officer and JICA Expert Team's observation, it seems that there are various factors such as:

- Time constraint to self-evaluate,
- Insufficient intelligibility of Evaluation Manual,
- Interest in evaluation of CUs,
- Motivation, etc.

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## 12. Challenges for Capacity Assessment & Capacity Development to be sustained based on Evaluation Manual

- Strong Commitment by MWDSEP and NWASCO,
- Incentive such as subsidy by central government, required for project implementation,
- Commitment of pre-condition as budget approval for project implementation,
- Others

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# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## 2-8: Schedule to be Implemented

[Session-2]

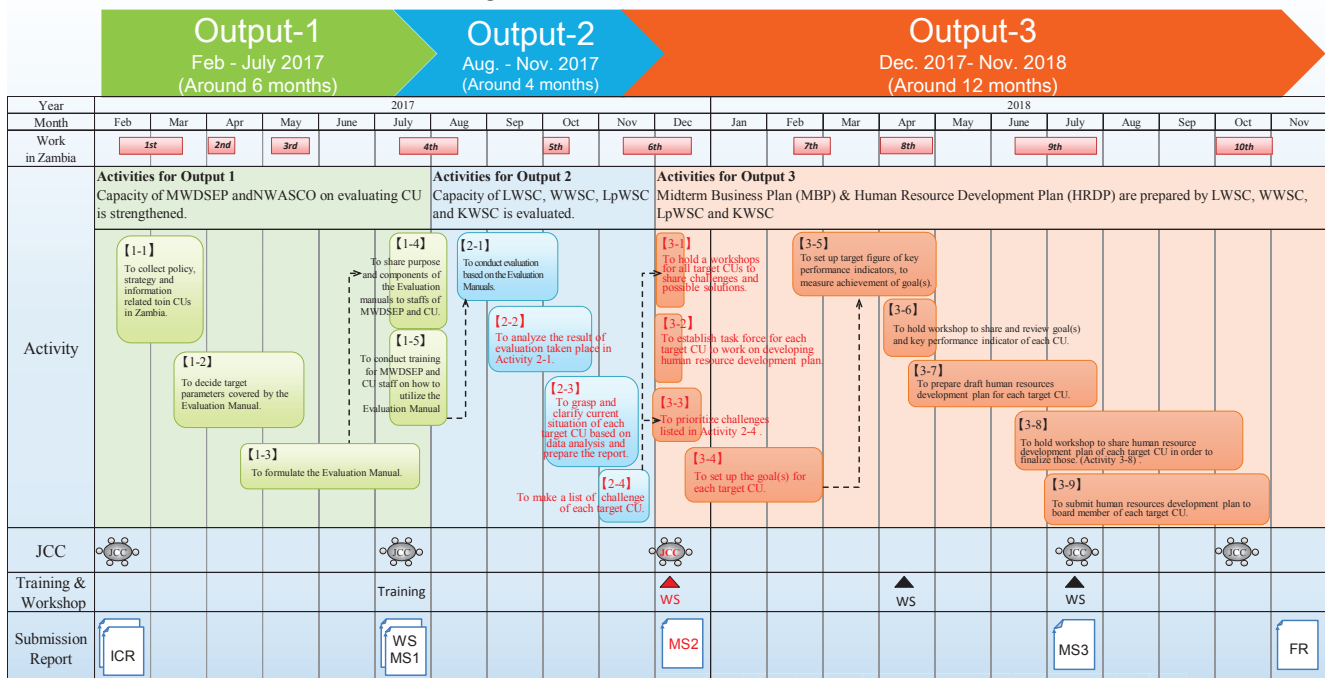
12<sup>th</sup> December 2017

Mr. Hideyuki IGARASHI

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

## 2. Schedule of the Project



↑ We are here (beginning of Output-3)

**Activities of Output1: [Formulation of evaluation manuals to CUs]**

**Activities of Output2: [Evaluation to CUs and identification of challenges & gaps]**

**Activities of Output3: [Formulation of MBP (Midterm Business Plan) & HRDP (Human Resources Development Plan)]**



### 3. Activities of each Output

#### (1) Activity-1: Formulation of evaluation manuals to CUs

- [1-1] Collect policy, strategy and information related to 4 CUs in Zambia
- [1-2] To decide target issues covered by the Evaluation Manual
- [1-3] To formulate the Evaluation Manual
- [1-4] To share purpose and components of the Evaluation manuals to staff of MWDSEP and CU
- [1-5] To conduct **training** for MWDSEP and CU staff on how to utilize Evaluation Manual

#### (2) Activity-2: Evaluation to CUs and identification of challenges & gaps

- [2-1] To conduct evaluation based on the Evaluation Manual
- [2-2] To analyze the result of evaluation taken place in Activity 2-1
- [2-3] To grasp and clarify current situation of 4CUs based on data analysis & prepare report
- [2-4] To enlist challenge of 4 CUs

#### (3) Activity-3: Formulation of MBP & HRDP

- [3-1] To hold **workshop** for 4 CUs to share challenges and possible solutions
- [3-2] To establish taskforce for 4 CUs to work on developing MBP & HRDP
- [3-3] To prioritize challenges listed in Activity 2-4
- [3-4] To set up the goal(s) for 4 CUs
- [3-5] To set up target figure of key performance indicators, to measure achievement of goal(s)
- [3-6] To hold **workshop** to share and review goal(s) and key performance indicator of 4 CUs
- [3-7] To prepare Draft MBP & HRDP for 4 CUs
- [3-8] To hold **workshop** to share MBP & HRDP of 4 CUs in order to finalize MBP & HRDP
- [3-9] To submit MBP & HRDP to board member of 4 CUs

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### 2. Training & Workshop for MBP & HRDP

Acti vity	Contents	Participants	Sche dule
<u>Trai ning</u> [1-5]	Make staff understand method to evaluate CUs	<ul style="list-style-type: none"> <li>● Team for Formulation of Evaluation Manual</li> <li>● 4 CUs</li> </ul>	9 Aug 2017 (Done)
<u>WS1</u> [3-1]	Share challenges & gaps on 4 CUs	<ul style="list-style-type: none"> <li>● Team for Formulation of Evaluation Manual</li> <li>● Task Force for formulation of MBP &amp; HRDP</li> </ul>	<b>Today</b> AM (12 Dec 2017)
<u>WS2</u> [3-6]	Share contents of activities of Task Force for formulation of MBP & HRDP	<ul style="list-style-type: none"> <li>● Team for Formulation of Evaluation Manual</li> <li>● Task Force for formulation of MBP &amp; HRDP</li> </ul>	Apr 2018
<u>WS3</u> [3-9]	Share MBP & HRDP	<ul style="list-style-type: none"> <li>● Team for Formulation of Evaluation Manual</li> <li>● Task Force for formulation of MBP &amp; HRDP</li> <li>● Board of four CUs</li> <li>● 7 CUs (Representative &amp; HR Manager)</li> </ul>	Jul 2018

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# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## **[Session-1]: WORKSHOP ON SHARING CHALLENGES & POSSIBLE SOLUTION**

### Agenda

1. Opening Remarks by Ms. Selenia Matimelo, Principal Community Development Officer (Project Manager), Department of Water Supply and Sanitation, MWDSEP
  2. Introduction of Participants
  3. Briefing on Conducting Evaluation based on Evaluation Manual & Analyzing Result of Evaluation by JICA Expert Team
  4. Explanation of Outline & Challenges for Evaluation Result (1) by LWSC & KWSC  
[Tea Break]
  5. Explanation of Outline & Challenges for Evaluation Result (2) by WWSC & LpWSC
  6. General Overview for Evaluation Result by NWASCO
  7. Question and Answer Session
  8. AOB (Any other Business)
  9. Closing Remarks by Project Manager  
[Lunch Time]
- Afternoon: Session-2 “3<sup>rd</sup> JCC”



# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## **[Session-2]: THIRD JOINT COORDINATING COMMITTEE (3<sup>rd</sup> JCC)**

### Agenda

1. Opening Remarks by Project Manager
  2. Address by JICA Zambia Office
  3. Address by Eng. Oswell Katooka, Acting Director (Project Director), Department of Water Supply and Sanitation, MWDSEP
  4. Introduction of Participants
  5. Briefing on Schedule & Activities of the Project by JICA Expert Team
  6. Project Monitoring Sheet (MS) Ver. 2 by MWDSEP
  7. Confirmation of Evaluation Report by NWASCO
  8. Schedule to be Implemented by JICA Expert Team
  9. Question and Answer Session
  10. Approval of MS Ver.2 by JCC Member
  11. AOB (Any other Business)
  12. Closing Remarks by Project Manager
- End





# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## 1-3: Briefing on Conducting Evaluation based on Evaluation Manual & Analyzing Result of Evaluation

[Session-1]

12<sup>th</sup> December 2017

Mr. Hideyuki IGARASHI

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

## Contents

1. Brush up the Project
  - (1) Outlines of the Project
  - (2) Schedule of the Project
2. Brush up Evaluation Manual
3. Procedure of Workshop
4. Consideration on Evaluation
  - (1) Composition of Position by CU
  - (2) Evaluation Result for Individual Level

## 1. Brush up the Project

### (1) Outlines of the Project

<Overall Goal>

Urban water supply infrastructure is managed in a sustainable way by each Commercial Utility (CU)

Indicator

<Project Purpose>

The structure for operation is strengthened in LWSC, WWSC, LpWSC and KWSC.

HRDP of LWSC, WWSC, LpWSC and KWSC is prepared and approved by board member of each CU.

(Output-3)

MBP and HRDP are prepared by LWSC, WWSC, LpWSC and KWSC

MBP and HRDP is logically prepared in a manner consistent with target figure of key performance indicator.

(Output-2)

Capacity of LWSC, WWSC, LpWSC and KWSC is evaluated

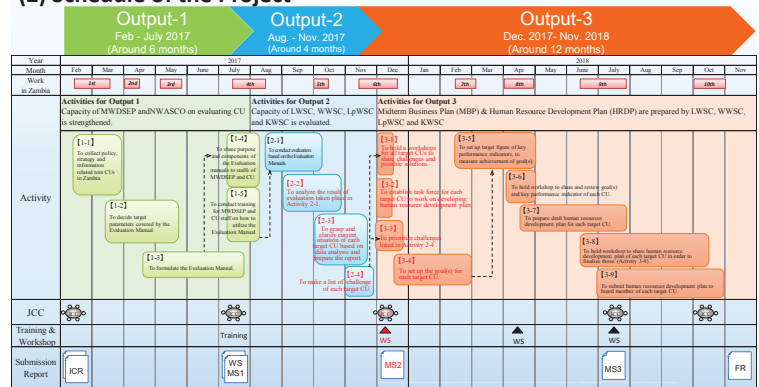
Challenges of each CU are clarified.

(Output-1)

Capacity of MWDSEP and NWASCO on evaluating CUs is strengthened

- 1) The evaluation manual for evaluating CUs is approved by MWDSEP.
- 2) The way to utilize the evaluation manual is understood by MWDSEP, NWASCO and CUs staffs in charge of urban water supply

## 1. Brush up the Project (2) Schedule of the Project



↑ We are here (beginning of Output-3)  
**Activities of Output1:** [Formulation of evaluation manuals to CUs]  
**Activities of Output2:** [Evaluation to CUs and identification of challenges & gaps]  
**Activities of Output3:** [Formulation of MBP (Midterm Business Plan) & HRDP (Human Resources Development Plan)]

## 2. Brush up Evaluation Manual

Evaluation Manual was Approved at 2<sup>nd</sup> JCC in August 2017

### (1) Performance Indicators (PIs) for Water Supply Service

→ 21 indicators

### (2) Evaluation Items for Management Capacity

→ 19 items

### (3) Evaluation Items for Communication & Negotiation Capacity

→ 6 items

Evaluation & Analysis were held from August to November 2017

**Activity-2:** Evaluation to CUs and identification of challenges & gaps

[2-1] To conduct evaluation based on the Evaluation Manual

[2-2] To analyze the result of evaluation taken place in Activity 2-1

[2-3] To grasp and clarify current situation of 4CUs based on data analysis & prepare report

**Activity-3:** Formulation of MBP & HRDP

[3-1] To hold WORKSHOP for 4 CUs to share challenges and possible solutions

→ This Workshop

## 3. Procedure of Workshop

Purpose of Workshop

→ To share challenges and possible solutions for 4 CUs

[Procedure]

### (1) Briefing on this Workshop

→ This presentation

### (2) Explanation of Outline & Challenges for Evaluation Result

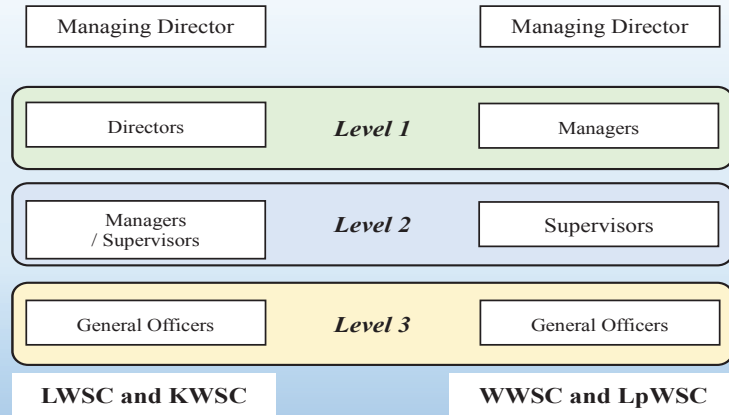
→ by each CU

### (3) General Overview for Evaluation Result

→ by NWASCO

#### 4. Consideration on Evaluation

##### (1) Composition of Position by CU



#### 3. Consideration on Evaluation

##### (2) Evaluation Result for Individual Level

Some Evaluation Results for Individual Level are NOT shared.



Submitted Evaluation Report to CUs has some mark-out in black

→ Because

Individuals may be identified in the section of Evaluation Result for Individual Level.

**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**4 (1): Evaluation of Outline for Evaluation Result by Lusaka Water and Sewerage Company (LWSC)**

[Session-1]

12<sup>th</sup> December 2017

Mr. Christopher Walimuntu

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

**1. Overview of CU**

CU <sup>*</sup>	Established Year	Number of Connections <sup>***</sup> (As at 2016) 1)	Number of Staff <sup>***</sup> (As at 2016) 2)	Number of staff per 1000 connections 3) =2/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4/2) x 100
LWSC	1989	97,008	899	9.3	23	2.6
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Total		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\*Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWS C	LpWS C	KWSC
Directors (Managers for LpWSC and WWSC) (Level 1)	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	Sub-Total	5	4	4	4

3

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWS C	LpWS C	KWSC
Managers (Supervisors for LpWSC and WWSC) (Level 2)	Human Resource and Administration	1	2	-	-
	Technical or Engineering	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
	Sub-Total	14	16	9	8
	All Department	4	4	3	7
General Officers (Level 3)	Sub-Total	4	4	3	7
	Total	23	24	16	19

4

**3. Result of Capacity Assessment**

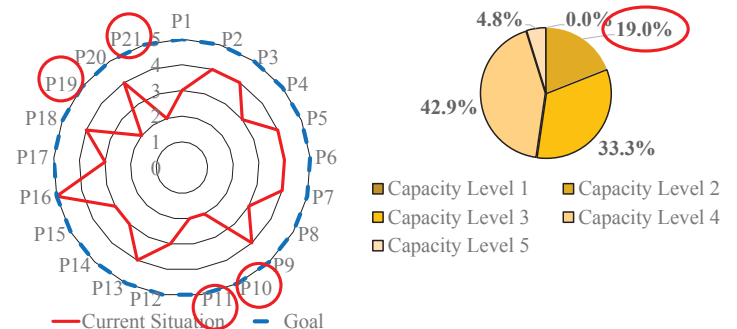
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that zero (0.0%) and four (19.0%) out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



5

6

## 'Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P10: NRW ratio is 36-50%.	By Capacity Development (Technical Aspect)	NRW occurs due to meter inaccuracy and leaks. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. Water meters are not calibrated because of non-existence of test bench, etc. CU has not enough leak detectors and there exists deteriorated pipes which may cause leaks.

7

## 'Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P11: Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	By Capacity Development (Technical Aspect)	Budget is insufficient to install customer meters.
P19: A few effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	<u>Detail reasons are not available.</u> Project Team assumes that awareness-raising activities is low priority judging from the current condition of frequency of newsletter's issue.
P21: Average year of work that staff have experience on water supply service is 8-15 years.	By General Aspect	Now a days, lots of staff leave CU because of low salary and mandatory retirement.

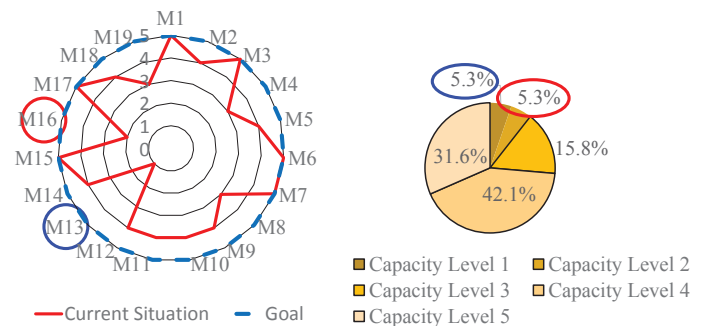
8

## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that **one (5.3%)** and **one (5.3%)** out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

### Distribution of Result on Management Capacity:



9

10

## 'Very Serious ' and 'Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
[Very Serious]		
M13: There is no a self-learning system.	Governance, Management and Human Resource	There are no training programs on how to use a self-learning support system.
[Serious]		
M16: It takes a week to respond to customer's complaint.	Customer Relation	There are no training programs on how to manage a quick action.

11

## 3.2 Individual Level

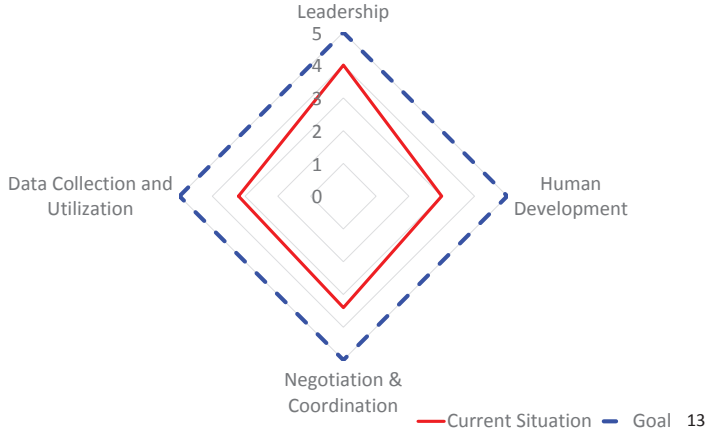
### (1) Communication & Negotiation Capacity

#### Challenges on Communication & Negotiation Capacity:

Neither of 'Very Serious' nor 'Serious' was observed in Directors, Managers and General Officers' level.

12

### Distribution of Result on Communication & Negotiation Capacity at Director Level:



**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

5 (1): Evaluation of Outline for Evaluation Result by Western Water and Sewerage Company (WWSC)

[Session-1]

12<sup>th</sup> December 2017

Ms. Pauline Sakala

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

**1. Overview of CU**

CU*	Established Year	Number of Connections*** (As at 2016) 1)	Number of Staff*** (As at 2016) 2)	Number of staff per 1000 connections 3) =2)/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4)/2) x 100
LWSC	1989	97,008	899	9.3	23	2.6
WWSC	2000	13,288	133	10.0	24	18.0
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Total		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\* Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Directors (Managers for LpWSC and WWSC) (Level 1)	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	Sub-Total	5	4	4	4

3

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Managers (Supervisors for LpWSC and WWSC) (Level 2)	Human Resource and Administration	1	2	-	-
	Technical or Engineering	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
	Sub-Total	14	16	9	8
General Officers (Level 3)	All Department	4	4	3	7
	Sub-Total	4	4	3	7
<b>Total</b>		23	24	16	19

4

**3. Result of Capacity Assessment**

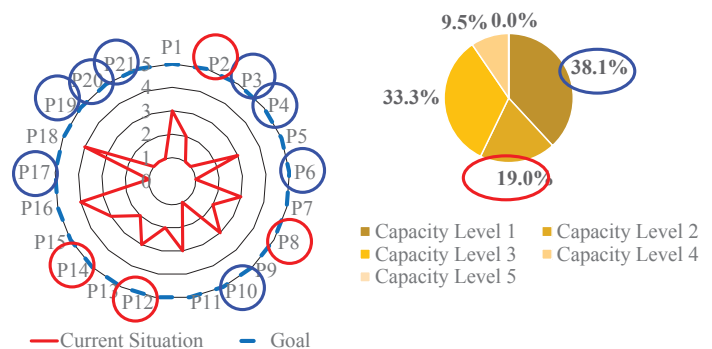
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that eight (38.1%) and four (19.0%) out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



5

6

### 'Very Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P3: Surplus capacity to maximum design capacity is less than 30%.	By Facility Investment	Most of intake facilities and treatment plant are not only deteriorated but also maintained due to budget constraint. CU has no the skilled staff to plan, and design intake & treatment plant, and to supervise their construction. In addition, NRW is one of causes for lack of purification capacity.
P4: Asbestos, old cast iron and old steel pipes make up 75% of main pipelines.	By Facility Investment	CU has no the skilled staff to plan, and design intake & treatment plant, and to supervise their construction. One of the main causes is lack of budget for replacing the existing pipes.

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### 'Very Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P6: More than 30% of installed major mechanical and electrical equipment are malfunctioning.	By Facility Investment	The existing equipment are not replaced with new ones because of lack of budget, skilled staff for planning and or designing and supervision. It is also difficult to procure spare parts in Zambia. In addition, CU has neither skilled staff nor budget to maintain equipment.

### 'Very Serious ' Challenges on PIs-3:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P10: NRW ratio is more than 50%.	By Capacity Development (Technical Aspect)	NRW occurs due to meter inaccuracy and leaks. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. Water meters are not calibrated because of non-existence of test bench and lack of skilled staff, etc. CU has not enough leak detectors and the skilled staff to detect water leaks, and there exists deteriorated pipes (asbestos pipes) which may cause leaks.
P17: Training is quite rare or not provided at all.	By Capacity Development (Non-Technical Aspect)	There are no training implementation system and trainers. CU also faces lack of budget to conduct the training.

9

### 'Very Serious ' Challenges on PIs-4:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P19: No or minimal effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	Budget is insufficient to employ the skilled staff to implement awareness-raising activities.
P20: Sewer coverage is zero.	By Program Approach	Because of lack of budget, development of sewer system is low priority in CU.
P21: Average year of work that staff have experience on water supply service is zero to seven years.	By General Aspect	CU is relatively new organization.

10

### 'Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P2: Overall service coverage is 50-69%.	By Facility Investment	CU faces function depression due to deterioration of intake facilities and difficulties in maintaining them due to budget constraint and lack of the skilled staff. Capacity of transmission & distribution facilities is insufficient due to deterioration, while budget and the skilled staff are not sufficient to maintain the facilities. In addition, CU has no the skilled staff to plan, and design water supply facilities, and to supervise their construction.
P8: CU has O&M manuals which are not effective.	By Capacity Development (Technical Aspect)	There are no staff to prepare O&M manual and utilize it.

11

### 'Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	By Capacity Development (Technical Aspect)	There are no budget to install bulk meters and no skilled staff to plan & design the bulk meters' installation. In addition, CU has no the skilled staff to maintain the bulk meters as well.
P14: All O&M costs apart from depreciation of water supply facilities are fully covered by water tariff.	By Capacity Development (Non-Technical Aspect)	Revenue is low because of much leakage. High O&M cost is caused by deterioration of water supply facilities.

12



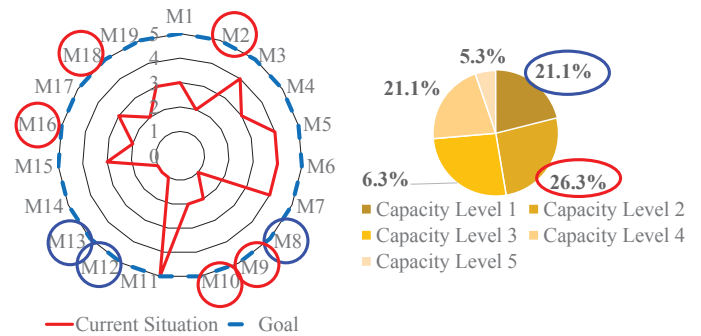
## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that **three (15.8%)** and **five (26.3%)** out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

13

### Distribution of Result on Management Capacity:



14

### 'Very Serious' Challenges on Management Capacity:

Challenges on Management Capacity	Category	Summary of Causes
M8: Average length of service with current CU is less than five years.	Governance, Management and Human Resource	CU is relatively new organization.
M12: There is no a self-evaluation system.	Governance, Management and Human Resource	There are no training programs on how to conduct a self-evaluation.
M13: There is no a self-learning system.	Governance, Management and Human Resource	There are no training programs on how to use a self-learning support system.

15

### 'Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
M2: Evaluation method has not been established.	Internal Policy and Planning	There are no training programs on how to prepare evaluation method and to evaluate activities.
M9: Recording system for the working time has been developed but the working time for all the staff has not been recorded yet.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of working record.
M10: Evaluation system for work performance is under development.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of work performance evaluation.

16

### 'Serious' Challenges on Management Capacity-2:

Challenges on Management Capacity	Category	Summary of Causes
M16: It takes a week to respond to customer's complaint.	Customer Relation	There are no training programs to make staff understand the necessity of a quick action and on how to manage the quick action.
M18: Customer survey has never been conducted but the survey is under consideration.	Customer Relation	There are no budget to contact surveyor.

17

## 3.2 Individual Level

### (1) Communication & Negotiation Capacity

#### Challenges on Communication & Negotiation Capacity:

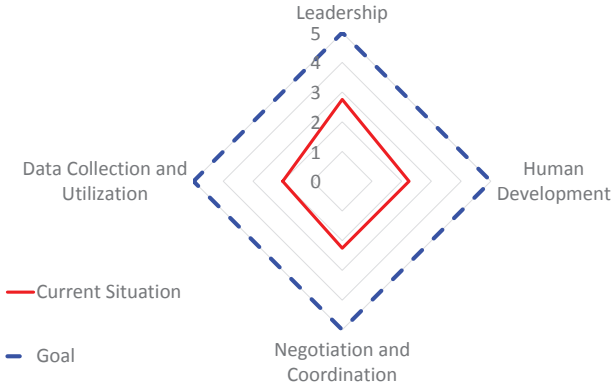
■ 'Very Serious' challenges were NOT observed in Managers, Supervisors and General Officers' level.

■ 'Serious' challenges were observed at Managers' level throughout WWSC and supervisor' level of the particular departments

18



### Distribution of Result on Communication & Negotiation Capacity at Managers' Level:



**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**5 (2): Evaluation of Outline for Evaluation Result by Luapula Water and Sewerage Company (LpWSC)**

[Session-1]

**12<sup>th</sup> December 2017**

**Mr. Bernard Chama**

**Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)**

**National Water Supply and Sanitation Council (NWASCO) Japanese Experts**

1

**1. Overview of CU**

CU*	Established Year	Number of Connections*** (As at 2016) 1)	Number of Staff** (As at 2016) 2)	Number of staff per 1000 connections 3) =2)/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4)/2) x 100
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Total		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\*Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Directors (Managers for LpWSC and WWSC) (Level 1)	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	Sub-Total	5	4	4	4

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWSC	LpWSC	KWSC
Managers (Supervisors for LpWSC and WWSC) (Level 2)	Human Resource and Administration	1	2	-	-
	Technical or Engineering	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
	Sub-Total	14	16	9	8
General Officers (Level 3)	All Department	4	4	3	7
	Sub-Total	4	4	3	7
<b>Total</b>		<b>23</b>	<b>24</b>	<b>16</b>	<b>19</b>

**3. Result of Capacity Assessment**

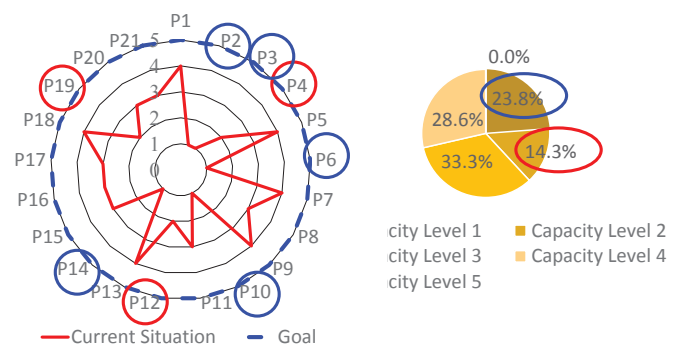
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that **five (23.8%)** and **three (14.3%)** out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



### 'Very Serious ' Challenges on Pls-1:

Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P2: Overall service coverage is less than 50%	By Facility Investment	CU faces not only function depression due to deterioration of treatment plant but also NRW such as leaks and illegal connections.
P3: Surplus capacity to maximum design capacity is less than -30%.	By Facility Investment	Production capacity is insufficient because treatment plant is not maintained appropriately, while the plant is deteriorated.
P6: More than 30% of installed major mechanical and electrical equipment are malfunctioning.	By Facility Investment	Budget is insufficient in order to replace equipment with new ones and to maintain equipment.

### 'Very Serious ' Challenges on Pls-2:

Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P10: NRW ratio is more than 50%	By Capacity Development (Technical Aspect)	NRW occurs due to apparent loss such as illegal connections & meter inaccuracy, and leaks. Illegal connections are caused by lack of PR activities to optimize water supply service and lack of patrol by CU's staff under difficulties in identifying illegal connections. Water meters are not calibrated because of test bench, etc. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. In addition, there are no budget to replace asbestos pipes with other types of pipes.

### 'Very Serious ' Challenges on Pls-3:

Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P14: Only part of the O&M costs excluding depreciation of water supply facilities are covered by water tariff.	By Capacity Development (Non-Technical Aspect)	O&M cost is higher than revenue because of high NRW ratio. High O&M cost is caused by deterioration of water supply facilities without appropriate maintenance. Lack of budget and skill made inappropriate maintenance.

### 'Serious ' Challenges on Pls-1:

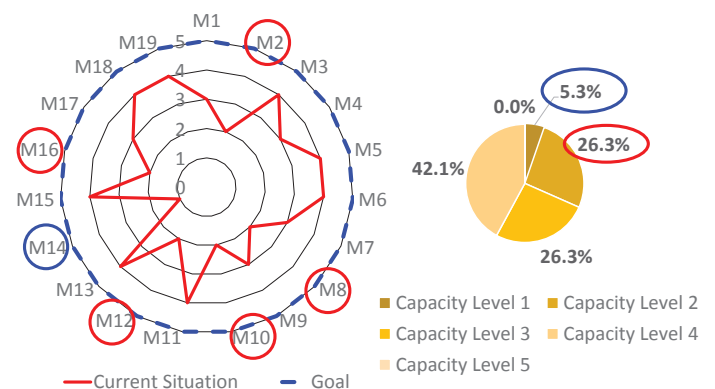
Challenges on Pls	Aspects to be improved mainly	Summary of Causes
P4: Asbestos, old cast iron and old steel pipes make up 50-75% of main pipelines.	By Facility Investment	There are no budget to replace asbestos pipes with other types of pipes.
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	By Capacity Development (Technical Aspect)	There are not budget to formulate plan and to install bulk meters.
P19: A few effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	The training to raise awareness on NRW reduction, water conservation and tariff collection is insufficient.

## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that one (5.3%) and five (26.3%) out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

### tribution of Result on Management Capacity:



### 'Very Serious' Challenges on Management Capacity:

Challenges on Management Capacity	Category	Summary of Causes
M14: Trainees' effort have not been evaluated.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of trainees' effort and on how to evaluate it.

13

### 'Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
M2: Evaluation method has not been established.	Internal Policy and Planning	There are no training programs on how to evaluate activities.
M8: Average length of service with current CU is five to 10 years.	Governance, Management and Human Resource	Lots of staff retired are not interested in CU.
M10: Evaluation system for work performance is under development.	Governance, Management and Human Resource	There are no training programs on how to evaluate work performance. In addition, CU has no budget to employ the staff to evaluate work performance.

14

### 'Serious' Challenges on Management Capacity-2:

Challenges on Management Capacity	Category	Summary of Causes
M12: A self-evaluation system is under development.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of a self-evaluation and on how to conduct a self-evaluation.
M16: It takes a week to respond to customer's complaint.	Customer Relation	CU has no budget to employ the skilled staff to manage quick actions to customers' complaint.

15

## 3.2 Individual Level

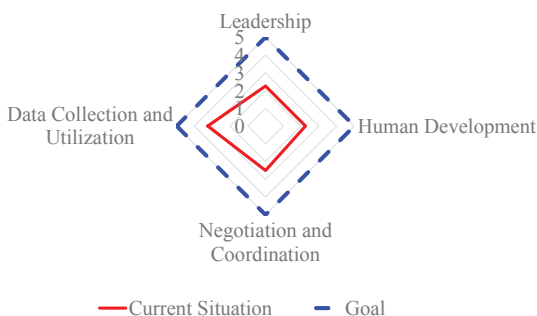
### (1) Communication & Negotiation Capacity

#### Challenges on Communication & Negotiation Capacity:

- 'Very Serious' challenges were NOT observed in Managers, Supervisors and General Officers' level.
- 'Serious' challenges were observed at Managers' level throughout LpWSC and Supervisor' and General Officers' level of the particular departments.

16

### Distribution of Result on Communication & Negotiation Capacity at Managers' Level:



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**THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA**

**4 (2): Evaluation of Outline for Evaluation Result by Kafubu Water and Sewerage Company (KWSC)**

[Session-1]

12<sup>th</sup> December 2017

Mr. Brian Ng'onga

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

**1. Overview of CU**

CU*	Established Year	Number of Connections*** (As at 2016) 1)	Number of Staff** (As at 2016) 2)	Number of staff per 1000 connections 3) =2/1) x 1000	Number of evaluated Staff at Individual Level (As at Oct. 2017) 4)	Rate of Evaluated Staff to Total Staff 5) =4/2) x 100
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<b>Total</b>		179,089	1,714	9.6	82	4.8

\* Order based on PDM

\*\* Including the dedicated persons in charge of sewer service

\*\*\*Source: WSS Sector Report 2016 and Project Team

2

**2. Targeted Staff for Individual Capacity Evaluation-1**

Post (Level)	Department	LWSC	WWSC	LpWSC	<b>KWSC</b>
Directors (Managers for LpWSC and WWSC) (Level 1)	Human Resource and Administration	1	1	1	-
	Technical and or Engineering	1	1	2	1
	Planning & Development	1	-	-	1
	Finance	1	1	1	1
	Commerce Services	1	1	-	1
	Sub-Total	5	4	4	4

3

**2. Targeted Staff for Individual Capacity Evaluation-2**

Post (Level)	Department	LWSC	WWSC	LpWSC	<b>KWSC</b>
Managers (Supervisors for LpWSC and WWSC) (Level 2)	Human Resource and Administration	1	2	-	-
	Technical Engineering	5	10	5	5
	Planning & Development	3	-	-	-
	Finance	1	1	2	3
	Commerce Services	4	3	2	-
	Sub-Total	14	16	9	8
General Officers (Level 3)	All Department	4	4	3	7
	Sub-Total	4	4	3	7
<b>Total</b>		23	24	16	19

4

**3. Result of Capacity Assessment**

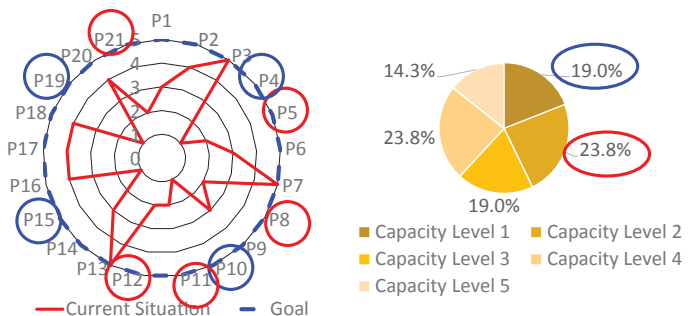
**3.1 Organizational Level**

**(1) Performance Indicators (PIs)**

**Challenges in 21 PIs:**

As the results of evaluation, it was observed that **four (19.0%)** and **five (23.8%)** out of 21 PIs (100%) were 'Very Serious' and 'Serious' respectively.

**Distribution of Result on PIs:**



5

6

### 'Very Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P4: Asbestos, old cast iron and old steel pipes make up 75% of main pipelines.	By Facility Investment	The existing asbestos pipes cannot be replaced with other types of pipes, because budget to replace the pipes is insufficient and staff are not aware of hazard for human health.
P10: NRW ratio is more than 50%.	By Capacity Development (Technical Aspect)	NRW occurs due to apparent loss such as illegal connections & meter inaccuracy, and leaks. Illegal connections are caused by lack of PR activities to optimize water supply service and lack of patrol by CU's staff. Water meters are not maintained sufficiently and not replaced with new ones promptly due to lack of budget. In addition, there are no budget to manage water leak reduction and to replace asbestos pipes with other types of pipes.

7

### 'Very Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P15: Collection ratio is less than 60%.	By Capacity Development (Non-Technical Aspect)	Detail reasons are not available. Project Team assumes that tariff collection system at organizational level is not developed well as one of the causes.
P19: No or minimal effective awareness-raising activities have been implemented.	By Capacity Development (Non-Technical Aspect)	The training to raise awareness on NRW reduction, water conservation and tariff collection is insufficient.

8

### 'Serious ' Challenges on PIs-1:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P5: 80-94% of house connections are more than 25 years old.	By Facility Investment	There are no regulation and plans to replace service pipeline with new ones. Even though CU has a plan to replace service pipelines, there are no budget.
P8: Facilities have O&M manuals which are not effective, leading to O&M deficiency.	By Capacity Development (Technical Aspect)	There are no O&M manuals because of lack of budget and skill to prepare it. In addition, staff's awareness on manual usage is insufficient.

9

### 'Serious ' Challenges on PIs-2:

Challenges on PIs	Aspects to be improved mainly	Summary of Causes
P11: Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	By Capacity Development (Technical Aspect)	PR activities such as awareness meeting in order to make customers understand the necessity of customer meters is not conducted.
P12: There are not enough functioning bulk meters for accurate flow rate of water production.	By Capacity Development (Technical Aspect)	Appreciation of staff on the necessity of bulk meters is insufficient.
P21: Average year of work that staff have experience on water supply service is 8-15 years.	By General Aspect	CU is relatively new organization.

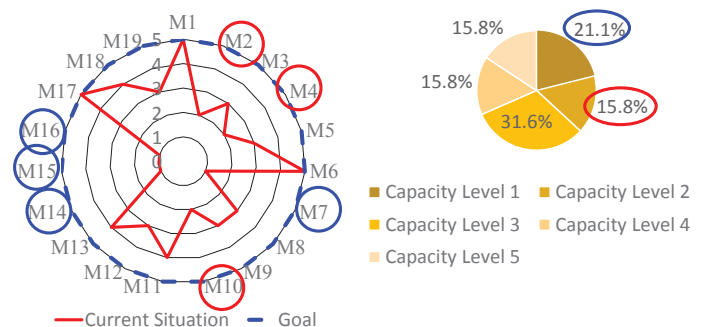
10

## (2) Management Capacity

### Challenges in 19 parameters of Management Capacity:

As the results of evaluation, it was observed that **four (21.1%)** and **three (15.8%)** out of 19 parameters (100%) were 'Very Serious' and 'Serious' respectively.

### Distribution of Result on Management Capacity:



11

12

### 'Very Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
M7: There are no manual, or even if there is a manual, it has not been used at all.	Finance	There are no training programs to make staff understand the necessity of manual.
M14: Trainees' effort have not been evaluated.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of trainees' effort and on how to evaluate it.

13

### 'Very Serious' Challenges on Management Capacity-2:

Challenges on Management Capacity	Category	Summary of Causes
M15: Customers' information has not been developed at all.	Customer Relation	There are no training programs on how to develop customers' information.
M16: It takes at least 10 days to respond to customer's complaint.	Customer Relation	There are no training programs to make staff understand the necessity of an action quickly and on how to manage a quick action. On the other hand, CU faces much work load.

14

### 'Serious' Challenges on Management Capacity-1:

Challenges on Management Capacity	Category	Summary of Causes
M2: Evaluation method has not been established.	Internal Policy and Planning	There are no training programs on how to prepare evaluation method and to evaluate activities.
M4: Financial status has not been improved at all.	Finance	There are no training programs to make staff understand the necessity of analysis of financial status.
M10: Evaluation system for work performance is under development.	Governance, Management and Human Resource	There are no training programs to make staff understand the necessity of work performance evaluation and on how to evaluate work performance.

15

## 3.2 Individual Level

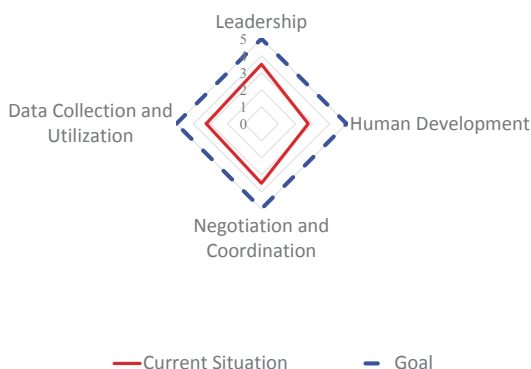
### (1) Communication & Negotiation Capacity

#### Challenges on Communication & Negotiation Capacity:

Neither of 'Very Serious' nor 'Serious' was observed in Directors, Managers and General Officers' level.

16

### Distribution of Result on Communication & Negotiation Capacity at Directors' Level:



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**THE PROJECT FOR STRENGTHENING CAPACITY  
OF URBAN WATER SUPPLY INFRASTRUCTURE  
IN THE REPUBLIC OF ZAMBIA**

**6: General Overview for Evaluation Result by NWASCO**

[Session-1]

12<sup>th</sup> December 2017

Mr. Peter Mutale/Mr. Kasenga Hara

Ministry of Water Development, Sanitation and  
Environmental Protection (MWDSEP)

National Water Supply and Sanitation Council (NWASCO)  
Japanese Experts

1

1. Process of Evaluation

NWASCO conducted the training on how to evaluate CUs by using Evaluation Manual on 9 August 2017



Assistant Engineer as JICA Expert Team by the support of JICA Experts gave Directors (or Managers\*) the more details on how to self-evaluate CUs from September to October 2017



JICA Experts with the assistant engineer collected the results evaluated by CUs and checked if the results were figured out correctly from 11 to 23 October 2017

2

2. Observation and Improvement of Evaluation Manual through Evaluation of CUs

JICA Expert Team practically observed the following challenges required for improving Evaluation Manual.

- Actual causes that CU has been facing were not stated in Evaluation Manual.
- In case that 'Good' was selected, the causes were not clarified in the answer sheets.
- Some complements were furthermore required to figure out the particular PI.

Evaluation Manual will be finalized based on the above observations.

3

3. Days required from giving briefing to collect the result of self-evaluating CUs-1

- Project Team is confident that Evaluation Manual was well-designed in order for CUs easily to self-evaluate them.
- JICA Expert Team gave a brief by the meeting, phone conversation and or emails on how to evaluate CU by utilizing Evaluation Manual from 14 August 2017.
- CUs started self-evaluating after receiving a brief.

4

3. Days required from giving briefing to collect the result of self-evaluating CUs-2

CUs	Date of giving a Brief	Date of completing Self-Evaluation	Days required for Self-Evaluation 1)	Number of evaluated Staff at Individual Level 2)	Days required for Self-Evaluation per evaluated staff 3) = 1)/2) x 100
LWSC	14 Aug.	20 Oct.	68 days	23	3.0 days/staff
WWSC	4 Oct.	12 Oct.	9 days	24	0.4 days/staff
LpWSC	6 Sep.	12 Oct.	37 days	16	2.3 days/staff
KWSC	26 Sep.	20 Oct.	25 days	19	1.3 days/staff

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3. Days required from giving briefing to collect the result of self-evaluating CUs-3

According to some of CUs' executive officer and JICA Expert Team's observation, it seems that there are various factors such as:

- Time constraint to self-evaluate,
- Insufficient intelligibility of Evaluation Manual,
- Interest in evaluation of CUs,
- Motivation, etc.

6



#### 4. Performance Indicators that Common Challenges were observed among four CUs

- ◆ Challenges on PIs depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC.

Performance Indicators (PIs)	Summary of Main Factors
P4: Transmission and distribution mains	<ul style="list-style-type: none"> <li>• Existence of asbestos pipes</li> </ul>
P10: NRW ratio	<ul style="list-style-type: none"> <li>• Existence of asbestos pipes</li> <li>• Existence of Deteriorated pipes</li> <li>• Much leakage</li> <li>• Lack of leakage detection</li> <li>• Defect of monitoring system for illegal connections</li> <li>• Lack of awareness activities</li> </ul>
P19: Awareness-raising on NRW reduction, water saving, collection of water charges, etc.	<ul style="list-style-type: none"> <li>• Lack of awareness activities</li> </ul>
P21: Year of work experience on water supply service	<ul style="list-style-type: none"> <li>• Retirement</li> </ul>

7

#### 5. Parameters of Management Capacity that Common Challenges were observed among four CUs

- ◆ Challenges on Management Capacity also depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC.

Parameters of Management Capacity	Summary of Main Factors
M16: Time to respond to Customer's Complaint	There are no training programs to make staff understand the necessary of a quick action and on how to manage the quick action

8

#### 6. Parameters of Communication & Negotiation Capacity that Common Challenges were observed among four CUs

- ◆ Challenges on Communication & Negotiation Capacity also depend on CU. The following are relatively main factors of common challenges among LWSC, WWSC, LpWSC and KWSC at Directors' (or Managers'\*) and Managers' (or Supervisors'\*) Level.

Parameters of Communication & Negotiation Capacity	Summary of Main Factors
<b>Human Development</b>	
C3: Capacity to improve qualification of staff in terms of post and job description	There are no training programs to make executive officers understand the necessity of human resource development.

\* For WWSC and LpWSC

9

# THE PROJECT FOR STRENGTHENING CAPACITY OF URBAN WATER SUPPLY INFRASTRUCTURE IN THE REPUBLIC OF ZAMBIA

## 2-5: Briefing on Schedule & Activities of the Project [Session-2]

12<sup>th</sup> December 2017

Mr. Hideyuki IGARASHI

Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP)

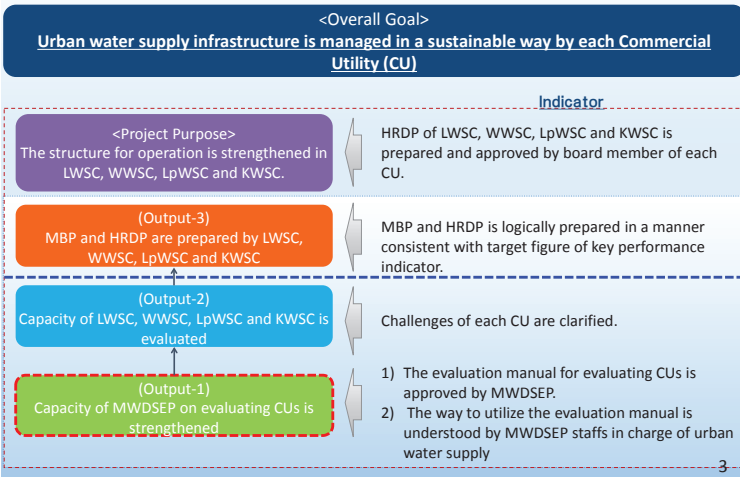
National Water Supply and Sanitation Council (NWASCO) Japanese Experts

## Contents

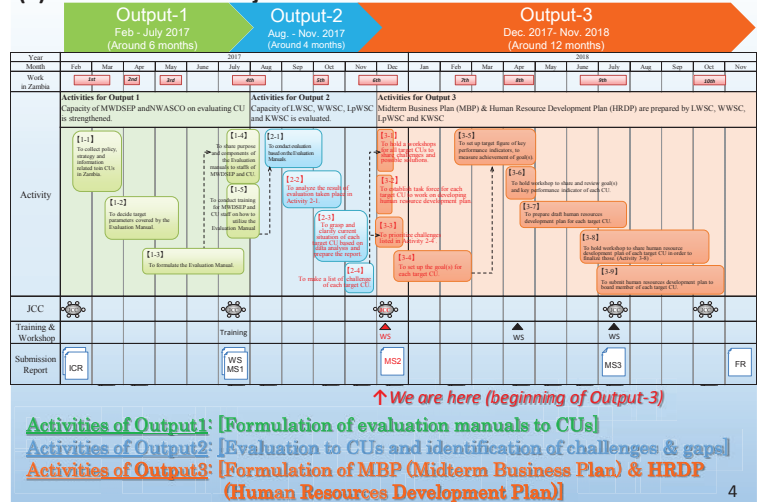
1. Brush up the Project
  - (1) Outlines of the Project
  - (2) Schedule of the Project
2. Activities from August to November 2017
3. Implementation Structure of the Project
4. Procedure of JCC

### 1. Brush up the Project

#### (1) Outlines of the Project



### 1. Brush up the Project (2) Schedule of the Project



### 2. Activities from August to November 2017

#### Activity-1: Formulation of evaluation manuals to CUs

→ **Evaluation Manual** was approved by 2<sup>nd</sup> JCC on 9<sup>th</sup> August 2017

#### Activity-2: Evaluation to CUs and identification of challenges & gaps

- [2-1] To conduct evaluation based on the Evaluation Manual
- [2-2] To analyze the result of evaluation taken place in Activity 2-1
- [2-3] To grasp and clarify current situation of 4 CUs based on data analysis & prepare report
- [2-4] To make a list of challenge of 4 CUs

#### Activity-3: Formulation of MBP & HRDP

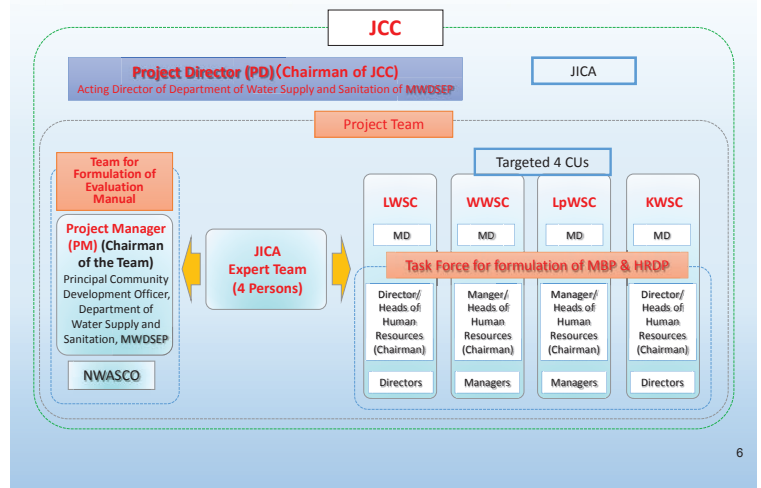
- [3-1] To hold **workshop** for 4 CUs to share challenges and possible solutions
- [3-2] To establish taskforce for 4 CUs to work on developing MBP & HRDP
- [3-3] To prioritize challenges listed in Activity 2-4
- [3-4] To set up the goal(s) for 4 CUs

→ [3-1] This morning session

→ [3-2] Taskforce was established by 1<sup>st</sup> JCC on 17<sup>th</sup> March 2017

→ [3-3] in progress

### 3. Implementation Structure of the Project



#### 4. Procedure of JCC

##### Purpose of 3<sup>rd</sup> JCC

→ *To Confirm Progress on Activities through MS Ver. 2*

##### [Procedure]

##### (1) Briefing on this JCC

→ *This presentation*

##### (2) Explanation of MS Ver. 2

→ *by MWDSEP*

##### (3) Confirmation of Evaluation Report

→ *by NWASCO*

##### (4) Approved of MS Ver. 2

→ *by JCC Member*