Report on the 4th Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region

September 2017

Japan International Cooperation Agency (JICA)

PACIFIC CONSULTANTS Co., Ltd.

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The 4th Executive Forum for Enhancing Sustainability of
Urban Water Service in Asian Region
Take action toward the next step
–Universal and Equitable Access, Finance, and Governance–
August 1-4, 2017 Yokohama, Japan

Contents

Attached CD-ROM

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Abbreviations

ADB	Asian Development Bank
BWSSB	Bangalore Water Supply and Sewage Board
Cipta Karya	Directorate General of Human Settlements, Ministry of Public Works and Housing, Indonesia
CMWSSB	Chennai Metropolitan Water Supply and Sewerage Board, India
COWD	Cagayan de Oro City Water Supply District, Philippines
CWASA	Chittagong Water Supply and Sewerage Authority, Bangladesh
DAWACO	Da Nang Water Supply Company, Viet Nam
DMA	District Metered Areas
DNSA	National Directorate for Water Service, Timor-Leste
DPWH	Department of Public Works and Highways, Philippines
F/S	Feasibility Study
HDPE	High-Density Polyethylene
HueWACO	Thua Thien Hue Construction and Water Supply State One Member Company Limited, Viet Nam
HRD	Human Resource Development
HRM	Human Resources Management
IBRD	International Bank for Reconstruction and Development
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
JWWA	Japan Water Works Association
KPI	Key Performance Indicator
KWASA	Kulna Water Supply and Sewerage Authority, Bangladesh
LCC	Life Cycle Cost
MCDC	Mandalay City Development Committee, Myanmar
MCPWS	Ministry of City Planning and Water Supply, Sri Lanka
MCWD	Metro Cebu Water Supply District, Philippines
MDGs	Millennium Development Goals
MIH	Ministry of Industry and Handicraft, Cambodia
MPWT	Department of Housing and Urban Planning, Ministry of Public Works and Transport, Lao PDR
MWA	Metropolitan Waterworks Authority, Thailand
NPKH	Khammouane Provincial Water Supply State Enterprise, Lao PDR
NPLP	Luang Prabang Provincial Water Supply State Enterprise, Lao PDR
NPNL	Vientiane Provincial Water Supply State Enterprise, Lao PDR
NRW	Non-Revenue Water
NWSC	Nepal Water Supply Corporation, Nepal
NWSDB	National Water Supply and Drainage Board, Sri Lanka
PAMJAYA	Jakarta Water Supply Enterprise, Indonesia
PDAM	Water supply utility in Indonesia (Perusahaan Daerah Air Minum)
PERPAMSI	Indonesian Water Supply Association (Persatuan Perusahaan Air Minum Indonesia), Indonesia
PI	Performance Indicator
PPP	Public-Private Partnership
PPWSA	Phnom Penh Water Supply Authority, Cambodia
PWA	Provincial Waterworks Authority, Thailand
PWWA	Philippines Water Works Association, Philippines
P2P	Project to Project
SAWACO	Saigon Water Corporation, Viet Nam
SCADA	Supervisory Control and Data Acquisition
SDGs	Sustainable Development Goals
SOP	Standard Operating Procedure
SRWSA	Siem Reap Water Supply Authority, Cambodia
USAID	United States Agency for International Development
WASA-F	Water and Sanitation Agency, Faisalabad, Pakistan

WASA-L	Water and Sanitation Agency, Lahor, Pakistan
WHO	World Health Organization
WSP	Water Safety Plan
YCDC	Yangon City Development Committee, Myanmar

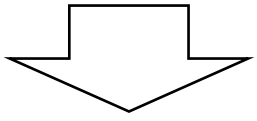
Chapter 1 Outline of the Executive Forum

1.1 Background

The Executive Forum for Enhancing Sustainability of Urban Water Services in Asian Regions (hereinafter, the Executive Forum) aims to promote the sharing of and co-creation of knowledge and good practices among leaders of water utilities, related ministries and organizations in Asia. The 1st Executive Forum was held in Yokohama in 2010, followed by the 2nd Executive Forum in Tokyo in 2011, and the 3rd Executive Forum in Yokohama in 2014. The leaders from each country have been making efforts to improve water supplies in various ways as reported in the previous Executive Forums. It is becoming more apparent that it is important to further strengthen the connection between Asian water leaders, share experience and lessons learned, and benchmark the progress of such efforts.

The 4th Executive Forum (hereinafter, this Executive Forum) was held from August 1st to 4th in 2017. It was co-hosted by the Japan International Cooperation Agency (hereinafter, JICA) and the City of Yokohama and brought together executives from 13 countries. The following is an overview of the 1st to 3rd Executive Forums and the composition and theme of this Executive Forum which were built on the former ones.

	1st Jan/20-22, 2010	**2nd Oct/1-5, 2011**	**3rd Jul/1-4, 2014**
Sessions	I. Policy on urban water supply	I. Policy on urban water supply	I. Raising revenue
	II. Sound management of urban water services	II. Finance and operation	II. “Maintenance of water supply facilities and procurement of equipment and materials
	III. Measures against NRW	III. NRW	III. Human resources development
	Group session (GS) : Urban water service for the poor, Financing Water Supply, Water Tariff System, Safe Water and Water Quality Management	IV. Measures for urban poor	Special session: Preparedness for disasters and continuity of water supply services
	IV. Public and Private Partnership on Urban Water Service, and New Technologies	V. Safe water and quality control	IV. Partnerships
	V. Introduction of JICA’s cooperation in Urban Water Service sector	VI. Human resources development	
	VI. Development of Human Resource in Urban Water Service		
Theme	**From vicious circle to virtuous circle**	**Dialogue and collaboration**	**Sustainable management of water utilities**



	4th Aug/1-4, 2017	
Sessions	I. Universal and equitable access to safely managed water	1) Water supply development plans and long-term visions
		2) Water supply to low income households
		3) Service improvement such as 24/7, water quality, and water pressure
	II. Finance	1) Financing from outside of the utility
		2) Cost reduction
		3) Water tariffs
	Iii. Proactive improvement of an enabling environment (Governance)	1) Sector governance
		2) Organizational governance
		3) Securing technical levels and human resource development
Theme	**Take Action toward the Next Step -Universal and Equitable Access, Finance, Governance-**	

Figure 1-1 Background of the 1st to 3rd Executive Forums, and the composition and theme of the 4th Executive Forum

1.2 Objective of the 4th Executive Forum

The objective of the 4th Executive Forum is to talk about the continuous improvement of water supply in order to achieve the Sustainable Development Goals (hereinafter, SDGs). This Executive Forum consists of three sessions: the universal and equitable access to safely managed water, finance, and proactive improvement of an enabling environment (Governance). The expected outcomes are as follows:

- To share issues and challenges concerning water service systems
- To share recent activities and progress of water supply utilities
- To develop key activities for a “Virtuous Cycle”
- To expand networks among water supply utilities and related organizations

1.3 Process of Formulating the Program for the 4th Executive Forum

In planning the 4th Executive Forum, we collected opinions from everyone concerned beforehand, including the participants, through the Pre-forum, field studies and questionnaires. The program of the forum was then formulated by referring to these opinions as input. We would like to express our appreciation to everyone concerned with the forum, including the participants, as their cooperation proved to be indispensable.

1.3.1 Participation to P2P Meeting

As preparation for the program formulation of the forum, we participated in the 6th P2P meeting in Phnom Penh, Cambodia, on January 19, 2017 to collect information. The following is an outline of the meeting.

■Date and Time: January 19, 2017 (Thu)

■Place: SUNWAY HOTEL, Phnom Penh, Cambodia

■Program: As follows:

Table 1-1 Program of the P2P meeting

Time	Contents	Speaker
8:30-8:40	Opening Remarks	Mr. Itsu ADACHI, Chief Representative, JICA Cambodia Office
8:40-9:00	Keynote Speech "Water supply in Cambodia, current status and way forward"	H.E. Ek Sonn Chan, Secretary of States, MIH
9:00-11:00 Including a short break	Activities result of MaWaSU-2016 (5th P2P)	
	Effort for Drinkable Water from the Tap	PERPAMSI (Indonesia)
	Create a culture to drink tap water: Waterworks education class at school	NPKH (Lao PDR)
	MWA Activities Result of Project MaWaSu & 5th P2P Meeting	MWA (Thailand)
	Creating a culture to drink tap water in Thailand	PWA (Thailand)
	Safe Water Supply in HueWACO	HueWACO (Viet Nam)
	Action Result of SRWSA on target of 5th P2P meeting	SRWSA (Cambodia)
	Open discussion	All participants
11:00-15:45 Including lunch and a short break	Information Sharing of Addressing for Sustainable Water Supply in Your Country	
	Challenges and Solutions for a Sustainable Water Supply in Viet Nam	DAWACO, SAWACO (Viet Nam)
	Efforts and Prioritize Challenges on Waterworks in Timor-Leste	Timor-Leste
	Information Sharing for a Sustainable Water Supply	MWA (Thailand)
	PWA's Role in Water Supply Services in Thailand	PWA (Thailand)
	Current Challenges of Yangon City's Water Supply	YCDC (Myanmar)
	Addressing for a Sustainable Water Supply in Lao PDR: Customer Questionnaire & Human Resource Development	Luang Prabang (Lao PDR)
	Indonesia Water Supply Development	Indonesia
	Sustainable Water Supply for Cambodia Case	MIH (Cambodia)
	Open discussion	All participants
15:45-16:15	Wrap-up	Project, MIH
	Closing Remarks	H.E. Ek Sonn Chan, Secretary of States, MIH

The participants of this P2P meeting were planning to participate in the 4th Executive Forum as well. Therefore, mainly information about current situations and participants' knowledge and experience were collected to be used as a basis for selecting presentations and making groupings for group discussions. In addition, participants of pre-forums (to be explained in the next section)

were the same as those in the P2P meeting. The following table shows the participants of the pre-forums and P2P meeting.

Table 1-2 Participants of the Pre-forums and P2P meeting

Country	Organization
Cambodia	Ministry of Industry and Handicraft (MIH)
	Siem Reap Water Supply Authority (SRWSA)
	Battambang Water Supply Authority
	Kampong Cham Water Supply Authority
	Kampot Water Supply Authority
	Phnom Penh Water Supply Authority (PPWSA)
Indonesia	Directorate of Water Supply System Development, Cipta Karya (Directorate General of Human Settlements), Ministry of Public Works and Housing
	Indonesian Water Supply Association (PERPAMSI)
	Jakarta Water Supply Enterprise(PAMJAYA)
Lao PDR	Luang Prabang Provincial Water Supply State Enterprise, Luang Prabang Province (NPLP)
	Vientiane Capital Water Supply State Enterprise (NPNL)
	Khammouane Provincial Water Supply State Enterprise (NPKH)
	Department of Housing and Urban Planning, Ministry of Public Works and Transport (MPWT)
Myanmar	Yangon City Development Committee(YCDC)
Thailand	Metropolitan Waterworks Authority (MWA)
	Provincial Waterworks Authority (PWA)
Timor-Leste	Ministry of Public Works, Transport and Communications / National Directorate for Water Service (DNSA)
Viet Nam	Thua Thien Hue Water Supply Joint Stock CO., Ltd (HueWACO)
	Saigon Water Supply Company (SaWACO)
	Da Nang Water Supply Joint Stock CO., Ltd (DaWACO)

1.3.2 Pre-Forum

In order to obtain input to make the 4th Executive Forum useful for all of the participants, a Pre-Forum took place after the P2P meeting. The following is an outline of the Pre-Forum in which a group discussion was held as a precursor to the main forum. A consultant played a role as a facilitator for this group discussion.

■Date: January 20, 2017 (Fri)
■Place: SUNWAY HOTEL, Phnom Penh, Cambodia
■Organizer JICA
■Program: As follows:
■Participants Foreign participants shown in Table 1-2, Domestic Participants shown in Table 1-5

Table 1-3 Program for Pre-Forum

Time	Item	Contents
9:15-9:30	Reception	
9:35-10:00	Opening remarks	H.E. Ek Sonn Chan, Ministry of Industry and Handicraft, Cambodia
10:00-11:00	Session 1	**Overall explanation (15 mins): JICA** －Review of the previous forum (program, Yokohama forum statement 2014) －Outline of the 4th Executive Forum **Discussion about the contents of the 4th Executive Forum (45 mins): Consultant** －Objectives, contents and program of the Pre-Forum －Tentative program and sessions for the 4th Executive Forum －Free discussion: 1) What do you think about the theme and sessions? 2) What do you think about individual topics? 3) What are your expectations for the 4th Executive Forum? 4) Others **Summary (1 min): Consultant** －Grouping and rooms for session 2 －Request for suggestions for the theme of the 4th Executive Forum
11:00-11:20	Break	
11:20-12:00	Session 2 Part 1	**Group A (Government)** －What do you think is the most important factor for water supply services (or management, operations, running etc.)? **Group B (Utilities)** －What do you think is the most important factor for water supply services (or management, operations, running etc.)?
12:00-13:30	Break	Lunch break
13:30-14:30	Session 2 Part 3	**Group A (Government)** －The worst mistake (failure) you have experienced? **Group B (Utilities)** －What measures are being taken against the impact of climate change? －The worst mistake (failure) you have experienced?
14:30-14:45	Break	
14:45-15:45	Session 2 Part 3	**Group A (Government)** －The most important change to achieve improvement? －What do you expect to learn from the 4th forum? **Group B (Utilities)** －NRW reduction. －Water supply to low income households. －Change for the past three years after 2014.
15:45-16:00	Comments	Representative of Group A: Dr. Seree Supratid (Governor, PWA, Thailand) Representative of Group B: Mr. Truong Cong Nam (Chairman, HueWACO, Viet Nam), Mr. Gustavo da Cruz (Director, MPWT & Communication, Timor Leste)
16:00-16:05	Closing remarks	Closing remarks and onward to the 4th Executive Forum: Ms. Eriko TAMURA, JICA
16:05-16:10	Introducing suggested themes	Three suggestions were randomly selected and then read.

*16:30-17:30 Hearing from Japanese experts

Table 1-4 Grouping for the group discussions

Group	Country	Organization
A	Cambodia	Ministry of Industry and Handicraft (MIH)
	Indonesia	Directorate of Water Supply System Development, Cipta Karya (Directorate General of Human Settlements), Ministry of Public Works and Housing
	Indonesia	Indonesian Water Supply Association (PERPAMSI)
	Lao PDR	Department of Housing and Urban Planning, Ministry of Public Works and Transport (MPWT)
	Thailand	Provincial Waterworks Authority (PWA)
B	Indonesia	Jakarta Water Supply Enterprise(PAMJAYA)
	Lao PDR	Luang Prabang Provincial Water Supply State Enterprise, Luang Prabang Province (NPLP)
	Lao PDR	Vientiane Capital Water Supply State Enterprise (NPNL)
	Lao PDR	Khammouane Provincial Water Supply State Enterprise (NPKH)
	Viet Nam	Thua Thien Hue Water Supply Joint Stock Co., Ltd (HueWACO)
	Viet Nam	Saigon Water Supply Company (SaWACO)
	Viet Nam	Da Nang Water Supply Joint Stock Co., Ltd (DaWACO)
	Cambodia	Siem Reap Water Supply Authority (SRWSA)
	Cambodia	Battambang Water Supply Authority
	Cambodia	Kampong Cham Water Supply Authority
	Cambodia	Kampot Water Supply Authority
	Cambodia	Phnom Penh Water Supply Authority (PPWSA)
	Myanmar	Yangon City Development Committee (YCDC)
	Thailand	Metropolitan Waterworks Authority (MWA)
	Timor-Leste	Ministry of Public Works, Transport and Communications / National Directorate for Water Service (DNSA)

Table 1-5 Participants from Japan

Organization	Participant
Former JICA Senior Advisor	Ms. Keiko Yamamoto
City of Yokohama	Ms. Akiko Kuniyasu
JICA (Global Environment Department) (Cambodia Office) (Thailand Office) (Timor-Leste Office) (Myanmar Office)	Ms. Eriko Tamura, Ms. Hanako Mori Mr. Itsu Adachi, Mr. Togo Uchida Mr. Takahiro Otsuka Ms. Ikumi Ogiwari Ms. Noriko Sakurai
Water and Sewer Bureau, City of Kitakyushu	Mr. Satoshi Kiyama
Project on Capacity Building for Urban Water Supply System in Cambodia (Phase 3), Cambodia	Mr. Hiroshi Hirowatari Mr. Hiroyuki Nonaka
Project for Improvement of Water Supply Management of YCDC, Myanmar	Mr. Yoji Matsui、 Ms. Mina Yariuchi
Capacity Development Project for Improvement of Management Ability of Water Supply Authorities, Lao PDR	Mr. Masahiro Shimomura Mr. Yusuke Kinoshita
JICA Expert, Indonesia	Mr. Shigeru Sugawara
JICA Expert, Myanmar	Mr. Keizo Watanabe
Pacific Consultants Co., Ltd.	Mr. Tatsuo Morimoto Mr. Shiro Mitsuno Ms. Kana Moriyama

The participants of this Pre-Forum were the same as those for the P2P meeting and this was planned as part of the participation for the main forum. (It needs to be noted that PWA, Battambang, Kampong Cham Water Supply, and Kampot Water Supply did not participate in the Forum in Yokohama.) During the Pre-Forum, things like important opinions about sessions, how group discussions would be carried out, and input on keywords for the forum's theme were collected. In addition, presentation topics, candidates for facilitators of group discussions and key persons were determined. The information collected here was reflected in the program of the 4th Executive Forum.

1.3.3 Field Study

Before the main forum, field studies were implemented to visit five countries: the Philippines, Indonesia, Viet Nam, Thailand and Lao PDR, and participants were interviewed to collect the information. The following is an outline of the field studies.

Table 1-6 Field study part 1 (the Philippine)

Date	Item	Memo
Feb. 6, Mon	Haneda - Manila	NH869
Feb. 6, Tue	Discussion with PWWA Discussion with COWD	PWWA: Discussion with Office Manager COWD: Discussion with General Manager of COWD
Feb. 6, Wed	Manila - Cebu Discussion with MCWD	PR2845 MCWD: Discussion with General Manager and Assistant Manager
Feb. 6, Thu	Discussion with MCWD Cebu-Manila	MCWD: Discussion with Assistant Manager PR1854
Feb. 6, Fri	Discussion with Maynilad Discussion with Marubeni	Maynilad: Discussion with VP-Head/Program Management Division and Executive Director/Maynilad Water Academy Marubeni office: Discussion with Vice President
Feb. 6, Sat	Date compilation	
Feb. 6, Sun	Manila - Haneda	NH870

【Survey Team Member】

Tatsuo Morimoto	Pacific Consultants Co., Ltd.	Project Manager
Shiro Mitsuno	Pacific Consultants Co., Ltd.	Water supply 1
Kana Moriyama	Pacific Consultants Co., Ltd.	Water supply 2-1

Table 1-7 Field study part 2 (Indonesia)

Date	Item	Memo
Feb. 20, Mon	Haneda - Bangkok-Jakarta	TG662, TG433
Feb. 21, Tue	Preparation	
Feb. 22, Wed	Discussion with Cipta Karya	Discussion with the Director of Development of Water Supply System, Head of Sub-directorate, and a secretary of the Director
Feb. 23, Thu	Discussion with PAM JAYA	Discussion with the President Director
Feb. 24, Fri	Discussion with PERPAMSI Discussion with Cipta Karya	Discussion with the Chairman and the Secretary General Discussion with a JICA Expert
Feb. 25, Sat	Data compilation	
Feb. 26, Sun	Data compilation	
Feb. 27, Mon	Jakarta - Bangkok	TG434

【Survey Team Member】

Tatsuo Morimoto	Pacific Consultants Co., Ltd.	Project Manager
Kana Moriyama	Pacific Consultants Co., Ltd.	Water supply 2-1

Table 1-8 Field study part 3 (Viet Nam)

Date	Item	Memo
Feb. 21, Tue	Haneda - Ho Chi Minh	NH0831
Feb. 22, Wed	Discussion with SAWACO	Discussion with Vice Managers (Cooperation and development department), Vice manager (Water quality management department), Vice manager (Department of technology and engineering).
Feb. 23, Thu	Ho Chi Minh-Da Nang	VN0122
Feb. 24, Fri	Discussion with DAWACO	Discussion with Chairman, Vice General Manager
Feb. 25, Sat	Data compilation	
Feb. 26, Sun	Da Nang - Hue	By car
Feb. 27, Mon	Discussion with HueWACO	Chairman, Vice Director General, Secretary
Feb. 28, Tue	Hue-Da Nang	By Car
Mar. 1, Wed	Da Nang - Ho Chi Minh	VN0125
Mar. 2, Thu	Ho Chi Minh - Bangkok	TG0551

【Survey Team Member】

Shiro Mitsuno	Pacific Consultants Co., Ltd.	Water supply 1

Table 1-9 Field study part 4 (Thailand)

Date	Item	Memo
Feb. 27, Mon	Jakarta - Bangkok	TG434
Feb. 28, Tue	PWA Academic Day	Information collection on topics
Mar. 1, Wed	Discussion with JICA Thailand office	Discussion with an official
Mar. 2, Thu	Discussion with MWA	Discussion with Assistant Governor and other 17 officials
Mar. 3, Fri	Discussion with PWA	Discussion with Assistant Governor and other 5 officials
Mar. 4, Sat	Data compilation	

【Survey Team Member】

Tatsuo Morimoto	Pacific Consultants Co., Ltd.	Project Manager
Shiro Mitsuno	Pacific Consultants Co., Ltd.	Water supply 1
Kana Moriyama	Pacific Consultants Co., Ltd.	Water supply 2-1

Table 1-10 Field study part 5 (Lao PDR)

Date	Item	Memo
Mar. 5, Sun	Bangkok - Vientiane	TG0570
Mar. 6, Mon	Discussion with Luang Pragbang Water Supply Enterprise	Discussion with Head of Administration and Planning Section
Mar. 7, Tue	Information collection on MaWaSU project	Discussion with chief consultant and experts
Mar. 8, Wed	Data compilation	
Mar. 9, Thu	Data compilation	
Mar. 10, Fri	Discussion with JICA evaluation team	
Mar. 11, Sat	Data compilation	
Mar. 12, Sun	Data compilation	
Mar. 13, Mon	AM: Discussion with DWS/MPWT PM: Discussion with Vientiane Water Supply Enterprise	Discussion with Deputy Director General Discussion with Deputy General Manager
Mar. 14, Tue	Vientiane- Khammouane Discussion with Khammouane Water Supply Enterprise	By car Discussion with a Chief.
Mar. 15, Wed	Khammouane-Vientiane	By car
Mar. 16, Thu	Data compilation	
Mar. 17, Fri	Vientiane - Bangkok Vientiane - Ha Noi	TG0575 (Project manager) VN0920 (Waterworks 1)
Mar. 18, Sat	Bangkok - Narita Ha Noi - Narita	TG0642 (Project manager) NH9716 (Waterworks 1)

【Survey Team Member】

Tatsuo Morimoto	Pacific Consultants Co., Ltd.	Project Manager
Shiro Mitsuno	Pacific Consultants Co., Ltd.	Water supply 1

Table 1-11 Field study part 6 (Thailand)

Date	Item	Memo
Apr. 19, Wed	Haneda - Bangkok	TG683
Apr. 20, Wed	AM: Discussion with PWA PM: Discussion with MWA	Discussion with a Governor and other officials. Discussion with manager and other officials.
Apr. 21, Thu	Bangkok -	TG682
Apr. 22, Fri	- Haneda	

【Survey Team Member】

Tatsuo Morimoto	Pacific Consultants Co., Ltd.	Project Manager
Shiro Mitsuno	Pacific Consultants Co., Ltd.	Water supply 1

Through these field studies, opinions of participants were heard, information about the presentation topics was collected, and candidates to act as facilitators for the group discussions were determined.

1.3.4 Distribution of a Questionnaire and its Collection

In order to confirm improvements after the 3rd Executive Forum (previous forum) and determine the presentation topics for the 4th Executive Forum, a questionnaire was distributed to all the participating organizations and the answers were then collected. The questionnaire was sent to 30 organizations in 13 countries, and ultimately 22 organizations in 11 countries answered (73%).

The questionnaire consisted of 5 parts: part 1 was name of the organization, the person in charge, and contact; part 2 asked about the progress of 10 statements adopted from the Yokohama Forum Statement 2014 as a review of the previous forum (the progress over the past three years for new participants); part 3 asked about challenges and actions regarding sessions 1-3 as proposed in the 4th Executive Forum; part 4 asked about lessons learned from past experiences, and part 5 was for free comments. The following shows the contents of the questions. The results of the questionnaire are attached in 12.6 of this report.

Questions in Chapter 2

- 【Q 1-1】Efforts on improvement of customer satisfaction
- 【Q 1-2】Contents of improvement of customer satisfaction
- 【Q 2-1】Efforts on improvement of good management
- 【Q 2-2】Contents of improvement of good management
- 【Q 3-1】Efforts on improvement of preventive maintenance
- 【Q 3-2】Contents of improvement of preventative maintenance
- 【Q 4-1】Efforts on improvement of good procurement system
- 【Q 4-2】Contents of improvement of good procurement system
- 【Q 5-1】Efforts on improvement of Water Safety Plans
- 【Q 5-2】Contents of improvement of Water Safety Plans

- 【Q 6-1】Efforts on improvement of human resources development
- 【Q 6-2】Contents of improvement of human resources development
- 【Q 7-1】Efforts on implementation of training
- 【Q 7-2】Contents of training
- 【Q 7-3】Internal/external trainers in each training
- 【Q 7-4】Average number of trainees in each training
- 【Q 7-5】Budget in each training
- 【Q 7-6】Period of each training
- 【Q 7-7】Improvement on training
- 【Q 7-8】Contents of improvement of training
- 【Q 8-1】Efforts on disaster preparedness
- 【Q 8-2】Contents of disaster preparedness
- 【Q 9-1】Partnership
- 【Q 9-2】Contents of partnership
- 【Q 10-1】Efforts on benchmarking
- 【Q 10-2】Efforts on monitoring system

Questions in Chapter 3

- 【Q 1-1】Challenges you are facing and actions you are taking
- 【Q 1-2】Contents of challenges and actions
- 【Q 1-2-1】Individual topic on Governance
- 【Q 1-2-2】Individual topic on Universal and equitable access to safely managed water
- 【Q 1-2-3】Individual topic on Finance

Questions in Chapter 4

- 【Q 1-1】Lessons learnt from the experience, effort and failures after the 3rd Executive Forum

This questionnaire was created mainly to find presentation topics, grasp current situations, and collect basic information from the participants through activities such as Pre-Forum and field studies. However, the questionnaire also made it possible to clarify items for which concrete efforts were made or not made, find common issues (especially monitoring, follow-up, and objective evaluation by PIs), and determine the needs of the participants. This was all very helpful in creating a policy to formulate the program. The result of the questionnaires is shown in Chapter 12 as an appendix.

1.3.5 Secretariat Meeting

In order to prepare for the forum and formulate the program, a secretariat was organized that consisted of an Advisor, the Yokohama Waterworks Bureau, and JICA. Members of the secretariat gathered once a month for a secretariat meeting and prepared for the forum by sharing information

and discussing the program. The results of the aforementioned studies were also shared during these meetings and the program was formulated accordingly. The following table shows an outline of the secretariat meetings and its participants.

Table 1-12 Outline of the secretarial meeting

No,	Date	Participants
1st	Mar. 15, 2016 10:30 - 12:30	Advisor, Yokohama Waterworks Bureau, JICA
2nd	May. 10, 2016 10:30 - 12:30	Advisor, Yokohama Waterworks Bureau, JICA
3rd	Jun. 28, 2016 10:30 - 12:30	Advisor, Yokohama Waterworks Bureau, JICA
4th	Aug. 19, 2016 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA
5th	Oct. 21, 2016 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant
6th	Nov. 29, 2016 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant
7th	Jan. 12, 2017 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant
8th	Feb. 5, 2017 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant
9th	Mar. 24, 2017 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant
10th	Apr. 27, 2017 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant
11th	May 26, 2017 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant
12th	Jun. 14, 2017 10:45 - 13:15	Advisor, Yokohama Waterworks Bureau, JICA, Consultant, Logistics Consultant
13th	Jul. 5, 2017 12:00 - 15:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant, Logistics Consultant
14th	Jul. 20, 2017 15:00 - 17:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant, Logistics Consultant
15th	Jul. 31, 2017 17:00 - 18:00	Advisor, Yokohama Waterworks Bureau, JICA, Consultant, Logistics Consultant

Table 1-13 Participants of Secretariat Meeting

Organization	Participant
Representative of WaQuAC-Net Former JICA Senior Advisor	Ms. Keiko Yamamoto
Yokohama Waterworks Bureau (Project promoting department) (Water distribution department)	 Mr. Hiroyuki Morita, Mr. Koji Shiono, Ms. Akiko Kuniyasu, Mr. Takeo Tanaka, Mr. Yusuke Takagi, Ms. Ryoko Enari Mr. Yuichi Nishishima, Mr. Takayuki Konishi, Mr. Kazutaka Nakai
JICA (Global Environment Department) (JICA Yokohama International Center)	 Mr. Shigeyuki Matsumoto, Ms. Eriko Tamura, Ms. Yasuyo Kawamura, Ms. Hanako Mori Ms. Kyoko Okubo, Mr. Kimio Abe
ISS	Ms. Naomi Ohki, Ms. Chihiro Sagara, Ms. Kaoruko Nohara
Pacific Consultants Co., Ltd.	Mr. Tatsuo Morimoto Mr. Shiro Mitsuno Ms. Kana Moriyama

1.4 Overview of the 4th Executive Forum

1.4.1 Participants

Overseas participants: 32 delegates in total from 13 countries including Bangladesh, Cambodia, India, Indonesia, Lao PDR, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Timor-Leste, and Viet Nam. The delegates consisted of executives from 29 organizations such as water supply utilities, related ministries, and associations. Their companion and participants of JICA Training Program on Water Supply Administration for Better Management of Water Supply Services (A) also participated as observers.

Japanese participants were from organizations such as the Ministry of Health, Labour and Welfare, Ministry of Economy, Trade and Industry, and local governments including the City of Yokohama, private companies, JICA, and so on. (details are shown in the article 12.2)

Number of total participants for the 3 days: 281.

1.4.2 Date and Venue

August 1st Tue. - 3rd Thu. 2017	At Yokohama Symposia
August 4th Fri., 2017	Technical Tour

1.4.3 Forum Theme

Take action toward the next step - Universal and Equitable Access, Finance, and Governance-

1.4.4 Sessions and Individual Topics

No	Sessions	Individual Topics
1.	Universal and equitable access to safely managed water	1. Water supply development plans and long-term visions 2. Water supply to low income households 3. Service improvement such as 24/7, water quality, and water pressure
2.	Finance	1. Financing from outside of the utility 2. Cost reduction 3. Water tariffs
3.	Proactive improvement of enabling environment (Governance)	1. Sector governance 2. Organizational governance 3. Securing technical levels and human resource development

1.4.5 Outline of the Schedule

Each session was composed of group discussions and all-member meetings where all participants attended. The all-member meeting was hosted by a main moderator and an assistant. As for group discussion, a main facilitator and an assistant facilitator led the discussion. The minutes were recorded in both Japanese and English by members of the secretariat. However, group discussions were not implemented but a plenary discussion was held in session 3 due to time limitation.

Table 1-14 Outline of the Schedule

Date	Activities
August 1st Tue. Session 1	[Morning] ➢ Opening remarks ➢ Photo session ➢ Keynote speech 1 ➢ Keynote speech 2 ➢ Program orientation [Afternoon] ➢ Presentations (7 presenters from the delegates) ➢ Group discussion ➢ Announcement on IWA World Congress and Exhibition in Tokyo [Evening] ➢ Welcome reception
August 2nd Wed. Session 2 (Partly Session 1)	[Morning] ➢ Keynote speech 3 ➢ Feedback of Session 1 ➢ Presentations (5 presenters from the delegates and 1 presenter from Japan) [Afternoon] ➢ Group discussion ➢ Feedback of Session 2
August 3rd Thu. Session 3	[Morning] ➢ Presentations (5 presenters from the delegates and 1 presenter from Japan) ➢ Open discussion and Q&A [Afternoon] ➢ Wrap-up session ➢ Closing remarks
August 4th Fri.	Technical tour (Visiting Aoyama Settling Basin and Doshi Water Resource Forest)

Please refer to the program in Annex for detail.

1.4.6 Exhibition by private companies

At the entrance of the conference room there were exhibits held by members of Yokohama Water Business Association. Yokohama Water Business Association was established by the city of Yokohama, municipal organizations and private local companies in order to solve water problems in developing countries as well as promote overseas marketing for water supply and sewer water related companies and organizations. Currently 163 companies are affiliated with the association. The exhibitors in this Executive Forum are as follows.

Suidou Technical Service Co., Ltd.
Toshikogyo Co., Ltd.
Hitachi, Ltd.
Goodman Co., Ltd.
Kobelco Eco-Solutions Co., Ltd.
Kubota Corporation
Tsukishima Kikai Co., Ltd.
Yokohama Water Co., Ltd

Figure 1-2 Exhibition booth

Chapter 2 Opening Remarks

2.1 Mr. Makoto Kashiwazaki, Deputy Mayor, the City of Yokohama

Good morning, ladies and gentlemen. My name is Makoto Kashiwazaki, Deputy Mayor of the City of Yokohama. As a representative of the host city of this forum, I would like to make some opening remarks. I would like to welcome all the delegates from the 13 participating countries of the 4th Executive Forum to Yokohama. It is a great pleasure to see you all here today.

Figure 2-1 Opening remarks by Mr. Kashiwazaki, Deputy Mayor, City of Yokohama

This forum has been held since 2010 as a place for the participants from Asian regions to come up with solutions to problems by working together and sharing information. Building on the 3rd Executive Forum held in 2014, I am now pleased to be holding the 4th Executive Forum here in Yokohama and sincerely welcome all its participants. In opening, I would like to talk about the reason this forum is being held.

Currently, 17 development goals in SDGs, which were adopted by the United Nations in 2015, have been set worldwide. In regard to the water sector, “Achieving universal and equitable access to safe and affordable drinking water for all” is one of these goals. This forum will also deal with related issues such as, how water is supplied to people with no access to it, how to secure the quality and safety of water, how to secure the financing to construct the facilities necessary for the above-mentioned purposes; and how the sound management of waterworks is achieved. These are most likely already common topics among most of the governments and water utilities of Asian countries. Later, Mr. Yamaguma, Director General of the Yokohama waterworks bureau, will talk about the history of the Yokohama water works bureau as it nears its 130-year anniversary since the establishment of modern waterworks in Japan. He is also expected to introduce what issues the

city of Yokohama faced and how the city of Yokohama overcame them: for example, how the facilities were expanded and how the finance was procured.

Including the city of Yokohama, all water utilities in each country have an objective to supply safe and sustainable water. Based on this forum, it is my hope that all the participants will bring back ideas to their home countries as a result of working together and sharing information from their own experiences and ultimately utilize it to formulate more concrete policies.

Next, I would like to explain about the international contribution that the city of Yokohama has made. Since opening its port in 1859, the city of Yokohama has developed through its connection and cooperation with foreign countries and cities. International cooperation and contribution have been set as a policy of the city of Yokohama and actively promotes the holding of international conferences as well as the development of partnerships and cooperation with cities from around the world. Of the participating countries at this forum, some are already working together with us on issues such as sewage and the environment while others have partnership agreements not related to the water sector. In addition, the city of Yokohama concluded a comprehensive partnership agreement with JICA for the first time as a regional government, and we are working hard to make an active contribution to international cooperation. Regarding the water sector, we receive group training, implement training by dispatching staff of the bureau, and contribute to grass roots technical cooperation projects. Through these activities, the city of Yokohama also gains invaluably through the development of human resources and establishing networks with foreign countries.

Thirdly, I would like to talk about the expectations for this forum. Though it is a top priority to solve the issues regarding the waterworks of each country and secure a water supply for all people, there are still others. Some organizations participating in this forum already have a long relationship with the city of Yokohama. Establishing a network among stakeholders through this forum may develop more intercity exchanges with the city Yokohama in the future. I expect energy from rapidly developing countries will be brought to the city of Yokohama. In addition, eight companies from the Yokohama Water Business Association will have exhibits at the venue. The city of Yokohama also expects local companies to develop their businesses abroad, contribute to solving your problems, and collaborate on various business projects. Please visit the exhibitions as the city of Yokohama is proud to introduce its technologies.

Finally, I would like to express my appreciation to the participants from each country, the participants from domestic water utilities, companies related to waterworks, and all the other Japanese people who have contributed. I believe this forum will act as a catalyst for the next steps as described in the theme. Please have a fruitful stay in Yokohama and remain in the best of health.

2.2 Ms. Noriko Suzuki, Senior Vice President, JICA

His Excellency Ek Sonn Chan, Secretary of State, Kingdom of Cambodia, Mr. Makoto Kashiwazaki, Deputy Mayor, City of Yokohama, Prof. Satoshi Takizawa, The University of Tokyo, Distinguished Guests, Ladies and Gentlemen, Good Morning, everyone.

I am very pleased to open the 4th Executive Forum and I welcome your attendance today. I would like to extend my sincere gratitude to the City of Yokohama, the co-organizer of this event, moderators, presenters, facilitators and those who are involved in the organizing of the forum. In particular, I would like to heartily welcome the assembled executive leaders from the water sector in Asian countries, for coming to Japan.

Figure 2-2 Opening remarks by Ms. Suzuki, Senior Vice President, JICA

Yokohama is well known as the birth place of modern waterworks in Japan, and has an important role in international cooperation in various sectors. 2017 is the memorable year, 130 years anniversary since modern water supply system started in Yokohama in 1887. JICA has a comprehensive partnership agreement with the City of Yokohama and the two organizations have been working together in many activities including those in the water sector. This Executive Forum is organized by JICA and the City of Yokohama as one of the outcomes of this intention.

Now, I would like to share with you my three main expectations for this Executive Forum.

First of all, I hope that the best outcome of this forum is that the top management of water utilities or regulators, who are gathered here, will be inspired by the discussions. It is needless to say that awareness and commitment of executives and top management of water utilities are important in order to achieve sustainable management. I believe that all of you will obtain beneficial experience and knowledge this time as well, and I hope you will bring them to your organizations, put them into practice and exercise your leadership. As you are already aware, theme of this forum is “Take actions towards the next steps.”

Secondly, I expect all of you to utilize this forum, as a place to build a network for cooperation and strengthen existing partnerships. At this forum we have invited leaders from about 31 water utilities, water supply association and governmental organizations from 13 Asian countries, who are working together closely with JICA or Yokohama Waterworks Bureau. Also, many Japanese water utilities, water-related authorities, private companies and associations are participating in this forum. Some of these organizations are already in touch with each other, sharing their experiences and challenges and learning from each other through site visits. It is very important to expand relationships for collaboration and cooperation in order to obtain new ideas and to initiate improvement and reform of your organizations by harnessing lessons learned from the experiences of others. I expect you to utilize this valuable opportunity to create new partnerships.

Thirdly, this forum will also provide opportunities for participants from Asian countries to confirm continuous commitment for the improvement of water supply service toward achievement of Sustainable Development Goals, SDGs. In the process of achieving SDGs, visualizing the performance through benchmarking, and establishing monitoring framework are the keys, which will be discussed in the sessions.

As your partner, JICA will contribute to realizing sustainable management of your water utilities utilizing its broad network, knowledge and financing capability.

As the conclusion to my opening remarks, I hope these three days will prove to be highly meaningful for all participants and will be filled with active discussions.

It has been a pleasure being with you today, thank you

Chapter 3 Keynote Speech

3.1 Keynote Speech 1 “History and Lessons for 130 Years of Modern Water Works in Yokohama City”

Keynote Speech 1 was made by Mr. Takahiro Yamaguma, Director General of Yokohama Waterworks Bureau.

Figure 3-1 Keynote Speech by Mr. Yamaguma, Director General of Yokohama Waterworks Bureau

Before the introduction of a modern water supply system in City of Yokohama, most residents purchased water at expensive prices from water sellers. Because of a serious lack of water, private investors constructed a wooden water supply system. However, decomposing wood and contamination caused outbreaks of waterborne diseases such as Cholera. At the time, the Governor of Kanagawa Prefecture asked a British engineer to design a modern water supply system so in 1887, approximately 130 years ago, Japan’s first modern water supply system was developed in the City of Yokohama. There were originally two plans regarding where to draw water from, either the Sagami River or Tama River. From the long-term view of a rising population and water quantity, they selected to develop a plan to intake water from the Sagami River even though it was farther away from the city that the Tama River. This of course was a very costly decision but has ultimately secured a safe clean source of high quality water even to this day.

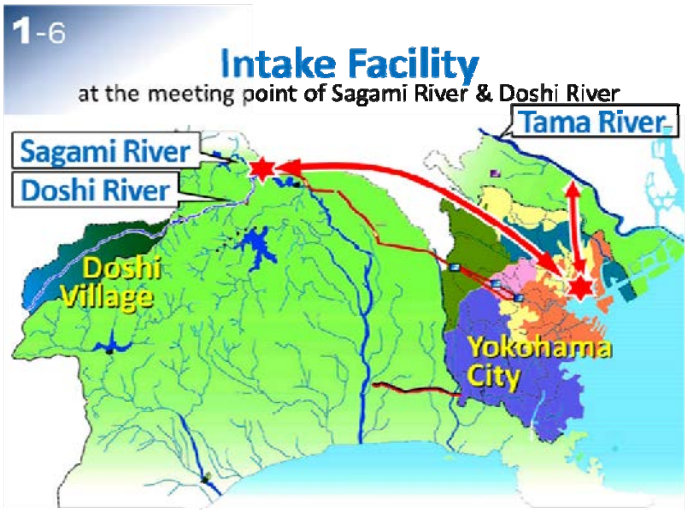


Figure 3-2 Selection of water resources

A modern water supply system improved the sanitation environment so that fewer waterborne epidemics occurred. As the population of Yokohama rapidly increased after World War II, the expansion of facilities was required a total number of eight times. The length of transmission pipes is currently 9,200km which is as long as the distance between Yokohama and Los Angeles.

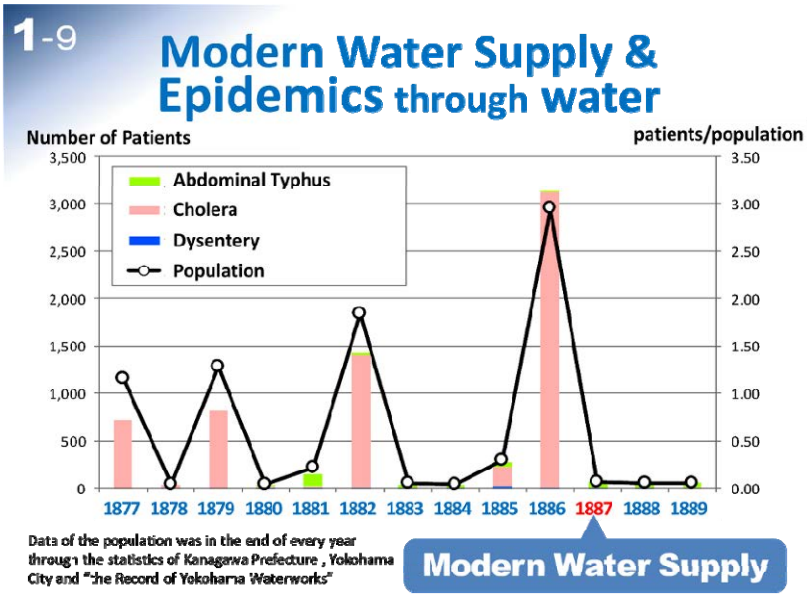


Figure 3-3 Number of Patients of Waterborne Epidemics

The City of Yokohama has overcome many problems. One of them is a lowered watershed cultivation function due to destructive logging practices in forests which are a watershed for Yokohama. In order to protect its water resources, the City of Yokohama decided to purchase and manage 2,873ha of forest in Doshi Village in Yamanashi Prefecture, which is in another municipality. Thanks to this decision, Yokohama can now secure high quality raw water.

In 1923, a huge earthquake occurred which destroyed most of the City's water supply facilities. The Yokohama Waterworks Bureau supplied water by tanker trucks, secured drinking water from

ships, and also developed additional drinking water resources by surveying and constructing wells and spring waters in and around the city. In 1945, towards the end of the World War II, water supply facilities were destroyed once again as the result of bombing by Allied forces. Although many staff members lost their lives or were injured, the Yokohama Waterworks Bureau quickly repaired its facilities and contributed to the reconstruction effort after the war.

In 1964, the supply of water supply was halted in many areas due to an extreme water shortage. In order to overcome this difficult situation, the Yokohama Waterworks Bureau undertook the operation of part of a water treatment plant which was under construction at the time. In March of 1986 operation of this water treatment plant was shut down due to heavy snow and strong winds leading to approximately 200,000 households without water. In response to this incident, the distribution network was connected in a circular fashion to create a water supply system that would not be susceptible to water cutoffs. This network was drawn by hand and implemented according to the drawing in a step-by-step fashion. We should also not forget that in addition to large-scale projects like these, day-to-day operations over the years by many dedicated staff have also played a crucial role in creating what the Yokohama Waterworks Bureau has become today.

Current water services in Japan are operated by an independent accounting system. The financial resources necessary for construction in Yokohama depend on bonds issued by the Yokohama Waterworks Bureau since the City of Yokohama only receives a small compensation from the central government. In order to repay this debt, water tariffs have been increased many times. Yet since 2001, over the last 16 years, the Yokohama Waterworks Bureau has not revised its tariffs. As a result, a lack of revenue from these tariffs has become a big issue.

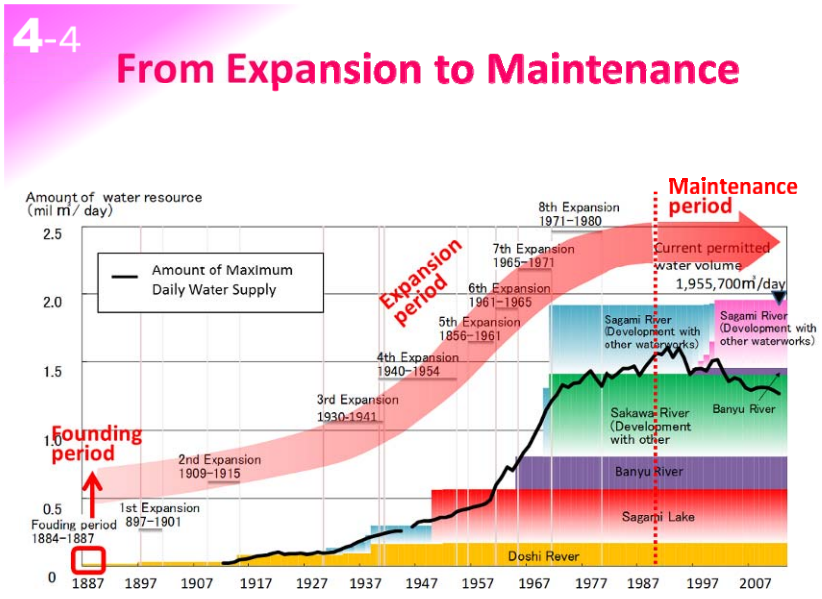


Figure 3-4 Period of Expansion to Maintenance

Since the 1990s, the water supply system in Yokohama has been under a period of maintenance since the end of the last period of expansion. In the near future, City of Yokohama is expected to

face population decline, thus it needs to carry out its operations while anticipating a decrease in both the demand for water and revenue acquired through its sale.

One of the biggest issues during this period of maintenance period will be to update pipeline. In Yokohama, almost all pipeline constructed before the 1950s has been updated though now it is necessary to update 24,00km of pipeline laid in the latter half of the 1960s. We take into account durability, importance, and the buried environment of pipeline while prioritizing and allocating how much to do annually. We are currently updating 110km of earthquake-resistant pipeline per year. Based on a decline in the demand for water we are also downsizing facilities.

In addition to improving management efficiency, the Yokohama Waterworks Bureau has also started outsourcing call center, metering, and tariff collection services. We are making efforts to streamline our operations with cooperation from the private sector. We have also closed or merged branch offices and decreased our staff by over 1,000 employees over the last dozen years or so.

As previously mentioned, the strengths of the Yokohama Waterworks Bureau are as follows: Firstly, experience from eight expansions. Secondly, we have overcome many hardships such as electrical power outages and water shortages and also accumulated valuable experience from renovating and repairing facilities damaged by war and earthquakes. Thirdly, we have developed and improved upon technologies of modern water supply systems imported from Britain while also introducing new technologies and methods. Utilizing all of this experience, the Yokohama Waterworks Bureau has been dispatching staff to developing countries since 1973 and has been accepting trainers from foreign countries since the same year.

I am positive that our vast experience will be a valuable resource for invitees from all of 13 Asian countries participating and we are more than happy to share this information with you. Starting today, I hope you will all openly share your opinions and requests with each other over the course of the next three days.

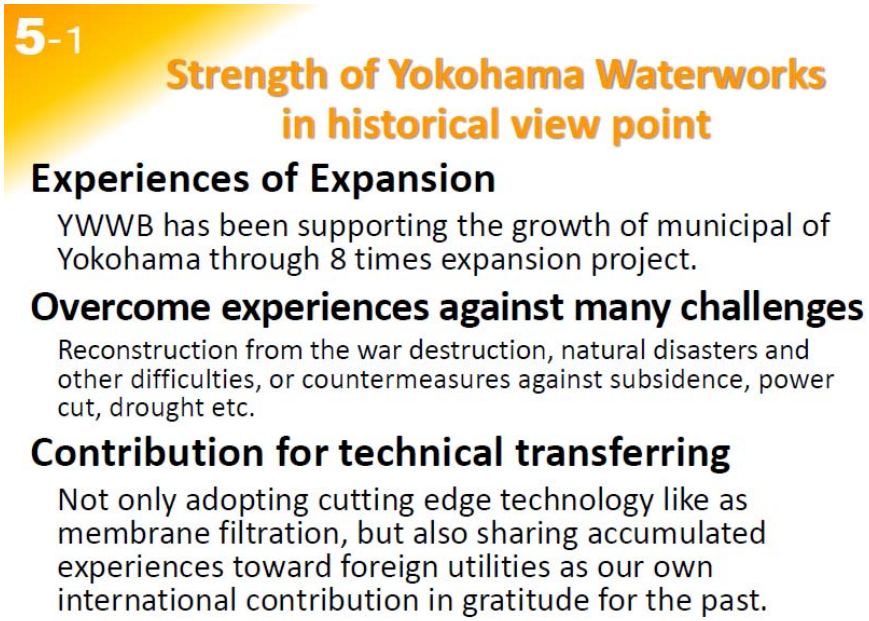


Figure 3-5 Strength of Yokohama Waterworks

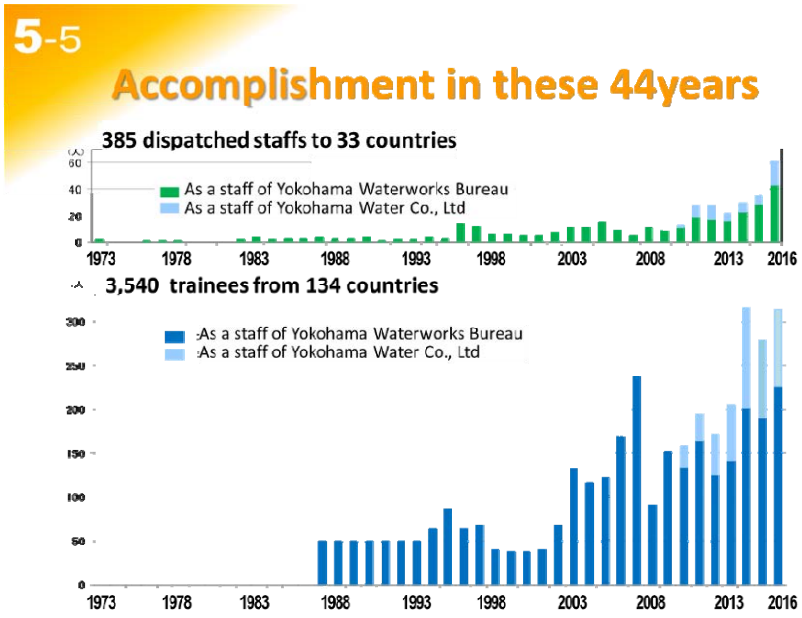


Figure 3-6 International Cooperation of the Yokohama Waterworks Bureau

3.2 Keynote Speech 2 "PPWSA's success and its expansion throughout the water supply utilities of Cambodia"

Keynote Speech 2 was made by H.E. Ek Sonn Chan from the Ministry of Industry and Handicraft, Cambodia.

Figure 3-7 Keynote Speech by H.E. Ek Sonn Chan

80% of the diseases in the world are caused by poor water and sanitation environments. In the 1st Asia and Pacific Water Summit that was held in Beppu, the participating leaders of the world agreed that having safe water is a basic human right and basic aspect of human safety assurance.
In Cambodia, approximately half of the people do not have access to safe water and basic sanitation. As a nation, Cambodia set the Cambodia MDGs toward 2015. As of 2012, Cambodia achieved 66% of this target. However, the access rate of the urban water supply system was limited to around 50% with the exception of Phnom Penh city. In provincial small towns, water supply system development did not keep pace with rapid urbanization. There was no legal framework, no masterplans, and no mid- or long-term investment plans. Except for the two water supply authorities, water supply utilities were unable to recover their production costs through the collection of tariffs and financial donations. They also faced many problems such the impact from climate change and the technical level of private operators.

Urban Water Supply Outside of Phnom Penh

INDICATORS	UNIT	PUBLIC WATER WORKS		PRIVATE WATER WORKS	
		MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
COVERAGE	%	13	85	29	59
WATER TARIFF	USD/m3	0.21	0.54	0.45	0.75
WATER COST	USD/m3	0.24	0.48	0.23	0.5
WATER BILL COLECTION	%	90	97	95	99
NRW	%	6.53	21	16	29
OPERATION RATIO	%	46	80	29	59
FINANCIAL STATUS		Not Profitable due low efficiency		Profitable due to high tariff	

Figure 3-8 Urban Water Supply Outside of Phnom Penh

In Cambodia, the social commercial water supply is known as the urban water supply and regulated by the Ministry of Industry and Handicraft (MIH) while the rural water supply is managed and operated by individual communities and regulated by the Ministry of Rural Development.

MIH is responsible for the following: 1. Legal framework and standards regarding water supply. Water Act is drafted and expected to be formally adopted by the National Assembly in 2018. 2. Urban water supply policy, strategic plans, and tariff setting, and licensing private operators. 3. Encourage private sector participation through extension of license life from 3 to 20 years. 4. Established Water Supply Monitoring System to secure the transparency and monitor the water supply sector. 5. Updated the Urban Water Quality Standard which was established in 2004. 6. Implemented “Provincial Tour Program,” which increased the experience of PPWSA in provincial water supply utilities to improve the performance of public water supply utilities. 7. Constructed the minimum technical standard for urban water supply. Lastly, MIH promotes Good Governance. Good Governance is the basis for a sustainable water supply. Good Governance means that all people can reliably access safe and affordable water.

Figure 3-9 The Last Four Years Effort by MIH

In order to achieve the target of 100% access to improved water supply in urban areas of which 90% will come through piped service by 2025, around 260,000 people per year will need to gain access. This will require an investment of US$60 million per year. MIH augments the commitment to the water sector as a regulator, and is also needed to aid and support the construction of physical water facilities.

The commitment at the international, national, and local levels and the ownership spirit of water operators will help to make "World Water Equity Day" a reality. I hope that each participant will learn from each other, network, and apply the 3H[1] concept during the three days of this forum.

[1] 3H represents the significant components of water supply. "Head" stands for knowledge and consideration, "Hand" for day-to-day tasks, and "Heart" for passion. This concept was mentioned by H.E. Ek Son Chann in the Pre-Forum.

Figure 3-10 Efforts for 2025's Universal Access

3.3 Keynote Speech 3 “Perspectives of urban water services in Asia and Japan”

Keynote Speech 3 was made by Professor. Satoshi Takizawa from the University of Tokyo.

Figure 3-11 Keynote Speech by Prof. Takizawa, the University of Tokyo

Although, MDGs were achieved in most of the regions in the world, there is a gap between what we achieved and reality. 2,600 million of people gained the access to “improved drinking water” although 1,900 million people still cannot access to piped water yet. In order to increase the access to the piped water supply, we need to improve the urban water supply as a utility. We also need to try and achieve the SDGs and also improve the level of service, including water quality and quantity. Universal and equitable access to safe water is a very important yet difficult issue.

Implementation of the integrated management of water resources by 2030 is also an important issue as it relates to the water supply for all people. In order to achieve this, we will need more capacity building and coordination among countries by 2030. Participation by stakeholders, including communities of low income households, is also important.

The world population is estimated to be 10.9 to 16 billion by that time. In particular, urban populations will increase and the water supply to urban people will be a big problem. Securing water resources will also be a big issue in many cities.

There is now less than 15 years before the year 2030 which is target year for the SDGs. What do we need to do? Here I introduce one of the problems we need to overcome, Intermittent Water Supply (hereinafter, IWS). When there are not enough water resources, there are two methods, supply water intermittently or supply water only to limited areas. This is a big problem when we consider how to achieve the SDGs.

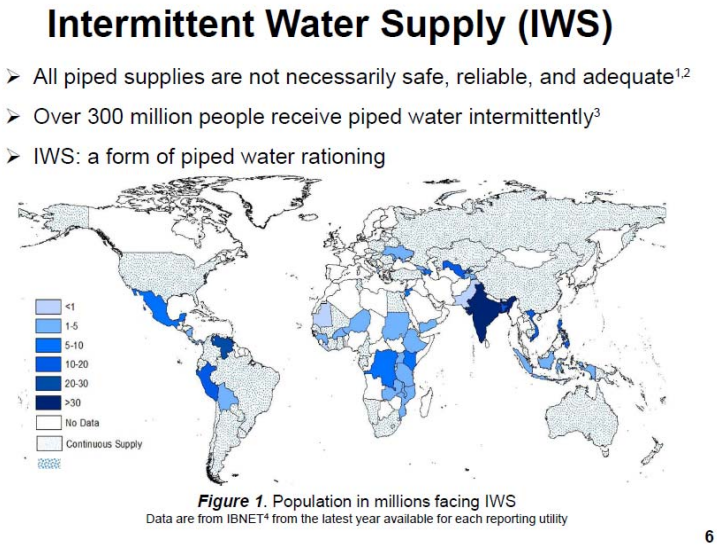
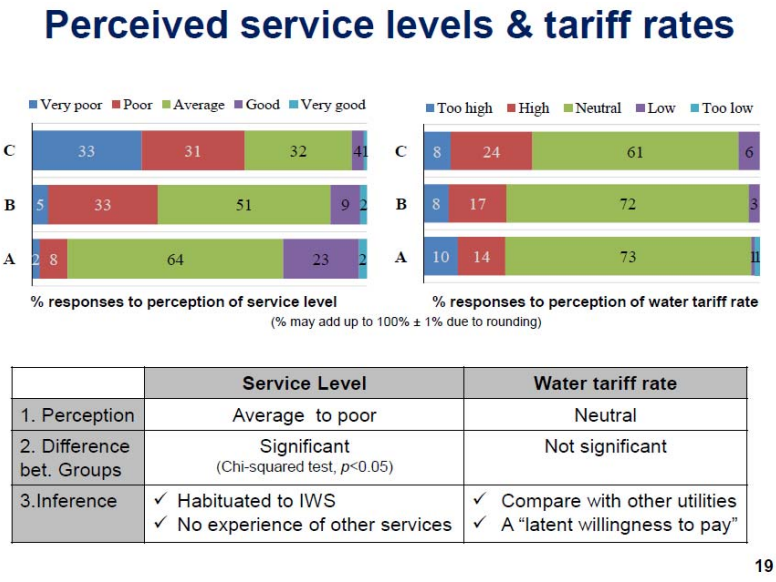


Figure 3-12 Population Facing IWS

According to a study in Nepal, in spite of IWS, 73% of people use a piped water supply system and 28% purchase water from tanker trucks at expensive prices. According to the results of the questionnaire given to customers of the same water supply utility in the study area, some people enjoy 24 hours of water supply while others only have access to an intermittent water supply such as once per week. The ratio of people who complain about water supply service level is higher in the group with access to only an intermittent water supply than in the group that enjoy a 24-hour water supply. On the other hand, there was not a significant relation between satisfaction and continuity of water supply.



	Service Level	Water tariff rate
1. Perception	Average to poor	Neutral
2. Difference bet. Groups	Significant (Chi-squared test, p<0.05)	Not significant
3.Inference	✓ Habituated to IWS ✓ No experience of other services	✓ Compare with other utilities ✓ A "latent willingness to pay"

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Figure 3-13 Perceived Service Level

The amount of water consumption per person per day, including from piped water and tanker trucks in the study area, is lower than 100 liters. This is much lower than the national target of 135 liters. In addition, the inequality in water supply was analyzed using the Lorenz Curve and the Gini

Coefficient, both of which are commonly utilized in the analysis of income inequality and inefficiency. As a result, an inequality was revealed in terms of period of water access in the Kathmandu Basin, which indicated 51% of the water supply hours needs to be redistributed to the people with shorter water supply hours to accomplish an equal water supply. On the other hand, after analyzing the inequality of water supply period by area, it was found that some areas experienced this inequality while others did not.

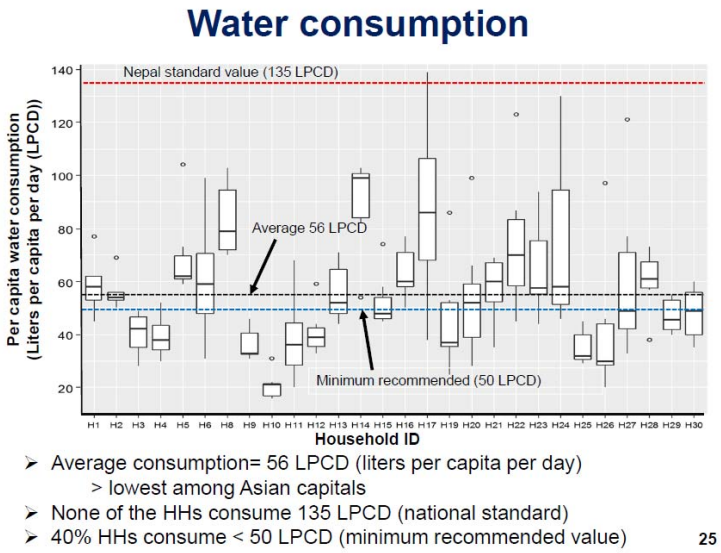


Figure 3-14 Water Consumption

In Jakarta, Indonesia, there is a problem of "Zero Customers" which simply means that some customers do not use a piped water supply even though they are connected to it. These customers use groundwater at no charge, which means that investment of infrastructure by water supply utilities amounts to nothing. According to a survey, the reason they do not use piped water is because of tariffs, low-hydrostatic pressure, and low-quantity of water.

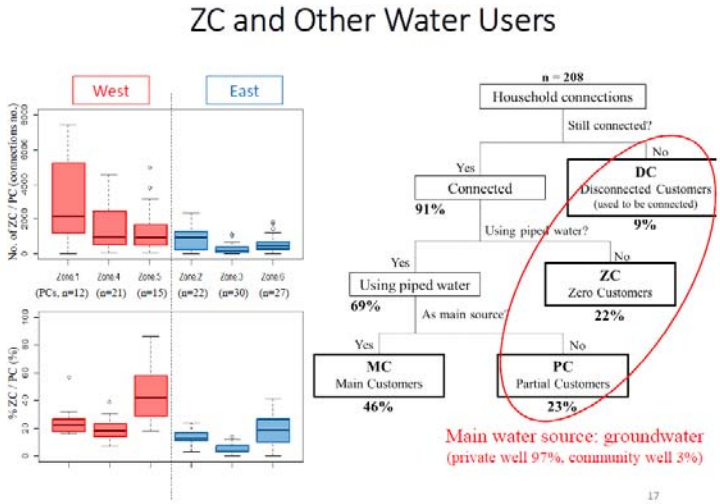


Figure 3-15 Zero Customers and Other Users

In Japan, even though approximately 100% access to a piped water supply is achieved, there are a number of problems such as aging facilities. Also, not all the experience from Japan can be applied to developing countries.

What we need to do in the future is to develop innovative funding mechanisms, create more regulations and institutions, determine the role of waterworks associations, develop more public-private partnerships, work on both technical and human resource development, and so on. Of all these, future human resource development is expected to be the most important. I hope we will all discuss how to achieve the SDGs by 2030 during the remaining two days of this forum.

Chapter 4 Session 1 "Universal and Suitable Access to Safely Managed Water"

The Target of Session 1
Improvement of water supply services is crucial to play a socially responsible role of water supply systems. Target 6.1 of the SDGs aims to achieve universal and equitable access to safe and affordable water for all. In this session, in order to improve access and quality of water services, the following topics were discussed: establishment of long-term plans and visions, water supply to low income households, improvement of continuity of water services, water quality, and hydraulic pressure.

Introduction by the Moderator

Dr. Mari Asami from the National Institute of Public Health, Japan made an introduction about the theme of Session 1 which was the dissemination of universal access to water services and improvement of water service quality such as 24/7.

Figure 4-1 Session1 Main Moderator, Dr. Asami (right), Assistant Moderator, Ms. Mina Yariuchi (left)

4.1 Presentation

4.1.1 Review of the past three years and importance of formulating mid-term plan, strategy and long-term vision (Mr. Viengthouay Vannarath, Vientiane Capital Water Supply State Enterprise (NPNL), Lao PDR)

NPNL is responsible for the water supply in the Capital of Vientiane and serves 541,312 people. Over the past three years NPNL has survived a water shortage while needing to increase its water supply. However, its budget is not enough, and NPNL could not implement expansion, repair or replace water treatment plants and old pipelines. The number of skilled workers is insufficient for O&M of water treatment plants, water quality control, and planning. In order to overcome financial problems NPNL has suggested an increment in water tariffs to the Government. For the

problems regarding technical skills, NPNL established rules and standards for operating procedures (SOP). Under the MaWaSU project, training of trainers (TOT) is also implemented.

Figure 4-2 Summary of the mid-term plan

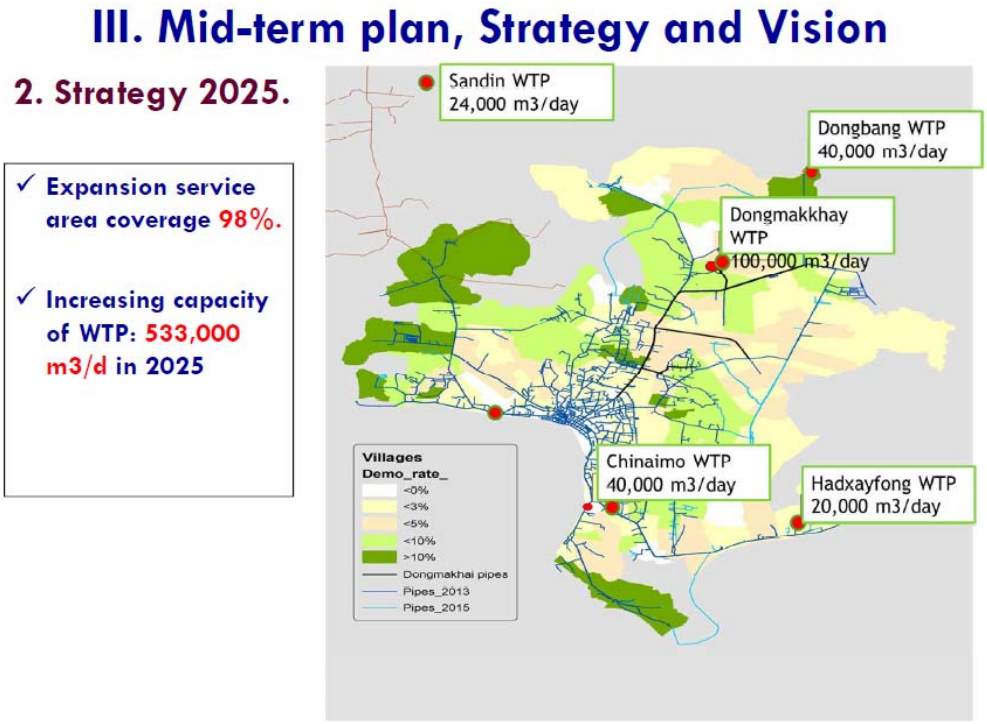


Figure 4-3 Summary of the strategy

Figure 4-4 Summary of the vision

NPNL established a Mid-term Plan for 2016-2020, Strategy 2025 and Vision 2030. The General Manager is responsible for formulating the plans and strategy, and all NPNL staff members are in charge of implementing the plans. NPNL set 23 performance indicators to manage the organization to achieve the final goal. Production capacity is increasing, but there is still not enough water in some areas. For the Mid-term plan, NPNL set DMA to manage water leakages in Vientiane.

In conclusion, the relevant lesson taken away from this is that the formulation of a long-term vision is very important to run sustainable water supply services. A long-term vision also has the effect to improve staff motivation and improve performance by better clarifying who is responsible for what.

4.1.2 Long Term Vision and Current Activities of Chittagong WASA (Engr. A.K.M. Fazlullah, Chittagong Water Supply and Sewerage Authority, Bangladesh)

Chittagong is a major coastal seaport city and financial center. The population in Chittagong is increasing so its water supply is very important. CWASA supplies 2000 million liters per day. There are 2 rivers in Bangladesh, and Chittagong faces hardships regarding the quality of its water resources such as high iron contamination.

CWASA is responsible for the safe water supply and sewerage services of Chittagong, which was established in 1960. It has a mission to provide a high-quality water supply in a cost-effective way. Accountability, quality and customer services are particularly important core values of CWASA.

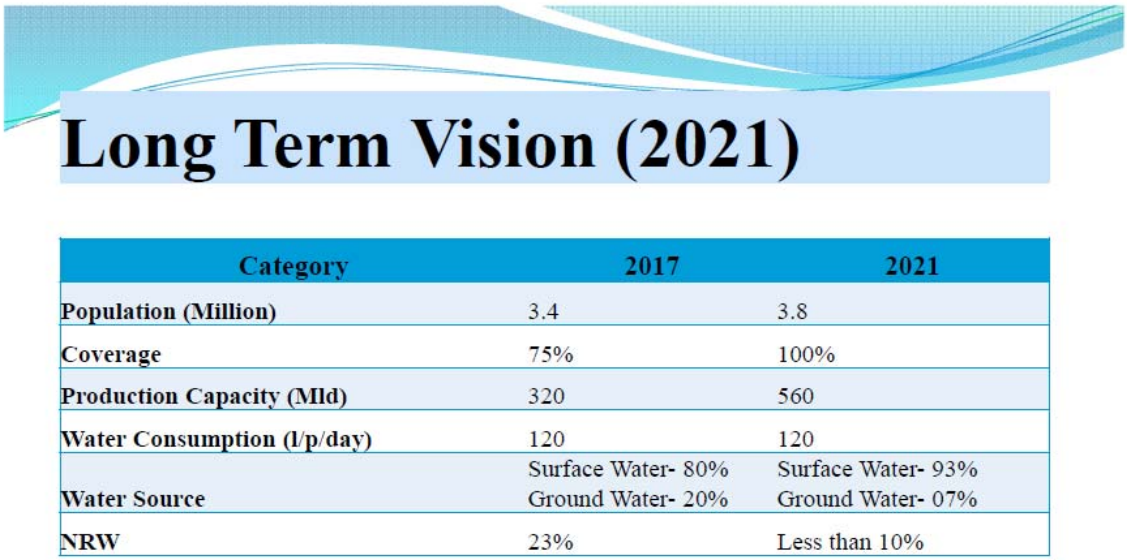


Figure 4-5 Long-Term Vision of Chittagong WASA

CWASA established a long-term vision for 2021 and expansion plans. In order to implement this vision, it started several projects, including building a treatment plant and updating pipelines. With JICA's support, construction of the treatment plant is currently underway.

The strengths of CWASA are as follows:

1. CWASA monitors every connection and is trying to NRW rate as much as possible.

2. High demand for its water supply services

3. CWASA receives Government support

4. Customers have a high willingness to pay for its services.

CWASA has recognized the following importance of long term vision:

1. To help the organization to set up the short term goals and achievements.

2. Motivation of staff is improved because the goal and responsibilities are clarified by the long term vision.

3. To take up the projects and human resource improvement plan to achieve the goals.

4.1.3 Expansion of Water Supply to Low Income Households (Ms. Yolanda C. Lucas, Maynilad, Philippines)

Maynilad is the concessionaire that provides water and wastewater services for the West Zone of Metro Manila that covers 17 cities and municipalities and has 1,327,743 customers as of April 2017. In Metro Manila, there are 560,000 families considered as informal settlers. They cannot

afford to buy legal piped water individually, so they buy unsafe water at expensive prices from illegal water sellers or illegally connect to the nearest water supply network. Maynilad carried out a program in order to allow informal settlers to access a safe and affordable water supply, empower them, and improve their quality of life. The program's name is "Samahang Tubig Maynilad (STM)" in English, "Maynilad Community-Based Water Management Program."

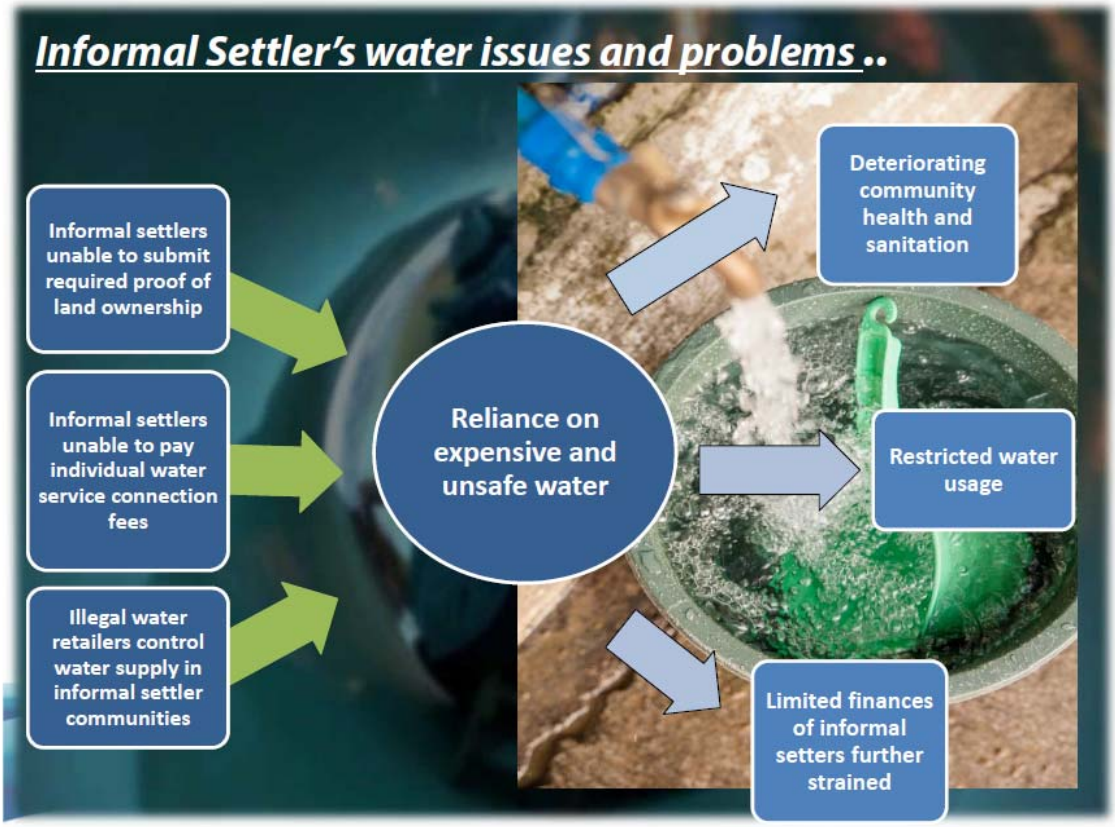


Figure 4-6 Water Problems of Informal Settlers

Maynilad conducted a meeting with the Homeowners' Association (HOA) and community leaders. And Maynilad also collaborated with other agencies. STM is a program developed for communities of informal settlers in the concession area that requires the involvement of communities of informal settlers.

In STM, Maynilad provides bulk metered water connections, receives water payment from the Homeowners Association, creates guidelines and policies, maintains the water facilities, holds ownership of the bulk meter, and supports the Association constantly. The Association collects tariffs from the members to pay Maynilad. Usage of water is limited for domestic use only.

Figure 4-7 What does Maynilad Get from the Program

STM helps informal settlers to use safely managed water at a cost of 69% less than before. In addition to this contribution, in the project of STM Tondo, Maynilad provides women in Tondo with opportunities to earn money by making a products line called Kapwa. STM benefits not only low-income households, but also Maynilad by increasing revenue by approximately 300,000 pesos per month by the addition of over 3000 customers and decreasing NRW caused by illegal connections.

4.1.4 Water Supply for Low Income Households- Indonesia Water Grant (Ms. Meike Kencanawulan, Sub Directorate of Technical Planning, Directorate of Water Supply System Development, Directorate General of Human Settlements (Cipta Karya), Ministry of Public Works and Housing, Indonesia)

The Indonesian central government implements a Water Grant Program to provide safe water access to low income communities by optimizing idle capacity. Low income households can pay their bills but cannot afford to pay for new connections. However, the budget was insufficient even though the government was planning to give them a subsidy for new connections. In order to support local government to subsidize these low-income households, the central Government started a performance based program called the Water Grant Scheme. This program was started in 2010 and originally funded by Australia and the USA. Now it is paid for by the government of Indonesia.

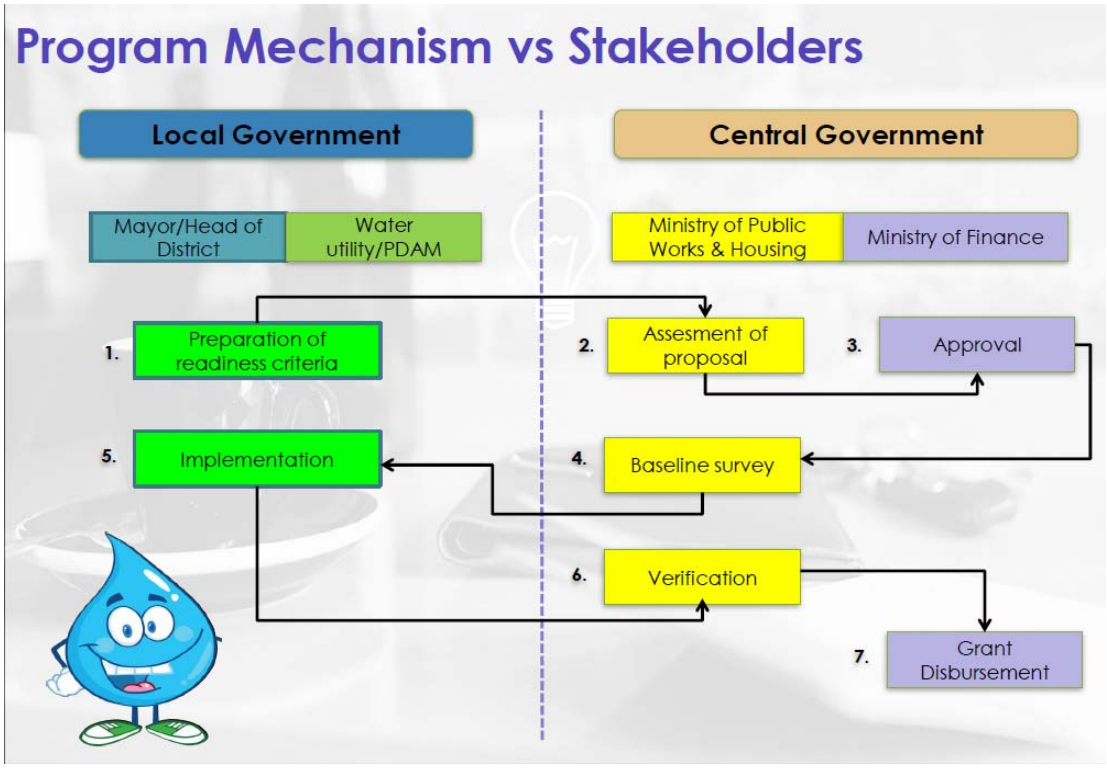


Figure 4-8 Program Mechanism

The process of this program is twofold. First, the local government submits an application to the central government. If the central government approves the application, they conduct a baseline survey. Then, the local government helps residents by subsidizing the installation of new connections. The central government then reimburses the money to the local government after they confirm that the new connections have been installed.

Critical aspects of the program implementation are the baseline survey before construction and verification after construction. The baseline survey confirms the beneficiary low-income households. Verification of house connections is to confirm whether the construction complies with the guidelines. The challenges the program faces are delays in carrying out the processes because the local government needs to pay for the installations before being reimbursed by the central government. The connections may also not be installed correctly according to the technical guidelines. As countermeasures for these challenges, Cipta Karya encourages local government, improves/formulates a monitoring system, and coordinates with the stakeholders. Cipta Karya started NUWAS, which is the platform for urban water supply development that local governments can use. The platform provides funds for infrastructure, technical assistance, and capacity building.

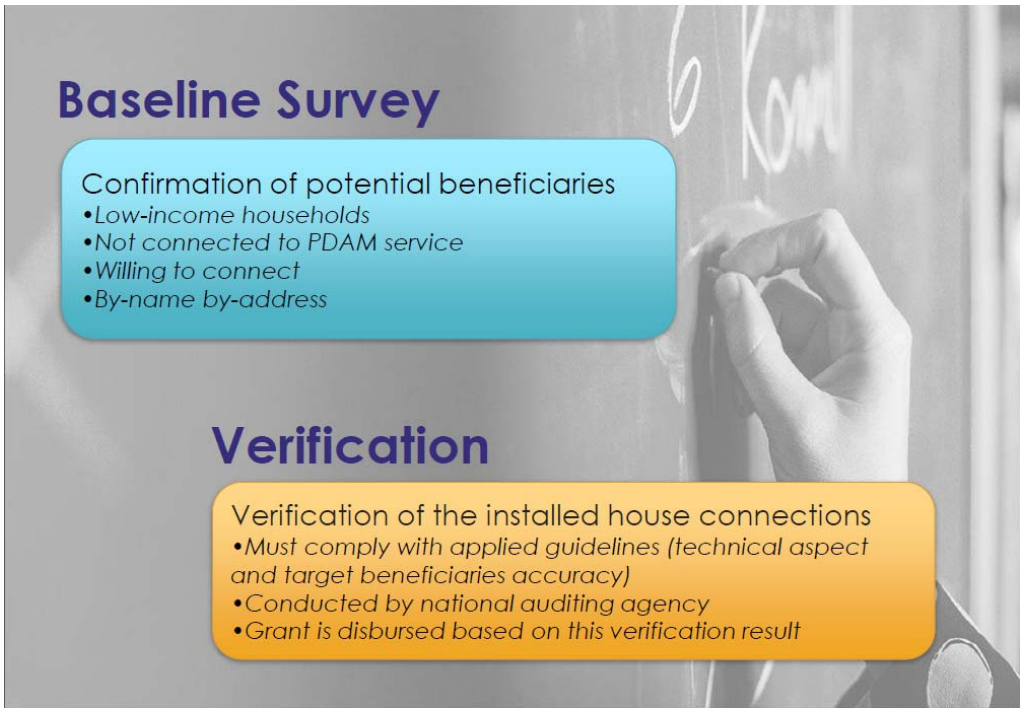
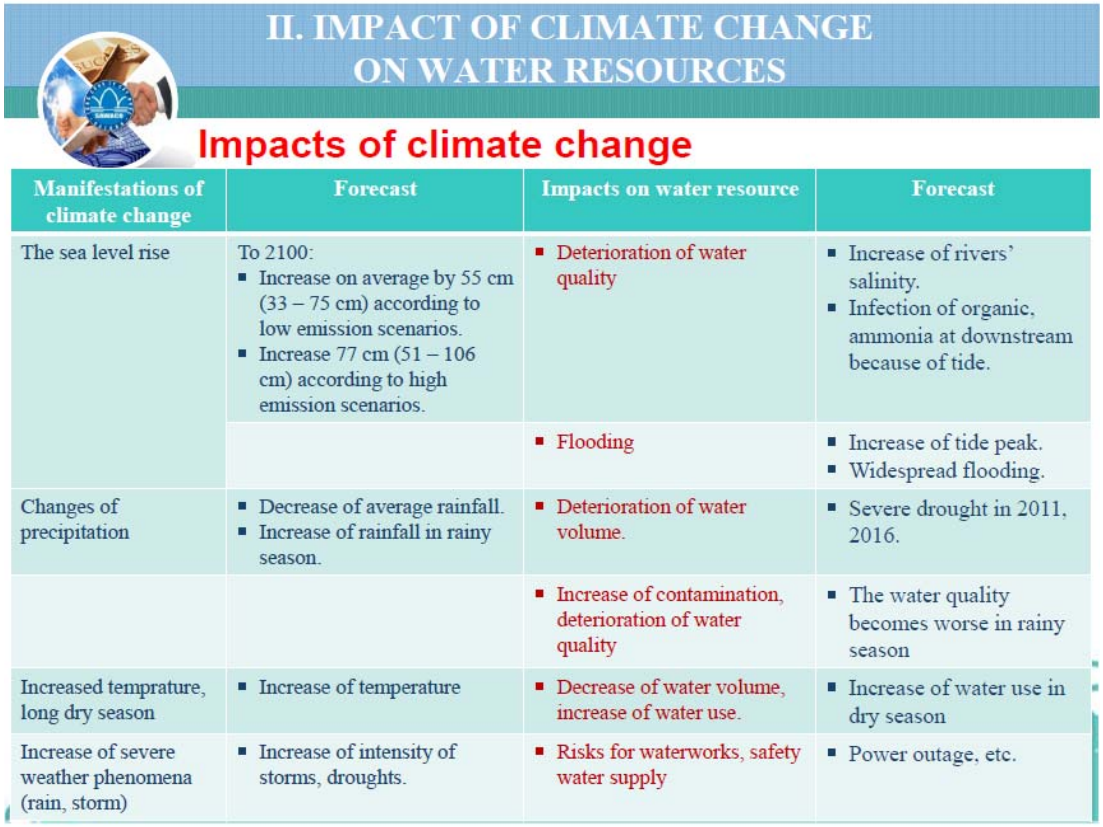


Figure 4-9 Baseline Survey and Verification

4.1.5 Response to impact of Climate Change on Water Resources of Ho Chi Minh City (Mr. Nguyen Van Du, Saigon Water Corporation (SAWACO), Viet Nam)

SAWACO is responsible for the water supply of Ho Chi Minh City, which is the biggest city in Viet Nam. SAWACO's main water resource is surface water from the Dong Nai-river, which is one of the main rivers in Ho Chi Minh City.

The impacts from climate change are many such as deterioration of water quality because of rising sea levels, a decrease of water volume, risks related to waterworks, and increase of contamination. Flooding is also a problem. SAWACO measures water quality and quantity, and based on the data, it controls the operation of facilities.



Manifestations of climate change	Forecast	Impacts on water resource	Forecast
The sea level rise	To 2100: ▪ Increase on average by 55 cm (33 – 75 cm) according to low emission scenarios. ▪ Increase 77 cm (51 – 106 cm) according to high emission scenarios.	▪ Deterioration of water quality	▪ Increase of rivers' salinity. ▪ Infection of organic, ammonia at downstream because of tide.
		▪ Flooding	▪ Increase of tide peak. ▪ Widespread flooding.
Changes of precipitation	▪ Decrease of average rainfall. ▪ Increase of rainfall in rainy season.	▪ Deterioration of water volume.	▪ Severe drought in 2011, 2016.
		▪ Increase of contamination, deterioration of water quality	▪ The water quality becomes worse in rainy season
Increased temprature, long dry season	▪ Increase of temperature	▪ Decrease of water volume, increase of water use.	▪ Increase of water use in dry season
Increase of severe weather phenomena (rain, storm)	▪ Increase of intensity of storms, droughts.	▪ Risks for waterworks, safety water supply	▪ Power outage, etc.

Figure 4-10 Impacts of Climate Change

As a solution to ensure a safe water supply, SAWACO monitors water quality and increases capacity of the treatment plant to reduce the effects of salinization.

As a strategic solution, SAWACO carried out the following countermeasures:

1. Established a network operation center and management system

2. Managed and invested to adapt to deteriorating water sources, including salinization and contamination.

3. Restructured the water supply network, improved management of water pressure and quality, and realized energy savings.

4. Rebuilt a water storage tank

Effective countermeasures are necessary to deal with the growing impact of climate change. As a water supply utility, SAWACO needs to take the initiative to implement such countermeasures in collaboration with the Municipality and local departments.

Figure 4-11 Solutions

4.1.6 Establishment and Operation of Water Safety Plan, and Its Contribution to Stable Water Supply (Eng. Deepthi Sumanasekera, National Water Supply and Drainage Board (NWSDB), Sri Lanka)

NWSDB is responsible for the water supply and sanitation of Sri Lanka. In order to secure water safety, it is necessary to consider things from the intake of raw water to household's water storage. The intake of raw water is the most difficult to deal with because several stakeholders are involved.

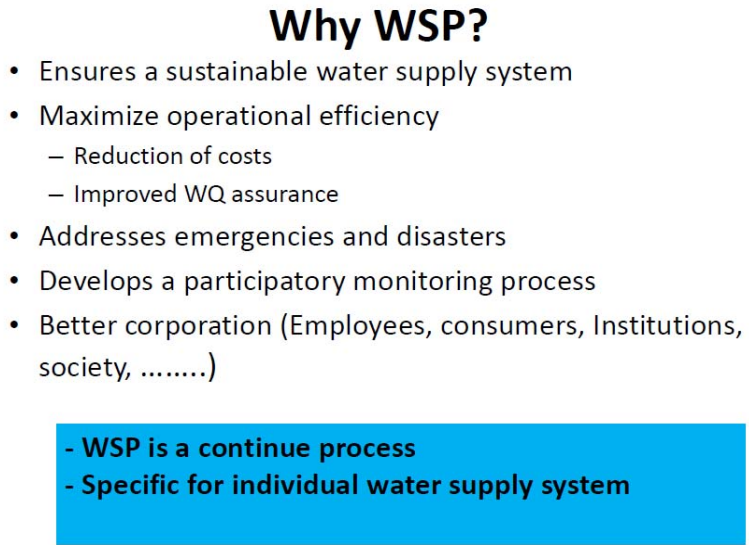


Figure 4-12 Necessity of WSP

NWSDB established a Water Safety Plan (WSP) in order to ensure a sustainable and safe water supply system, maximize operational efficiency, address emergencies and disasters, develop participatory monitoring process, and improve the organization. Since 2014, more and more water supply stations have been completed through WSP. As of April 2017, out of 329 water supply stations, 34 have completed WSP and 87 have finished 6 out of the 10 modules of WSP. Ensuring the budget and continuous the commitment of staff are significant challenges for carrying out the WSP.

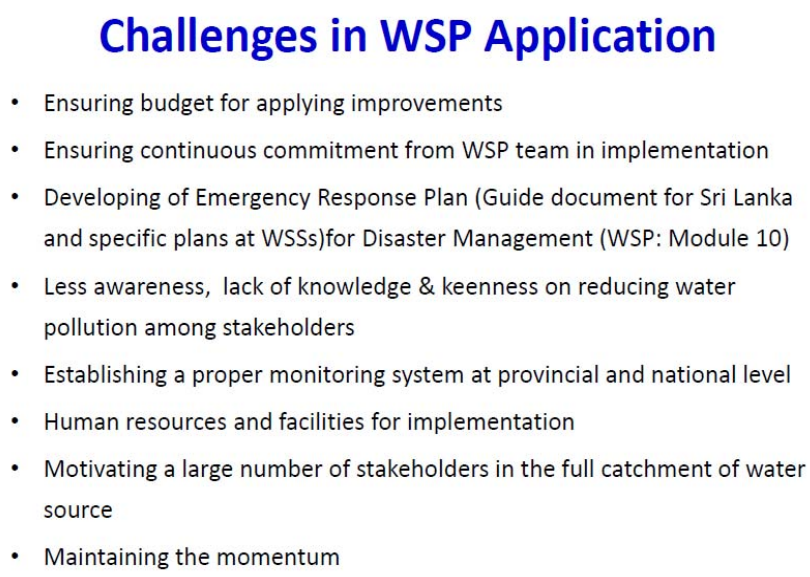


Figure 4-13 Challenges in WSP Application

4.1.7 Effort to improvement of the services by DNSA (Mr. Xavier Pereira Francisco, Department of Dili Water Supply, National Directorate Water Service (DNSA), Timor-Leste)

DNSA established a Strategic Development Plan in 2011. It targets to provide safe piped water supply 24 hours a day. It also aims to provide safe water to all citizens of Timor-Leste by 2030. DNSA executed the Benamauk Project to achieve a 24/7 water supply by repairing leaks caused by illegal connections and isolating distribution pipelines. As a result, in the Benamauk area, a 24/7 water supply is now available.

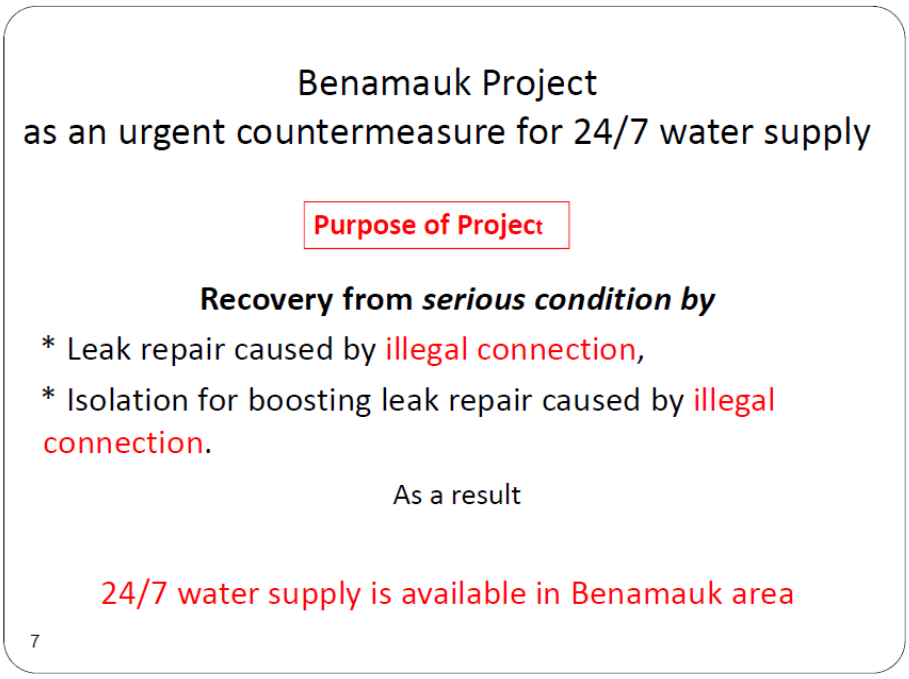


Figure 4-14 Summary of Benamauk Project

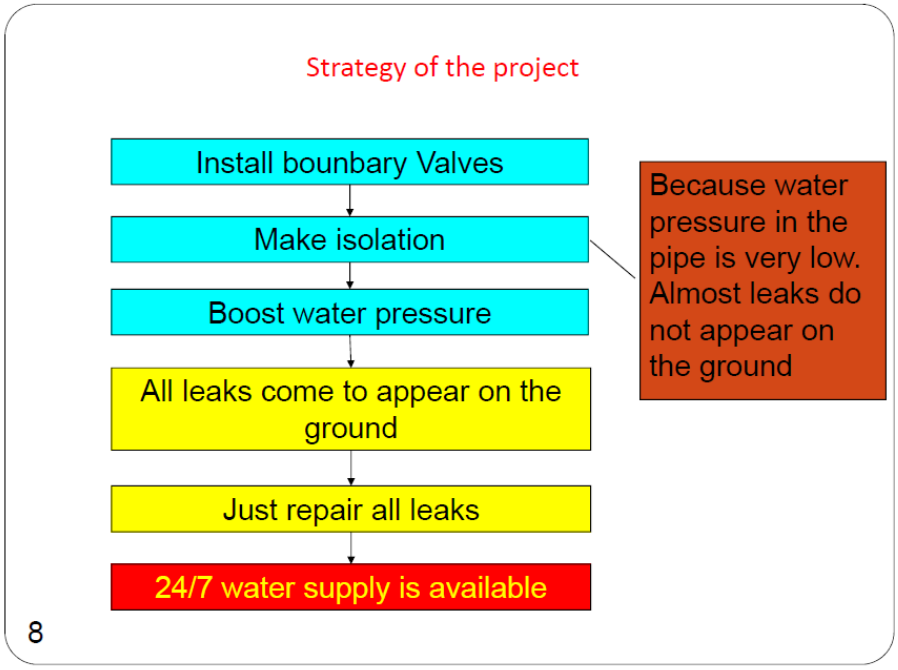


Figure 4-15 Strategy of Project

For the next step, DNSA faces the following challenges: leakage control detection, establishing water distribution network modeling, water meter installation, repairing leakage, dealing with illegal connections, rehabilitation of old pipes, advocacy to citizens, and training staff.

In conclusion, DMA is necessary to control the water distribution system and to strictly enforce water laws related to illegal connections.

4.2 Group Discussion

The group discussion of Session1 was implemented by the groups and themes as follows. The detailed records of each group discussion are attached at the end of this report as an annex.

Table 4-1 Groups in the Session 1

	Group 1A	Group 1B	Group 1C
Venue	8th Floor 802	8th Floor 805	8th Floor 803
Facilitators	Main Facilitator: Ms. Lokuliyanage Mangalika (MCPWS, Sri Lanka) Assistant Facilitator: Mr. Takayuki Sawai (JWWA, Japan)	Main Facilitator: H.E. Dr. Sim Sitha (Phnom Penh Water Supply Authority (PPWSA), Cambodia) Assistant Facilitator: Mr. Ikuo Mitake (JWWA, Japan)	Main Facilitator: Dr. Rachel M. Beja (COWD) Assistant Facilitator: Mr. Takayuki Konishi (Yokohama Waterworks Bureau, Japan)
Discussion Theme	The Roles of Regulators to Supply Safe Water to All People	Safe Water Supply to the Low-Income Households and Vulnerable People	Customer Service Improvement: 24/7, Water Quality, and Water Pressure, etc.
Grouping Reason	They are from Ministries or nationwide associations. For Waterworks, members at the supervisory level are divided into this group.	They are from Waterworks not involved in 1A that have already carried out water supply expansion or are faced with an expansion problem.	They are from Waterworks not involved in 1A that are focusing on or going to improve their services, or are faced with an imbalance between water quantity and quality.
Members	● Mr. Chen Seng Heang MIH (Cambodia) ● Mr. Pok Chann MIH (Cambodia) ● Ms. Meike Kencana Wulan Cipta Karya (Indonesia) ● Mr. Kusmayadi Rudy PERPAMSI (Indonesia) ● Mr. Virabouth Noupheuak MPWT (Lao PDR) ● Ms. Hlaing Maw Oo YCDC (Myanmar) ● Mr. Sunanthapongsak Somboon, MWA (Thailand)	● Engr. Fazlullah Abul Khair Mohammed, CWASA (Bangladesh) ● Engr. Abdullah Mohammad KWASA (Bangladesh) ● H.E. Khut Vuthiarith SRWSA (Cambodia) ● Mr. Nath Tushar Giri BWSSB (India) ● Mr. Vijayakrishnan Arun Roy, CMWSSB (India) ● Mr. Sinthepphavong Khampasith, NPKH (Lao PDR) ● Mr. Vannarath Viengthouay NPNL (Lao PDR) ● Mr. Philavong Ladda, NPLP (Lao PDR) ● Mr. Aung San Win YCDC (Myanmar) ● Ms. Khin May Htay MCDC (Myanmar) ● Ms. Lucas C. Yolanda Maynilad (Philippines)	● Mr. Barce Mercedes Simarmata PAMJAYA (Indonesia) ● Dr. Prasad Bhupendra NWSC (Nepal) ● Mr. Khan Adnan Nisar WASA-F (Pakistan) ● Mr. Mazhar Muhammad Naveed WASA-L (Pakistan) ● Eng. John Paul Delgado MCWD (Philippines) ● Mr. Sumanasekera Deepthi Upul NWSDB (Sri Lanka) ● Mr. Xavier Pereira Francisco DNSA (Timor-Leste) ● Mr. Ho Minh Nam DAWACO (Viet Nam) ● Mr. Truong Cong Han HueWACO (Viet Nam) ● Mr. Nguyen Van Du SAWACO (Viet Nam)

Figure 4-16 Group1A Left Photo: Assistant, Mr. Sawai, Right Photo: Group discussion appearance

Figure 4-17 Group1B Left Photo: Main facilitator, H.E. Dr. Sim Sitha (middle) and Assistant, Mr. Mitake (right), Right Photo: Group discussion appearance

Figure 4-18 Group1C Left Photo: Main facilitator, Dr. Rachel M. Beja (middle), Assistant, Mr. Konishi (right), Right Photo: Group discussion appearance

4.3 Q&A and Feedback

4.3.1 Group 1A: The Roles of Regulators to Supply Safe Water to All the People ~The roles of regulators would include sector development plans, master plans, business plan, and long-term visions~, ~All the people would include people in urban & provincial area low income households~

Ms. Lokuliyanage Mangalika (MCPWS, Sri Lanka), a main facilitator of Group 1A, reported the results of the discussion. The discussion was made based on 1) as regulatory agencies, it is important to supply water to vulnerable people and people living in geographically isolated areas, formulate new policies and commit to them, and prepare mid/long term plans including licensure systems for water utilities, 2) water tariffs should be reasonable and affordable, 3) standards on water quality, quantity, 24/7, piping and water safety plans should be formulated, 4) customer management should be made. In the discussion, following items were mainly discussed:

- Formulation of mid/long term plans and utilization of PIs
- Water supply to remote areas
- Formulation and implementation of water safety plans
- Preparing a legal framework, and the importance of enforcing existing rules and regulations
- Capacity building of water utilities
- Watershed management
- Shortage of budget.

Based on the discussion above, a summary was made as following:

1) As regulatory agencies, the governments should formulate regulations, and ensure that the water utilities enforce them properly, including the existing regulations and rules to achieve a sustainable water supply,

2) The governments should support the water utilities to formulate and implement environmentally friendly and financially reasonable master plans and mid/long term plans,

3) The governments should implement a plan to monitor the activities of water utilities.

(Comments from Dr. Asami, a main moderator)

Though it was a great theme for the discussions, the visions, policies, plans and evaluation of PIs are also important to manage water utilities. The importance of disseminating these things to the stakeholders and convincing them to make a commitment to follow them were discussed.

4.3.2 Group 1B: Safe Water Supply to the Low-Income Households and Vulnerable People

A main facilitator of Group 1B, H.E. Dr. Sim Sitha (PPWSA, Cambodia), reported there were many opinions, but they agreed that it was not easy to supply water to low-income households and people living in remote areas. This is mainly because there are many stakeholders and many financial issues including water tariffs. He talked about the following five points as a summary:

1) It is necessary to involve the community. NGOs should also be involved.

2) Commitment and policies are important and the support from third parties is necessary.

3) It is important that sound financial management be achieved, such as eliminating gaps between revenue and expenditure,

4) Access to water is a human right. All people should have equal access to water.

5) As described in SDGs, we have to think about "sustainable water for all."

(Comments from Dr. Asami, a main moderator)

Involvement of stakeholders, water tariffs and sustainability were discussed. Efforts made earlier in Japan were also introduced. The important concept of supplying water to everyone was talked about.

4.3.3 Group 1C: Customer Service Improvement: 24/7, Water Quality, and Water Pressure, etc.

Facilitator of Group 1C, Dr. Rachel M. Beja (COWD, the Philippines) reported the following three things as main points of the discussion:

1) Common complaints, such as: intermittent or not continuous or not 24/7 water availability or supply due to inadequate pressure or lack of supply or simply due to NRW; alleged erroneous billing and/or meter reading; delayed action or response by water utilities; water

quality issues such as turbidity, impurities; inadequate chlorine residuals or even absence of chlorine residual.

2) Common challenges of water utilities, such as: power outages; salt water intrusion into water sources or salinity issues aggravated by climate change; turbidity at water sources; collection from customers; no funding subsidy from the governments (some have a subsidy such as up to 60% of the cost while others really have none); no support from governments for water tariff adjustments; high concentration of minerals at water sources (nitrates, etc.).

3) Steps and actions or efforts undertaken by the Water Utilities to improve customer services thereby meeting customer satisfaction considering the above, such as: changing consumer to customers; community Involvement & recognition of Performing Employees; setting PIs for customer satisfaction; setting customer center; securing transparency of public contract with customers; conducting customer satisfaction survey; focusing on pilot Areas for 24-hour efforts; selling bottled water; use of advance technology; formulation and implementation of the WSPs; efforts on NRW reduction.

As a summary, the following were reported.

1) Despite limitations and huge challenges, water utilities have to take the next steps in improving customer service, something that every utility can follow.

2) Customers' most important need is a water service that provides safe and adequate water.

3) Water utilities have been able to do and implement these initiatives with great help and assistance and learning from partners like JICA, which means, continued partnerships will greatly help to improve water services delivery.

(Comments from Dr. Asami, a main moderator)

A wide range of topics on water supply service was covered in group 1C. Customer service centers are important, water quality is a common issue for most water utilities, transparent/ active relations/commitment to the service/WSP and NRW reduction were discussed.

4.3.4 Comments from the participants

(Comments from the participants)

- Though it is not easy to supply water to poor people, they need water. On the other hand, water utilities need revenue. The number of poor people in big cities is great and they should not be denied access to water. Maynilad is taking interesting measures to tackle this issue. There are so many challenges and even though NGOs are working on them, their efforts are not sustainable. Maybe there are just too many ideas to address. Involvement is one of the most important ways to deal with the myriad number of problems. (Ms. Yamamoto, advisor to the forum)

- Maynilad is cooperating with poor people and buying their products at Christmas, family events, and as gifts. In this way, we are helping to support them. (Ms. LUCAS C Yolanda, Maynilad)
- In Nepal, we extended a pipe to poor, with the Municipality's cooperation. Poor people only pay a monthly charge. An NGO is involved to collect the money. (Dr. Prasad Bhupendra, NWSC)
- Indonesia has so many islands. Service to remote areas is quite difficult. Urban poor is the focus of water utilities, but remote areas should also be considered. (Ms. Meike Kencanawulan, Cipta Karya)
- For suburban areas in Yangon, harvesting rainwater is possible. We dug wells during the dry season as a countermeasure against drought. A piped system does not cover such areas. A more innovative method based on the conventional one is needed. (Ms. Hlaing Maw Oo, YCDC)
- In Sri Lanka, connection costs 100 USD. This amount can be paid separately from the monthly charge in order to encourage poor people to make individual connections. (Mr. Sumanasekera Deepthi UPUL, NWSDB)
- As Prof. Takizawa explains, the number of poor people is increasing in urban areas. Urbanization is occurring very rapidly but investment capacity cannot keep pace, mainly because of the large numbers of people moving in from rural areas. As described in SDGs, "universal and equitable access to safe and affordable water for all" is what every government should commit to. Even though we only have 13 years left until 2030, just look at the last 13 years of progress. In Cambodia, 60 million USD was spent to newly connect 26,000 families. Actually knowing what we are talking about in these discussions is very important and we also have to do our best to solve these problems. In addition, water utilities should understand what the rules and regulations are. To accomplish this, strong regulators are necessary. The government's role is large. In addition, the biggest constraint is connection costs, not water tariffs. Poor people cannot pay the entire amount at one time. A subsidy or partial payment should be considered. (H.E. Ek Sonn Chan, MIH)
- Just building a piped distribution network is not enough; water resources should also be considered. Innovative ways are important. Peri-urban areas are developing rapidly. Due to this lifestyles are also changing, such as using washing machines and baths. These changes lead to more water use. Discovering more water resources to deal with the lack of them is more important than financing. It is a big challenge to solve the big discrepancy between the available amount of water supply and water demand. This is the key for the most Asian countries for sustainability and to achieve SDGs. Inequality for supply hours is also an issue. Some get 24/7 water supply and never complain while others have only intermittent and complain, even though they are living in the same city. (Prof. Takizawa, the University of Tokyo)
- Most of the customers in developing countries do not complain about tariffs. Only politicians bring up this issue. However, it is necessary to increase water tariffs to improve

services. In Cambodia, we there are many types of problems, not only financing, but also a lack of technologies. Therefore, governments should consider two key points to improve the situation: 1) Budget and 2) Technologies, should be considered to improve services. (H.E. Ek Sonn Chan, MIH)

Chapter 5 Session 2 “Finance”

Objective of Session 2
Water tariffs are a crucial point for the healthy water supply management. However, it is difficult to revise water tariffs because of political issues. Public financial resources are not sufficient to expand and renovate facilities, and more and more PPP projects have been implemented. It is important for regulators and utilities to develop the ability to properly control private sectors. In addition, cost reduction and energy saving are also significant ways to operate a sustainable water supply. In order to secure financial resources, in this session, financing from outside of utilities, cost reduction, and water tariffs are discussed.

Explanation of aims from moderators

Mr. Masao Shibuya, Japan Waterworks Association, introduced the aims of session 2 above.

Figure 5-1 Mr. Shibuya, Main moderator (right), Ms. Honda, Assistant moderator (left)

5.1 Presentations

5.1.1 Review after the 3rd forum & the COWD’s efforts to fund the implementation of its NRW reduction program (Dr. Rachel M. Beja, COWD, Philippines)

COWD is a water utility with 500 districts and 93,000 connections. One of the big challenges of COWD is NRW. Dr. Rachel visited Japan for the first time for a JICA training program in 2013, and participated in the 3rd Executive Forum in 2014. Having experienced the 3rd Executive Forum, Dr. Rachel recognized that leaders are the heart of the Human Resource Development (hereinafter, HRD). With able leaders, financial sustainability and efficiency are improved and ensured. However, leaders cannot do everything by themselves. Therefore, leaders should involve all surrounding people, organizations and governments.

After the 3rd Executive Forum, for the purpose of learning good practices, COWD visited PPWSA. Having experienced the visit, in order to reduce NRW, COWD learned the importance of national and international cooperation, review of specifications and materials, DMA and its monitoring, and community education and involvement. Furthermore, COWD recognized that replacement of old pipes is very expensive.

Because COWD still had a high NRW rate before, they planned a NRW projection, which aims to reduce NRW from 50%. In order to achieve this target, more than 30 million USD of investment over a total of fifteen years will possibly be needed.

Figure 5-2 Investment needed for NRW reduction

To know technical capacities is one of the important issues. Collection of information and capacity building are also very expensive. These additional costs are also key issues to provide sustainable water services.

Other challenges include how to get the funding necessary to invest. To conduct a Feasibility Study (F/S), huge investment is needed. COWD submitted an F/S for the project, which costed millions, was conducted by JICA in 2014. COWD have been approved but still waiting for the loan. For the F/S, COWD developed a road map for NRW reduction as well. COWD maintained its efforts to be funded by USAID, the Coca Cola Foundation, and other donors.

The lesson learned is that you should look at the achievements you've made so far, not just look at how far you still have to go. You have partners, collaborators, etc. Alliances, collaborators, and cooperation with these stakeholders are also important. To obtain the support of these partners, it is necessary to explain the value of their investment quantitatively using data such as future projections. A better outcome can be achieved by achieving NRW reduction.

5.1.2 Lessons learned of Jakarta water supply concession (Mr. Barce M. Simarmata, PAMJAYA, Indonesia)

In 1998, there was a global trend of privatization and PAMJAYA was one of them. PAMJAYA had a concession agreement of 25 years with two private companies: PALYJA is on the west side and AETRA in on the east side. The concession agreement was expected to solve the problems of low service coverage areas, high NRW, demand for sustainable infrastructure, insufficient revenue from customers and weak financial capacity.

The concession agreement included full transfer of PAMJAYA's responsibility for water services, including water treatment, water distribution to customers, and billing and correction. Based on the concession agreement, PAMJAYA sent its staff to the private companies. Furthermore, PAMJAYA itself monitored the performance levels of private companies, including service levels and technical achievements. A regulatory body was established to mediate any disputes between PAMJAYA and the private companies. At the end of the concession agreement, all the assets and systems will be transferred back to PAMJAYA.

Figure 5-3 shows the structure of the concession. PAMJAYA and/or the private companies propose tariff increases. Figure 5-4 expresses the concession service area. The service area of PALYJA is shown in green and has 403,614 connections, and the service area of AETRA is shown in red and has 435,777 connections.

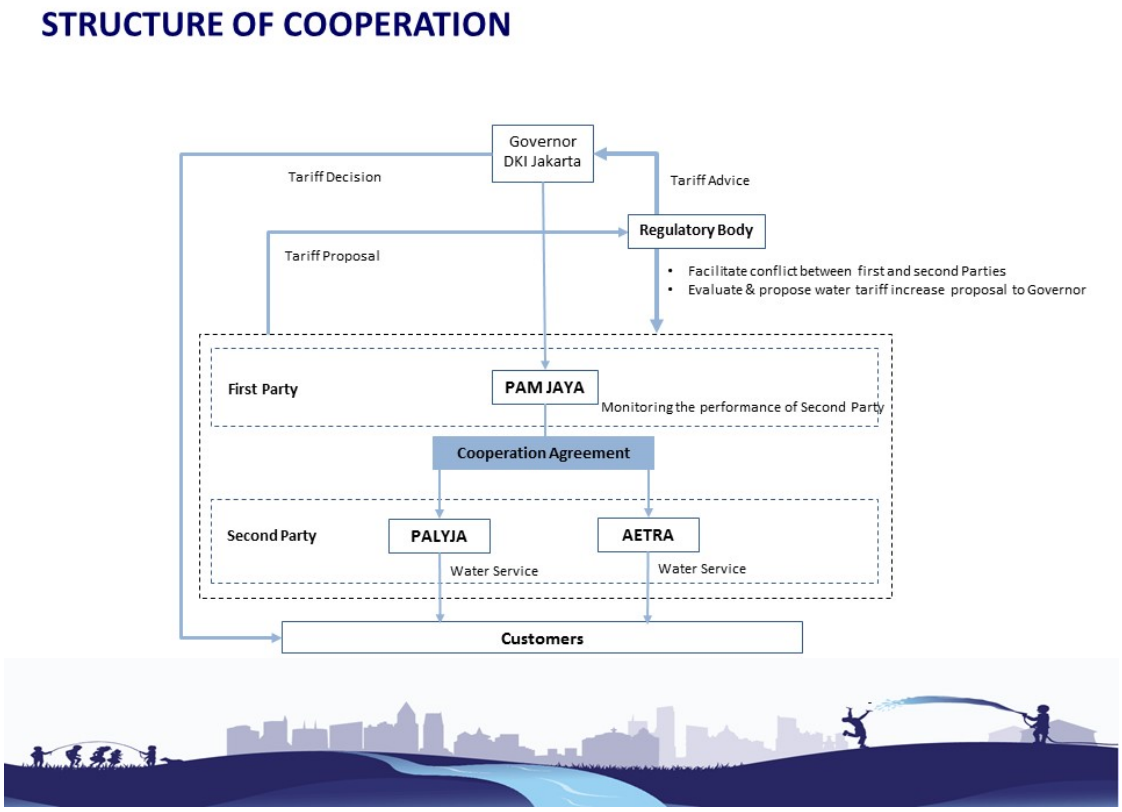


Figure 5-3 Structure of Cooperation

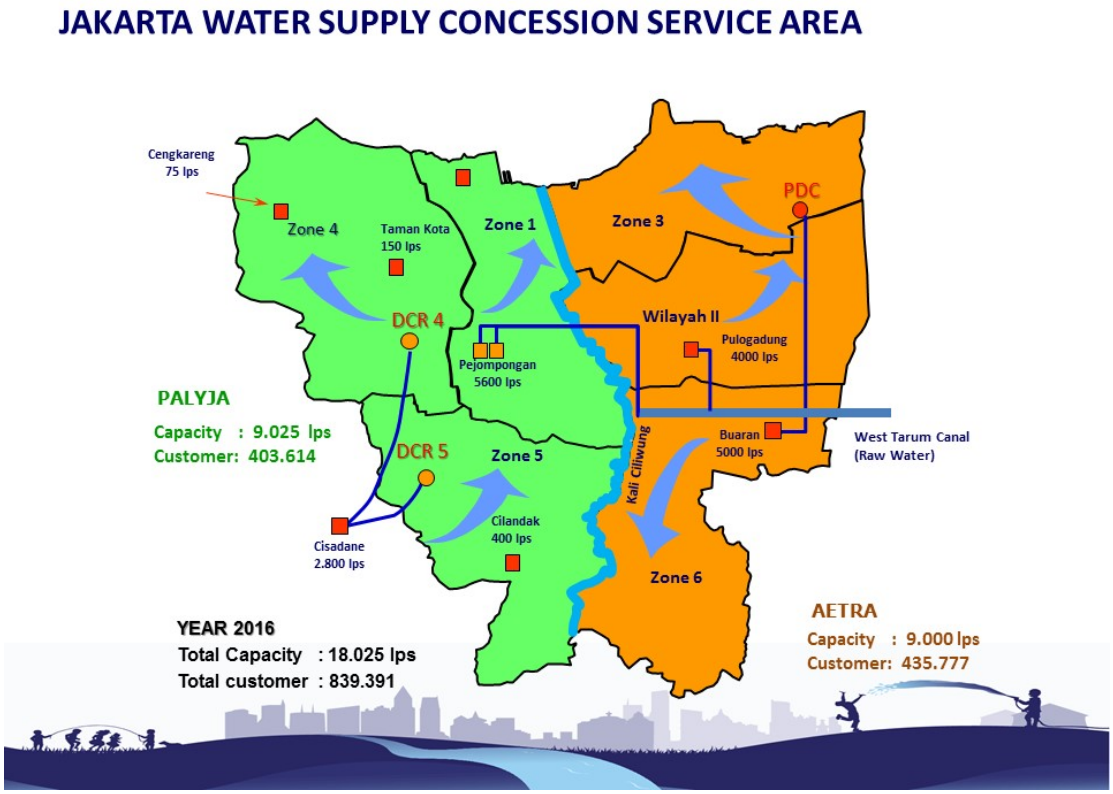


Figure 5-4 Jakarta Water Supply Concession Service Area

PALYJA achievement includes an increment in connections from 201,000 to 404,769; an increment in volume sold from 89 million cubic meters to 160.3 million cubic meters; a reduction of NRW from 59.4% to 39.3%; an increment of clean water access from 32% to 73%; 5,495 km pipe network in total; and an increment in service coverage ratio from 32% to 60%. AETRA achievement includes an increment in connections from 268,000 to 426,088; an increment of volume sold from 104.5 million cubic meters to 170.8 million cubic meters; a reduction of NRW from 58.4% to 41.4%; an increment of clean water access from 47% to 60%; 6,219 km pipe network in total; and an increment in service coverage ratio from 50% to 68%.

The lesson learned is that the concession in Jakarta contributed to improvement of the water supply services such as an increment in service coverage ratio from 40% to 62%, a reduction of NRW from 58% to 42%, an improvement in customer service levels, investment in new infrastructure and renovation, completed payment of PAMJAYA's loan to the Ministry of Finance, and transferred technology and knowledge to local staff.

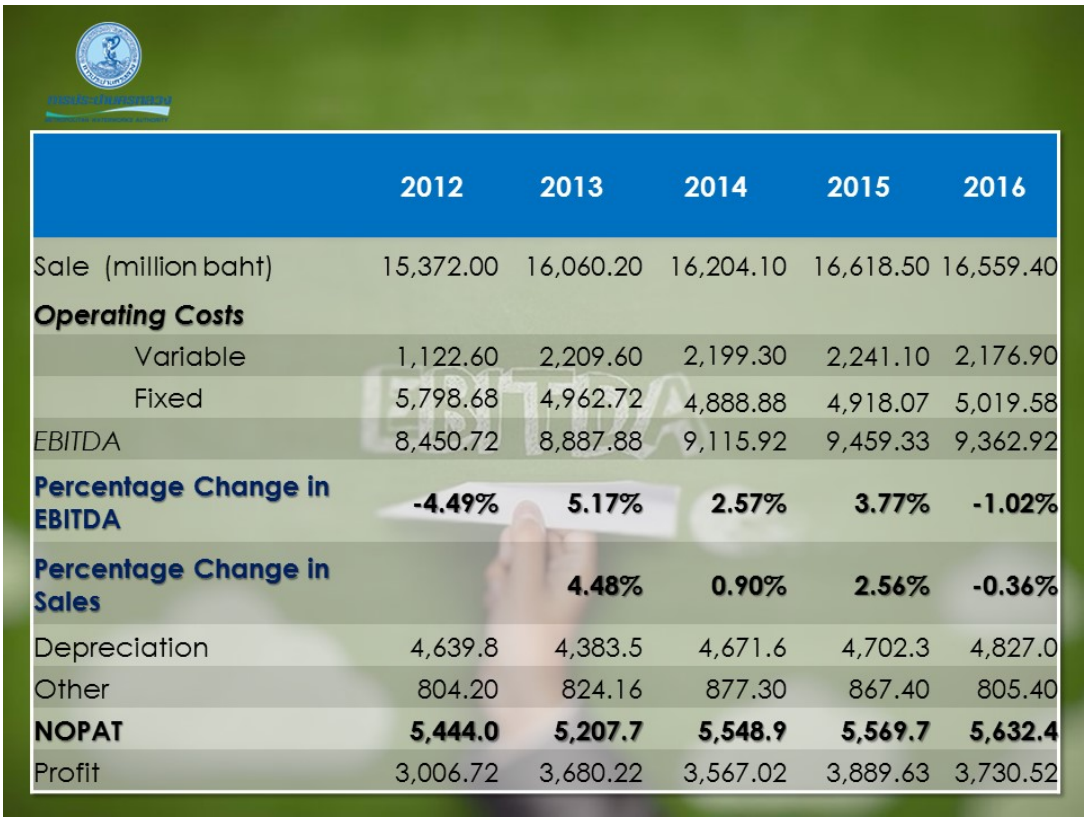
A proposal for a tariff increment has been being postponed since 2007, which causes a reduction in capital expenditure. Therefore, even though 6 years still remains in the concession agreement, the speed of development speed is slowing down. In order to accelerate the development of water supply infrastructure in Jakarta, PAMJAYA is renegotiating its existing contract agreement to comply with new regulations which only allow private sectors to participate in production facilities.

Coalition of Community Refusing Jakarta Water Privatization (KMMSAJ), which opposed the water privatization, has sent an appeal for cancellation of this concession to the Supreme Court and is waiting for its final decision. The trend of full concessions is over. Water is not a private resource but a public one in Indonesia, hence it should be secured by regulations based on the constitution. Water resource management is the responsibility of the Indonesian Government.

5.1.3 Challenging management for sustainable water supply (Mr. Somboon Sunanthapongsak, MWA, Thailand)

MWA is responsible for the water supply of Bangkok and 2 provinces (Nonthaburi and Samutprakan) covering 3,195 km^2 in Thailand. They have 2.2 million customer connections.

Figure 5-5 shows the changes in its financial situation. EBITDA means earnings before interest, taxes, depreciation and amortization interests. The table shows variable costs, fixed costs, and total costs, which shows that total costs account for nine times the variable costs.



	2012	2013	2014	2015	2016
Sale (million baht)	15,372.00	16,060.20	16,204.10	16,618.50	16,559.40
Operating Costs					
Variable	1,122.60	2,209.60	2,199.30	2,241.10	2,176.90
Fixed	5,798.68	4,962.72	4,888.88	4,918.07	5,019.58
EBITDA	8,450.72	8,887.88	9,115.92	9,459.33	9,362.92
Percentage Change in EBITDA	**-4.49%**	**5.17%**	**2.57%**	**3.77%**	**-1.02%**
Percentage Change in Sales		**4.48%**	**0.90%**	**2.56%**	**-0.36%**
Depreciation	4,639.8	4,383.5	4,671.6	4,702.3	4,827.0
Other	804.20	824.16	877.30	867.40	805.40
NOPAT	**5,444.0**	**5,207.7**	**5,548.9**	**5,569.7**	**5,632.4**
Profit	3,006.72	3,680.22	3,567.02	3,889.63	3,730.52

Figure 5-5 Changes in the Financial Situation

Water tariffs of MWA have not changed since 1999. The reason MWA could survive is because it did not implement long term investment, but appropriated investments according to the necessity and size of the projects being implemented. In addition, MWA analyzed revenue and expenditures, formulated investment plans, and wisely managed their implementation.

Operating leverage is key. Managers need to understand that operating leverage is a financial concept related to business risk, not just a theory. **Figure** 5-6 shows the effect of operating

leverage. The figure contains blue shaded and yellow shaded areas where the greater angle indicates more risk. Operating leverage is indicative of fixed costs. The higher the fixed costs are the higher the Operating leverage is. In some cases, lower variable costs can still indicate high risk. However, it is also important to keep in mind that profits increase with sales.

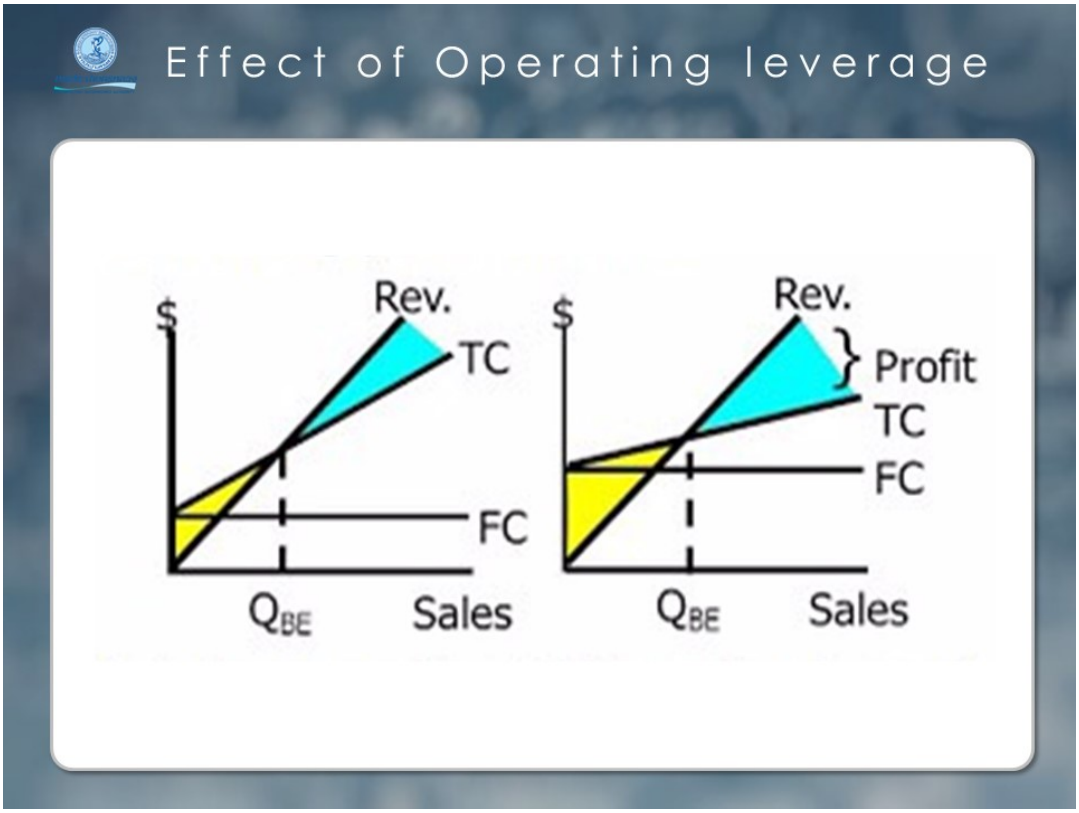


Figure 5-6 Effect of Operating Leverage

Since the fixed cost is high and the variable cost is low, the Break Even Point of MWA is described like this, which concludes that MWA has “Economies of scale.” However, this does not guarantee permanent profit. Depreciation reduces profits and increases variable costs by investing “Project 9.” Since the fixed cost of MWA is high, MWA tried to outsource some of its services to adjust the variable costs, and control expenditures with the Ministry of finance and Department of Finance. Therefore, the management teams should understand the cost structure and financial analysis, and disseminate the results to the staff properly.

5.1.4 Energy Savings at PPWSA (Dr. Sim Sitha, PPWSA, Cambodia)

For the purpose of achieving financial sustainability and cost reduction, variable cost is one of the important factors. Originally, PPWSA was established by a French company in 1895. However, the water supply system had fallen to its worse situation in 1979 due to the civil war. After the civil war, PPWSA renovated its water facilities. At that time, PPWSA experienced its worst conditions including an output of only 63,000 cubic meters of water per day, countless illegal connections, 72% of NRW and 50% of the collection rate.

PPWSA has had external assistance from international organizations including Japan, France and the World Bank from 1992 to 2016.

The coverage area in 1993 was one-tenth of the current area. However, the coverage area gradually increased, and the current pipeline now counts for more than 2,600km in total. Every year, more than 12,000 connections are newly connected. Thus, the coverage rate has now increased by more than 85%.

Figure below shows the condition of water demand and supply. In Phnom Penh, water demand has been increasing, yet PPWSA's total capacity in 2016 was just 560,000 cubic meters per day, which means demand and supply are not equal. PPWSA has expanded its coverage and connections and more than 1,000,000 cubic meters per day will be supplied by 2030. PPWSA currently has five water treatment plants.

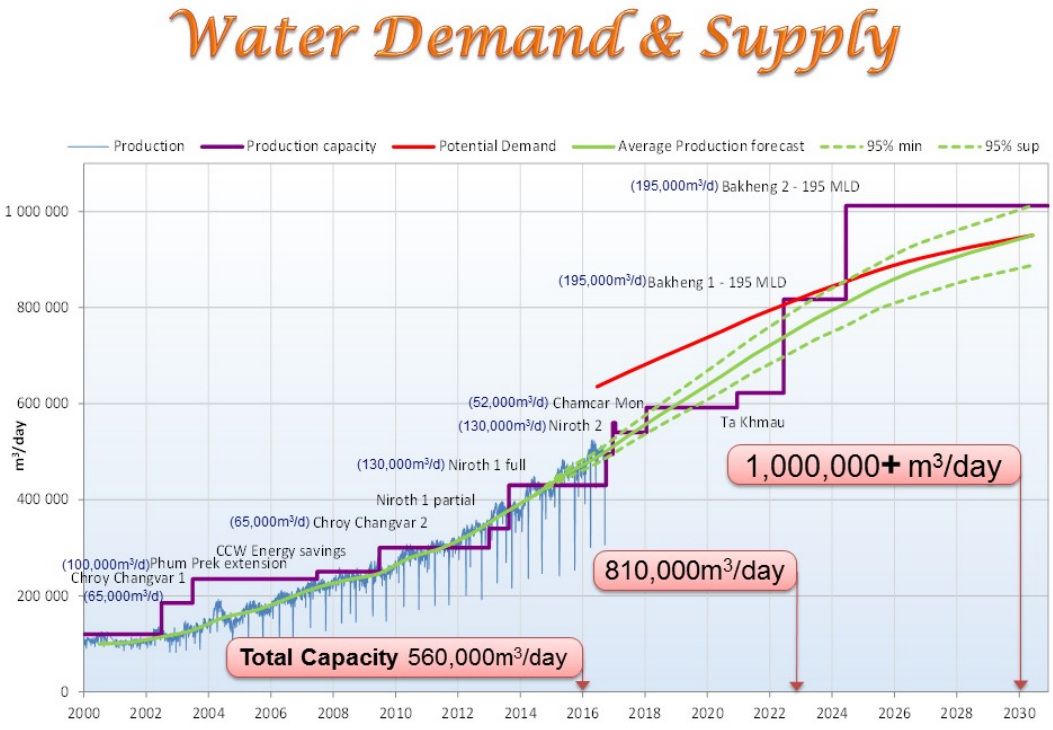


Figure 5-7 Condition of Water Demand and Supply

PPWSA introduced clean energy technologies. A solar power generation system was installed that resulted in more than 1,000MWh/year of energy savings and 590 tons/year of CO_2 reduction. Replacement of existing pumps with variable speed distribution pumps resulted in 1,000Mwh/year of energy savings and 550 tons/year of CO_2 reduction. Replacement of operation methods of all raw water pumps with Proportion Integration Derivation (PID) resulted in 477MWh/year of energy savings and 260 tons/year of CO_2 reduction. PPWSA also replaced light bulbs and fluorescent lamps with LED lamps, which resulted in 15MWh/year of energy savings and 8 tons/year of CO_2 reduction. Currently, PPWSA has replaced existing distribution pumps with high-efficient

technology using the Joint Credit Mechanism (JCM) scheme. Half of the budget is provided by Japan and the remaining half by PPWSA. The expected results include energy savings of 650MWh per year and a CO_2 reduction of 470 tons per year.

As a result of these energy saving efforts from 2006 to 2016, PPWSA saved energy of 2,582 MWh and reduced CO_2 by about 1,410 tons per year totally. In monetary terms, this reduction accounts a savings of approximately 460,000USD annually. Figure 5-8 shows the detailed financial results. A dividend was allotted, and dividend payout ratio increased to 28.24% in 2016 from only 7.0% in 2012.

PPWSA will have future projects to install solar systems in other water treatment plants: CCW WTP expects to save energy of 1,680 MWh per year, Nirodth WTP expects to save energy of 7,520 MWh per year and Bakheng WTP expects to save energy of 1,240 MWh per year. In total, PPWSA aims for extra energy savings of 10,440Mwh per year and a reduction in CO_2 of approximately 5,655 tons per year.

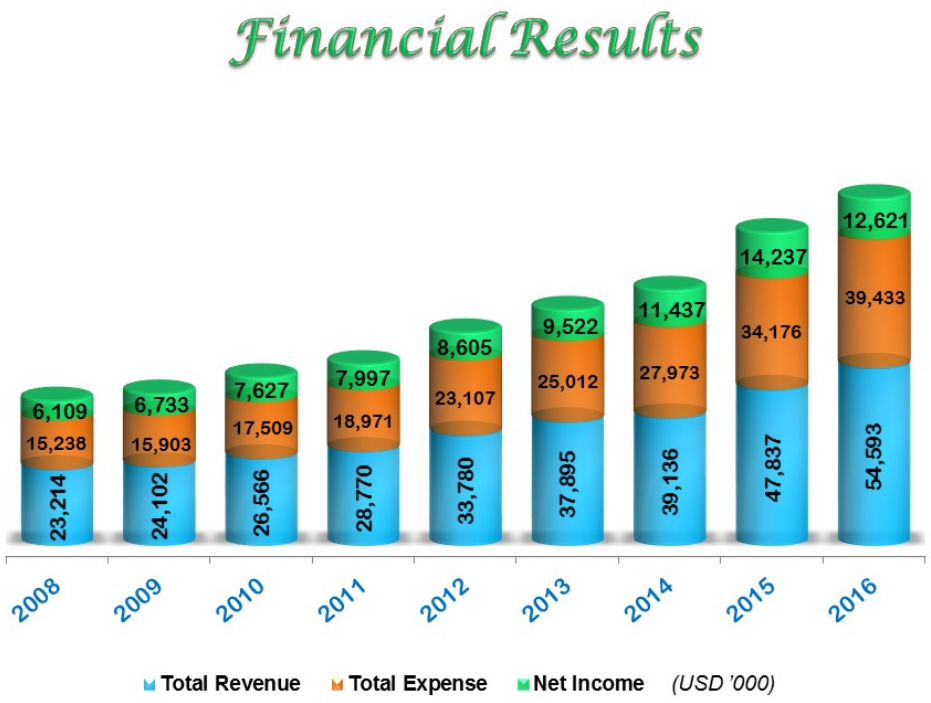


Figure 5-8 Financial Results

In conclusion, energy savings will benefit in the long run even though it costs a lot initially. Furthermore, new technology is the key to achieving financial sustainability and reducing CO_2 emissions.

5.1.5 Water safety plan and water tariff role (Mr. Truong Cong Han, HueWACO, Viet Nam)

HueWACO is a water utility established in 1909 with 24,000 connections in total and 550 employees. Figure 5-9 shows the process from 2003 to implementing a Water Safety Plan (WSP). In 2003, HueWACO conducted a pilot project in Viet Nam. WHO provided HueWACO with a WSP in 2006. From 2008 to 2009, HueWACO had a JICA project. In 2009, HueWACO declared its water to be safe throughout the province. Under the WSP, HueWACO achieved its goal of "supplying safe and delicious water."

The water quality standards of HueWACO are stricter than those of national standards, which were achieved with the support of JICA and the Yokohama Waterworks Bureau. Additionally, HueWACO achieved a 24/7 water supply, hence its 30 WTPs have continuously supplied safe and delicious water 24 hours a day 365 days a year. From 2006 until 2016, the number of connections increased by 3.2 times from 75,000 to 240,000, and the provincial service coverage increased from 37% to 83%. Because of an improvement in water quality, meters last longer than before. As a result, the longer meter replacement period of 10 years (previously 5 years) resulted in a cost reduction of 5 million US dollars as well.

Nowadays, tourists and students come to visit WTPs. Furthermore, fifty public drinking water taps were installed in schools, hospitals, and airports, etc.

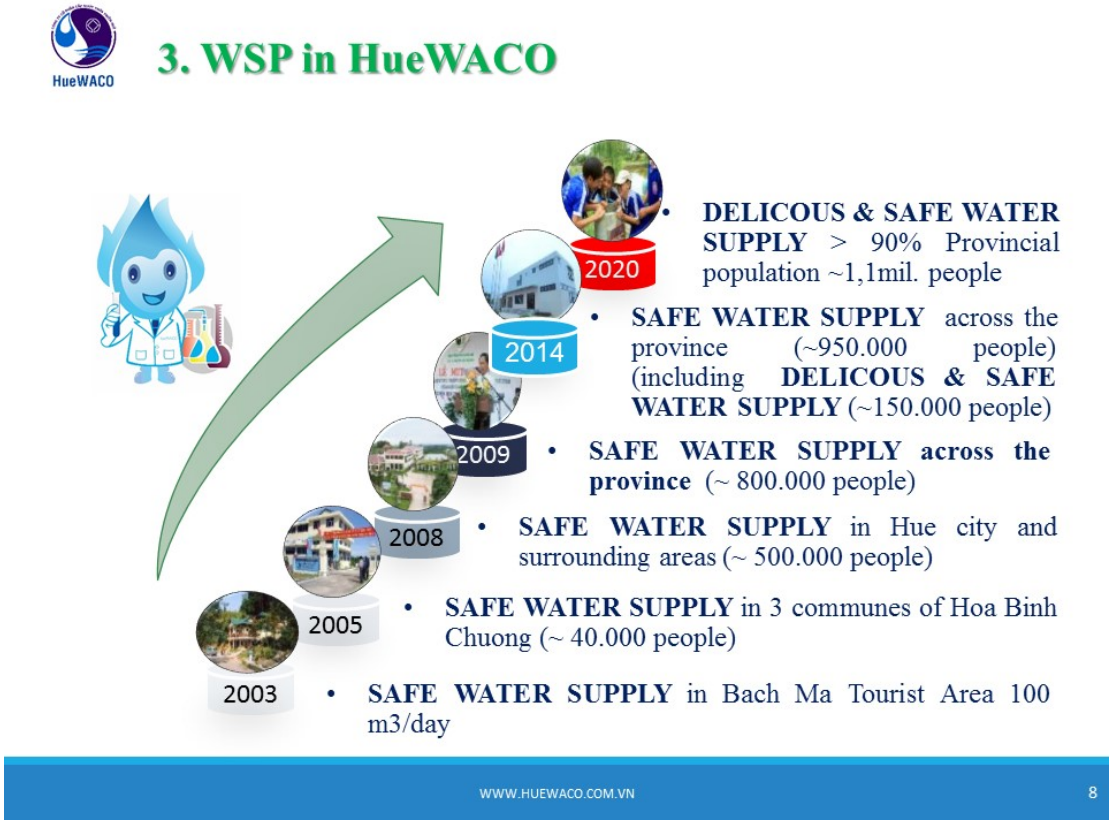


Figure 5-9 Implementation Process of Water Safety Plan

There is a relationship between water tariffs and the WSP. Based on WSP, HueWACO achieved an improvement in water quality, pressure, a continuous water supply and customer services. These achievements resulted in a reduction of waterborne diseases, improvement of service coverage and an improvement in collection ratios.

In Viet Nam, water tariffs are much lower than production costs so the government has to pay the difference. The higher the water tariff is, the better the water quality becomes. Therefore, such solutions as GIS, smart management and operation of the system, and a clean energy system including hydro power and solar power are important.

Figure 5-10 shows the water tariffs of HueWACO from 2009 to 2018. HueWACO discounts its water tariff by 20% for the poor so the water tariff for people in rural areas is approximately one third of those for urban areas. The coverage rate in rural areas increased to 83% in 2005. The water volume used in rural areas is just one third of what is used in urban areas, so accordingly the water tariff is reduced by 20%. Big cities like Ho Chi Minh City have a very high density so they have larger capacities and connections. Currently, HueWACO has 5,000km pipes in total, which is the result of a great effort on the part of HueWACO to expand its water supply area. HueWACO is explains the reasons why it is necessary to raise water tariffs every time it increases them. The improvement of services HueWACO achieved supports this water tariff revision. HueWACO recognizes that it is affordable for citizens to pay its water tariff since it only comprises about 3% of household income.

As HueWACO receives a sufficient amount of customers reliability, its brand accordingly becomes more significantly reliable. HueWACO continuously supplies water 24/7 water and maintains high quality and proper pressure. Furthermore, HueWACO established a customer care center and appropriately collects tariffs. HueWACO realized that the role of leaders is essential in declaring the water supply to be safe. It is also important to get support from the local government as well as the consensus of customers and international cooperation institutions like JICA.

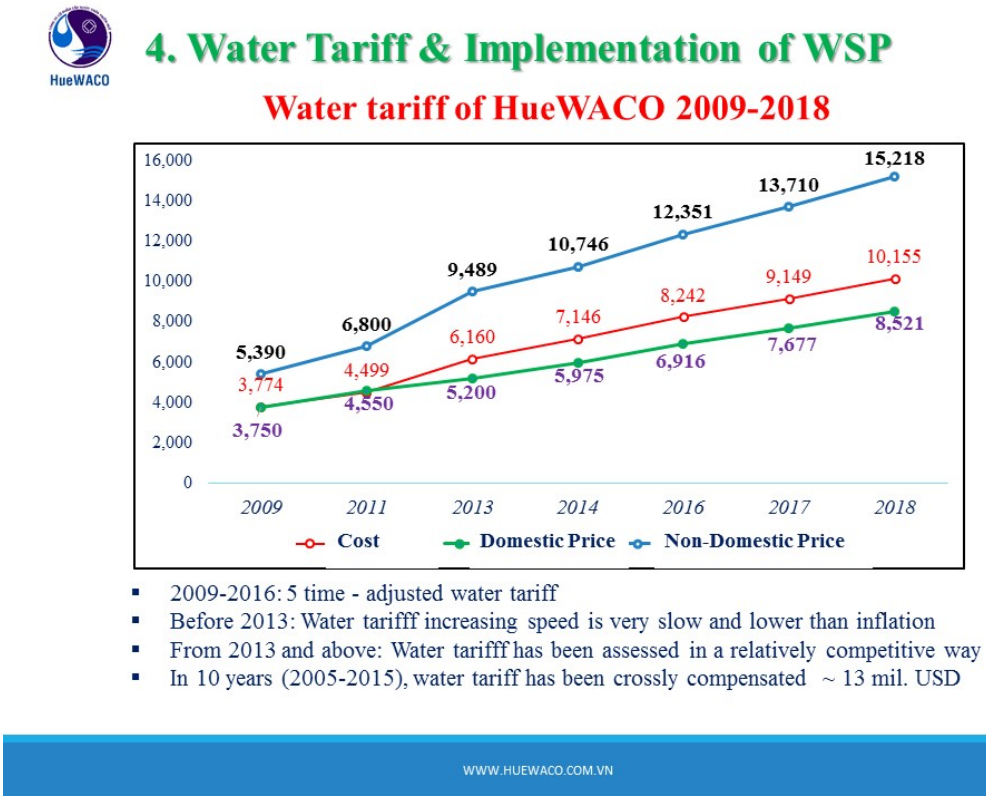


Figure 5-10 Water Tariff and Implementation of Water Safety Plan

5.1.6 Revision of Water Rates for Sustainable Business ~ Public relationship about water rate~ (Mr. Keitaro Chihara, Kyoto City Water and Sewerage Works Bureau, Japan)

Kyoto is a large city with a long history and has a population of 1,459,000. Kyoto City Water and Sewerage Works Bureau was established in 1912 and supplies 186.4 million cubic meters per year. Kyoto City Water and Sewerage Works Bureau has over 3,970 km of distribution pipes as well.

Most of the water facilities in Kyoto city were constructed during a period of high economic growth from the 1950s to 1970s. Therefore, updating its aging water infrastructure is a top priority. Also, Japan frequently experiences earthquakes so disaster prevention measures such as earthquake-resistant pipes are required. Kyoto City has had to revise its water rate for the following reasons: management of water and sewerage works in Japan is done based on an independent accounting system, to optimize its water business and strengthen its financial ability, and for future generations to enjoy healthy water conditions.

Kyoto City increased its water rate by 9.6 % in 2013. The details of the revision include a part of the expenditure for upgrading pipelines. Furthermore, the revision strives to balance the burden over succeeding generations, reflect the actual situation, and expand methods for payment in order to improve convenience for its customers.

It was difficult to gain customers' understanding for the tariff revision. As an effort to promote customers' understanding, Kyoto City established a committee that consisted of local people, professors, JWWA, an accountant, etc. The committee held meetings seven times over a one-year period and asked citizens to give their opinions and ask questions during the meetings. To inform citizens about the water tariff revision, Kyoto City Water and Sewerage Works Bureau made a leaflet as shown in the Figure below. In addition, posters, local TV programs, radio programs, newspapers, websites, and SNS were utilized. Furthermore, Kyoto City Water and Sewerage Works Bureau distributed the leaflet about the tariff revision to every household in the city. In designing the poster, to make it more appealing to citizens, Kyoto City Water and Sewerage Works Bureau tried to reduce the number of Japanese characters on the poster and use them effectively.

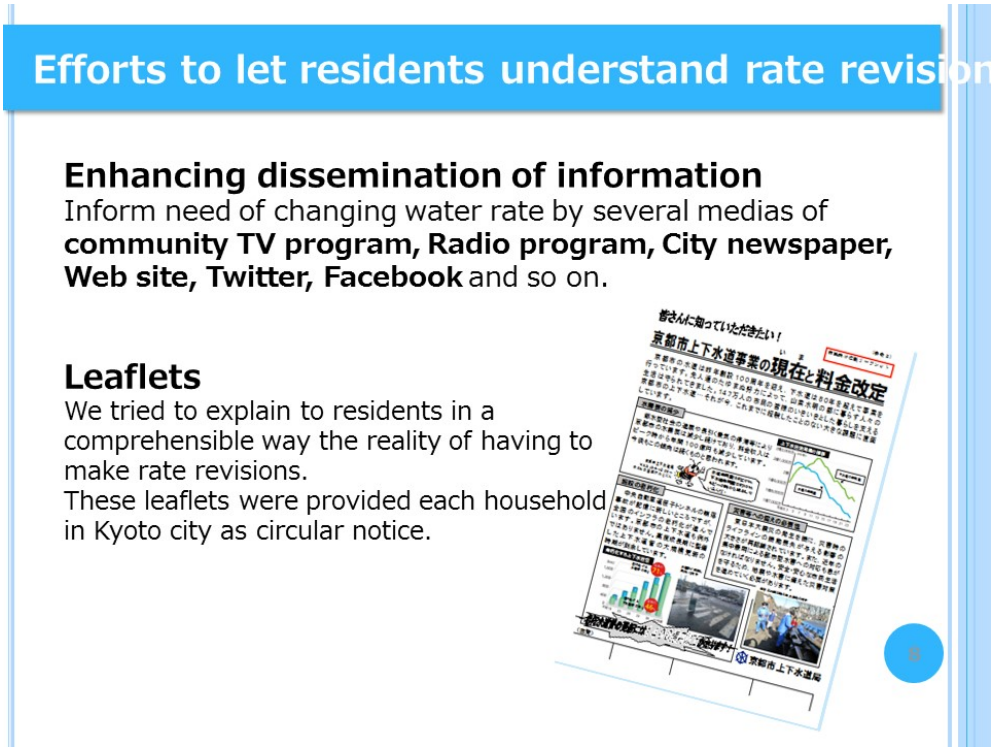


Figure 5-11 Efforts to Help Residents Understand the Rate Revision (Image of Leaflets)

Figure 5-12 Efforts to Help Residents Understand the Rate Revision (Image of Posters)

Lastly, since water tariffs are regulated by municipalities in Japan, it is necessary to revise city regulations to change the water tariff system. Accordingly, Kyoto City Water and Sewerage Works Bureau needs to explain about the necessity of the tariff revision to the city council. Communication between water utilities and customers is therefore essential for business to run smoothly. One of the important points is to explain not only about the water tariff revision but also future visions at the same time.

5.2 Group Discussion

Group discussions in session 2 were implemented based on the following groupings and themes. Detailed records of discussions are shown in the appendix in this report.

Table 5-1 Grouping for group discussion in session 2

	Group 2A	Group 2B	Group 2C
Venue	8th floor 802	8th floor 805 Simultaneous interpretation	8th floor 803
Facilitators	Main facilitator Ms. Meike Kencana Wulan Cipta Karya (Cipta Karya, Indonesia) Assistant facilitator Mr. Hirotaka Sato (TEC International Co., Ltd., Japan)	Main facilitator Dr. Bhupendra Prasad (NWSC, Nepal) Assistant facilitator Mr. Ryuji Ogata (JICA Expert to Nepal, Japan)	Main facilitator Ms. Yolanda C Lucas (Maynilad, Philippines) Assistant facilitator Mr. Katsumi Fujii (Yachiyo Engineering Co., Ltd., Japan)

	Group 2A	Group 2B	Group 2C
Discussion Theme	Collaboration with Private Sectors, Role of Regulators and Private Sectors, and Other Financial Sources	Saving Energy and Operation Cost Reduction	Water Tariffs
Grouping Reason	They are from Ministries and nationwide associations. For waterworks, members at the supervisory level and members who have experience working with private sector are divided into this group.	They are from Waterworks not involved in 2A that have carried out energy saving or are faced with an energy problem.	They are from Waterworks not involved in 2A that have already revised tariffs, are focusing on or going to revise them, or are having problems amending them.
Members	● Mr. Chen Seng Heang MIH (Cambodia) ● Mr. Pok Chann, MIH (Cambodia) ● Mr. Barce Mercedes, Simarmata, PAMJAYA (Indonesia) ● Mr. Kusmayadi Rudy PERPAMSI (Indonesia) ● Mr. Virabouth Noupheuak MPWT (Lao PDR) ● Mr. Philavong Ladda, NPLP (Lao PDR) ● Ms. Hlaing Maw Oo YCDC (Myanmar) ● Ms. Lokuliyanage Mangalika MCPWS (Sri Lanka) ● Mr. Sunanthapongsak Somboon MWA (Thailand)	● Engr. Fazlullah Abul Khair Mohammed, CWASA (Bangladesh) ● Engr. Abdullah Mohammad KWASA (Bangladesh) ● H.E. Khut Vuthiarith SRWSA (Cambodia) ● H.E. Dr. Sim Sitha PPWSA (Cambodia) ● Mr. Nath Tushar Giri BWSSB (India) ● Mr. Sinthepphavong Khampasith NPKH (Lao PDR) ● Mr. Aung San Win YCDC (Myanmar) ● Ms. Khin May Htay MCDC (Myanmar) ● Dr. Bhupendra Prasad KUKL (Nepal) ● Mr. Mazhar Muhammad Naveed, WASA-L (Pakistan) ● Mr. Xavier Pereira Francisco, DNSA (Timor-Leste)	● Mr. Vijayakrishnan Arun Roy CMWSSB (India) ● Mr. Vannarath Viengthouay NPNL (Lao PDR) ● Mr. Khan Adnan Nisar WASA-F (Pakistan) ● Eng. John Paul Delgado MCWD (Philippines) ● Dr. Rachel M. Beja COWD (Philippines) ● Mr. Sumanasekera Deepthi Upul NWSDB (Sri Lanka) ● Mr. Ho Minh Na DAWACO (Viet Nam) ● Mr. Truong Cong Han HueWACO (Viet Nam) ● Mr. Nguyen Van Du SAWACO (Viet Nam)

Figure 5-13 Group 2A Left Photo: Main facilitator Ms. Meike Kencana Wulan (left), Assistant facilitator Mr. Sato (right), Right Photo: Group discussion

Figure 5-14 Group 2B Left Photo: Main facilitator Dr. Bhupendra Prasad (Middle), Assistant facilitator Mr. Ogata (right), Left: Group discussion

Figure 5-15 Group 2C Left Photo: Main facilitator Ms. Yolanda C Lucas (left), Assistant facilitator Mr. Fujii (right), Right Photo: Group discussion

5.3 Q&A and Feedback

5.3.1 Group 2A: Collaboration with Private Sectors, Role of Regulators and Private Sectors, and Other Financial Sources

A main facilitator of Group 2A, Ms. MEIKE Kencanawulan (Cipta Karya, Indonesia) reported that the discussion was lively and great input was obtained. Discussions about the following four points were especially lively.

1) Why is PPP necessary? As one of the sources of funding; innovative and new technologies can be incorporated; mutual benefits, such as profit for private sectors and social/economic benefit for public sectors.

2) What issues are there and what lessons can be learned from PPP? There is a lack of regulations and rules to manage private sectors; some have regulations but still do not have clear implementation; some regulations are in the preparation stage in some countries; political issues, such as politicians using PPP for political reasons, PPP basically being a long term contract while the government changes every 5 years etc., the contents of the contract being influenced by the government whenever it changes; tariffs are lower in the PPP project than other projects; private sector is basically profit oriented, and their investment must meet their profit goals.

3) Why PPP needs to be implemented. To establish regulations for PPP projects supervision, including a legal framework which is balanced between both parties, monitoring, enabling an environment for PPP projects; planning and designing PPP projects are necessary, and they are based on F/S including the demarcation of roles, responsibilities and cost at the least; importance of raising awareness to all stakeholders of PPP; good bidding processes for good PPP; a monitoring mechanism with PI, and this mechanism should be included in the contract; equality, transparency, healthy competition and law; and a commitment from top management to reduce political influence.

4) What other types of funding are available? There are loans and grants, but they have to be designed well in regard to the amount and period of repayment. Owners should understand the PPP project well and explain why it is necessary beyond the scope of “what the needs are.”

5.3.2 Group 2B: Saving Energy and Operation Cost Reduction

A main facilitator of Group 2B, Dr. PRASAD Bhupendra (NWSC, Nepal) reported that the following points were emphasized during the discussion.

- We should try to use surface water instead of ground water. During site selection, we should select good quality water to reduce energy cost.
- We should store enough water and supply it depending on peak water demand periods. We should know when off-time demand periods are and save energy during these times. We should also try to use high efficiency pumps. Training for operators of this equipment is necessary.
- We should replace old equipment with new more efficient equipment to reduce maintenance and running costs.
- We should use solar energy and avoid generators because generators use a lot of fuel. Also, other natural energies are recommended.
- Maintenance of equipment should be done periodically and not used when it is damaged or in need of repair.
- It is necessary to increase reservoirs.
- We should turn off electrical equipment when it is not in use.
- Pipe replacement should be systematically to reduce leakage.
- We should try to use a gravity flow system. This would help to reduce electricity costs.
- We should use a SCADA system to minimize operation costs.
- A capacity building for the operator carrying out operation and maintenance, considering the life cycle cost (LCC) is necessary.
- We should reduce NRW by eliminating illegal connections and change them to legal ones. Survey by using a GIS system can be helpful. Additional fines as punishment are effective. We should motivate consumers not to make illegal connections and increase bill collection
- Staff should also be more motivated, this would reduce operation costs.

5.3.3 Group 2C: Water Tariff

Ms. Lucas C Yolanda (Maynilad, Philippines) as a main facilitator introduced the concept that water tariffs are the blood of water utilities and so should be cared for as such, and also reported three points that were emphasized in the group discussion.

1) Common challenges for water utilities in the revision of water tariffs: political problems, government's lack of approval; a lack of customers' and stakeholders' awareness why tariffs should be increased; some still cannot pay existing water tariffs so will be unable to pay for even higher ones.

2) How do you solve this problem? To make customers pay more willingly, services must be improved; easier payment methods should be adopted, and cartoons to attract customers can also be effective; improve water supply service, 24/7-water supply, adequate pressure, careful investment; optimize operational efficiency, and create the biggest effect with the minimum time, energy and cost; subsidies for the poor; invite politicians to the site; use of PIs.

3) A virtuous cycle could be expected with these service improvements and water tariff increment.

5.3.4 Comments

(Comments from the participants)

- PPP could be effective when there are budget constraints. However, no success reports are available. Are there any success stories? (Mr. Sumanasekera Deepthi UPUL, NWSDB)
- In the Philippines, PPP is very common. However, because the private sector is doing a better job regarding the water supply than the public sector some people say, "Let's privatize the public utilities." Why is the private sector doing a better job than the public sector? This is very sad but true. One of the reasons is that older organizations have older staff and their capabilities are not so good. However, PPP projects are very expensive. Justifying the cost of a PPP project is difficult because they do not necessarily guarantee the improved performance of a waterworks. The international community needs to recognize this. (Ms. Rachel M. Beja, COWD)
- Older water laws focused on how to expand the water supply and how to achieve 100 % coverage. However, this has already been achieved. We have now concluded that it is necessary to strengthen the management of waterworks and promote the hiring of engineers for small scale water utilities. To achieve this, we are promoting new water laws to better utilize the private sector and also focusing on how to strengthen management. In Japan, we already have facilities so the situation is different than in other countries that need to

expand the water supply. Therefore, each country needs to understand its own specific needs. It is meaningless to directly copy PPP projects from other countries and use them in your own country.

- The most important thing is social economic development. Private and public investment is equally important. This relates to universal access to SDGs. (Mr. Virabouth Noupheuak, MPWT)

- How do you reduce the number of illegal connections? (Mr. Shibuya, main moderator)
- We do not know which homes have an illegal connection yet some staff or neighbors may be aware of this information. Even so, many do not report this to us. A reward can be given for this information and punishment can be given to those who withhold it. (Dr. Prasad Bhupendra, NWSC)
- Regarding illegal connections, it is a good idea to punish people who are stealing water from organizations. (Ms. Yamamoto, Advisor)

(Summary by Mr. Shibuya, main moderator)

In session 2, a lot of experiences related to finance were shared. The importance of leadership, financial analysis, WSP and customer satisfaction, private utilization, monitoring and regulating private sectors, energy saving, reduction of illegal connections, customer satisfaction as a key to revise water tariffs, were all discussed. We hope the lessons learned during this forum will be utilized in your home country.

Chapter 6 Session 3 “Proactive Improvement of Enabling Environment (Governance)”

Objective of Session 3
Governance is the essential part of sustainable water supply operations. In order to achieve proactive improvement of enabling environment, Sector governance, Organizational governance, Securing technical levels and human resource development are discussed.

Explanation of aims from moderators

Mr. Morita, Yokohama Waterworks Bureau, introduced the session by talking about how proactive improvement of enabling environment is important for providing services sustainably and achieving SDGs, and also that this session would emphasize the following three points: Sector Governance; Organization Governance; and Securing Technical Levels and Human Resource Development.

Figure 6-1 Mr. Morita, Main moderator (right), Ms. Kimura, Assistant moderator (left)

6.1 Presentation

6.1.1 Urban water supply of Cambodia (Mr. Chen Seng Heang, MIH, Cambodia)

There are 15 public and 203 private (licensed) waterworks in Cambodia. Connections have been increasing at a high rate. Connections of private waterworks have increased from 162,151 in 2007 to 309,300 in 2016, while public ones have increased from 21,093 in 2007 to 54,114 in 2016.

On the other hand, NRW has decreased from 24.3% to 10.5% since 2007 to 2016. But this data is only for public waterworks.

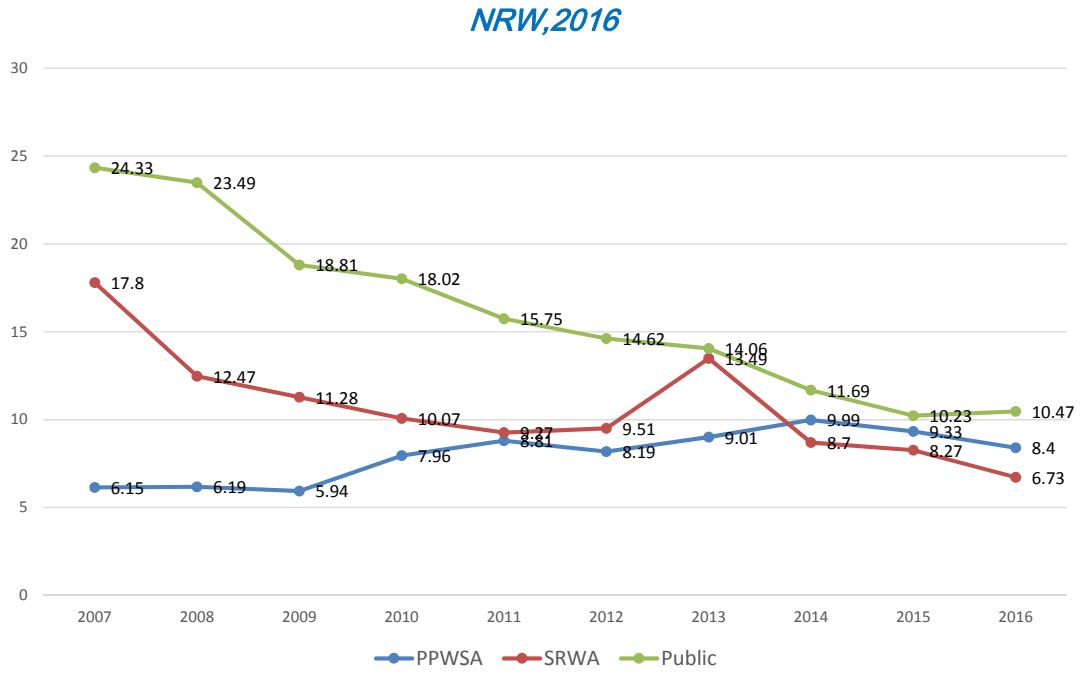


Figure 6-2 Annual change of NRW in the public entities sector

21% of the population in Cambodia is served by water from pipes while the rest depends on other sources, which means only 1 out of 4 people in Cambodia have access to clean water through pipes. To solve this problem, “100% of the urban population needs to have access to a piped water supply by 2025” has been set as a goal of the Royal Government of Cambodia for the development of urban water supply. To reach this goal, the policy objective wants to achieve “at least 85% of the urban population has access to a piped water supply by 2018 and 100% by 2025.”

The “Samdech techno water policy” focuses on providing clean drinking water to people in all towns by 2018, based on the following four pre-conditions: 1. Security of water quality (no floc, odorless, colorless), 2. Safe water (not toxic or virulent), 3. Sustainable water (during all seasons at all times), 4. Affordable (with the transparency calculated).

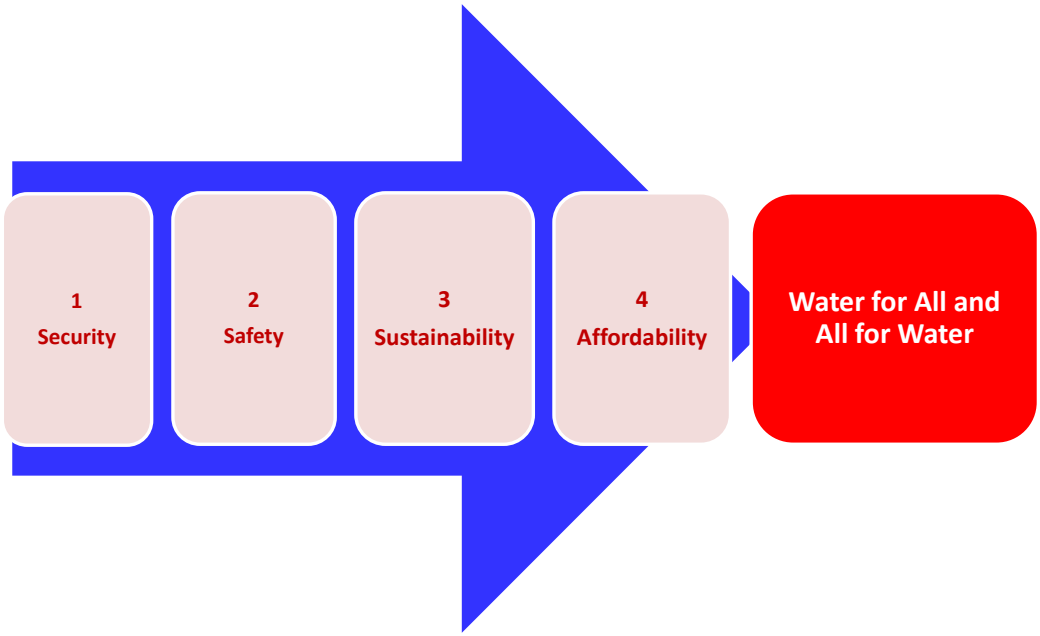


Figure 6-3　4 main re-conditions of policy objective

Regarding this situation, HIM founded the General Department of Water Supply in 2016 to achieve the goals mentioned above. However, they are still facing the following challenges:

【Sector Level】

・The legal framework is incomplete (draft of water supply law is finished)

・There are no laws regarding the management of the urban water supply (draft is finished)

・The overall access to drinking water remains low, especially for low-income households

・Funding is limited due to budget constraints

【Waterworks Level】

・Staff still lack the necessary skills and experience

・Poor infrastructure

・Lack of a master plan and long-term investment plan

Under these circumstances, MIH has created a key action plan to achieve these goals.

1) Action plan to enhance the organization and improve governance and ability

2) Enhancement and improvement of regulations (promotion of private investment, protection and subsidies for low-income households)

3) Enhancement of the public water supply system

4) Cooperation with other organizations (such as JICA, ADB, WB, AFD, AusAID, UN-HABITAT, WHO, etc.)

6.1.2　Effort to Manage Water Supply Services Efficiently including PPP (Mr. Ladda Philavong, NPLP, Lao PDR)

There are 19 service areas determined in Luang Prabang province, only 6 of which are covered by a water supply system.

The JICA project "MaWaSu" was started by utilizing the Key Performance Indicators (KPIs) in 2012. Firstly, specialists from both JICA and Lao PDR reviewed and evaluated the situation of the water sector in Lao PDR. They then strengthened the monitoring and evaluation of Lao's urban water supply sector with a new Water Supply Guideline that included 23 KPIs to meet the 3S, namely Safe, Stable, and Sustainable.

The monitoring result in 2016 indicates good progress for most KPIs with the exception of water quality, aging of main pipes, receivable accounts and unit cost of water supply. Nevertheless, the motivation of employees has been improved since their performance has become more visible and goals have been clarified by using KPIs.

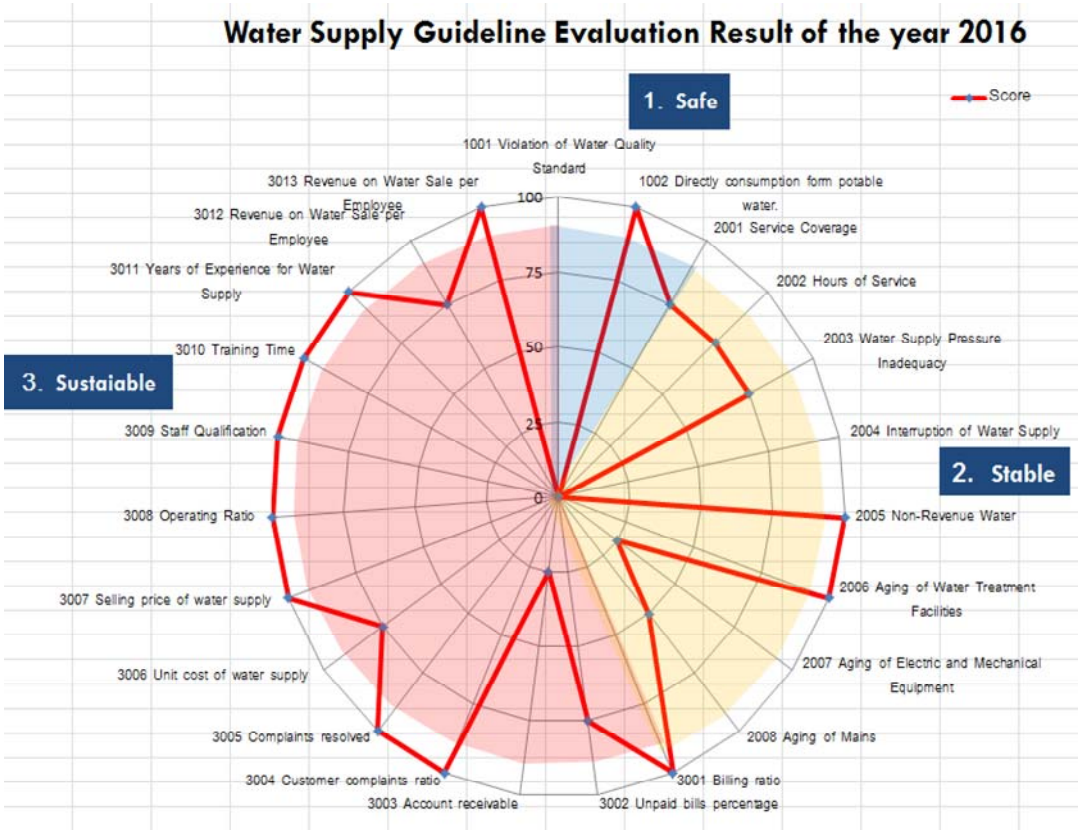


Figure 6-4 Water supply guideline evaluation result of the year of 2016

NPLP has collaborated with private sectors as a concession using the BOT method for facility construction and operation of a water treatment plant and bulk water plant. The water supply did not cover all areas so there were always complaints about insufficient water pressure and low water quality by citizens at the time. The expansion of the water supply service has become a priority however there is not enough money available. This is why NPLP introduced the PPP project for water supply service.

Figure 6-5 Water Treatment Plant using the BOT method

The key points in this PPP project are summarized as 1. to clarify each supply area and control the use of bulk water by the minute, 2. to have full cooperation and communication between the public and private sectors, 3. to determine an appropriate water tariff, etc. In addition, it is also necessary to improve the management of the waterworks.

A conclusion can be drawn as follows:

1) Monitoring and evaluation using KPIs are important for achieving an efficient water supply.

2) PI not only makes achievements more visible and easy to understand, but also improves the understanding of staff. This allows them to make better suggestions to their supervisors that substantially enhance the organization.

3) It is necessary to create goals based on the organizational long-term vision so evaluation can be more practical.

4) It is also necessary to have clear rules when selecting a PPP method to deal with a lack of funding.

5) Government should take the responsibility of offering a water supply service because water is a public resource.

6.1.3 MCWD Performance Management System (Mr. John Paul Hofilena Delgado, MCWD, Philippines)

MCWD is in charge of the water supply service for Metropolitan Cebu. Although PI was utilized in MCWD's Performance Management System (hereinafter, MPMS), the evaluations were made subjectively by supervisors and were based on effort instead of performance. Due to a lack of work standards, those with a better performance rating were given more work. This made it difficult for them to achieve their goals. Nevertheless, MPMS is still an effective way to determine wage incentives based on both and individual's and a team's performance.

There are 4 stages in MPMS, including

1) Performance planning and commitment, namely PI planning,

2) Performance monitoring and coaching,

3) Performance review and evaluation,

4) Performance rewarding and development planning.

KPIs must be linked to the organization and the works, and should be decided based on a unit that is quantifiable, standardized, efficient, and effective. In this way, MPMS plays a role as an incentive mechanism an effective way to maintain and promote the staff's motivation.

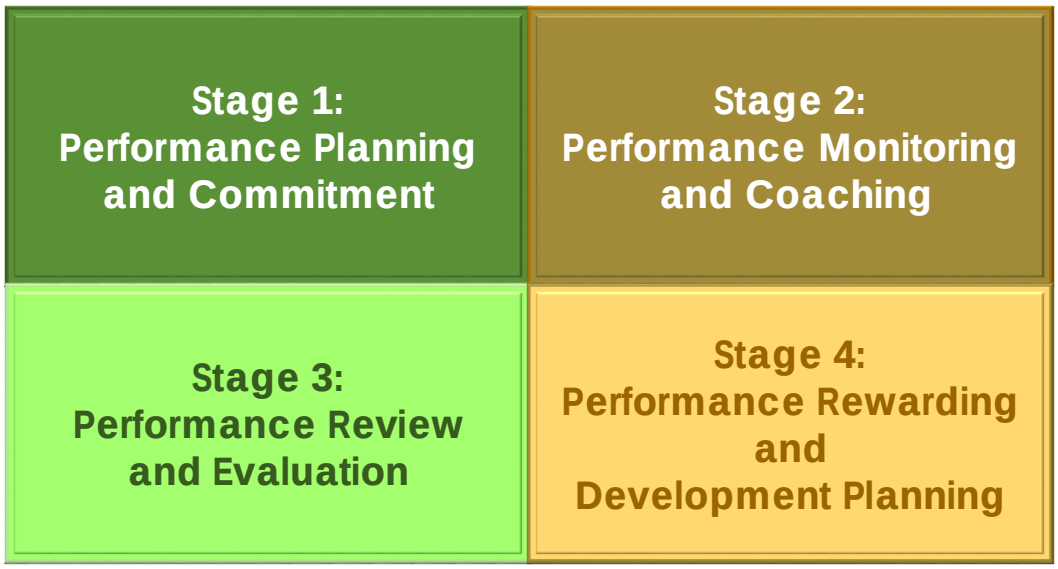


Figure 6-6 Four stages of MPMS

MPMS has many advantages; for instance, it is easy to understand and possible to cultivate a sense of responsibility in employees allowing them to work more independently. The performance management team consists of an Acting General Manager and several departments, who will evaluate the performance of employees.

MCWD faced challenges when executing MPMS. It took a long time to collect data and confirm performance so that a work standard could be created.

Lastly, it was mentioned that improvements in staff performance were evident due to the creation of wage incentives. As a next step, MCWD is planning to amend the work standard, build an automatic performance monitoring system and improve the transparency of incentive systems.

DELIVERY UNIT'S RANKING	EMPLOYEE PERFORMANCE RANKING			
	BEST	BETTER	GOOD	POOR
BEST	P35,000 (20%)	P20,000 (35%)	P10,000 (45%)	Employees rated poor in the annual MCWD Performance Management System
BETTER	P25,000 (15%)	P13,500 (30%)	P7,000 (55%)	
GOOD	P15,000 (10%)	P10,000 (25%)	P5,000 (65%)	
POOR				

Figure 6-7 Determine of incentive wage

6.1.4 Challenges and Prospective View of the New YCDC (Ms. Hlaing Maw Oo, YCDC, Myanmar)

The population of the city of Yangon is growing rapidly at a rate of 2.6%. However, only 40% of water demand has been covered by 2016.

The city of Yangon is now faced with various challenges including

1) Aging of transmission pipes

2) Complex distribution without zoning system

3) High NRW rate

4) Water shortages

To overcome these challenges, a master plan has been made with the cooperation of JICA which clarifies the future water supply and zoning system plans for 2025 and 2040. In the meantime, organization has been widely reformed, including the creation of new divisions in order to 1) establish a division responsible for planning, 2) improve customer service, 3) mitigate NRW, and 4) enhance the education for employees, etc.

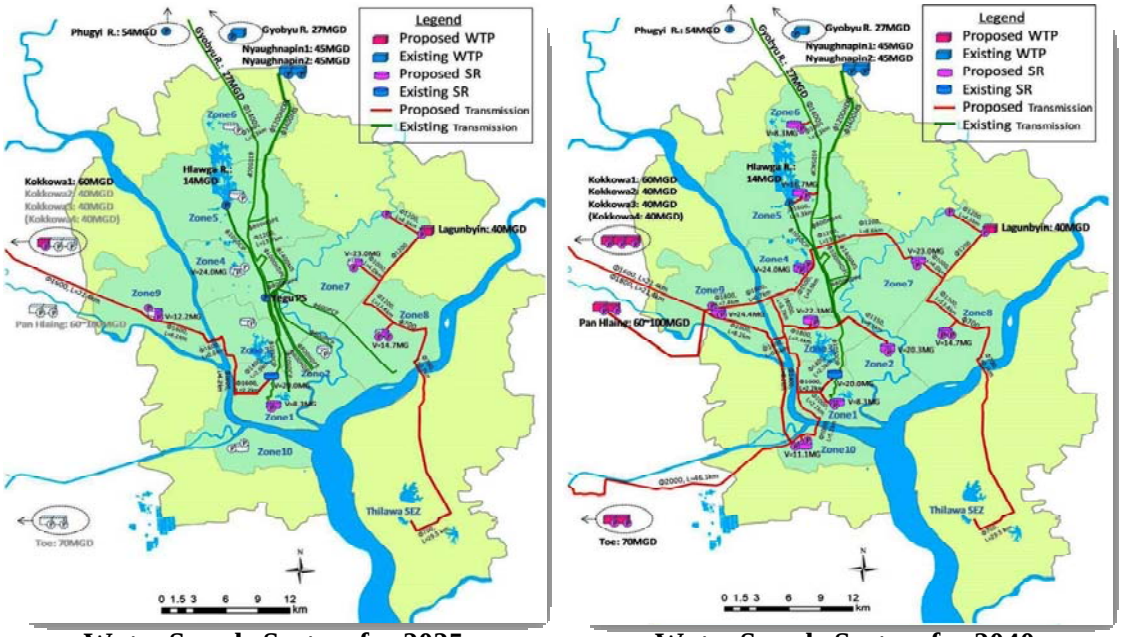


Figure 6-8 Future Water Supply Plan for Yangon City in 2025 and 2040

To eliminate water shortages, Yangon city is now developing surface water as new water source with the support of JICA.

6.1.5 Performance improvement of water companies in Indonesia through improved human resources capacity (Mr. Rudy Kusmayadi, PERPAMSI, Indonesia)

PERPAMSI is an association composed of 436 water utilities. Among these utilities, public utilities called PDAM are divided into 3 types according to their performance among which 197 PDAMs are categorized as Healthy, 103 as Less Healthy, and 64 as Unhealthy. 25% of employees are at the managerial level while remaining 75% is at the operator level. PERPAMSI is targeting on strengthening human resources in the water supply sector to improve the performance of the Indonesian water supply and give all citizens access to safe drinking water.

In order to reach this goal, PERPAMSI needs its staff to meet the Indonesian National Occupational Competency Standards called “SKKNI,” developed by the Ministry of Public Works and Housing. SKKNI is used as a guideline for basic training that includes 1) essential knowledge, skills and work attitude, 2) quantitation and evaluation methods, 3) guide for implementation and assessment to be used by trainers and evaluators. The following concept is used in SKKNI for human resources improvement.

Expected effects are as follows.

1) Employees can reach a certified skill level through proper education

2) The ratio of certified managerial staff can increase by up to 80%

3) 95% of staff at the managerial level can get skill certification

4) Healthy performance can be observed in all waterworks in Indonesia

5) The diffusion goal can be achieved by late 2019

Lastly, the following effects of PERAMSI has been reported:

1) The development of a new water supply facility and maintenance of existing facilities need to be carried out by staff with professional skills and certification

2) Therefore, SKKNI ensures that people working in the water supply industry have the necessary qualifications and skills through appropriate verification and valid certification.

Figure 6-9 Human resource improvement concept of SKKNI

6.1.6 Three Approaches to Sustainable Business Management, (Mr. Tomonori Hayama, Yokohama Waterworks Bureau)

The three approaches to sustainable business management are 1) to share organizational goals, 2) to develop human resources and 3) to maintain and succeed technological and technical ability.

A challenge of the first approach, namely to share organizational goals, is that it is difficult to give personnel sufficient opportunities to learn the organizational goals. The bureau is aiming at sharing information as well as the thoughts and enthusiasm of top management, and letting personnel be more aware of the link between their daily work and management. To reach these goals, “Administration Policy News” is regularly issued to each individual.

As for the second approach, development of human resources, the bureau shares materials of the Vision of HRD with every employee. The human resource development is implemented as a cycle of career information confirmation, personal objective setting through interviews, ability development by training and work, and achievement evaluation by MBO (Management by Objectives).

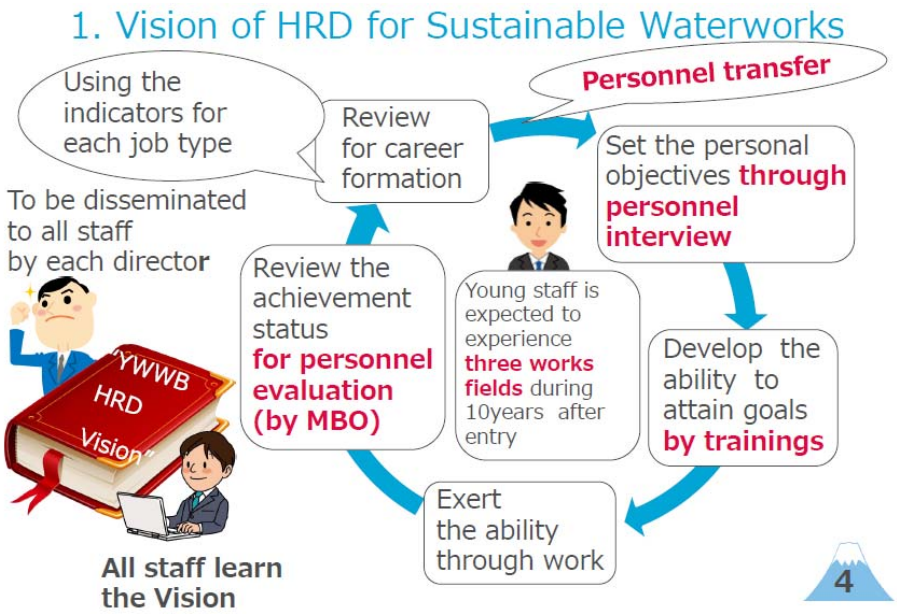


Figure 6-10 Cycle of HRD

The effects of MBO (Management by Objectives) are expected to be 1) cultivating a sense of participation in business management by linking personal goals to the organizational ones, and 2) developing skills and knowledge for employees while considering their strong and weak points by linking personnel evaluation with HRD results.

Specifically, every employee makes a “goal sharing sheet” that includes 1) goals, 2) actions to achieve each goal, 3) improved points and ones to be improved upon through HRD, 4) review, 5) self-evaluation, 6) comments by supervisors.

As for the third approach, two courses, namely Master Engineer and Technical Expert have been developed. Qualified employees are selected for either course according to their field based on their ability and position. Master Engineers are required to acquire advanced knowledge while Technical Experts are required to study about plumbing skills and learn how to repair water leaks. Once certified, they continue their studies in order to further improve their knowledge and level of expertise. There are 94 certified Master Engineers and 11 Technical Experts at present.

Title	Role	Field	Number
Master Engineer (ME)	・Transfer expertise and knowledge of waterworks to successors of advanced technological level ・Personal training in daily works ・Lecturer at training courses	**Total:7technological fields,such as** ・Design and Supervision of constructions ・Water distribution control and management ・Inspection of water supply equipment	94/690 Certified / Total number of engineers
Technical Expert (TE)	・Transfer technical skills and knowledge to enhance capacity of staff to respond to accidents and disasters	Technical skill for piping and leakage repair etc	11/160 Certified / Total number of technical staff 10

Figure 6-11 Maintain and Succeed Technological/Technical Ability

Lastly, it was emphasized that besides making use of above mentioned three approaches, it is also essential to make employees proud of their work and willing to work for water supply industry.

6.2 Open Discussion, Q&A, and Feedback

Regarding the Sector Governance and Organizational Governance

- Setting targets is important. It is necessary to understand the baseline because it defines the requirements for finance and human resource development. What I learned from this forum is the importance of setting goals based on the understanding of guidelines, baselines, finance, human resource development, and all the aspects related with other tax sources as well. In Indonesia, we have a lot of water, but in terms of "safe" water, there are several problems to overcome such as quantity, quality and environment of water resources. In terms of central government, one of the hardships is coordination among the several ministries related with water, such as the Ministry of Public Works and Housing for technical aspects, the Ministry of Environment and Forestry for water resource protection, and the Ministry of Industry for industries. In terms of operation, human resource development is one of the hardships. We already have a legal framework, now we need to think about how to implement it more effectively. This was discussed in the Group1A. It is necessary to develop PIs and monitoring systems in order to make all the stakeholders implement the legal framework. These tools will contribute to achieve this goal. (Ms. Meike Kencana Wulan, Cipta Karya)

- Setting goals is a job for high level management. The goals of high level management need to be broken down into objectives. The national goals which are based on the SDGs, can be divided into long-term or medium-term goals such as 5-years period goals. In order to achieve these goals, we need to have a strategy, and based on it, we need to identify the roles of each department. Higher level management supervises medium level functionaries and medium level management supervises lower level functionaries. This is how to set objectives that are in line with the goals for the mid-term. (Mr. Nath Tushar Giri, BWSSB)
- Everything we do starts from the organizational vision and mission, which are the reason of our existence. We started our strategic plan in 2011, even thow disseminating the organizational goal down to every employee is challenging. When we breakdown the goals into targets and initiatives, it is hard to identify each employee's contribution to attaining the goal of the department. We have gradually disseminated the vision and mission at the assistant manager level, the department manager level (that set targets), and the division level. We can make employees aware of our mission and vision by repeating them constantly, and this is helpful in setting the objective and targets. (Dr. Rachel M. Beja, COWD)

- When setting a goal, it is important to understand the baseline, as mentioned by Ms. Meike, and to also understand the strengths and weaknesses of the organization so that not only is the goal attainable but also so that employees are eager to achieve it. After setting a goal, we need to clearly show how to attain it. (Ms. Hlaing Maw Oo, YCDC)
- If you want to succeed in your mission, you have to understand the government's goals, national goals, and international goals such as water for all by 2030. After we analyze all of these things as well as our own current conditions, we can create our own goal. Implementation is so important. Fixing a target will make it more achievable.

Those who are not managers do not know the targets and goals. So we need to monitor, motivate, and support employees to achieve the target and mission. (Dr. Prasad Bhupendra, NWSC)

- SAWACO sets goals annually. For instance, for 2017, we set three goals: improvement of management, continuous water supply and securing financial resources. The goals were announced through the leaders of each department. Each unit then confirmed the budget to attain the goal, and formulated projects. Leaders have meetings and distribute newsletters every week about what they have finished the previous week and what they were planning to do the following month. I report all these matters through the vice presidents. Regarding human resource development, we have training with other utilities such as DAWACO and the Yokohama Waterworks Bureau, and the outputs are brought back to other employees of SAWACO. (Mr. Nguyen Van Du, SAWACO)

- Governance plays a very important role in achieving universal access to a sustainable water supply. Most of the countries achieved MDGs, however, this was in terms of quantity. We are now at the stage to try to achieve the SDGs. SDGs have three keywords: Universal, Equal, and Sustainability. We all recognize that finance and governance are the first step to a universal, equitable and sustainable water supply. Personally, governance is the most important issue, and we proved this in Phnom Penh. When Phnom Penh was poor and NRW was about 70%, we requested the World Bank to support us financially. The request was finally approved with 17 conditions including management, commercial, financial aspects, and so on. Cost, service improvement, international cooperation, transparency, community, corruption, etc. are all related to governance. This means that governance is the most difficult issue for us. Governance is not established by only money, but countermeasures and sacrifices. Governance is what drives everything smoothly to achieve a goal. A country with good governance can be supported easily. We are making great efforts for the dignity of future generations, women, and children. The effort to establish governance is not something get from another country, but you can learn from their experiences and ultimately establish your own governance. (H.E. Ek Sonn Chan, MIH)

Securing Technical Levels and Human Resource Development

- HueWACO has 550 staff. We establish visions, goals, and targets of the department and the organization, and each department makes a plan. We constantly evaluate performance of the department with PIs. At the end of the fiscal year, the enterprise, each unit, and every individual is evaluated according to indicators, working attitude and performance. According to these evaluation results, employees' work positions are then changed (job rotation for employees). We make a roadmap for human resource development so that employees can develop the capacity to do several different jobs. We established a training center within our company and coordinate with universities. (Mr. Truong Cong Han, HueWACO)
- What is the important point when evaluating employees? (Moderator)

- In terms of evaluation, we rank employees at the monthly meeting and confirm the progress of their work. We discuss the goals for the following month, current problems, and also how to motivate employees. The employees and unit with the best performance are rewarded. (Mr. Truong Cong Han, HueWACO)
- How to motivate employees? (Moderator)
- Evaluation and rewarding the best practices is important. There are two types of ways to motivate people: punishment and reward. I prefer reward to punishment because you can find improvement. Visualizing the evaluation process for reward or punishment will be helpful to motivate staff. (Ms. Meike Kencana Wulan, Cipta Karya)

- In order to achieve the targets, principle of 5Ms is important, which are Man, Material, Money, Motivation, and Machinery. Motivation is the most important of them. Motivation is enhanced by certification, prize for the best performance of the month or year, and so on. (Mr. Mazhar Muhammad Naveed, WASA-L)

- As the evaluation in BWSSB, every month, we evaluate respective goals, NRW, quality of services, complaints from customers, and so on. We reward the unit which is recognized as having the best performance. However, we are a publicly owned company, so there is not enough budget for rewards. In order to maintain the motivation level, there are three or four ways, and human resource development is the most important one. Human resource development starts from recruitment. In order to prevent corruption, we have competitive examinations instead of interviews. Training is also important, and a training policy should be well established. We mandate that every employee take a training course. For higher level positions we have a 7 day training course that fosters leadership, and for lower level positions we have a 15 day training course that focuses on improving tasks and skills. Improving job satisfaction is the key to motivating employees. (Mr. Nath Tushar Giri, BWSSB)

Chapter 7 Wrap-up Session

A Wrap-up Session was set to exchange opinions about the Yokohama Forum Statement 2017 based on the 3 days of discussions, and the Yokohama Forum Statement 2017 was adopted at the end of the session with the following procedures.

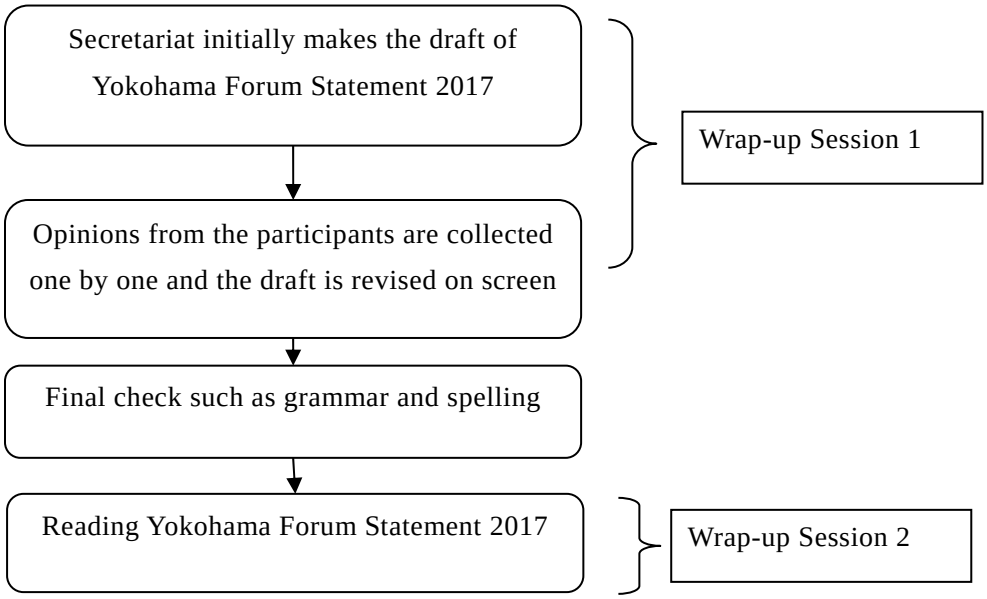


Figure 7-1 Flow of adopting Yokohama Forum Statement

After the Yokohama Forum Statement 2017 (draft) was distributed to each of the participants, opinions from the participants were collected and discussions were implemented. The discussion is as the following.

Statement 1

- Regarding statement 1, SDGs should be “Goal 6 of SDG.” (Ms. Lokuliyanage Mangalika, MCPWS)

Statement 2

- Regarding statement 2, long term perspective, not only water utilities, but also government should be put there. Governments set a goal, especially long-term visions (Ms. Meike Kencanawulan, Cipta Karya)
- The governments have to suggest clear goals. (Ms. Hlaing Maw Oo, YCDC)
- Water utilities have to follow the government (Mr. Virabouth Noupheuak, MPWT)
- Regarding 2, visions cannot be changed, but missions can. The word “Governments” should not be omitted from long term plans (Mr. Nath Tushar Giri, BSWWB)

Statement 4

- I would like to add “community involvement” in statement 4. (Ms. Yamamoto, Advisor)

Statement 5 and 6

- In article 5, reducing tariffs for the poor should be contained (Mr. Vijayakrishnan Arun Roy, CMWSSB)
- The reason why poor households cannot access safe water is not because of tariffs. (H.E. Ek Sonn Chan, MIH)
- We have some points regarding 5 and 6. Finance is the key and contained in 5. 6 follows what is mentioned in 5, and cross subsidy is also included. It is necessary to consider how to recover the cost with tariffs and it is also included in the statement. (Prof. Takizawa, the University of Tokyo)
- Customer’s affordability should be considered. (Engr. Abdullah Mohammad, KWASA)
- Background may not be necessary for water tariffs, in statement 6. (Ms. Meike Kencanawulan, Cipta Karya)
- 1st sentence of 6 is very important because tariffs are important for sustainability to recover the cost. (Dr. Beja M. Rachel, COWD)

Statement 8

- Regarding 8, not only good engineering, but also supervision is needed to reduce the cost. (Mr. Barce Mercedes Simarmata, PAMJAYA)
- Everything in 8 can be summarized as operational efficiency. (Ms. Lucas C.Yolanda, Maynilad)
- NRW reduction is a bigger issue than just cost reduction, so I suggest separating them. If you have a high NRW rate, water resources are wasted as well so that we cannot satisfy customer satisfaction. (Dr. Beja M. Rachel, COWD)
- I suggest adding NRW reduction before cost reduction in the first sentence of statement 8. (Mr. Nath Tushar Giri, BWSSB)
- NRW reduction and cost reduction are both included in this paragraph. From the point of view on securing water, it can also be related to water resources. The theme of this forum is finance and governance. Saving water and management of water sources are both important. (H.E. Ek Sonn Chan, MIH)

Statement 9

- Regarding statement 9, good governance is secured not only by legal framework but also through autonomy, regulations, and transparency. (Mr. Nath Tushar Giri, BWSSB)

- Regarding 9, you should put “enforce” before “formulating” (Mr. Virabouth Noupheuak, MPWT)

Statement 10

- We have discussed human resource development in this forum. Therefore, it should be included. (Mr. Mazhar Muhammad Naveed, WASA-F)
- In many presentations, HRD was mentioned as an important point. (Ms. Hlaing Maw Oo, YCDC)
- Staff’s efficiency through proper HRD can be incorporated. (Mr. Nath Tushar Giri, BWSSB)
- We need to separate the HRD into another statement. (Mr. Khan Adnan Nisar, WASA-F)
- In the original draft of the statement, we put an article on HRD at the end of the statement. (Prof. Takizawa, the University of Tokyo)
- It’s better to put HRD in the original version, because it’s a good expression of HRD. (Ms. Meike Kencanawulan, Cipta Karya)

Others

- To take actions toward the next step, it is necessary that whenever one utility needs help, other utilities that have the resources should help. Some governments are eager to help other countries in the water sector, but other governments are not. JICA plays an important role as a platform on this point. (Mr. Ho Minh Nam, DAWACO)
- It’s an important input. Cooperation between countries in the Asian region is important. That’s why we put “water family” instead of “networking,” which indicates a much stronger relationship. (H.E. Ek Sonn Chan, MIH)









JICA

Chapter 8 Yokohama Forum Statement 2017

Based on the 3 days of discussion in the 3 sessions and the wrap-up session, "Yokohama Forum Statement 2017" was read by H.E. Ek Sonn Chan firstly and was then adopted by all the participants as follows.

2017 YOKOHAMA FORUM STATEMENT
August 3rd, 2017

The Japan International Cooperation Agency (JICA) and the City of Yokohama organized the Fourth Executive Forum for Enhancing Sustainability on Urban Water Service in Asian Region from 1st to 4th August 2017, in Yokohama, Japan.

Government agencies, executives of water utilities and water experts from 13 countries: Bangladesh, Cambodia, India, Indonesia, Lao PDR, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, Timor-Leste and Viet Nam joined and shared their experiences at the forum.

Following one of the Sustainable Development Goals (SDGs), "By 2030, achieve Universal and Equitable Access to Safe and Affordable Drinking Water for All," the Fourth Executive Forum set the following theme: "Take action toward the next step - Universal and Equitable Access, Finance, and Governance."

Through intense discussion, all delegates unanimously agreed on the concepts and actions as follows:

1. The delegates well noted that we are working today for the well-being of the present and the next generation, for the liberation of women, children and the underprivileged from their current difficulties regarding water.

2. Water utilities should have long term perspective through elaborate long-term missions and action plans, while the governments should set a clear policy for achieving Goal 6 of SDGs.

3. In order to secure a safe, stable and sustainable water supply, water utilities must consider Water Safety Plans as a central role.

4. Recognizing Water as a Human Right, water utilities must provide this basic service to all low-income households at an affordable tariff. It is very well known that the service connection cost is the biggest barrier that keeps low-income households from accessing this basic service. Therefore, by waiver or discount, by installment payment, by subsidy of social service connection, and/or by community involvement, the human right to water will have to be secured.

5. Financing is one of the key elements to achieve our goals. Finance could be covered through: water tariff that allows utility to recover their costs, government funding, external development partners and private sector participation.

6. Although a water tariff is an important source of income for stable management of water utility, there are only few utilities that have appropriate water tariffs. The majority of customers complain about the water service rather than about the water tariff. Customer satisfaction is the key issue in water tariff revision. Customer affordability should also be considered.

7. To get funding from Government and external institutions, water utilities must carry out detailed analysis of their current status and set business plans for efficient investment.

8. Cost reduction is a key for steady development of water utilities. Cost reduction can be done through good engineering design and supervision, reduction of energy consumption by efficient water distribution and up-grading to energy-efficient equipment, reduction of non-revenue water (NRW) through elimination of water theft, renewal of pipes and improvement of operation and staff efficiency.

9. Transparency, integrity and accountability are the three core values of good governance. Good governance can be secured by formulating and enforcing fair policies, legal framework and regulations, and having the participation of stakeholders. Autonomous regulation is a key aspect to bringing transparency. Using Performance Indicators (PIs) makes it possible to visualize and objectively measure performance efficiency of water utilities. PIs need to be periodically monitored.

10. In order to operate and sustain water supply services, water utilities need not only maintain the technical levels of each employee, but also develop human resources in such a way that each employee becomes supportive to the enhancement of institutional capacity.

Based on the outcome of the discussion in sharing experiences, all delegates commit to take action, as a Water Family, toward the next step for universal and equitable access to safe, sustainable and affordable water for all.

August 3rd, 2017
Yokohama, Japan

Chapter 9 Closing Remarks

Mr. Kunihiro Yamaguchi, Director General, Global Environment Department, JICA, gave the following speech as closing remarks.

His Excellency Ek Sonn Chan, Secretary of State, Kingdom of Cambodia, Prof. Satoshi Takizawa, The University of Tokyo, distinguished guests, ladies and gentlemen, good afternoon.

I would like to thank those in attendance from overseas and various cities of Japan for coming to the 4th Executive Forum for Enhancing the Sustainability of Urban Water Services in Asian Regions.

Figure 9-1 Closing remarks by Mr. Kunihiro Yamaguchi, JICA

The forum ends today with great success. The success of this forum was achieved by all of the attendants who gathered here. On behalf of JICA, I would like to express my appreciation especially to all the executive leaders from Asian countries, resource persons from the City of Yokohama and other Japanese organizations.

We believe that you have shared a lot of knowledge and findings during these three main sessions, namely universal and equitable access, finance and governance. Through the forum, there were also active discussions among leaders from 13 Asian countries, especially at the group discussion. I am convinced that through this forum, the relationship of “Water family” has been further strengthened.

In addition to this, I am very pleased that as the result of the forum, “Yokohama Forum Statement 2017” was declared by His Excellency Ek Sonn Chan, and adopted by all participants. I sincerely hope that the overseas participants will utilize the shared knowledge and findings for the

improvement of their waterworks. I also expect that many Japanese participants will utilize what they have learned here in their respective activities for international cooperation. The theme of the forum is “Take action toward the next step, and it will be realized when all the participants really take their own actions after the forum ends. I would like to emphasize the importance of actions for improvement and their monitoring by all the participants.

I hope that you enjoyed your stay in Yokohama. I hope the rest of your time in Yokohama will be fun and memorable. Those of you who will join our technical tour tomorrow may be able to enjoy a view of Mt. Fuji on the way to the Doshi watershed cultivation forest.

In September of next year, Japan will host the “International Water Association World Water Congress and Exhibition” in Tokyo, the first time in Japan. We hope you will come to Japan again for this event.

Thank you very much for your attention and cooperation.

Chapter 10 Introduction of "IWA World Water Congress and Exhibition" and Technical Tour

10.1 IWA World Water Congress and Exhibition

On the last day of the Executive Forum, Bureau of Waterworks Tokyo Metropolitan Government invited all participants to the IWA World Water Congress and Exhibition.

Figure 10-1 Introduction of IWA World Water Congress and Exhibition by Bureau of Waterworks Tokyo Metropolitan Government

10.2 Technical Tour

Applicants took a technical tour held on the 4th day of the Executive Forum with the following schedule.

Table 10-1 Schedule of the technical tour

Time	Content
8:15	Meet at Hotel New Grand
8:30	Depart from Hotel New Grand
10:00	Arrive at "Aoyama Settling Basin"
10:50	Depart from "Aoyama Settling Basin"
11:30	Arrive at "Yamayuri Center" and have lunch
12:30	Depart from "Yamayuri Center"
12:50	Arrive at "Doshi Water Resource Forest"/ Field Tour
13:40	Depart from "Doshi Water Resource Forest"
14:00	Arrive at "Yamanaka Lake" / Take photos
14:20	Depart from "Yamanaka Lake"
15:00	Arrive at "Ashigara Service Area" / Break
15:15	Depart from Ashigara Service Area
16:45	Arrive at Hotel New Grand

Figure 10-2　Situation of the Technical Tour

Chapter 11 Examination

11.1 Outputs from the 4th Executive Forum

In this Executive Forum, from August 1st to 4th (technical tour on August 4th), presentations and discussions were made and carried out through three sessions (Universal and equitable access to safely managed water, Finance, Proactive improvement of enabling environment (Governance)). The total number of participants of this Executive Forum was 281. In addition, new trials that have never been done at past forums were conducted during this Executive Forum. Under the theme "Take action toward the next step," the following outputs were obtained in this Executive Forum.

(1) Provisions for Sharing Knowledge and Experience

This output is the same as the previous three forums (to the 3rd), and this was also achieved at this Executive Forum. Presentations shared during each session were the ones that participants were able to refer to in making efforts within their own organization, and group discussions were good opportunities to deepen their knowledge.

The following list shows success stories and success factors which can be references for the participants in making further improvements in their own countries.

Table 11-1 Success stories and success factors shared in presentation

Presenter	Success story	Success factor/lesson
Mr. Viengthouay Vannarath/NPNL, Lao PDR	Improvement of staff's motivation in the organization, clarification of responsibility, improvement of performance.	Goals of the organization were clarified by formulating mid/long term plans, lessons learned were shared by all stakeholders appropriately.
Ms. Yolanda C Lucas/ Maynilad, Philippines	Improvement of collection revenue by supporting low-income households, and improvement of resident's ownership to water supply facilities.	Technical cooperation on self-reliance support for low income households were implemented, follow-up such as purchasing their products is also made, and the effort involved stakeholders such as social welfare institutions.
Mr. Francisco Xavier Pereira/DNSA, Timor-Leste	Success for 24/7 water supply in pilot area.	Water pressure and leakage were thoroughly managed even though it was in a small area near to the WTP as a pilot area, and community was involved in this effort.
Mr. Nguyen Van Du/ SAWACO, Viet Nam	Stable supply of water by taking appropriate measures to deal with the impact of climate change	Quantitatively measuring the impact of climate change using data and computer analysis. Relocating the water intake and revising the distribution network based on the results.
Ms. Meike Kencanawulan Martawidjaja/Cipta Karya, Indonesia	Helping 394,144 households make new connections to the water supply system through a Grant Scheme, and improving the attitude of government towards waterworks	A systematic method was developed for subsidies using the Grant Scheme. Attitudes were changed through greater government commitment and involvement. The government will continue to fund the project with the support of external donors.

Presenter	Success story	Success factor/lesson
Dr. Rachel M. Beja/ COWD, Philippines	Securing budget for NRW reduction and taking measures against climate change.	Not only waiting, but the top of the organization has to keep working on securing a budget, value of the investment was explained outside quantitatively with data such as future projection of NRW, networks and partnership were utilized.
Mr. Somboon Sunanthapongsak/ MWA, Thailand	Increasing profits year by year in a difficult situation where the water tariff cannot be changed.	Revenue and expenditure were analyzed in detail, and the results were announced, concrete plans for investment was formulated based on the analysis results, implementation is managed thoroughly, leaders must understand the financial analysis.
H.E. Dr. Sim Sitha/ PPWSA, Cambodia	Cost reduction for waterworks, reduction of CO2 emission	Energy was saved on facility operation (i.e. introduction of solar system etc.)
Mr. Truong Cong Han/ HueWACO, Viet Nam	Reduction of waterborne diseases, improvement of service coverage, water tariff revision, improvement of collection ratio.	Understanding of tariff revision was gained by improving water supply services based on WSP, public relations were made on water tariff revision.
Mr. Keitaro Chihara/Kyoto City Water and Sewerage Works Bureau, Japan	Revision of water tariffs	Essential costs for facility maintenance and management for the next generation were clarified. Public relations were improved by listening to residents' opinions and using various kinds of media.
Mr. Philavong Ladda/ NPLP, Lao PDR	Improvement of staff's motivation, improvement of performance.	Setting 23 PIs, and the PIs are used to monitor the operation of the works, utilization of private sectors. However, there are some issues such as regulations to supervise private sectors, procedures to select private firms are not formulated, and capability to supervise the private sector is insufficient.
Mr. John Paul Hofilena Delgado/ MCWD, Philippines	Improvement of staff's motivation, improvement of performance.	Incentive mechanisms are established such as rewarding those who received a good evaluation, the evaluation uses PIs. On the other hand, the issues are accuracy and the collection of information.
Mr. Tomonori Hayama, Yokohama Waterworks Bureau, Japan	Improvement of staff's motivation	The goals and missions of the Bureau are given every staff member. Everyone is responsible for setting their own goals and writes a self-evaluation at the end of each year. Supervisors support them to set the goals, evaluate them, and give feedback. Also, a certification system for skill improvement was developed.

It is very important in view of the meaning of this Executive Forum as a platform to share knowledge and experience that these success factors and lessons were shared, and also that the group discussions were implemented based on them. In addition, the Executive Forum was

considered to be beneficial for all the participants since the Japanese side also obtained important information to form new cooperation and businesses.

(2) Further creation of leadership by proactive participation during the Executive Forum

In this Executive Forum, new trials which had never been done at past forums were implemented as following:

(i) Implementation[b] of group discussions in session 1 and 2
(ii) In adopting Yokohama Forum Statement 2017, a prepared draft version of the statement was distributed to the participants, comments were collected in a Wrap-up Session, and the statement was revised live on screen.

(i) Implementation of group discussions

In Session 1 and 2 of this Executive Forum, group discussions were made. In the group discussions, participants played the role as main facilitators and Japanese experts as assistant facilitators. Preparation meeting was also held to talk about the details before the day of the Executive Forum. In group discussions, those who did not have to make a presentation were selected as much as possible to act as main facilitators and accelerators. Accelerators assume the role of talking about the theme at the beginning of the group discussions. This allows all participants to contribute to this Executive Forum in a meaningful way.

In the group discussions, all participants had a chance to talk and proactive participation seemed to be promoted. In fact, group discussions were quite lively and fruitful, and some mentioned that they would have liked more time for discussion and were impressed by sharing experiences. In this way, it is a great opportunity for leaders to meet together in one place and actively discuss matters. The experience of the participants who joined the Executive Forum as leaders and discussed matters with other leaders contributed to creating even greater leadership among the participants.

Some efforts were made to prevent the discussion from deviating off theme. For example, a printout with the theme on it was handed out and some facilitators wrote the questions on the whiteboard. Nevertheless, there were still some negative comments that resulted from insufficient preparation, such as questions being unclear and directions of discussions being not precise. It should be considered to let the facilitators know about the scenario in detail beforehand and narrow down the scope of the discussions etc.

(ii) Adoption of Yokohama Forum Statement 2017

Yokohama Forum Statement 2017 is a compilation of the Executive Forum, and the participants are requested to make efforts following the statement. For further creation of leadership, it seemed

[b] Although sectional discussion was conducted in the 1st Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region, it was the first time to have group discussions where participants were assigned as main facilitators with Japanese experts acting as assistant facilitators. Themes were also given for each session.

to be significant that comments were collected from all the participants and active discussions were made in adopting the statement. The participants bring back this statement to their home country, which incorporates their own comments that they have committed to, and they are expected to make efforts to improve their organizations and operations with a feeling of ownership.

11.2 Follow-up

11.2.1 Collection of Information

Same as the previous forum, a Utility Profile of the participating water utilities was made. The Utility Profile consists of the following items:

Table 11-2 Contents of the Utility Profile

Item	Indicator/Contents	Remarks
PIs	Indicators (major) Rate of total returns (%) Operating cost coverage (%) Collection ratio (%) NRW (%) Water coverage (%) Indicators (medium) Water production (L/P/D) Operational cost (USD/m^3) Electricity cost (USD/m^3) Chemical cost (USD/m^3) Staff/1000 conn. (staff/1000conn) Continuity of service (Hrs./day) Average revenue (USD/conn/yr.)	At least four years between 2012 and 2015 is covered.
Basic information	Population served (people) Covered service area (km^2) No. of connections (households) Production capacity (m^3/day) Distribution pipe length (km) Water consumption (lpcd) Unit production cost (USD/m^3) Main water source No. of staff	Cover the latest information
Financial information	Financial information including revenue, expenditure and their details.	Cover the latest information
Water tariff	Water tariff and tariff structure	Cover the latest information
JICA project	JICA projects ongoing and implemented in the past	
Other donors' projects	Other donors' projects ongoing and implemented in the past	
Cooperation between utilities	Cooperation ongoing and in the past, if any	
Contact	Contact of a person in charge	
Organization structure	The structure of the organization	

For this Executive Forum, a Utility Profile containing 28 water utilities out of a total of 32 (3 organizations could not attend), was made. Among the participants, using this Utility Profile, it is expected that partnerships will be built and strengthened through collaboration and individually contacting other water utilities that can provide lessons. This can be achieved by comparing information with other water utilities and observing changes of improvement from the Utility Profile. Also, from the view of the donors, the Utility Profile can be utilized as basic information (described later) for new project formulation, baseline monitoring, and training in Japan. The Utility Profile was finalized by the following procedures:

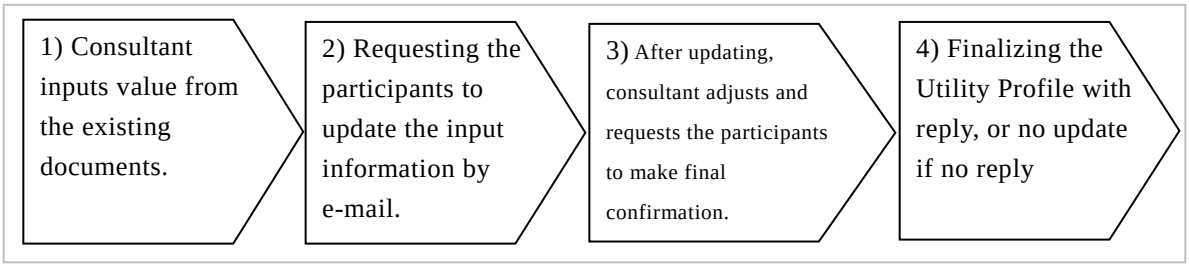


Figure 11-1 Procedures for finalizing the Utility Profile

On the other hand, even though the above procedures are followed, there are organizations that do not reply, and some have no PIs. Therefore, note that not all information is complete. In addition, utilization of the Utility Profile in the Executive Forum seems to be insufficient. Improvement of these points will be explained in 11.4.

11.2.2 Project Formulation

From the Utility Profile and presentations of each session in this Executive Forum, issues and challenges were shared as well as success stories. By utilizing this information properly, new projects can be effectively formulated. The following graph shows a comparison among the participating organizations on representative indicators collected in the Utility Profile.

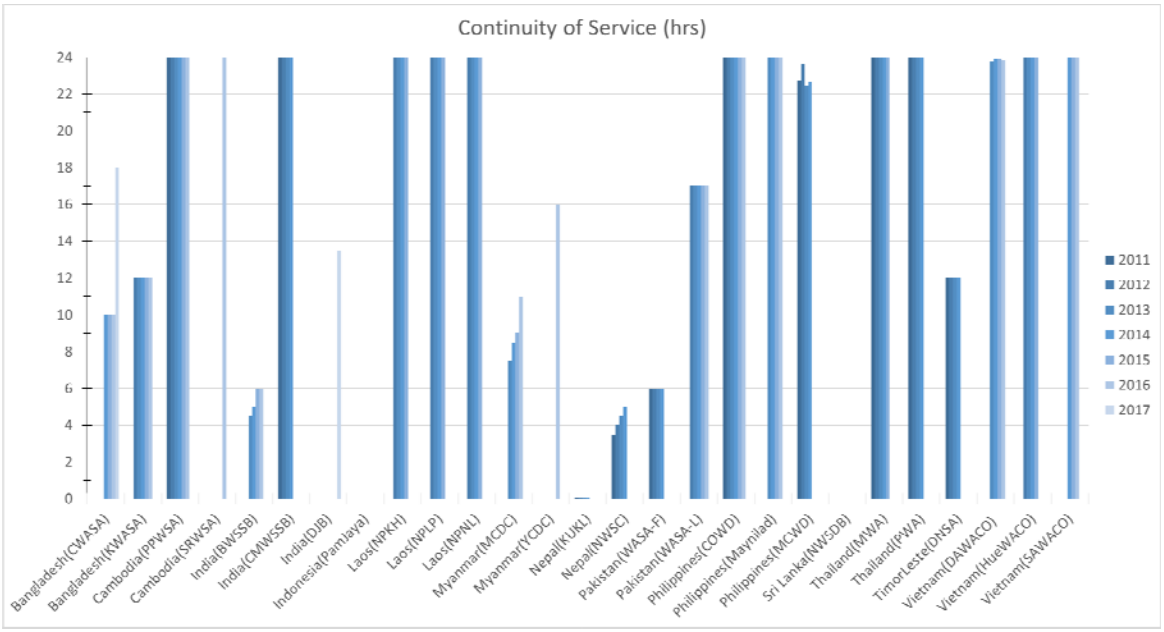


Figure 11-2 Comparison of continuity of service

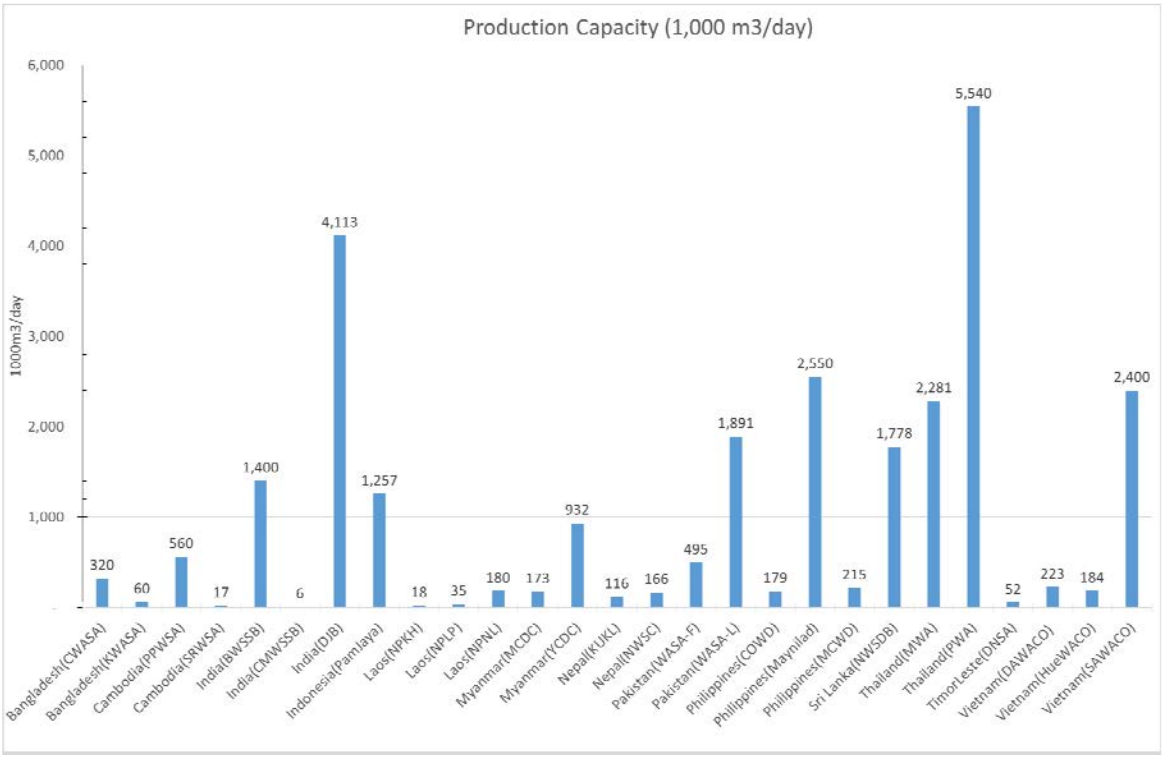


Figure 11-3 Comparison on production capacity

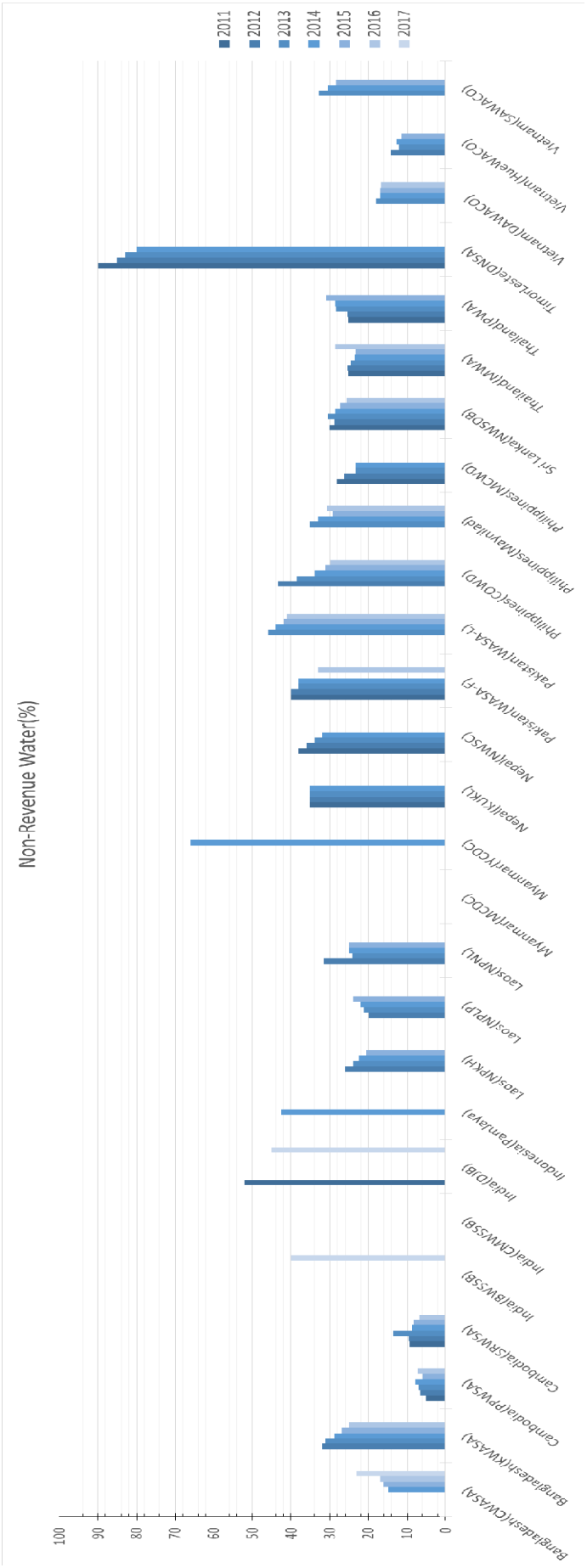


Figure 11-4 Comparison of NRW

From these, support hints can be found for organizations without improvement on continuity of service, and without reduction of NRW. In addition, Table 11-1 showed success stories, new project formulation based on success stories where expansion can be achieved such as the improvement of performance using PIs as described in the presentations of NPNL and NPLP in Lao PDR can be used in other countries, and improvement of services by WSP described in HueWACO in Viet Nam can be used for other countries to support formulation of WSP.

On the other hand, the following challenges and issues were introduced as well as success stories. With information like this, appropriate and effective formulation of new projects can be achieved. In addition, many of the issues are common among all the organizations so that expanded support can be expected.

Table 11-3 Issues introduced in the Executive Forum

Organization	Issues
CWASA, Bangladesh	Low customer services, inappropriate human resources management, low revenue.
SAWACO, Viet Nam	Shortage of budget for measures against climate change, low water tariff.
NWSDB, Sri Lanka	Shortage of budget for efforts on improvement, commitment on WSP, low awareness of stakeholders on water pollution, introduction of monitoring system.
NPLP, Lao PDR	No standards and guidelines to manage private sectors, lack of capability of water utilities to manage private sectors.
MCWD, Philippines	Formulation of work standards necessary to evaluate the performance of the staff, information collection and its accuracy, how the validity of performance is evaluated, quality change of raw water due to climate change.
Cipta Karya, Indonesia	Difficulty to supply water to people living on islands, commitment of the water utilities to the regulations of central governments.
MIH, Cambodia	Engineers at local water utilities lack of skill, high connection cost for poor people.
MPWT, Lao PDR	Lack of leadership by stakeholders in making efforts to enable access to safe water, private sector is only interested in large projects.
YCDC, Myanmar	Difficulties due to both regulatory agency and water utility roles, shortage of budget.
MCDC, Myanmar	High connection cost for poor people.
MWA, Thailand	Securing sustainability of waterworks in direct connection between water tariff revision and political issues.

Approaching things with the above information collected during the Executive Forum enables appropriate and effective support. In addition, this information is quite valuable since it is part of the basic information for follow-up of the organization in the future and to formulate business plans.

11.2.3 Strengthening Partnerships

Partnerships among participants were strengthened through sharing presentations, talking between leaders in the group discussions, and sharing basic information as well as the contact in

the Utility Profile. In the past forum, collaboration has been carried out between participants, such as COWD, Philippines, visited PPWSA, Cambodia. In fact, in the questionnaire distributed during the third day of the Executive Forum, seven organizations (22%) answered that they have already contacted a specific organization on specific matters, 11 organizations (34%) plan to visit other organizations.

This Executive Forum is expected to act as a platform for partnership among those concerned with waterworks. As seen from the results above, this Executive Forum was quite significant in the view of strengthening partnerships.

11.3 Questionnaire

On the third day of this Executive Forum, a questionnaire was handed out, and all the participants answered it (please refer to the result in Annex for details). The questionnaire consists of 10 questions in total. It was provided both paper-based and online, so that the participants could select whether to handwrite or type in their answers with a smartphone. However, all of them submitted theirs answers in paper format.

Question 3 asked about the satisfaction level for the whole Forum and 90% of the participants answered “Very Satisfied” or “Satisfied.”

Question 4 asked about the satisfaction level for the group discussions that were a new trial at the Executive Forum, and more than 92% of the participants answered “Satisfied” or “Very Satisfied.”

On the other hand, answers for Question 5 varied widely, which asked if the sessions were interesting. 59.38% of the participants were interested in Session 1 “Universal and equitable access to safely managed water,” 31.25% were interested in Session 2, “Finance,” and only 6.25% were interested in Session 3 “Proactive improvement of enabling environment (Governance).” This shows that the participants from South Asia were more interested in session 1, although there was not a significant bias among the various organizations.

Question 6 is about how to utilize the lessons learned during the Executive Forum in the future. Only a few participants wrote about sector governance. One of the reasons is probably because sector governance is difficult to control due to political and social problems. The majority of answers included organization governance, cost reduction, service improvement, and sector development plans, all of which are good reference points for the theme selection of the next forum.

Question 8 is about how participants are going to reexamine their own challenges and goals based on the knowledge they learned during the Executive Forum. Some wrote about service expansion to low-income households, external funding, and sector governance. The reason why few participants choose service expansion to low-income households as their goal is because of the difficulty in

achieving it. This is because low-income households are not only in urban areas but also in remote areas such as islands and mountains that also have a right to be supplied with water. As for raising external funding, it may be difficult to make a future plan and convince external organizations or companies that it will be profitable to invest in it. Similar to question 6, sector governance may be beyond their control.

Although the program of Executive Forum was generally appreciated, the secretariat received the following comments about points to be improved. While some of the comments indicated an insufficient understanding of the structure, they are still valuable for selecting a theme for the next forum. Some of the comments also suggested that the Executive Forum could be a few days longer.

- Session theme was too broad, it would be better to narrow down the scope.
- Hope to hear a presentation from Japan.
- It would be better to make up a time frame for Q&A after the presentations. The number of presentations can be reduced.
- Group discussion was a good activity, but the questions were ambiguous, and it was not clear where the discussion was headed to.
- Time frame for group discussions was too short.
- The themes of the group discussions were too broad, and direction was not clear.
- Regarding adoption of Yokohama Forum Statement, it could be more smoothly adopted if participants were divided into several categories and decided the direction of the input in each category in advance.
- It would be better to focus more on "Finance." Perhaps, the next forum can act as a platform to achieve goal 6.1 of SDGs.
- For further learning and understanding, the 4-day forum can have even 4 sessions.

11.4 Lessons and Suggestions for the next Forums

In this Executive Forum, not only conventional contents, but also original trials were implemented in the program. The following are good points and points to be improved.

【Good Points】

Items	Contents
Number of Sessions	This Executive Forum consisted of 3 sessions, which is a proper number for a 3-day forum even though it was the fewest for the Executive Forums so far.
Group Discussion	In the group discussion, all of the participants had an opportunity to speak which showed proactive participation. The participants appreciated group discussion as a fruitful activity so it should be continued.
Facilitators and Accelerators of the Group Discussions	In this Executive Forum, some of the participants were assigned to be facilitators and accelerators. The satisfaction of the participants who played these roles was high so this should be continued. On the other hand, some facilitators were also assigned to make a presentation, which may have been a burden for them. Thus, in the next forum, it would be better to

Items	Contents
	let them concentrate on just one role if possible.
Way to Adopt Yokohama Forum Statement	In this Executive Forum, each participant made a comment one by one, and the draft of the statement was revised at the same time. This gave the participants a common understanding about the Yokohama Forum Statement to which they made a commitment.

【Points to Be Improved】

Items	Contents
Session Theme	According to the questionnaire at the final day of the Executive Forum, a big gap was found on the interest of the participants. Though approx. 60% of the participants were interested in the session of "Universal and equitable access to safely managed water", only a few had interest in the session of "Proactive improvement of enabling environment (Governance)". This shows the big difference between the aim of the secretariat and the interest of the participants. Utilizing the events such as P2P meeting, needs from the participatory organizations should be grasped appropriately as well as the direction of JICA's policy is incorporated. Then the session theme should be set in order for the participants to be interested in all sessions.
Pre-Forum	The original aim that the participants should be involved in the Executive Forum from the preparation stage cannot be accomplished since some participants of the Pre-Forum could not attend the Executive Forum. On the other hand, the Pre-Forum was useful in a view of program formulation such as finding presentation topics and candidates of the facilitators. Utilizing the events such as P2P meeting, awareness building can be achieved and inputs to the Executive Forum can be gained.
Group Discussion	Group discussion is appreciated, but in terms of the procedure, several points to be improved were suggested. Particularly, it is necessary to have a clear direction of discussion and prepare for the recovery of missed discussion points. Well-structured handouts that included the topics of discussion were an effective tool. Regarding the selection of discussion themes, interest in the themes differed from participant to participant. Some participants pointed out that the themes were too broad. It is preferable to understand the needs of participants and set appropriate themes accordingly.
Grouping of Group Discussion	Depending on what theme was discussed, some participants were unable to comment. For instance, one of the participants was unable to speak in Session 1 but was able to in Session 2. It is necessary to adequately make groups according to the participants and organizations and have lead comments by facilitators at the beginning of the group discussion by summarizing the points of the presentations in the session and raising topics to be discussed. In addition, to activate the discussion, it is preferable that Japanese observers and utilities attend the group discussions. Especially, in the group discussion of regulators, Japanese organizations such as Ministry of Health, Labour and Welfare and JWWA could participate in the group and compare the institutions among the participants and Japan.

Items	Contents
Incorporation of Japan's Case Studies	Many of the participants wanted to hear about a case study from Japan. In this Executive Forum, only 2 cases were presented by Japanese organizations, but it is preferable to increase the number of presentations about Japanese cases while considering the balance as a whole.
Q&A after the Presentations	There were several comments requesting a time frame for Q&A regarding the presentations. It is preferable to set about 5 minutes of time for questions.
Utilization of Utility Profile	It is preferable to formulate the framework to update basic information and PIs periodically, since creating Utility Profile takes time. During this Executive Forum, the Utility Profile was rarely used. However, it is preferable to utilize the Utility Profile to accelerate discussion among the participants about how to collect data, definitions of indicators, ways to improve operation, and so on by referring to the summarized results during a session.
Draft of the Forum Statement	Some comments suggested that input from participants should be given earlier. There was an inevitable time limitation for drafting the Forum Statement. The secretariat and the General Moderator needed to work on drafting the Forum Statement until mid-night and in the last minute before the wrap-up session. As one of ways to make a draft of the Forum Statement, it could be considered that moderators summarize several points of each session and after the sessions, those points are put together into a draft of the Forum Statement. In this case, it should be noted that the statement needs to avoid being abstract.
Moderators of the Session	Moderators can be assigned to the participants to increase the participants who contribute to the Executive Forum in a meaningful way. This is because the participants who played a certain role such as presenter and facilitator showed higher satisfaction than the others.

Based on the things mentioned above and in order to make the Executive Forum even better, an idea for a program is shown as follows:

【Program Idea for the Next Executive Forum】

Policy: The program for this Executive Forum was generally appreciated so there are no major changes. The number of sessions can be three, the same as for this Executive Forum. It should be noted that the time scheduled to make a draft for the Forum Statement after the sessions is preferable because this is crucial input for the discussions and opinions of all the sessions related to the draft, which needs time. Thus, the survey team suggests making a draft of the Forum Statement during the technical tour, which takes place during the middle part of the Executive Forum.

Day	Activities
Day 1 (Session 1)	[Morning] ・Keynote Speech ・Orientation [Afternoon] ・Presentations for Session1 (3 presenters from the delegates and 1-2 presentations from Japan, and have Q&A time after each presentation for 5-10 minutes) ・Group Discussion (The role of main and assistant facilitators and accelerators are the same as this Executive Forum)
Day 2 (Session 2)	[Morning] ・Feedback of Session2 ・Presentations for Session 1 (3 presenters from the delegates and 1-2 presentations from Japan, and have Q&A time after each presentation for 5-10 minutes) [Afternoon] ・Group Discussion (The role of main and assistant facilitators and accelerators are the same as this Executive Forum) ・Feedback of Session 2
Day 3 (Session 3 and Technical Tour)	[Morning] ・Presentations for Session 1 (3 presenters from the delegates and 1-2 presentations from Japan, and have Q&A time after each presentation for 5-10 minutes) ・Group Discussion (If there is a time limitation, this could be open discussion) [Afternoon] ・Technical Tour (The Participants) ・Drafting of the Forum Statement (The Secretariat)
Day 4 (Wrap-up Session)	[Morning] ・Session (Each participant comments one by one) ・Adopt the Forum Statement

Chapter 12 Annex

12.1 Invited Participants List

Country	Name	Title	Organization
Bangladesh	Engr. Fazlullah Abul Khair Mohammed	Managing Director	Chittagong Water Supply and Sewerage Authority (CWASA)
	Engr. Abdullah Mohammad	Managing Director (CEO)	Khulna Water Supply and Sewerage Authority (KWASA)
Cambodia	H.E. Ek Sonn Chan	Secretary of State	Ministry of Industry and Handicraft (MIH)
	H.E. Khut Vuthiarith	General Director	Siem Reap Water Supply Authority (SRWSA)
	Mr. Chen Seng Heang	Deputy Director General	General Department of Potable Water Supply, Ministry of Industry and Handicraft (MIH)
	Mr. Pok Chann	Head of Planning Office	Department of Planning and Data Management, Ministry of Industry and Handicraft (MIH)
	H.E. Dr. Sim Sitha	Director General	Phnom Penh Water Supply Authority(PPWSA)
India	Mr. Vijayakrishnan Arun Roy	Managing Director	Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)
	Mr. Nath Tushar Giri	Chairman	Bangalore Water Supply and Sewerage Board (BWSSB)
Indonesia	Mr. Barce Mercedes Simarmata	Technical Director	Jakarta Water Supply Enterprise (PAMJAYA)
	Ms. Meike Kencanawulan	Head of Sub Directorate	Sub Directorate of Technical Training, Directorate of Water Supply System Development, Directorate General of Human Settlements, Ministry of Public Works and Housing (Cipta Karya)
	Mr. Kusmayadi Rudy	Chairman	Indonesian Water Supply Association (PERPAMSI)
Lao PDR	Mr. Virabouth Noupheuak	Deputy Director General	Department of Water Supply, Ministry of Public Works and Transport (MPWT)
	Mr. Vannarath Viengthouay	Deputy General Manager	Vientiane Capital Water Supply State Enterprise (NPNL)
	Mr. Philavong Ladda	Head of Section	General Administration, Planning and Inventory Section, Luang Prabang Water Supply State Enterprise (NPLP)
	Mr. Sinthepphavong Khampasith	Chief	Technical Division, Khammouane Water Supply State Enterprise (NPKH)
Myanmar	Ms. Hlaing Maw Oo	Secretary	Yangon City Development Committee (YCDC)
	Mr. Aung San Win	Head of Department	Engineering Department (Water and Sanitation), Yangon City Development Committee (YCDC)
	Ms. Khin May Htay	Head of Department	Department of Engineering (Water and Sanitation), Mandalay City Development Committee (MCDC)
Nepal	Dr. Prasad Bhupendra	Acting Manager	Nepal Water Supply Corporation (NWSC)

Country	Name	Title	Organization
Pakistan	Mr. Khan Adnan Nisar	Director (Planning and Design Directorate)	Water and Sanitation Agency Faisalabad (WASA-F)
	Mr. Mazhar Muhammad Naveed	Project Director (Foreign Aid Project)	Water and Sanitation Agency Lahor (WASA-L)
Philippines	Mr. John Paul Hofileña Delgado	OIC, Manager, Planning & Monitoring Division	Metropolitan Cebu Water District (MCWD)
	Dr. Beja M. Rachel	General Manager	Cagayan de Oro City Water District (COWD)
	Ms. Lucas C. Yolanda	Head	Program Management Division, Maynilad Water Services Inc.
Sri Lanka	Ms. Lokuliyanage Mangalika	Additional Secretary (Technical)	Technical Division, Ministry of City Planning and Water Supply (MCPWS)
	Mr. Sumanasekera Deepthi UPUL	General Manager	National Water Supply and Drainage Board (NWSDB)
Thailand	Mr. Sunanthapongsak Somboon	Deputy Governor	Metropolitan Waterworks Authority (MWA)
Timor-Leste	Mr. Xavier Pereira Francisco	Chief Department of Dili Water Supply	Ministry of Public Works, Transport and Communications / National Directorate for Water Service (DNSA)
Viet Nam	Mr. Truong Cong Han	Director General	Thua Thien Hue Water Supply Joint Stock Company (HueWACO)
	Mr. Ho Minh Nam	Vice General Director	Board of Director, Danang Water Supply Joint Stock Company (DAWACO)
	Mr. Nguyen Van Du	Deputy Director General	Saigon Water Corporation (SAWACO)

The following executives were also invited, but they cancelled their participation due to inevitable reasons.

Country	Name	Title	Organization
India	Mr.Tyagi Radhey Shyam	Member of Board (Water Supply)	Delhi Jal Board
Nepal	Dr. Mahesh P. Bhattarai	General Manager	Kathmandu Upatyaka Khanipani Limited (KUKL)
Thailand	Dr. Seree Supratid	Governor	Provincial Waterworks Authority (PWA)

12.2 Presenters, Facilitators, and Participating Organizations from Japan

Presenters and Facilitators

Opening Remarks

Mr. Makoto Kashiwazaki, Deputy Mayor, the City of Yokohama

Ms. Noriko Suzuki, Senior Vice President, JICA

Keynote Speech

Mr. Takahiro Yamaguma, Director General of Yokohama Waterworks Bureau

Keynote Speech

Prof. Satoshi Takizawa, Department of Urban Engineering, the University of Tokyo

Master of Ceremonies

Ms. Akiko Kuniyasu, Yokohama Waterworks Bureau

Mr. Kazutaka Nakai, Yokohama Waterworks Bureau

Presenters

Mr. Keitaro Chihara, Kyoto City Water and Sewerage Works Bureau

Mr. Tomonori Hayama, Yokohama Waterworks Bureau

Moderators of Session1

Dr. Mari Asami, National Institute of Public Health

Ms. Mina Yariuchi, JICA Expert to Myanmar

Moderators of Session2

Mr. Masao Shibuya, Japan Water Works Association

Ms. Yuki Honda, Bureau of Waterworks, Tokyo Metropolitan Government

Moderators of Session3

Mr. Hiroyuki Morita, Yokohama Waterworks Bureau

Ms. Makiko Kimura, Global Environment Department, JICA

Assistant Facilitator of Group1A

Mr. Takayuki Sawai, Japan Water Works Association

Assistant Facilitator of Group1B

Mr. Ikuo Mitake, Japan Water Works Association

Assistant Facilitator of Group1C

Mr. Takayuki Konishi, Yokohama Waterworks Bureau

Assistant Facilitator of Group2A

Mr. Hirotaka Sato, TEC International Co., Ltd.

Assistant Facilitator of Group2B

Mr. Ryuji Ogata, JICA Expert to Nepal

Assistant Facilitator of Group2C

Mr. Katsumi Fujii, Yachiyo Engineering Co., Ltd.

Minutes Recorder

Ms. Mayu Ohmura, Global Environment Department, JICA
Mr. Takashi Kondo, Global Environment Department, JICA
Mr. Koji Nakashima, Global Environment Department, JICA
Mr. Keisuke Sonoda, Waterworks Bureau of Saitama City
Ms. Rika Takahashi, Bureau of Waterworks, Tokyo Metropolitan Government
Mr. Kazumoto Onotera, Yokohama Waterworks Bureau
Mr. Shuhei Kureta, Yokohama Waterworks Bureau
Ms. Yukiko Shibata, Yokohama Waterworks Bureau
Ms. Yuki Maeda, Yokohama Waterworks Bureau
Ms. Ena Tsutsumi, Pacific Consultants Co., Ltd.
Ms. Kana Moriyama, Pacific Consultants Co., Ltd.
Ms. Yasuyo Yoshikawa, Pacific Consultants Co., Ltd.

Participating Organizations

Ministries and Institutions

Ministry of Health, Labour and Welfare (MHLW)
Ministry of Economy, Trade and Industry (METI)
Japan Water Research Center (JWRC)
Japan International Corporation of Welfare Services (JICWELS)
Japan Water Works Association (JWWA)
Global Water Recycling and Reuse System Association (GWRA)
Japan Water Forum
WaQuAC-Net (Water Quality Asian Cooperation Network)

Local Governments

Public Enterprise Bureau, Saitama Prefectural Government
Saitama City Waterworks Bureau
Chiba Prefectural Waterworks Bureau
Bureau of Waterworks, Tokyo Metropolitan Government
Public Enterprises Agency, Kanagawa Prefectural Government
Waterworks Bureau, City of Kawasaki
Nagoya City Waterworks & Sewerage Bureau
Hanshin Water Supply Authority
Fukuoka City Waterworks Bureau
Water and Sewer Bureau, City of Kitakyushu

Private Companies

Crown Agents Japan
CTI Engineering International Co., Ltd.

DKK-TOA Corporation
Ebarashoji Co., Ltd.
Hamagin Research Institute, Ltd.
Hitachi, Ltd.
Hinode Sangyo Co., Ltd
KK Toushin Kikaku Sekkei
Kyowakiden Industry Co., Ltd.
Kubota Corporation
Kobelco Eco-Solutions Co., Ltd.
Metawater Co., Ltd.
Mori Engineering Co., Ltd.
Nihon Suido Consultants Co., Ltd.
Nippon Koei Co., Ltd.
NJS Consultants Co., Ltd.
Original Engineering Consultants Co., Ltd.
Pacific Consultants Co., Ltd.
Public Utility Services Center Co., Ltd.
Suidou Technical Service Co., Ltd.
Sumitomo Corporation
Swing Corporation
Water Partners JP Co., Ltd.
Tokyo Engineering Consultants Co., Ltd.
Toshikogyo Co., Ltd.
TSS Tokyo Water Co., Ltd.
Tsukishima Kikai Co., Ltd.
Urban Resilience Corporation.
Yokogawa Electric Corporation
Yokogawa Solutions Service Corporation
Yokohama Water Co., Ltd.

Press

Overseas Infrastructure Research Association of Japan, Inc.
The International Development Journal Co., Ltd.
Newspaper of Waterworks Industry
Nippon Suido Shimbun Co., Ltd.

Organizers

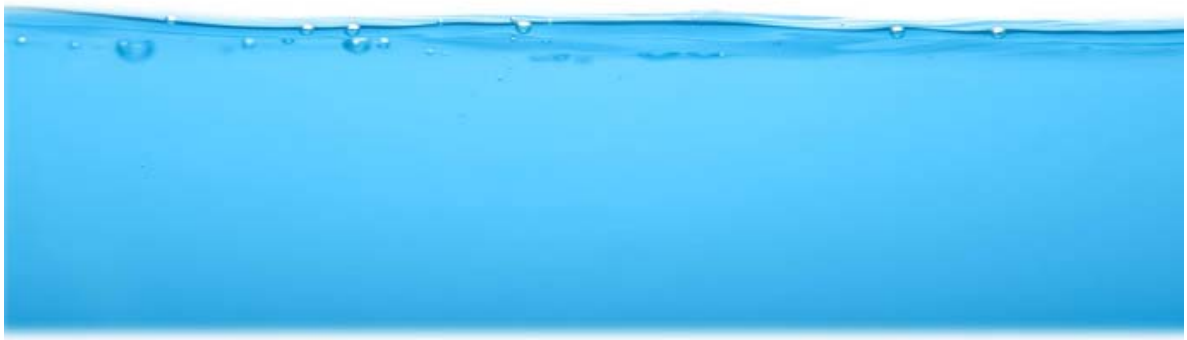
Japan International Cooperation Agency
City of Yokohama

12.3 Program

The 4th Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region

— PROGRAM —

Date: August 1-4, 2017
Venue: Yokohama, Japan



Overview

Theme

Take action toward the next step
-Universal and Equitable Access, Finance, and Governance-

Three Main Sessions

- ***Universal and equitable access to safely managed water***
- ***Finance***
- ***Proactive Improvement of enabling environment (Governance)***

What We Do in This Forum

- **S**hare your challenges and progresses
- **L**earn from others' successes and efforts
- **F**ind the best practice
- **P**artnerships among water supply utilities and regulators in Asian region
- **P**ut the learning into practice in your organization

1

Overview

1. Background

The Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region aims at sharing and co-creation of knowledge and good practice among leaders in water utilities, related ministries and organizations in Asia. The 1st Forum was held in Yokohama in 2010, followed by 2nd Forum in Tokyo in 2011, and 3rd Forum in Yokohama in 2014. The leaders of each country have been making good efforts for the betterment of water supply in various ways as reported in the previous Forums. It is important to further strengthen linkage between Asian water leaders, share experiences and lessons learned, and benchmark the progress of such efforts.

The 4th Forum is co-hosted by the Japan International Cooperation Agency (JICA) and City of Yokohama to invite leaders from 13 Asian countries.

2. Period

From August 1 to 3 (Tuesday-Thursday), 2017

*Observation tour: August 4 for those who are interested in.

*Overseas participants will arrive in Japan on Monday, July 31, and will leave Japan on Friday, August 4 or Saturday, August 5 2017.

3. Invited Countries

Bangladesh, Cambodia, India, Indonesia, Laos, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Timor-Leste, Viet Nam and Japan.

4. Target Organization

This program is designed for the executive leaders of water utilities and directors of ministries related to the projects and program of JICA.

5. General Moderator and Advisor

General Moderator: Prof. Satoshi Takizawa, The University of Tokyo

Advisor: Ms. Keiko Yamamoto, Representative of WaQuAC-Net, Former Senior Advisor of JICA

Overview

6. Program Objective

In the fourth Forum, continuous and committed improvement of water supply service towards achievement of Sustainable Development Goals (SDGs) will be discussed. It will consist of 3 sessions. Expected outcomes of each session will be the followings;

- ✓ To highlight issues and challenges in water service system
- ✓ To share recent activities and progress of water supply utilities
- ✓ To develop key activities for a "virtuous cycle"
- ✓ To identify opportunities for partnership among water supply utilities

7. Venue of Forum:

International Conference Hall, Yokohama Symposia
Address: Sangyo Boeki Center Bldg., 2 Yamashita-cho, Naka-ku, Yokohama 231-0023
Attention: Conference room Div., General Affairs Department, Yokohama Chamber of Commerce & Industry
Tel: +81- 45-671-7151

8. Language

English.
(Simultaneous translation is provided to Japanese and Vietnamese speakers.)

9. Accommodation

HOTEL NEW GRAND
Address:10, Yamashita-cho, Naka-ku, Yokohama-shi, Kanagawa, 231-8520 Japan
Tel : 045-681-1841 (Int : +81-45-681-1841)
http://www.hotel-newgrand.co.jp/english/

10. Welcome Reception

Workpia Yokohama
Date & Time: 18:00-20:00 on August 1, 2017

August 1, 2017

Opening Session

Time	Theme	Presenter
9:30-10:00	**-Opening Remarks** **-Photo Session**	Mr. Makoto Kashiwazaki, Deputy Mayor, City of Yokohama Ms. Noriko Suzuki, Senior Vice President, JICA
10:00-10:30	**Keynote Speech 1** "History and lessons learned from 130 years of modern waterworks in Yokohama City"	Mr. Takahiro Yamaguma, Director General Yokohama Waterworks Bureau
10:30-10:50	**Break**	
10:50-11:20	**Keynote Speech 2** "PPWSA's success and its expansion to all over the water supply utilities of Cambodia"	H.E. Ek Sonn Chan, Secretary of State, Ministry of Industry and Handicraft (MIH), Cambodia
11:20-11:50	**Program orientation** Introduction of the program, participants and handouts, etc.	Mr. Shigeyuki Matsumoto Deputy Director General , and Group Director for Water Resources , JICA
11:50-13:05	**Lunch Break**	

Session I: Universal and equitable access to safely managed water

Main Moderator: Dr. Mari Asami (National Institute of Public Health, Japan)
Assistant Moderator: Ms. Mina Yariuchi (JICA Expert to Myanmar, Japan)

Improvement of water supply services is crucial to play a socially responsible role of water supply systems. Target 6.1 of SDGs also makes it a target to "achieve universal and equitable access to safe and affordable drinking water for all." In order to improve access to water supply services and water quality, in this session, we will discuss the following topics:

- **Water supply development plans and long-term visions**
- **Water supply to low income households**
- **Service improvement such as 24/7, water quality, and water pressure**

Time	Theme	Presenter / Moderator
13:05-13:10	Introduction to the Session I	Dr. Mari Asami
13:10-13:30	**Presentation 1** "Review of the past three years and importance of formulating mid-term plan, strategy and long-term vision"	Mr. Viengthouay Vannarath, Deputy General Manager, Vientiane Capital Water Supply State Enterprise (NPNL), Laos
13:30-13:40	**Presentation 2** "Long term vision and current activities of Chittagong WASA"	Engr. A K M Fazlullah, Managing Director, Chittagong Water Supply and Sewerage Authority (CWASA), Bangladesh
13:40-13:55	**Presentation 3** "Expansion of water supply to low income households"	Ms. Yolanda C Lucas, Head, Maynilad, Philippines
13:55-14:05	**Presentation 4** "Water supply for low income households – Indonesia Water Grant"	Ms. Meike Kencanawulan, Head of Sub Directorate of Technical Planning, Directorate of Water Supply System Development, Directorate

August 1, 2017

		General of Human Settlements (Cipta Karya), Ministry of Public Works and Housing, Indonesia
14:05-14:25	**Presentation 5** "Response to impact of climate change on water resources of Ho Chi Minh City "	Mr. Nguyen Van Du, Deputy Director General, Saigon Water Corporation (SAWACO), Vietnam
14:25-14:40	**Presentation 6** "Establishment and operation of water safety plan, and its contribution to stable water supply"	Eng. Deepthi Sumanasekera, General Manager, National Water Supply and Drainage Board (NWSDB), Sri Lanka
14:40-14:50	**Presentation 7** "Effort to improvement of the services by DNSA"	Mr. Francisco Xavier Pereira, Chief Department of Dili Water Supply, National Directorate for Water Service (DNSA), Ministry of Public Works, Transport and Communications, Timor-Leste
14:50-15:10	**Break**	
15:10-16:30	**Group discussion** Participants will be divided into 3 groups and have a discussion in each group. **Group 1A (Meeting room: 8 Floor 802)** Facilitator Main: Ms. Lokuliyanage Mangalika (Ministry of City Planning and Water Supply (MCPWS), Sri Lanka) Assistant: Mr. Takayuki Sawai (Japan Water Works Association (JWWA), Japan) Discussion Theme **The Roles of Regulators to Supply Safe Water to All the People** ***~The roles of regulators would include sector development plans, master plans, business plan, and long term visions~*** ***~All the people would include people in urban & provincial area, remote area, isolated area, and low income households~*** ・ As a regulator, what can we do to supply safe water to all including low income households, people in isolated area and provincial area? ・ As a regulator, how should we develop mid-long term plans, visions, and strategies and how should we monitor the progress of them? Members MIH (Cambodia) ,Cipta Karya (Indonesia), PERPAMSI (Indonesia), MPWT (Laos), MCPWS (Sri Lanka), MWA (Thailand), YCDC (Myanmar) **Group 1B(Meeting room: 8 Floor 805)** Facilitator Main: H.E.Dr. Sim Sitha(Phnom Penh Water Supply Authority(PPWSA), Cambodia) Assistant: Mr. Ikuo Mitake (Japan Water Works Association Japan) Discussion Theme **Safe Water Supply to the Low Income Households and Vulnerable People** ・ As a water supply utility, what can we do to improve access to safe water? ・ What is the barrier? How can we overcome it? ・ What is the pros of effort to supply water to those people? Members SRWSA(Cambodia), PPWSA (Cambodia), NPNL (Laos), NPLP (Laos),	

August 1, 2017

	NPKH (Laos), Maynilad (Philippines), CWASA (Bangladesh), KWASA (Bangladesh), CMWSSB (India), BWSSB(India), YCDC (Myanmar), MCDC (Myanmar) **Group 1C (Meeting room: 8 Floor 803)** **Facilitator** Main: Dr. Rachel M Beja (Cagayan de Oro City Water District (COWD), Philippines) Assistant: Mr. Takayuki Konishi (Yokohama Waterworks Bureau, Japan) **Discussion Theme** **Customer Service Improvement: 24/7, Water Quality, and Water Pressure, etc.** ・ What can we do to improve customer services to win the trust? ・ Why do we need to be trusted by customers? ・ As a water supply utility, what can we do under the situation that quality and quantity of raw water have been changing in recent years? **Members** MCWD (Philippines), COWD (Philippines), PAMJAYA (Indonesia), SAWACO (Vietnam), DAWACO (Vietnam), HueWACO (Vietnam), NWSC (Nepal), WASA-F(Pakistan), WASA-L (Pakistan), NWSDB (Sri Lanka), DNSA (Timor-Leste)	
16:30-16:45	**Break and gather to the main hall**	
16:45-16:50	**Announcement of IWA World Water Congress and Exhibition 2018, Tokyo**	Mr. Daisuke Kase, Director for IWA World Water Congress 2018 Tokyo Preparation, General Affairs Division, Bureau of Waterworks, Tokyo Metropolitan Government
18:00-19:45	**Welcome Reception** Venue: Workpia Yokohama	

August 2, 2017

Keynote Speech &
Session I: Universal and equitable access to safely managed water (cont.)

Time	Theme	Presenter / Moderator
9:00-9:30	**Keynote speech 3** "Perspectives of urban water services in Asia and Japan"	Prof. Satoshi Takizawa, The University of Tokyo, Japan
9:30-10:45	**Session I (cont.)** **-Feedback of the group discussion** The main facilitator of each group (Group 1A, 1B, and 1C) will make a brief feedback of the discussion. **-Q&A** All participants can ask questions regarding Session I.	Moderated by Dr. Mari Asami Feedback will be made by facilitators of the groups, -Ms. Lokuliyanage Mangalika (1A) -H.E.Dr. Sim Sitha (1B) -Dr. Rachel M Beja (1C)
10:45-11:00	**Break**	

Session II: Finance

Main Moderator: Mr. Masao Shibuya (Japan Water Works Association (JWWA), Japan)
Assistant Moderator: Ms. Yuki Honda (Bureau of Waterworks Tokyo Metropolitan Government, Japan)

Water tariff is crucial point of healthy management of water supply. However, it is difficult to revise water tariff because of political matters. Public financial resources are not sufficient to expand and rehabilitate facilities, and more and more PPP projects have been implemented. It is important for regulators and utilities to develop abilities to control private sectors properly. In addition, cost reduction and energy saving are also significant way to operate sustainable water supply. In order to secure financial resources, in this session, we will discuss the following topics:

- **Financing from outside of the utility**
- **Cost reduction**
- **Water tariff**

Time	Theme	Presenter / Moderator
11:00-11:05	Introduction to the Session II	Mr. Masao Shibuya
11:05-11:25	**Presentation 1** "Review after the 3rd forum & the COWD's efforts to fund the implementation of its NRW reduction program"	Dr. Rachel M Beja, General Manager, Cagayan de Oro City Water District (COWD), Philippines
11:25-11:40	**Presentation 2** "Lessons learned of Jakarta water supply concession"	Mr. Barce M.Simarmata, Techinical Director, Jakarta Water Supply Enterprise (PAMJAYA), Indonesia
11:40-11:55	**Presentation 3** "Challenging management for sustainable water supply"	Mr. Somboon Sunanthapongsak, Deputy Governor, Metropolitan Waterworks Authority (MWA), Thailand
11:55-12:10	**Presentation 4** "Energy Savings at PPWSA "	H.E. Dr. Sim Sitha, Director General, Phnom Penh Water Supply Authority (PPWSA), Cambodia

August 2, 2017

12:10-12:30	**Presentation 5** "Water safety plan and water tariff role"	Mr. Truong Cong Han, Director General, Thua Thien Hue Water Supply Joint Stock Company (HueWACO), Vietnam
12:30-12:40	**Presentation 6** "Revision of Water Rates for Sustainable Business ~ Public relationship about water rate~ "	Mr. Keitaro Chihara, Kyoto City Waterworks Bureau, Japan
12:40-13:55	**Lunch Break**	
13:55-15:15	**Group discussion** Participants will be divided into 3 groups and have a discussion in each group.	

Group 2A (Meeting room: 8 Floor 802)

Facilitator
Main: Ms. Meike Kencanawulan (Directorate General of Human Settlements, Ministry of Public Works and Housing (Cipta Karya), Indonesia) Assistant: Mr. Hirotaka Sato (TEC International Co., Ltd., Japan)
Discussion Theme
Collaboration with Private Sectors, Role of Regulators and Private Sectors, and Other Financial Sources ・ Why PPP is needed / unneeded? ・ As a regulator, what can we do to improve services of private sectors? ・ In order to manage PPP projects properly, what kind of abilities do regulators and water supply utilities need to have?
Members
MIH (Cambodia) ,Cipta Karya (Indonesia), PERPAMSI (Indonesia), MPWT (Laos), MCPWS (Sri Lanka), MWA (Thailand), YCDC (Myanmar), PAMJAYA (Indonesia), NPLP (Laos)

Group 2B (Meeting room: 8 Floor 805)

Facilitator
Main: Dr. Bhupendra Prasad (Nepal Water Supply Cooperation(NWSC), Nepal) Assistant: Mr. Ryuji Ogata (JICA Expert to Nepal, Japan)
Discussion Theme
Saving Energy and Operation Cost Reduction ・ What kinds of items cost us? ・ How can we succeed in reducing operation cost and saving energy? ・ How can we organize effective structures to reduce NRW?
Members
CWASA (Bangladesh), KWASA (Bangladesh), SRWSA(Cambodia), PPWSA (Cambodia), BWSSB (India), NPKH (Laos), YCDC (Myanmar), MCDC (Myanmar), NWSC (Nepal), WASA-L (Pakistan), DNSA (Timor-Leste)

Group 2C (Meeting room: 8 Floor 803)

Facilitator
Main: Ms. Yolanda C Lucas (Maynilad, Philippines) Assistant: Mr. Katsumi Fujii (Yachiyo Engineering Co., Ltd., Japan)
Discussion Theme
Water Tariff ・ Is your water tariff reasonable or too low? ・ How can we succeed in revising water tariff? Why cannot we revise tariff properly?

August 2, 2017

	• How can we improve customers' willingness to pay? • In order to supply water sustainably, what should we achieve? **Members** CMWSSB (India), NPNL (Laos), WASA-F (Pakistan), MCWD (Philippines), COWD (Philippines), Maynilad (Philippines), NWSDB (Sri Lanka), SAWACO (Vietnam), DAWACO (Vietnam), HueWACO (Vietnam)	
15:15-15:40	**Break**	
15:40-16:55	**-Feedback of the group discussion** The main facilitator of each group (Group 2A, 2B, and 2C) will make a brief feedback of the discussion. **-Q&A** All participants can ask questions regarding Session II.	Moderated by Mr. Masao Shibuya Feedback will be made by facilitators of the groups. - Ms. Meike Kencanawulan (2A) - Dr. Bhupendra Prasad (2B) - Ms. Yolanda C Lucas (2C)

August 3, 2017

Session III: Proactive improvement of enabling environment (Governance)

Main Moderator: Mr. Hiroyuki Morita (Yokohama Waterworks Bureau, Japan)
Assistant Moderator: Ms. Makiko Kimura (JICA, Japan)

Governance is the essential part of sustainable water supply operations. In order to achieve proactive improvement of enabling environment, we will discuss the following topics:

- **Sector governance**
- **Organizational governance**
- **Securing technical levels and human resource development**

Time	Theme	Presenter / Moderator
9:30-9:35	Introduction to the Session III	Mr. Hiroyuki Morita
9:35-9:55	**Presentation 1** "Cambodia Urban Water Supply"	Mr. Chen Seng Heang, Deputy Director General, General Department of Potable Water Supply, Ministry of Industry and Handicraft (MIH), Cambodia
9:55-10:10	**Presentation 2** "Effort to manage water supply services efficiently including PPP"	Mr. Philavong Ladda, Head of Section, Luang Prabang Provincial Water State Enterprise (NPLP), Laos
10:10-10:25	**Presentation 3** "MCWD performance management system (MPMS)"	John Paul Hofileña Delgado OIC, Manager, Planning & Monitoring Division, Metropolitan Cebu Water District (MCWD), Philippines
10:25-10:40	**Presentation 4** "Challenges and prospective view of the new "YCDC" "	Ms. Hlaing Maw Oo, Secretary, Yangon City Development Committee (YCDC), Myanmar
10:40-10:55	**Presentation 5** "Performance improvement of water companies in Indonesia through improved human resources capacity"	Mr. Rudy Kusmayadi, Chairman, Indonesian Water Supply Association(PERPAMSI), Indonesia
10:55-11:05	**Presentation 6** "Three approaches to sustainable business management"	Mr.Tomonori Hayama, Director for Innovation and Improvement, Yokohama Waterworks Bureau, Japan
11:05-11:20	**Break**	
11:20-12:35	**Open discussion and Q&A** All participants will join the discussion and ask questions regarding Session III. **Discussion Theme** **1. Sector governance** **2. Organizational governance** **3.Securing technical levels and human resource development**	Moderated by Mr. Hiroyuki Morita
12:35-13:50	**Lunch Break**	

August 3, 2017

Wrap-up Session

General Moderator: Prof. Satoshi Takizawa (The University of Tokyo)

Time	Theme	Presenter / Moderator
13:50-15:50	**Wrap-up Session Part1** All participants will make comments on drafted "Yokohama Forum Statement 2017"	Prof. Satoshi Takizawa
15:50-16:20	**Break**	
16:20-16:50	**Wrap-up Session Part2** All participants will join the open discussion and adopt "Yokohama Forum Statement 2017".	Prof. Satoshi Takizawa
16:50-17:00	**Closing Remarks**	Mr. Kunihiro Yamauchi, Director General, Global Environment Department, JICA

August 4, 2017

Technical Tour

- **Date**

  August 4 (Fri), 2017

- **Schedule (TENTATIVE)**

Time	Activities / Venue
8:15	Meeting at the lobby of "Hotel New Grand"
8:30	Depart from "Hotel New Grand"
10:00	Arrive at "Aoyama Settling Basin"
10:50	Depart from "Aoyama Settling Basin"
11:30	Arrive at "Yamayuri Center"
12:30	Depart from "Yamayuri Center"
12:50	Arrive at "Doshi Water Resource Forest"/ Field Tour
13:40	Depart from "Doshi Water Resource Forest"/ Field Tour
14:00	Arrive at "Lake Yamanaka"/ Take photos
14:20	Depart from "Lake Yamanaka"
15:00	Arrive at "Ashigara Service Area"/ Break
15:15	Depart from at "Ashigara Service Area"
16:45	Arrive at "Hotel New Grand"

＊Dress code is casual. Please wear appropriate outfits and shoes aince it is hot and we visit forest.

＊We prepare a lunch box(Sandwich) and a bottle of water for participants. However, PLEASE be noted to prepare your own meal if you have particular food restricts.

＊Prayer room for the Muslim is available at "Yamayuri Center" (during lunch break)

＊There is no bathroom in "Doshi Water Resource Forest". Please go to the bathroom before a site-visit to the forest.

Information

Other Information

- Travel Arrangement

  For invited participants, JICA will book a round trip air ticket between international airport designated by JICA and Tokyo. Air ticket will be sent to you by JICA overseas office. Accommodation cost in Japan will be borne by JICA.

  For all participants (including observers), when you arrive at the Narita International Airport or Tokyo International Airport (Haneda Airport), please proceed to the immigration and customs inspection area. After the custom inspection area, you will be at "Arrival Lobby". During your stay in Yokohama, an escort of International Hospitality and Conference Service Association (IHCSA) will accompany participants of the Forum, The escort will wait for you at Arrival Lobby with the "JICA" sign board, and give you further assistance. After you arrive at the hotel, the escort will tell you detailed information after the next day.

- Meals

  During your stay in Yokohama, meal expenses will be provided by JICA. For Muslim participants, halal foods will be offered.

- Presentation materials

  All presentation materials will be stored "GIGAPOD" which is an online storage service. Materials will be printed and distributed to only invited participants by JICA. You can download materials from GIGAPOD in advance. The URL of GIGAPOD is as below.

  - URL: https://goo.gl/QwjsH6
  - ID: yokohama2017
  - Password.: Yokohama2017
  - Name of folder: The 4th Executive Forum in Yokohama_第 4 回アジア上水道事業幹部フォーラム

- Free WIFI service

  You can use free WIFI service at the 9th floor of venue of the Forum.

- Prayer room for Muslim

  Prayer room will be set up on the same floor of the Forum (Floor 9).

- Climate

  Please note that seminar period falls on the summer season in Japan. Average Temperature in Yokohama is 30~33 degrees Celsius.

13

The GIGAPOD of this Executive Forum is already closed.

Information

- Prayer room for Muslim

  Prayer room will be set up on the same floor of the Forum (Floor 9).

- Climate

  Please note that seminar period falls on the summer season in Japan. Average Temperature in Yokohama is 30~33 degrees Celsius.

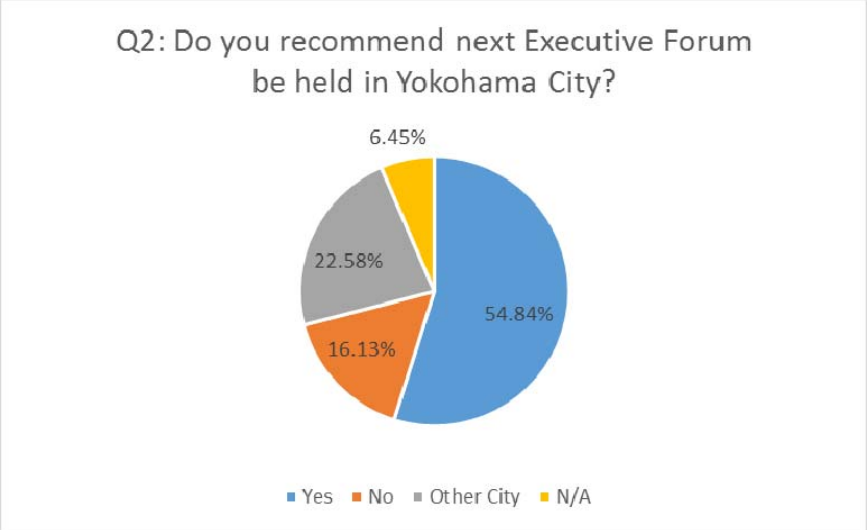
12.4 Result of Questionnaire

On the third day of this Executive Forum, the survey team implemented questionnaire which consists of 10 questions. All the delegates answered the questionnaire.

Q1. Name and Organizations

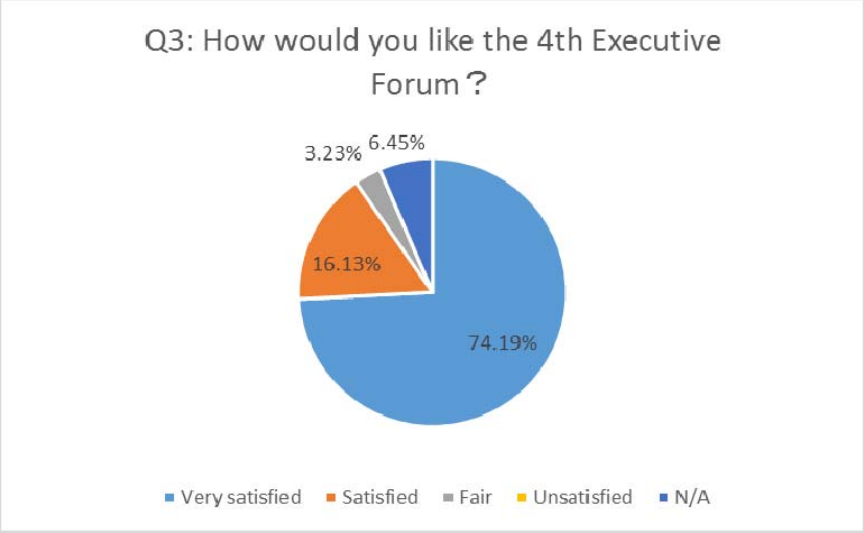
Omitted

Q2. Do you recommend next Executive Forum be held in Yokohama City?



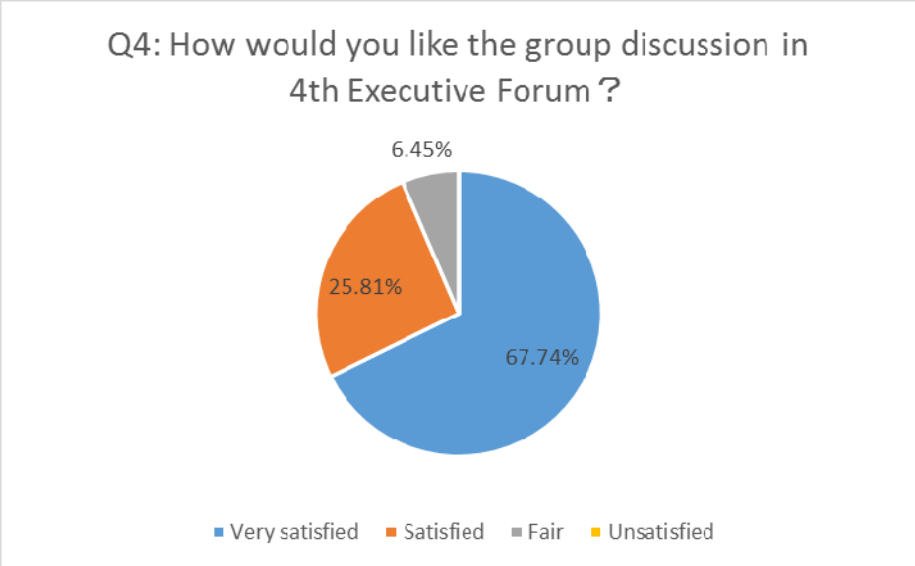
- Kyoto (three votes)
- Tokyo (two votes)
- Nagoya
- Hiroshima
- Sapporo
- This idea can also be considered

Q3. How would you like the 4th Executive Forum?



- Sessions were managed well, topics are helpful.
- It was well organized program.
- Very satisfied, organized very well and productive
- May program free attendee of list last afternoon for shopping of present
- Management seem to be very nice.
- The water administration team prepare before forum very excellent than previous forum
- Well organized.
- Well focused on appropriate topics.
- Presentation followed by Q&A would have been better.
- Forum linked -up us to enhance new experience and knowledge.
- It is good opportunity for me getting information from the other countries experience how to develop water supply services improvement in my country.

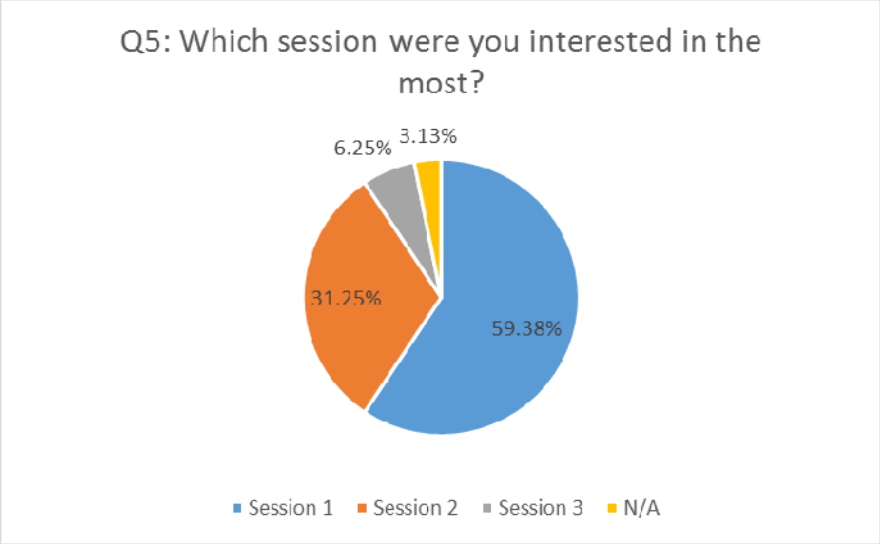
Q4. How would you like the group discussion in 4th Executive Forum?



- There was enjoyed time for discussion.
- Satisfied.
- Should be increase more time for group discussion.
- Everybody very enthusiasm
- None.
- Seeking idea with all other participants.
- It is good sharing knowledge and experience from other country.
- Very active.
- Recorder should be provided to facilitators to make save that the note taking cover all the opinion of the participants.
- To learn more and got fruitful from water supply with neighboring country.
- Some of the discussions had no clear directions.
- The questions are not clear.

- Slightly more duration for summarizing the group discussions would have been better.
- Sharing knowledge is very impressive.

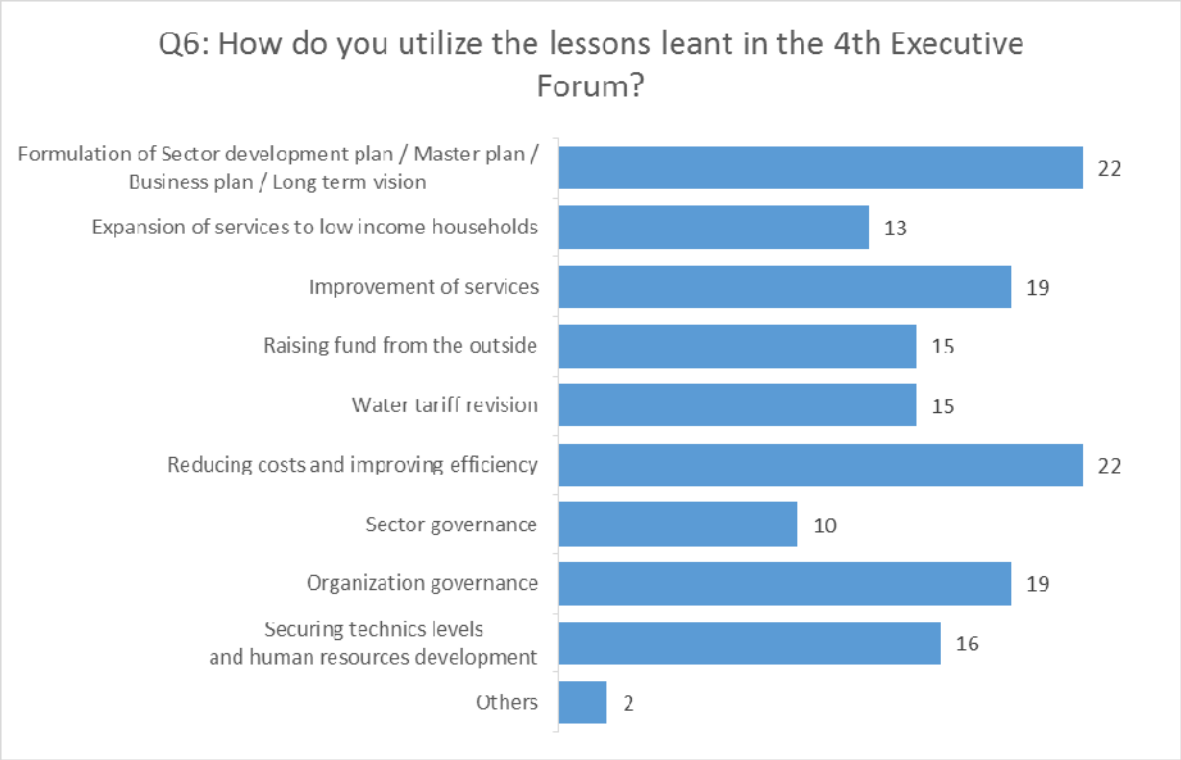
Q5. Which session were you interested in the most?



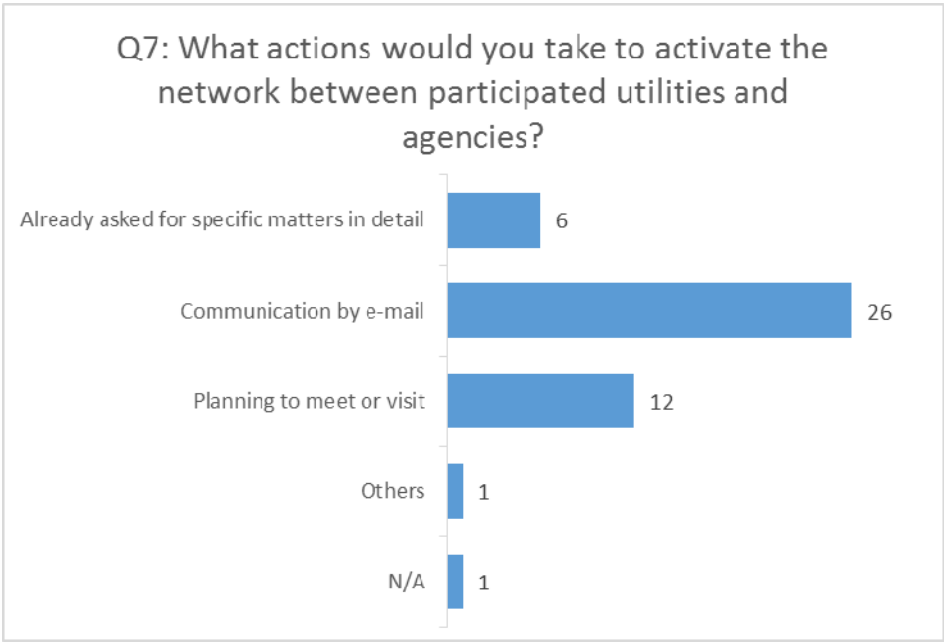
What presentation impressed you the most?

- Perspective of urban water services in Asia and Japan - Professor Satoshi Takizawa (Japan): Eight votes.
- Energy saving at PPWSA - H.E. Dr. Sim Sitha, PPWSA, Cambodia: Three votes
- Expansion of water supply to low income households - Ms. LUCAS C Yolanda, Maynilad, the Philippines: Two votes
- History and lessons learned from 130 years of modern waterworks in Yokohama City, Mr. Takahiro Yamaguma, Yokohama waterworks Bureau, Japan: One vote
- Revision of Water Rates for Sustainable Business~ Public relationship about water rate~ - Mr. Keitaro Chihara, Kyoto City Water and Sewerage Works Bureau, Japan: One vote
- Three approaches to sustainable business management - Mr. Tomonori Hayama, Yokohama Waterworks Bureau, Japan: One vote
- Establishment and operation of water safety plan, and its contribution to stable water supply - Eng. Deepthi Sumanasekera, NWSDB, Sri Lanka: One vote
- Long term vision and current activities of Chittagong WASA - Engr. A K M Fazlullah, CWASA, Bangladesh: One vote
- Review after the 3rd forum & the COWD's efforts to fund the implementation of its NRW reduction program - Dr. Rachel M. Beja, COWD, the Philippines: One vote
- Water safety plan and water tariff role - Mr. Truong Cong Han, HueWACO, Viet Nam: One vote

Q6. How do you utilize the lessons learned in the 4th Executive Forum? (Tick all that apply)



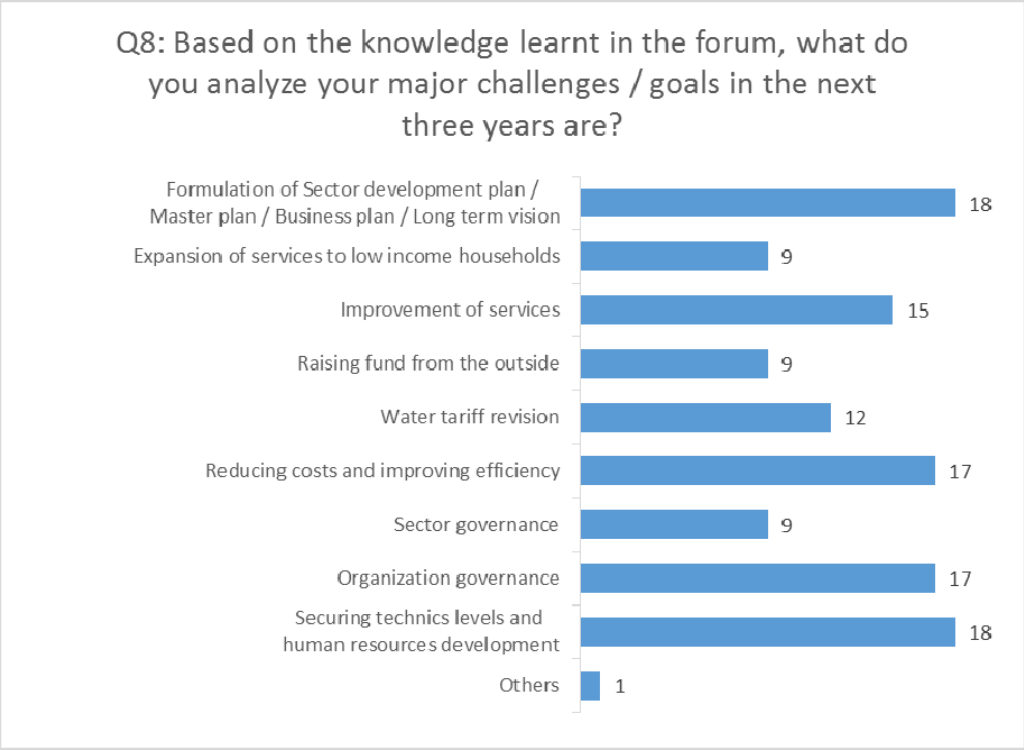
Q7. What actions would you take to activate the network between participated utilities and agencies? (Tick all that apply)



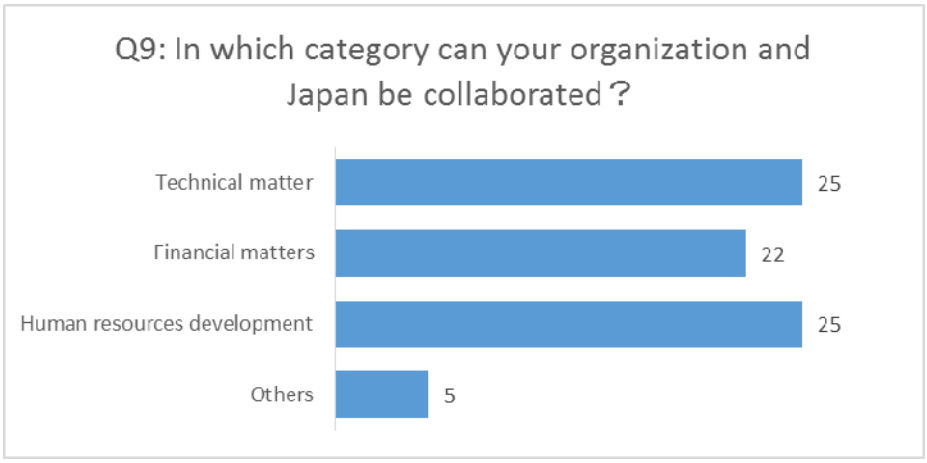
- Partnership agencies can be directly or JICA, WSP, AFD etc.
- Specific deal of JICA research on PPP
- Already asked for specific matters in detail: Cipta Karya, PAMJAYA, MPWT, MCDC, SAWACO, DAWACO

- Communication by E-mail: MCPWS, NWSDB, CWASA, Cipta Karya, PAMJAYA, PERPAMSI, WASA-L, WASA-F, NWSC, DNSA, MIH, PPWSA, SRWSA, MPWT, NPLP, NPNL, NPKH, BWSSB, CMWSSB, MCWD, MCDC, Maynilad, COWD, DAWACO, SAWACO, HueWACO
- Planning to meet or visit: KWASA, WASA-F, WASA-L, PERPAMSI, NPNL, NWSDB, BWSSB, MIH, YCDC, Maynilad, MCWD, HueWACO

Q8. Based on the knowledge learnt in the Executive Forum, what do you analyze your major challenges/goals in the next three years are? (Tick all that apply)



Q9. Based on the knowledge learnt in the Executive Forum, what do you analyze your major challenges/goals in the next three years are? (Tick all that apply)



- At present one project is being financed by JICA with maybe extended for the next step.

- JICA in working on two major projects in WASA.
- JICA is already working in and assists above mention factors.

Q10. Please give us any comments (no grammatical corrections are made).

- Very satisfied is all I want to make comment to the 4th Executive Forum in Japan. Thank you for all we (SAWACO) have received from the Organization. Hope that we will see again in next forums.
- 4th Executive Forum was very well organized. But the presentations especially "Finance" should be more focused on the subject. Next forum may be a platform to the SDG6.1.
- Duration of the Executive Forum could be four sessions in four days instead of three days for better understanding and learning. It could be more benefited by including more best practices in water utilities. Group discussion and participation was useful and benefited for our water utility.
- All the activities are well organized. We have to successfully organize SDG6 in Bangladesh. The 4th Executive Forum in Japan will help implementing the goal.
- Human resource development is the way to be impressive in the first stage of all works. To make proper master plan / business plan and long -term-planning is significant way to improve all utilities.
- Excellent opportunity to gain and share knowledge from water utilities too. Improvement of our utility world's best practices were shared by the JICA, Yokohama water and other water utilities. Issues and challenges are common with all developing countries. This is a good forum to share and arrive at agreed points for sector improvement.
- Thank you for all HueWACO have receive from organizers, hope Hue we will see again in the next forum.
- Very well-organized event.
- Increase number of presentation from Japan Water works of how they make improvement and information to increase the level of service to customers.
- Please facilitate us to make the forum for sharing knowledge after we come back to each country, so we can communication each other for implement recommendation from Yokohama forum before we meet again on 5th forum.
- Best organizing for comfortable stay of attendees. General information and experience have been sharing among participants and success utilities in Japan. All experience and succeed organizations + key speaker provided most important word. Thank you for welcome warmly. Please provide more speakers from Japan utilities on private company.
- Good to share experience, problems, solutions amongst each other to take action towards the next step. Thank you.

- Everything have perfectly managed in 4th Executive Forum in Yokohama, Japan. Please arrange this type of executive in future in Japan. Thank you very much. Thank you again.
- It is very good opportunity to share with the other county experience. How to improve develop in water supply sector to the community.
- The best chance of my life to come here and fulfill my need (dream). I hope in next forum I will have more chance again.
- Meal tickets provided to overseas participants are limited to only 3 restaurants of which 2 are western and 1 Chinese. Japanese restaurants should be promoted or Otherwise cash should be given instead of tickets so more options can be selected and more enjoyable.
- Better to disseminate discussion frame ahead to facilitate much more meaningful discussion.
- Well organized and well attended. Noted the continuous attention of all participants. Very good knowledge sharing on common issues such as “resistance for tariff revisions”, “NRW” etc. Log of discussions on PPP but “successful stories” not available and shared. However, in general, a very comprehensive and successful forum.
- Presentations shall be more interactive, there shall be more brain storming on larger no. of issues by making smaller groups and sharing with the larger group in more meaningful marker. We can reduce number of presentations and give more time to theme on which presentation was made. In each afternoon field with may be planned on various important aspects like asset repayment, SCADA, call center.
- It would have been better, if an opportunity for asking questions was given after each presentation.
- The 4th Executive Forum is very fruitful to develop water sector to achieve (SDG). From this output we will continue to improve our sheet (water supply seefors). Bare on 4 pre-conditions: 1) water quality, 2) safe water, 3) sustainable water, 4) affable (trenchancy calculated)
- Good preparing for this forum. Strong discussion and good comments.
- I hope the aid JICA will continue so that we can also become a good water utility equipped with the technical skills and support for the development of the water utility.
- MCDC is implementing the Mandalay Urban senesces improvement project and Nether endian, NRW reduction, rehabilitation of orienting networks, reservoir and tube wells so that in forum please put the Musip-Pmo to attend because we are also going to draw a master plan (2040) for Mandalay city. This forum is very well for us.
- In general, the forum in very informative, interesting and challenging at the same time specially when it comes to water tariff issue. In the preparation of the summary / Yokohama statement, we can first get all the delegate input, categorize them in a particular topic so we can easily draft a statement/paragraph, the easiest way. This is also to limit the disagreement or difficult interpretation of the issue presented@ hand.

- Thank you very much. I learned useful knowledge to apply to my company. Hopefully with the lessons learned and exchanges applied to the right conditions at DAWACO, if will be good. I look forward to coming back to the 5th forum to retort the results.

12.5 Records of Group Discussions

12.5.1 Group 1A

Record of Group Discussion	
Session	(I) II III
Program	Group Discussion
Group No.	1A
Recorded by	Ms. Kana Moriyama
Theme of group discussion	The Roles of Regulators to Supply Safe Water to All People ~The roles of regulators include sector development plans, master plans, business plans, and long-term visions~ ~All people include people in urban & provincial areas, remote areas, isolated areas, and low-income households~)
Facilitator	Ms. Lokuliyanage Mangalika (MCPWS, Sri Lanka) Mr. Takayuki Sawai (JWWA, Japan)

[Accelerator]

Mr. Pok Chann, (MIH, Cambodia)

- MIH is in charge of regulations of water supply in Cambodia. Cambodia established water policy standards and other regulations.

[Discussion]

Facilitator

- Facilitators provided the following Key Questions, and requested all the participants to comment one by one.
- What are the most critical barriers or issues to develop a safe water supply?
- What should you provide to support water utilities and/or what and how have you accomplished as a result of your experience?
- What is your vision or business plan for the next 30 years for further development?

Ms. Hlaing Maw Oo (YCDC, Myanmar)

- In Myanmar, some of the current issues are as follows: Broken pipelines and leakage because the city is rapidly growing. YCDC has implemented a zoning system to distribute water and properly manage water distribution, water pressure, and reduce NRW rate. Coverage ratio is 40% of the whole city, but existing water sources are not enough to satisfy increasing water demand. Salination of water sources is also an issue.

Facilitator

- Does YCDC have any future plans?

Ms. Hlaing Maw Oo (YCDC, Myanmar)

- NRW is really high and this is a major issue. YCDC is working on NRW reduction and aims to create a much more efficient water supply. We need to find more water sources to expand water coverage and satisfy the increasing water demand in Yangon City.

Ms. Meike Kencanawulan (Cipta Karya, Indonesia)

- To answer the Second question, Indonesia has already issued numerous regulations and policies. However, regulations are just regulations, and implementing them requires a serious commitment. In the water supply sector in Indonesia, local government is responsible for the water supply. As a regulator, central government needs to consider how to make local government and local operators commit comply

with regulations. Using performance-based benchmarking is one of solutions to manage local operators and local government.

- The Indonesian central government established Performance Indicators and criteria to monitor and evaluate local government and local operators. It also provides funding as well as regulations and policies. Quantity, quality, continuity and affordability are the key issues for the water supply in Indonesia. Regarding these issues, the central government set National Standards which are required as a minimum to benchmark local government's daily operations.

Mr. Kusmayadi Rudy (PERPAMSI, Indonesia)

- As mentioned by Ms. Meike from Cipta Karya, regulations and policies have already been established enough in Indonesia. To answer question 1, the hurdle is a safe water supply for poor people living far from cities. Indonesia consists of so many islands and its geographical features are varied. Some people live in elevated areas and far from urban water supply systems. The government needs to be responsible for supplying water to these people. Because they are unable to access the urban water supply system, they have simple community plants managed by local government. The water quality of some of these community plants is not sufficient.
- For low-income people living in cities, regulators needs to support them in order to have connections to the water supply system.
- The Indonesian Central government establishes a mid-term strategic plan every 5 years.

Facilitator

- Do water operators operate the community plants?

Mr. Rudy Kusmayadi (PERPAMSI, Indonesia)

- No, the communities are very far from big cities, so only residents operate the community plant.

Ms. Meike Kencanawulan (Cipta Karya, Indonesia)

- There are two water supply systems, one is a piping system and the other is a non-piping system. Local government can define an area as either a non-pipe or pipe system.

Mr. Pok Chann, (MIH, Cambodia)

- Finance is really an important key. A legal framework is also necessary. In Cambodia, water law has already been drafted to regulate private water operators. In local government and utilities, the number of skilled operators is insufficient. MIH has established the minimum technical specifications for production and water quality.
- The connection fee is a problem for poor people. The connection fee is the same everywhere in Cambodia. The odor of water is also a critical point. People will not drink potable water if it smells bad.

Facilitator

- What about human resource development?

Mr. Pok Chann, (MIH, Cambodia)

- Capacity building of staff of the utilities. Before 1993, the water supply system in Cambodia was not operated properly, but after 1993, the roles of water utility staff became more clearly defined.
- Regarding Question 2, legal framework is very important. MIH has 23 performance indicators and monitors the situations of all public water utilities every year. Our mission is to ensure that all water utilities comply with the vision and that all people living in urban areas can access safe and stable water supply systems by 2025.

Mr. Sunanthapongsak Somboon (MWA, Thailand)

- MWA is a water supply operator but also plays a role as a regulator because Thailand has no agencies to directly regulate water supply. Regarding Question 2, MWA has to try and provide a water quality that meets the standard even there is no regulator.

Facilitator
- Are there any long-term plans or visions that are applied to all over the country?

Mr. Sunanthapongsak Somboon (MWA, Thailand)
- No, and MWA is responsible for Bangkok as well as two other provinces. MWA also establishes a long-term master plan the areas it is responsible for.

Facilitator
- Who monitors the plan?

Mr. Sunanthapongsak Somboon (MWA, Thailand)
- MWA reviews the plan itself and establishes a medium-term depending on the progress.

Mr. Virabouth Noupheuak (MPWT, Lao PDR)
- How are SDGs different from MDGs? For MDGs, only access to drinking water is required. For SDGs “safely managed” drinking water is also required.
- How do you implement WSP? Both development and implementation are important. The government of Lao PDR is involved in improving regulations and establishing new PIs which contain three groups: Safety, Stability, and Sustainability. Lao PDR also reviews and revises the drinking water quality standard.
- The hurdle can be defined by just one word, “Leadership.” Collaboration with other agencies is also important. In Lao PDR, the Ministry of Health is in charge of the water quality standard while MPWT is in charge of monitoring and benchmarking. The government manages and monitors, implements training and TOT for water supply operators. MPWT also encourages each utility to have its own internal auditors to implement WSP.
- No plans can be implemented without a budget, so plans should be a determined with funding in mind. If utilities have no business plan, WSP cannot be implemented.

Ms. Hlaing Maw Oo (YCDC, Myanmar)
- The situation of YCDC is similar to that of MWA. Both of them are not only the government but also the operator. There is no financial support by the central government so YCDC needs to allocate its own budget. When YCDC gets a loan or a grant, it needs to get approval from the Union Government. The revenue from the water tariff could be financed, but the water tariff in Yangon is too low, so YCDC needs to compensate the cost from its own budget.
- There is no body that supervises the water supply in Myanmar, so we are trying to establish a water supply authority. YCDC is attempting to reform its authority to a regulatory role and an operational role. YCDC will then ask to set its own targets and goals to manage regulation.

Facilitator
- The situation is similar in Sri Lanka as well. The water utility in Sri Lanka, NWS&DB needs to manage its business by itself. However, when it implements projects, MCPWS provides the funding. Increasing tariffs is very difficult because some of them are related to political matters.

MIH Mr. Pok Chann, (MIH, Cambodia)
- In Cambodia, before 2012, water tariffs were approved by local government, but after 2013, approval by central government became necessary to revise tariffs. Even though private sectors use their own money to develop the system, we still try to make them comply with the national standards.

Ms. Meike Kencanawulan (Cipta Karya, Indonesia)
- In Indonesia, water tariffs are approved by local government, but in practice, water tariffs also require approval by parliament.

Facilitator
- Cambodia: A legal framework, financial resources and capacity development are important. A legal framework is important to develop and implement a water safety plan. The central government manages water supply utilities for both the private and public sectors.
- YCDC needs to secure financial resources to increase coverage ratio. YCDC is an operator yet also regulates itself at the same time.
- Cipta Karya has a strong commitment to quality and quantity of water. In order to monitor them, Performance Indicators are utilized to make improvements.
- PERPAMSI mentioned that a regulator needs to be responsible for the water supply for people living far away from cities.
- MWA plays both the roles of a regulator and an operator.

Facilitator
- Does MWA have a problem with water quality?

Mr. Sunanthapongsak Somboon (MWA, Thailand)
- The treatment of water has improved but there are still problems with pollution in customers' water tanks and water sources.

Facilitator
- Does this mean that a long-term master plan is important? What about a monitoring process?

Mr. Sunanthapongsak Somboon (MWA, Thailand)
- Yes. And MWA regulates itself because there is no regulatory body.

Facilitator
- MPWT emphasizes the establishment and implementation of a Water Safety Plan. Most water utilities only follow the standards.
- Our opinions and situation are different.
- In the presentation, Viet Nam mentioned the importance of development plans for the water sector. Bangladesh also mentioned long-term plans for the water sector. (MCPWS)
- Although each country has a different situation and background, facilitators will pick up some important key issues.

Ms. Hlaing Maw Oo (YCDC, Myanmar)
- YCDC also has a master plan for 2025-2040 although it is not for water safety, but water coverage because Yangon City needs to increase its coverage ratio first.

Ms. Meike Kencanawulan (Cipta Karya, Indonesia)
- Not only issuing regulations but also enforcing them is important. Accountability is also very important. To make sure of performance, KPIs are useful.

Facilitator
- We would like to summarize the entire discussion for feedback.

EOT

12.5.2 Group 1B

Record of Group Discussion	
Session	(I) II III
Program	Group Discussion
Group No.	1B
Recorded by	Ms. Yasuyo Yoshikawa
Theme of group discussion	Safe Water Supply for Low Income Households, Vulnerable People, and People Living in Remote Areas
Facilitator	H.E. Dr. Sim Sitha (PPWSA, Cambodia) Mr. Ikuo Mitake (JWWA, Japan)

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- Good afternoon. There are more than 10 people here from several different countries. Supplying the water to the community is difficult, especially to remote areas. How do you supply water to remote areas? How do you supply water to low-income households? Manila Water has managed to supply water to remote areas. We only have a total of 70 minutes so each of you only have about 5 minutes to speak. Everybody has ideas and something they want to say. Mr. Nath Tushar Giri (India) will begin the discussion as an accelerator.

[Accelerator]

Mr. Nath Tushar Giri (BWSSB, India)

- The number of slums has gone down and they are not clearly defined. Urbanization is increasing. Not only the rich but also the poor are coming into the city. A large unpredictable number of settlers are coming and we do not know when. Universal access to water is everyone's right. Everyone should have access to water yet there are obstacles to providing it. A vicious cycle of informal systems is going on. What we can do? Who will construct the infrastructure in remote areas of the city? How can we get the necessary funding?

[Discussion]

Mr. Vijayakrishnan Arun Roy (Chennai, India)

- Even if we can provide water to the slums, the water pressure is insufficient. There are two different strategies. The first is, in addition to pipes, we also use tanks. Or, we can provide 15 million cubic meters of water per day free of cost to the informal sectors.

Engr. Abdulllah Mohammad (KWASA, Bangladesh)

- Informal settlers and the poor who are formal settlers cannot pay for water. Provide water to the informal ones, which should also be backed by legal approach. For those not connected, there are service providers that are not informal. Slums get their water at higher pressure and poor water quality. Distribution pipes should be made ready. There is not the capacity for the effort required to make service connections. We connected two slum areas and invested in the pipes. NGO came for the service connections and so on. We have MOU between water utilities and Communication Based Operation (CBO). Reducing NRW, accounted as legal customers, but they don't have a special tariff rate. The tariff is covered by the CBO.

Ms. Khin May Htay (MCDC, Myanmar)

- I want to focus on poor urban settlers. Our government cannot recognize the informal settlements. There are two essential things: **availability and affordability are**

important. The connection fees are not affordable. The connection fee should be divided and covered by the tariff. The poor pay more for water than the rich. I received the information from one country. If we cannot provide water directly to individuals, a prepaid card system may be a possibility for utilizing a public tap.

Mr. Philavong Ladda (luang Prabang, Lao PDR)

- In Laos, house connections are increasing, a revolving fund is utilized for the poor. The poor means people living in rural in the case of Lao PDR, since we do not have slums. The priority is to lay pipes in remote areas. Because ownership is the price, they do not have the ability to pay for water in the city.

Mr. Vannarath Viengthouay (NPNL, Lao PDR)

- Supplying water to the poor is difficult to achieve. First of all, there is not enough money to lay the pipes since the length is very long and the pipes are located in high areas. 30% should be paid by the beneficiary and 70% by the water supplier. But the government will ultimately set the policy regarding these issues. Public hearings indicated that the people think the government should supply water for free. If the people need to access water from new connections, they should have a safety tank, so the connection fee should be collected in 3 months or so beforehand.

H.E. KHUT Vuthiarith (SRWSA, Cambodia)

- We have established a policy to provide water to the poor. We can provide a subsidy of 30 to 50% of the water connection according to the situation. Maynilad and Indonesia have set an example, including a reduction in water tariffs and water for low income households. The commitment of the Waterworks is that the water tariff should be affordable by the poor and specially priced. Water is a scarce resource. A strong commitment is essential so support from third parties is necessary.

Ms. Lucas C. Yolanda (Maynilad, Philippines)

- Slums and the poor. We have a water tariff structure so that less than 10 cubic meters is a flat rate. CSR is going on. We constructed small water treatment plants along the river and have given local communities the opportunity to manage them. There are still informal settlers and we have much to accomplish so we should try and solve this problem. It is better for us to discuss illegal connections.

Engr. Fazlullah Mohammad (CWASA, Bangladesh)

- How do you define low income households? If a person has a house, they should not be considered as low-income people. **If we cover all the low-income slums, more people will move into them. We should offer free connections but customers should pay for them. An NGO has a better solution: Connections are given a name, then educate the community how to manage them (pay and collect). Then they can give the connection name to the community and they will come. This was successful and we can learn from this experience. If you don't provide water, illegal connections and waterborne diseases will increase. So, in conclusion, they will get a free connection but should eventually pay.** Working with local coordination units is important.

Ms. Lucas C. Yolanda (Maynilad, Philippines)

- I do agree with the idea of Engr. Fazlullah Mohammad. We should not encourage more slums but we should communicate with local government.

Mr. Nath Tushar Giri (BWSSB, India)

- We should recognize that drinking water is a fundamental right. Infrastructure of slums will increase. Full recovery from slums is an issue. We have to provide metered water. 10 m3 free water, then they should pay. Third from the example in Manila, it depends on the community structure of the slum. Some sort of community participation is required. NGOs should be involved in various ways. Think of how to utilize the NGO.

Engr. Abdullah Mohammad (KWASA, Bangladesh)

- We cannot ignore the Sustainable Development Goals (SDGs), equitable access to safe water for all people. How do we achieve these goals? We cannot ignore slums. Each situations is different, so in the planning process, we have to consider each specific situation. If we achieve efficiency at a certain level, then we should consider the expenditures for these slums. **Financial points of view should include slums in their plans.**

Mr. Sintepphavong Khampasith, (NPKH, Lao PDR)

- We talked about a safe water supply for low income people. A small-scale water treatment plant with a capacity of 5,000 cubic meters per day is implemented by JICA. We only supply 9,000 and cannot supply the remaining amount. This is a problem for us.

Mr. Philavong Ladda (NPLP, Lao PDR)

- I agree with all of the ideas. We should keep the opportunities for poor people to access safe water.

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- Let me share an experience. We also have some slum areas and remote areas. 1 million cubic meter/day. Water for all projects is supported by the World Bank. Support pay for connection fees is the issue. But the tariff is half the cost as the domestic one. How do we continue this until 2020, take a part from social funding, we give a 100% subsidy for connection fee? Some cases are individual and some relate to communities and so on, maybe 1,000 families.

Engr. Abdulllah Mohammad (KWASA, Bangladesh)

- Are these policies approved by the local government or the central government?

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- By the local government.

Ms. Khin May Htay (MCDC, Myanmar)

- How can you recover OPEX?

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- We did not increase the water tariff. We have three classifications, we can cover the

water tariff from the industrial one.

Facilitator

- He did not mention a water tariff when talking about Yokohama. In the past, most people had low incomes. They also installed common taps. If people were wealthy they were able to afford their own tap. They had a smaller water tariff. This is the first priority to improve public health. We also installed common taps.

Mr. Nath Tushar Giri (BWSSB, India)

- Population in Yokohama city growing more and more. If it is growing, there are always gaps. How do we recover OPEX? We cannot return that directly. Covering it by another tariff.

Facilitator

- Subsidies and water are very important factors. Water supply was started in 1887 in Yokohama. After 70 years, the central government stipulated local government law. Water utilities have to manage sustainability bases. We have to recover all of the costs. Small scale water supply is very difficult to manage. To supply water is the top priority. There should be sustainability bases. That was a huge argument between the Ministry of Finance and the Ministry of Social welfare. What comes first then? Supplying water is decreasing.

Engr. Fazlullah Mohammad (CWASA, Bangladesh)

- A safe water supply is a human right. There is no definition for low income people.

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- Standpipes are not free of charge. Local authorities should correct the tariff according to the area, and we have to lay the pipes. Many utilities cannot increase the water tariff and make it as low as possible. Operating costs, especially the cost of electricity. How do we reduce costs? How can we survive? What is the water tariff structure?

Facilitator

- Yokohama story. During its 130-year history, how many times has Yokohama rehabilitated its water facilities?

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- Water facilities are not the government but for local communities. This is a very important concept.

Ms. Keiko Yamamoto (Advisor, Japan)

- Involvement of the poor is a key factor.

Ms. Lucas C. Yolanda (Maynilad, Philippines)

- Involvement of people is a very important idea. For them, water supply facilities should be owned and managed by themselves. They own revenues to benefit their community.

Ms. Khin May Htay (MCDC, Myanmar)

- We need to talk about stakeholders. We need to select leaders from within the

communities and then municipalities become involved.

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- There is no need to go to the municipality, but we need to talk with community leaders. Then, we make standpipes available temporarily. There are some standpipes. The water pressure is insufficient, yet we will be able to supply water affordably. We have to observe the situation to give them safe water treatment, otherwise, they will complain. In Phnom Penh city, many people do not want to use the treated water. But everybody asks about pipes.

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- We summarize today's discussion by the following points:
  1. Involvement. Some sort of community participation is required. Water supply facilities should be owned and managed by the community. In addition, NGOs should be involved in various ways.
  2. Commitment and policy. A strong commitment is a key issue and there should be support from third parties.
  3. Commercial issues, including OPEX. Financial points of view should be included. The gaps between revenues and costs should be covered.
  4. Water is a human right. We should recognize that drinking water is a fundamental right, hence everyone has to use water equally.
  5. Sustainability. We should achieve the Sustainable Development Goals (SDGs), equitable access to safe water for all people.

EOT

12.5.3 Group 1C

Record of Group Discussion	
Session	(I) II III
Program	Group Discussion
Group No.	1C
Recorded by	Ms. Ena TSUTSUMI
Theme of group discussion	Customer Service Improvement: 24/7, Water Quality, and Water Pressure, etc.
Facilitator	Dr. Rachel M Beja (COWD, Philippines) Mr. Takayuki Konishi (Yokohama Waterworks Bureau, Japan)

[Accelerator]

Mr. HO Minh Nam (DAWACO, Viet Nam)

- In DAWACO, water quality has reached the standard in Viet Nam. However, it is difficult to supply water 24/7 because of broken pipes or power blackouts in WTP.
- About water quality, water salinity is high, especially in the dry season. Additionally turbidity in source water is high because of biological contamination.
- DAWACO collects water tariffs from customer's bank accounts but some customers don't have one. Therefore, it is difficult to collect water tariffs.
- We use PI to give good service to customers.

[Discussion]

Mr. Sumanasekera Deepthi UPUL (NWSDB, Sri Lanka)

- Government does not give funding for the water supply system.
- 35 years ago, a revolution occurred in Sri Lanka and the name "consumer" was changed to "customer" They then expect reactions about water supply service.
- We made a "customer chart," recording the list of complaints from customers and how

to solve them. It is available on a website for everyone to see.

Mr. Mazhar Muhammad Naveed (WASA-L, Pakistan)
- We have a “customer center” and it is open 24 hours a day. Certification is given staff that perform exemplary service. In the future, we plan to reward them.
- Water tariffs have not increased since 2004 and we receive a subsidy (60 percent) from the government.

Dr.Prasad Bhupendra (NWSC, Nepal)
- We are monitoring water quality and water pressure 24/7.
- In Nepal, we aim for a water tariff collection rate of 100 percent.
- We have “Display chart”, recording how long and how much services take and we make it available on a website. It helps to make our work more visible to customers and leads to more customer satisfaction.

Mr. Khan Adnan Nisar (WASA-F, Pakistan)
- The campaign started from 1990 and it finished last year. It used GIS and discovered 4000 illegal connections with the aid of a French company and JICA.
- We made a “Customer relation center” recording complaints from customers and whether or not they were solved and posted the information on a website. Managers and directors are assessed based on this.
- We also have an NRW problem that was solved with help from a French company and JICA. It will be a 24 hours a day 7 days a week water supply service project.
- We use citizen liaison cells for water tariff collection. Staff communicates with the citizen liaison cells and collect water tariff face to face.

Mr. Mazahar Muhammad Naveed (WASA-L, Pakistan)
- We started a bottled water business for areas that have no pipe water system. The price of bottled water is less than that sold by Nestle.

Mr. Barce Mercedes Simarmata (PAMJAYA, Indonesia)
- We established a third party to conduct a customer satisfaction survey. Customer trust this way and we do not do this by ourselves.

Mr. John Paul Hofileña Delgado (MCWD, the Philippines)
- We have a “customer service center,” which is open 24/7 and a “collection center,” which has ISO. Customers can pay water tariffs 24 hours a day at the collection center.
- For elevated areas, water is not supplied 24/7.
- Source water (not only surface water but also ground water) is affected by El Nino events. This results in low quality customer service.
- We also have problems with high nitrogen and salinity concentration in source water.
- JICA helped to improve customer service by introducing SCADA to monitor water leakage and water pressure area by area. This helps us to quickly respond to problems.

Mr. Ho Minh Nam (SAWACO, Viet Nam)
- Customers have access to three services, asking at a service counter, hotline by company and hotline by city.
- Only 2 percent of customers do not pay their water tariff.
- Source water contains high salinity and it is expensive to treat. However, the water tariff is fixed at 20 cent USD/liter by the government. We negotiated but did not succeed. Additionally, we do not receive funding from the government.

Mr. Sumanasekera Deepthi UPUL (NWSDB, Sri Lanka)
- 70 percent of complaining customers are retired.

Mr. Mazahar Muhammad Naveed (WASA-L, Pakistan)

- Government doesn't allow an increase in the water tariff but are thinking about a new water tariff system, which graded by customers' income.

EOT

12.5.4 Group 2A

Record of Group Discussion	
Session	I (II) III
Program	Group Discussion
Group No.	2A
Recorded by	Ms. Yasuyo Yoshikawa (Pacific Consultants Co., Ltd.)
Theme of group discussion	Collaboration with private sectors, role of regulators and private sectors and other financial resources
Facilitator	Ms. Meike Kencana Wulan (Cipta Karya, Indonesia) Mr. Hirotaka Sato (TECI, Japan)

Facilitator

- White board shows four questions that we would like to discuss.**1. Why we need PPP? 2. What are the issues/lessons learned? 3. What do we need to implement PPP? 4. What other funding is there?** We can share our needs and experiences.

[Accelerator]

Mr. Virabouth Noupheuak (MPWT, Lao PDR)

- There are three good things about PPP. Public investment and private investment should be done equally. PPP is a powerful tool between public and private goods, which ensures social benefits. In collaboration with private sectors, we can receive economic benefits. When we implement PPP projects, the registration issue, such as guidelines and manuals, is the most important. In order to estimate payment ability, including government support, we should conduct feasibility studies. Six principles, Equity, Equality, Transparency, Healthy competition, Ethic, Role and Law are important as well. In our country, the private has already joined so we need regulations.

[Discussion]

Ms. Hlaing Maw Oo (YCDC, Myanmar)

- We do not have proper PPP projects yet. Why we need PPP? For financial resources, sustainability of the projects, efficiency of the project and innovation. What should we expect from PPP? We need proper guidelines, regulations and monitoring systems. We need to implement PPP projects. What we need to do is to monitor PPP projects, some technology such as laboratories. We need to support private companies. Support from local government is also essential. We are about to sign the loan for a drainage project from the World Bank. We also have two loans for a water supply project from JICA. The PPP project is not only for the water supply but for other infrastructure, which amount is small. The important thing is not what the donor wants to give us but what we really need, otherwise we get what we do not need.

Facilitator

- What kind of support do you need from the government?

Mr. Chen Seng Heang (MIH, Cambodia)

- Public and private sectors should work together. We have no laws or PPP policies, we are still developing regulations. Also, we are just planning to apply for an ADB loan.

Ms. Hlaing Maw Oo (YCDC, Myanmar)

- For water infrastructure, tariffs are not enough. Because the private sector should consider business, a tariff needs to be properly collected. Government needs to facilitate it.

Mr. Pok Chann, (MIH, Cambodia)
- Private sector should be business based.

Mr. Chen Seng Heang (MIH, Cambodia)
- We have strategies and policies for private participation but not partnership. Regarding PPP projects, so far, the government just issued the guidelines to conduct PPP, only one place at the border between Cambodia and Viet Nam. JICA tries to conduct PPP projects but there are no results yet. Regulators, government subsidies, etc. are to be considered. To make all stakeholders understand the benefits of PPP is important.

Mr. Sunanthapongsak Somboon (MWA, Thailand)
- Inviting private companies to participate is important. How to set up the project? Structure between public and private, and contract management are important since we have contracts with both sides. Total management is important. For me in Thailand, Performance Based Contract (PBC) is still difficult.

Mr. Philavong Ladda (NPLP, Lao PDR)
- In the case of my city, we are rapidly developing. Why we need PPP? The Feasibility Study should be clear and contracts are also important, both of which are not easy. For the private sector, what do they need? They need to be balanced. In my case, we already have PPP projects, and are trying to communicate with private companies. If we can survive, they can as well. We try to communicate with them. We need funding, it is not easy to get funding for utilities. The problem is high interest rates.

Facilitator
- Low interest rate is better for PPP.

Ms.Lokuliyanage Mangalika (MCPWS, Sri lanka)
- Because of the financial situation, the government tries to implement PPP projects. We have some issues. The issue is that the national policy provides subsidies to households while the board collects the money from the private company. So, there is a gap. Who will fill the gap? When we privatize water facilities, we have to concentrate on water purchase agreements. We should be very careful regarding this agreement. Awareness program is necessary as well.

Mr. Kusmayadi Rudy (PERPAMSI, Indonesia)
- Our experience in Indonesia, we have a contract agreement with two private sectors. Private sector orients profit making. There is a difference between private sectors and public sectors. Contract agreements always have a limited time period, say 25 years. To continue or not to continue depends on the local governor. We have political problems as well. The contracts need to change.

Mr. Barce Mercedes Simarmata (PAMJAYA, Indonesia)
- Private sector should be more effective and be focusing on the water production.

Mr. Kusmayadi Rudy (PERPAMSI, Indonesia)
- Social problems are big for customers.

Mr. Virabouth Noupheuak (MPWT, Lao PDR)
- The private sector needs big markets. We have to convince businesses to come even if it is a small city. Yet, they are not interested in small markets. The most important thing is to resize. How much caution is necessary regarding PPP? How much subsidy is necessary? We now have to draft a decree, which can formally implement PPP.

Facilitator
- I would like to summarize the discussion. **1. Why we need PPP?** The 1st point is that the private sector cannot be healthy on its own. The 2nd point is to have a proper

process, basically we need regulations. The 3rd point is how to address the issues. We need good feasibility studies that include technical, financial, organizational and environmental factors. Selection of potential markets is important. The government should address these issues otherwise private sectors will not invest. Also, the health of each party including government, the private sector, and communities is important. In addition, I would like to add the numbers of feasibility studies. A type of bulk water purchase is better for PPP. Rather than the experience of the Jakarta concession, there are issues about water tariffs. It is necessary to know what we need. Also, a monitoring system is necessary to implement good PPP projects. Performance indicators should be included in the contract. **3. What do we need to implement PPP?** The government support could be anything. In Indonesia the government provides the private sector with VGF. Because of limited tariff, a majority of the investment cost can be paid for by the government.

Mr. Kusmayadi Rudy (PERPAMSI, Indonesia)
- Private sector should be limited only production facilities and government should be responsible for distribution to customers.

Observer (Mr. Dwike Riantara (PERPAMSI, Indonesia)):
- The important thing is a well-regulated private sector regarding water supply development. In Indonesia, we have strong laws. Law 7 was revoked because it did not guarantee people the right to access water. Because of the strength of its role and presence, tariffs became very high and many people could not access water. In the past, we did not have good regulations for PPP. Now, we are drafting new regulations for private participation. Full consideration is necessary for the future to avoid the problem experienced in Manila and Jakarta. I heard that the role of participation of the private sector is limited. We have to keep in mind that good regulations are required to protect the people. We all have an image of what a municipality should be, which means all private water utilities should be public or regulated by the government because access to water is a basic human right.

Facilitator
- The government should regulate well. What is the regulatory body?

Observer (Mr. Dwike Riantara (PERPAMSI, Indonesia))
- The central government should regulate the private sector.

Mr. Barce Mercedes Simarmata (PAMJAYA, Indonesia)
- The regulation body is only for Jakarta but is not so efficient since the province is so complex.

Facilitator
- Central government is now in the process of PPP scopes.

Observer (Unknown)
- There are pros and cons. If the private sector is strong, we lose, so we should be strong.

Facilitator
- The perception or the understanding of the contracts should be the same for each stakeholder.

Mr. Kusmayadi Rudy (PERPAMSI, Indonesia)
- Sometimes we modify the contract and sometimes we do not make them.

Facilitator
- The issue is assurance during the operational time. The government should provide

the private sector with a good environment.

Observer (Trainee from Nijeria):
- The private sector seeks profits. The public should judge based on the policy. What we need are laws and regulations based on the contract documents. Responsibilities depend on the individual cases.

Facilitator
- Political areas and types of PPP should be effective. In summary.

Mr. Virabouth Noupheuak (MPWT, Lao PDR)
- The most important issue includes the roles and responsibilities of the private sector as well as the regulatory bodies.

Facilitator
- Everybody understands why we need PPP. Lack of knowledge. What are the issues? Political issues and risks. Also, lack of regulations and monitoring systems. Private sector always looks for large markets and profits. There is a tariff issue as well. Main issues are related to the political ones and profit seeking of the private sector. Performance Based Contracts (PBCs) are better. Feasibility studies are very important. Clear bidding processes and contracts are also important. Contracts should mean the same thing to the private sector and public sector. Facilitation of private profits by the government is important as well. Additionally, communication is essential to implement PPP projects. Regulation and monitoring systems are required. Thirdly, the will of government, or the political commitment to implement good PPP projects are important.

Ms. Hlaing Maw Oo (YCDC, Myanmar)
- Regarding the first one, not because of a lack of know-how, but because of the need for innovation. Know-how might be there. There should be know-how transfer.

Facilitator
- In summary is as below:
    1. **Why we need Public Private Partnership (PPP)?** Mutual benefits, including financial benefits for the private sector and social benefits for the public sector should be considered. (NOTE: not lack of know-how, but need for innovation)
    2. **What are the issues/lessons learned?** Lack of regulation, political influence and tariff setting issues. Also since the private sector focuses on profits, we have issues concerning potential markets.
    3. **What do we need to implement PPP?** We should have a good design. So, the preparation of the project is essential. Therefore, feasibility studies should include technical, financial, organizational and environmental details. Also, strong regulations are required. Good regulations should be stipulated. The contract should mean the same to all parties concerned. In addition, government support is important since the private sector normally seeks profits, so benefits for people should be the most important priority. The will and commitment from the top
    4. **Other funds.** Design of the contract considering the capacity is important.

Observer (Mr. Shigeru Sugawara (JICA Expert (Indonesia)))
- I'm hearing from you from the side of the public. We need private finance to develop water systems. So, we have to think of the private side as well. Water supply service market might be attractive to the private sector. That's why we should establish regulations for both private and public sectors.

Ms. Hlaing Maw Oo (YCDC, Myanmar)
- Private sector cannot participate in projects unless they are sustainable and profitable.

That's why facilitation is the key. The government should facilitate.

Facilitator
- Manila case, the private sector was successful because they involved the community (homeowners). Three entities, private, public and community, are the key.

Mr. VIRABOUTH Noupheuak (MPWT, Lao PDR)
- Project preparation, or the Feasibility Study is essential.

Ms. Hlaing Maw Oo (YCDC, Myanmar)
- That's why the project design is essential.

Facilitator
- There is private participation and one preparation for a PPP project in Cambodia. Jakarta has a concession project. In Laos, there are some PPP projects but no registration. Myanmar and Sri Lanka are in the process of PPP preparation.

EOT

12.5.5 Group 2B

Record of Group Discussion	
Session	I (II) III
Program	Group Discussion
Group No.	2B
Recorded by	Ms. Kana Moriyama (Pacific Consultants Co., Ltd.)
Theme of group discussion	Energy reduction and cost reduction
Facilitator	Dr. Bhupendra Prasad (NWSC, Nepal) Mr. Ryuji Ogata (JICA Expert (Nepal), Japan)

[Discussion]

Mr. Aung San Win (YCDC, Myanmar)
- In Yangon City, distribution pipes run around the city and many booster pumps used, which are very costly. Cost reduction is very important because usually water tariffs recover the cost, so YCDC tries to recover the cost through water tariffs.

Facilitator
- Utilities need to use pumps to store, produce, and distribute water, which consume a lot of energy. How to minimize the energy cost is crucial.

Mr. Mazhar Muhammad Naveed (WASA-L, Pakistan)
- How to reduce electricity cost is important. For example, operate systems at night, for which the water tariff is low. Replace motors to highly efficient ones. We reduce the cost by collaboration with wastewater treatment plants.

Mr. Xavier Pereira Francisco (DNSA, Timor-Leste)
- We try to reduce the operation and maintenance cost by turning off the fuel and generators, and being aware of the demand to operate the pumps efficiently according to the demand. Reducing the NRW is another issue. In Timor-Leste, NRW rate is about 90% because of illegal connections. So, it is important to reduce illegal connections, find leakage, and replace old pipelines.

Ms. Khin May Htay (MCDC, Myanmar)
- Mandalay city has 6 townships, and 70% have piped network, 90% will be covered in the future. In Mandalay, water quality is not good enough. Energy is the major cost and most of the revenue is used for energy. MCDC tries to save energy by replacing the pumps, using the SCADA, using a gravity system instead of pumping supply. (MCDC)

Mr. Sintepphavong Khampasith, (NPKH, Lao PDR)

- Regarding the operational cost, we negotiate with electricity companies to reduce the electricity fee. With the support of JICA, we are making efforts to develop the capacity of the staff and to operate water treatment plants.

H.E. Dr. Sim Sitha (PPWSA, Cambodia)

- By rehabilitating old facilities, maintenance cost and energy can be reduced. Particularly, we focus on energy saving of pumping systems. We introduced renewable energy to motor pumps. Efficiency of pumps depends on efficiency of shaft power of motors.

H.E. Khut Vuthiarith (SRWSA, Cambodia)

- It is important to consider the efficiency at the beginning of a project. In the design phase we should consider the efficiency based on the condition location, and we also need to select high-efficient equipment and facilities. In the operation phase, we need to operate differently at night and during the day based on hydrological calculations.

Engr. Abdulllah Mohammad (KWASA, Bangladesh)

- Comprehensive plans should be developed. When we update or newly construct facilities, it is also important to replace existing equipment with highly efficient equipment using new technologies. In order to reduce the electricity cost, we utilize the gap between peak hours and off-peak hours. Operators need to be sufficiently educated. Specialists' skills are required.

Engr. Fazlullah Mohammad (CWASA, Bangladesh)

- It would be significant to select chemicals properly as well as reducing personnel cost and operation cost. If you operate the treatment plants for 24 hours a day, using the gap between peak and off-peak hours of electricity cost is effective, in addition to this, we need more storage facilities for water produced during the night.

Facilitator

- I would like to focus on renewable energy. There are various types of renewable energy, such as solar, hydropower and wind power. Which type of energy is suitable depends on the situation of each country, such as geographical situation, culture, and so on. In Nepal, hydro energy can be used. In addition, when I focus on the contents of the cost, percentage of each content differs from utility to utility. Normally, the cost of personnel is the greatest, but in Nepal, one utility expends 40% of its total cost on energy, while another one uses only 10%.

Facilitator

- It is an important point to reduce energy consumption as much as possible. Replacement of motors is also a significant point.

Mr. MAZHAR Muhammad Naveed (WASA-L, Pakistan)

- Preventing breakdowns is also important. In order to prevent breakdowns, we need to check the equipment such as condition of valves and electric counters every day. We can reduce the operation and maintenance cost.

Facilitator

- The discussion can be summarized as follows: 1. In the designing phase, location, water quality and energy consumption should be considered. 2. Use the gap between peak and off-peak of electricity consumption. 3. Consider installation of renewable energy. 4. Reduce the operation cost by constant maintenance. 5. Monitoring NRW rate and prevent and find leakages.

Facilitator
- How to deal with illegal connections?

Ms. Khin May Htay (MCDC, Myanmar)
- We are planning to install bulk meters for each DMA and monitor the gap of the total consumption based on the customers' meters and that of the bulk meter. After checking the repair of the DMA, the gap would indicate illegal connections instead of leakage.

Mr. Xavier Pereira Francisco (DNSA, Timor-Leste)
- We detect leakages, and find out whether they are caused by just leakage or illegal connections. We patrol when we find an illegal connection, we visit the homeowner.

Engr. Abdulllah Mohammad (KWASA, Bangladesh)
- It is difficult to identify illegal connections, but we investigate area by area. When we find an illegal connection, we suggest to connect legally or punish the offender.

Engr. Fazlullah Mohammad (CWASA, Bangladesh)
- There are two types of illegal connections: direct connection and connection with bypasses. Indirect illegal connection is more difficult to find. We stop all the meters in a district and we can find the place where water still flows. Of course physical investigation is important, but motivation is the most important. We need to motivate staff.

Mr. Xavier Pereira Francisco (DNSA, Timor-Leste)
- By using GIS program, we can check when each house owner get water connection.

H.E. Dr. Sim Sitha (PPWSA, Cambodia)
- A long time ago, PPWSA established regulations because illegal connections were started by staff instead of customers. PPWSA motivated staff to find illegal connections by promotion and reward.

EOT

12.5.6 Group 2C

Record of Group Discussion	
Session	I (II) III
Program	Group Discussion
Group No.	2C
Recorded by	Ms. Ena Tsutsumi (Pacific Consultants Co., Ltd.)
Theme of group discussion	Water Tariff
Facilitator	Ms. Yolanda C Lucas (Maynilad, Philippines) Mr. Katsumi Fujii (YEC, Japan)

[Accelerator]

Mr. Khan Adnan Nisar (WASA-F, Pakistan)
- Pipeline is 1200 km and the electric cost is great. Additionally, staffs' salary has been increasing. Therefore, we want to increase water tariffs but did not change them since 2006. This is because of politicians.
- We have subsidy from the government.
- We use citizen liaison cells to make customers pay their water tariffs.
- Water is supplied for some cities from one WTP and water tariffs in each city are different because of electric costs for transportation. For example, the water tariff in one city that is farther from WTP is three times higher than that of another city.

Facilitator

- Do you have any plan to increase revenue?
- Since 1993 we have been revising our master plan with JCA. It will be finished in 2018.
- We also have an NRW reduction project in three pilot areas, low income, middle income and high income.

[Discussion]

Mr. Sumanasekera Deepthi Upul (NWSDB, Sri Lanka)

- We increase water tariffs once every three years but social media is against this and complains about it.
- The government does not give a subsidy

Facilitator

- Why do politicians or social media not want us to increase water tariffs?
- I think it is because of collecting popularity from customers. Do you all agree with it?

Mr. Vannarath Viengthouay (NPNL, Lao PDR)

- We have three categories of water tariffs, business (ex; restaurant), none-domestic (ex; institution, ministry) and domestic.

Mr. Truong Cong Han (HueWACO, Viet Nam)

- The government decided water tariffs and total income in Viet Nam is low. Therefore, it is difficult to increase water tariffs. Additionally, Viet Nam has an event every two years that effects the decision to increase water tariffs.
- When we increase water tariffs, we have to explain about our good customer service or high-quality water to all water councils.
- When we build new WTPs, we need to let the government see them.
- We should educate why high-quality water is important to explain about waterborne diseases to customers.
- We need to monitor and measure customer service to increase customers' willingness to pay.
- We need a long-term plan, not a short-term plan for a sustainable water supply system.
- Of course, water tariffs should include the cost to conserve the water source.
- Our water tariff system has four categories, industry, b and non-industry. Industry has three categories, business, construction and manufacturers. Non-industry also has three categories, poor, rural households and urban households.
- Industry should pay for non-industry.

Facilitator

- How to collect water tariff?

Ms. Rachel M Beja (COWD, Philippines)

- If we collect them from bank accounts, it is difficult. In our case, a policy of disconnection.
- The problem is that we cannot collect water tariffs from people who are disconnected to access.
- In the Philippines, after customers have not paid their water tariff for ten years, it becomes exempted. Therefore, when customers don't pay for two months, we disconnect.
- To avoid such things, we should increase customer awareness.

Facilitator

- There are many strategies to increase awareness. Do you also consider maintaining awareness?

Ms. Rachel M Beja (COWD, Philippines)

- We used to have a "payment office" for customers to pay their water tariff. However now we have an "e pay center." Customers can pay their water tariff through banks or

by cellphone by using an “e pay center.”

Facilitator
- We all have problems of customer service like low pressure. Do you think there is any connection between water tariffs and customer service?

Mr. Khan Adnan Nisar (WASA-F, Pakistan)
- It is important to convince local government because customers listen to their stories.

Mr. Nguyen Van Du (SAWACO, Viet Nam)
- Our water tariff system has three classifications, household, authority, service and business.

Mr. Truong Cong Han (HueWACO, Viet Nam)
- We increased water tariffs based on load map, little by little.

Eng. John Paul Delgado (MCWD, Philippines)
- Usually we expand pipelines in areas that are expected to get a return first.
- We did not have any categories for a water tariff system.
- Our water source is mainly sea water and it is expensive to treat. However, we don’t get any subsidy from the government.
- In Cebu Island, there are a lot of small water providers. Therefore, if our water tariff increases, customers don’t use our water.

Facilitator
- My question is why we have different services in the same cities.

Ms. Rachel M Beja (COWD, Philippines)
- It is important to think about the funding mechanism.

Mr. Ho Minh Na (DAWACO, Viet Nam)
- To reducing water tariffs, we should do good governance (saving energy or reducing NRW).

EOT

12.6 Result of Questionnaires for Program Formulation

The questionnaire for program formulation is composed of five sections. The 1st section is about respondent’s information such as organization and contact etc. the 2nd section is about the progress of the 10 statements adopted in the 2014 forum (for new participants, actions in recent three years). The 3rd section is about challenges and actions the respondent is having. The 4th section is about lessons learned from experience/efforts. The final section is free comment. Results are shown for each section except section 1.

12.6.1 Section 2: Progress in past three years

Winning customer satisfaction is the key to improve willingness-to-pay. Regarding this agenda, please answer the following questions.

1-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts to improve the customer satisfaction?

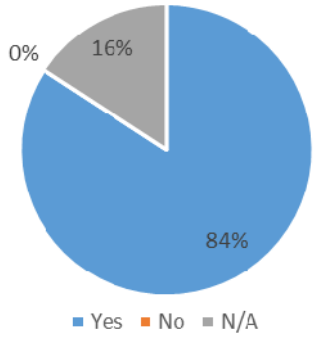


Figure 12-1 Ratio of new effort to improve the customer satisfaction

1-b) If yes to the above question a), is (are) that effort(s) related to the following matters? Please tick all that apply.

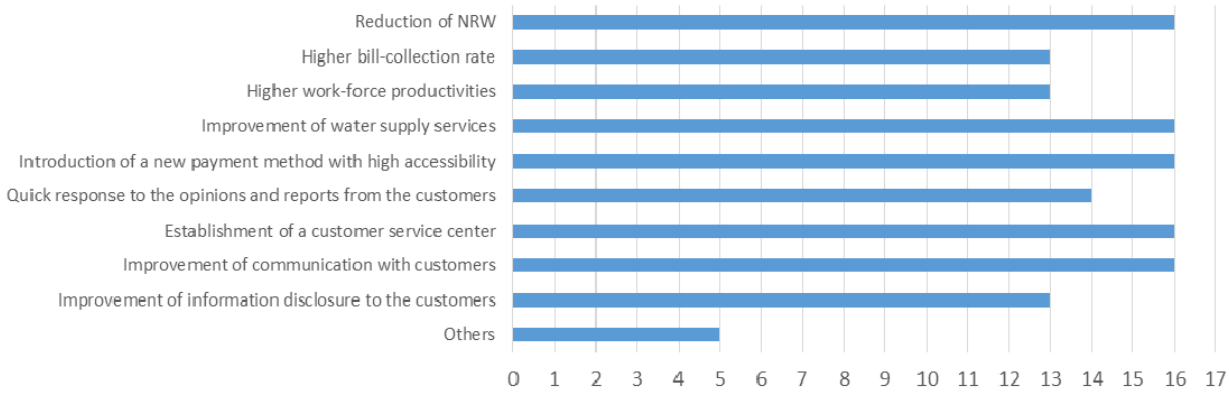


Figure 12-2 New effort to improve the customer satisfaction (multiple selection acceptable)

Good management is an essential factor to sustainable water supply and a key to improve the efficiency of water utility. Regarding this agenda, please answer the following questions.

2-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts to achieve good management?

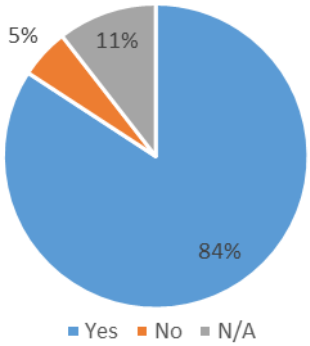


Figure 12-3 Ratio of new efforts to achieve good management

2-b) If yes to the above question a), is (are) that effort(s) related to the following improvement? Please tick all that apply.

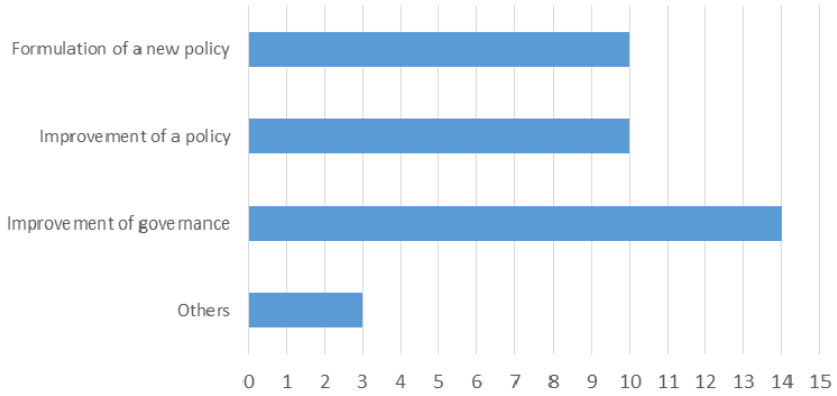


Figure 12-4 Ratio of new efforts to achieve good management (multiple selection acceptable)

Preventive maintenance contributes reducing the total cost of water supply and brings about net profit to the water utilities. Regarding this agenda, please answer the following questions.

3-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts on preventive maintenance?

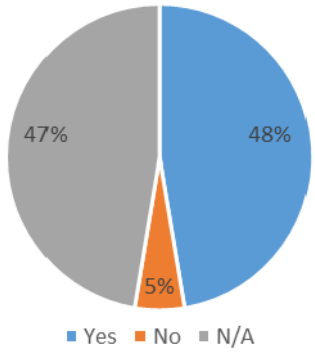


Figure 12-5 Ratio of new efforts on preventive maintenance

3-b) If yes to the above question a), What preventive maintenance have you done? Please tick all that apply below.

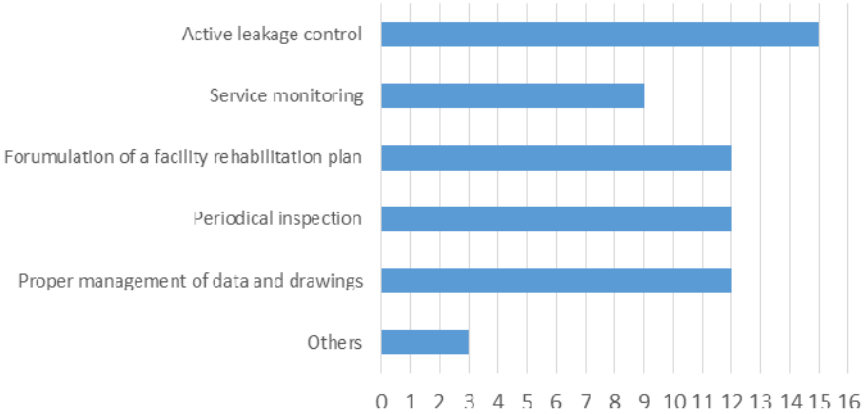


Figure 12-6 Preventive maintenance (multiple selection acceptable)

Procurement of non-standardized materials and equipment will increase the repair and replace costs, while reliable and durable material reduce the Life Cycle Cost (LCC). Regarding this agenda, please answer the following questions.

4-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts and/or improve procurement system?

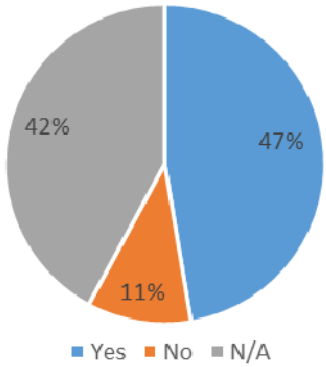


Figure 12-7 Ratio of new efforts and/or improve procurement system

b) If yes to the above question a), What have you done to achieve good procurement system? Please tick all that apply below.

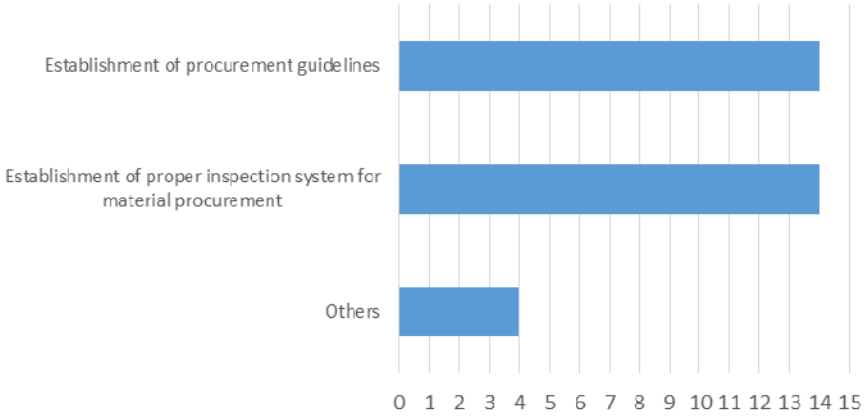


Figure 12-8 New efforts and/or improve procurement system (multiple selection acceptable)

To secure the safety supply of water, Water Safety Plans need to be established in every water utility. Regular monitoring on every step of water supply processes is highly needed. The strict monitoring of water quality must be clearly stated in the Standard Operating Procedure (SOP). Regarding this agenda, please answer the following questions.

5-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts to secure the safety supply of water?

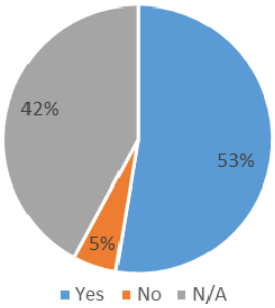


Figure 12-9 Ratio of new efforts to secure the safety supply of water

5-b) If yes to the above question a), What have you done to achieve securing the safety supply of water? Please tick all that apply below.

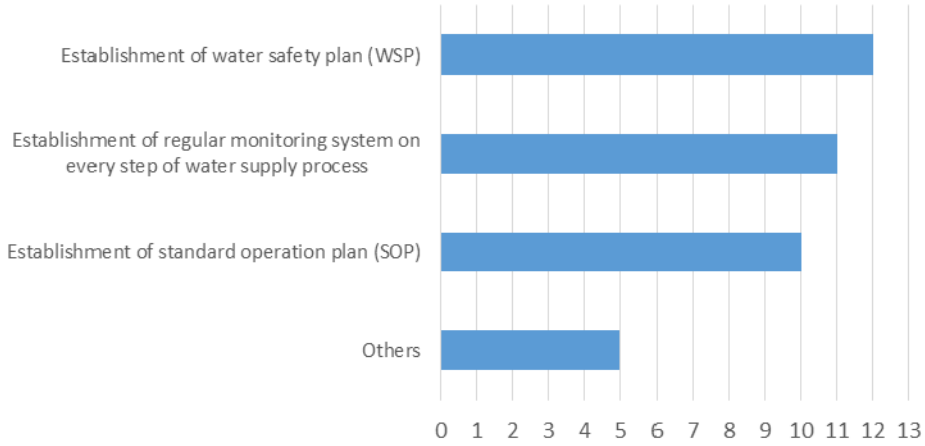


Figure 12-10 New efforts to secure the safety supply of water (multiple selection acceptable)

The sustainable supply of water needs sound HRD. HRD includes many schemes and every utility is encouraged to have those schemes fitting to actual situation. Regarding this agenda, please answer the following questions.

6-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts on HRD and/or improve the schemes?

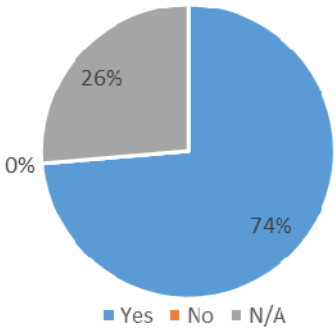


Figure 12-11 Ratio of new efforts on HRD and/or improve the schemes

6-b) If yes to the above question a), What have you done on improvement of HRD? Please tick all that apply below.

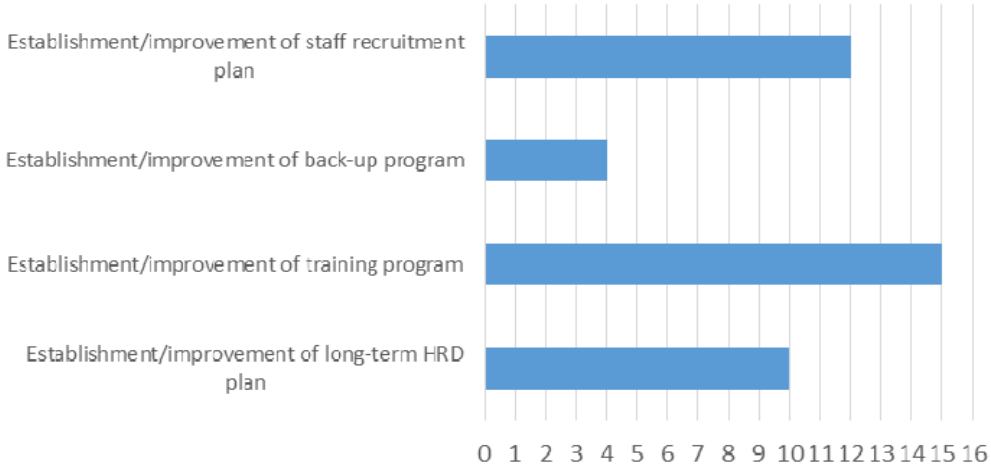


Figure 12-12 Ratio of new efforts on HRD and/or improve the schemes (multiple selection acceptable)

Using in-house trainers is more important as it could cope with the local culture and understand the actual situation, while external trainers and training centers to fill the deficiency of the in-house training program are also needed. The training should provide to the trainees knowledge, skills and good attitude as well. Applying incentives linked to training and setting-up a monitoring system to monitor and evaluate the training outcome are recommended. Enough budget should be allocated to such HRD even if it's usually an issue in many places. Regarding this agenda, please answer the following questions.

7-a) After the previous forum in 2014 (or for the last three years for the new participants), did you implement any trainings?

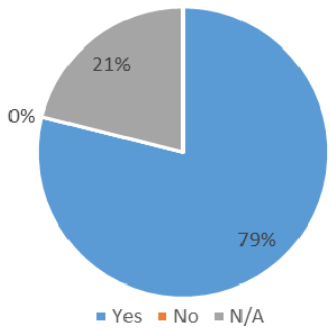


Figure 12-13 Ratio of implement trainings

7-b) If yes to the above question a), What training have you implemented? Please tick all that apply and describe the details below.

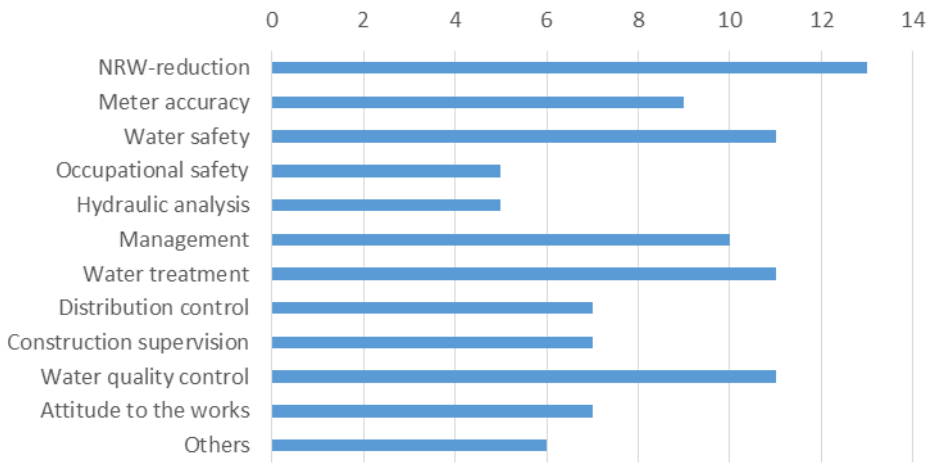


Figure 12-14 Training Contents (multiple selection acceptable)

7-c) how is the proportion of external and internal trainers?

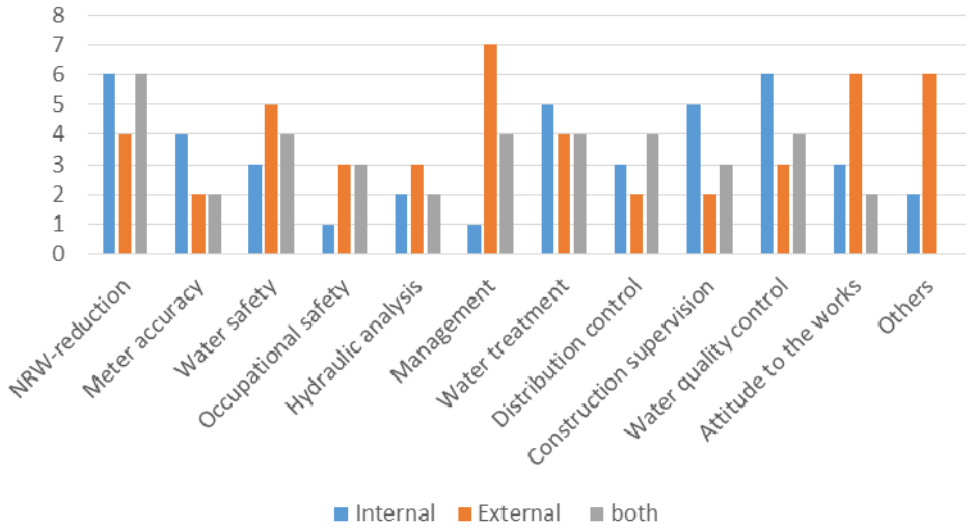


Figure 12-15 Proportion of external and internal trainers

7-d) what is the average number of trainees in each training?

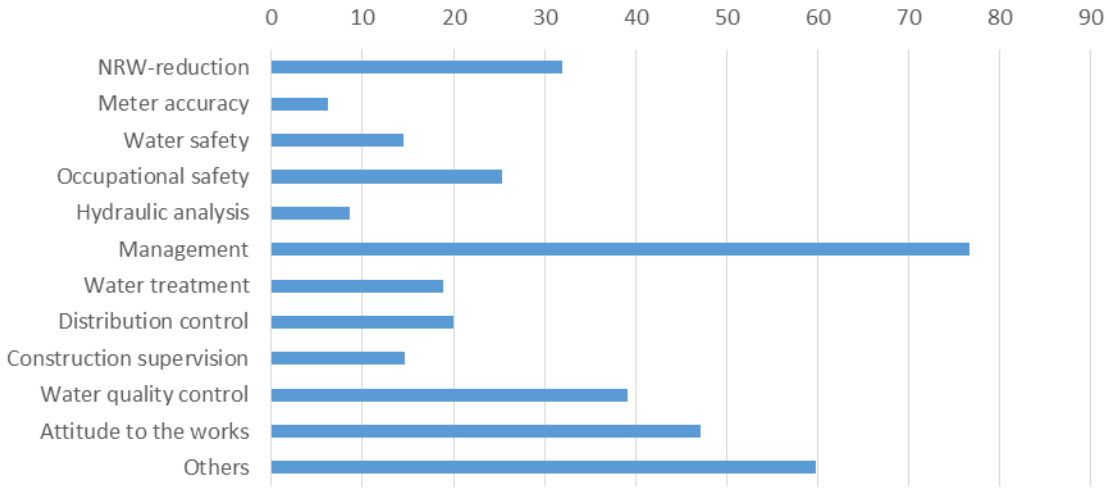


Figure 12-16 Average number of trainees in each training

7-e) budget for each training

The result is omitted since there were only 3 answers to this question. (they are MWA, Maynilad, and PAMJAYA)

7-f) duration of each training

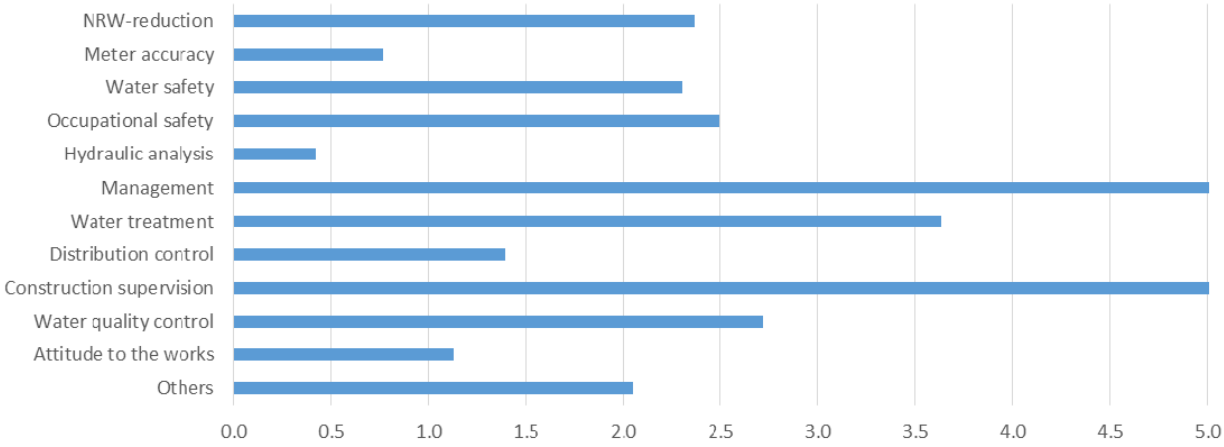


Figure 12-17 Average duration of each training

7-g) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts on trainings to improve HRD?

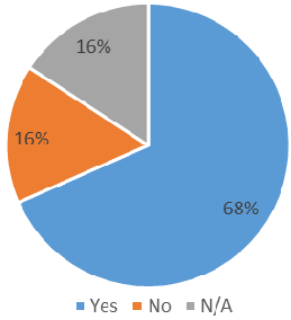


Figure 12-18 Ratio of improved trainings

The frequency of natural disaster has become higher and the magnitude has become greater. Our mission "Safe Water to Everyone" must be achieved even in emergency events. For this mission, leadership of the top management, preparedness, information collection and sharing, communication, and cooperation of various stake holders are essential. Funding for restoration of water supply systems is urgently needed for a full recovery from the aftermath of mega-scale natural disasters. Regarding this agenda, please answer the following questions.

8-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin any new efforts on Disaster Preparedness or improve this matter?

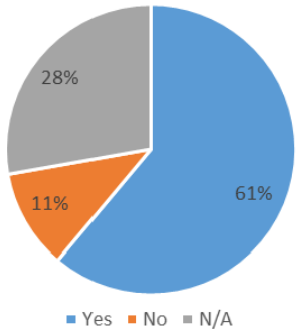


Figure 12-19 Ratio of new efforts on Disaster Preparedness or improve this matter

8-b) If yes to the above question a), What have you done on Disaster Preparedness? Please tick all that apply below.

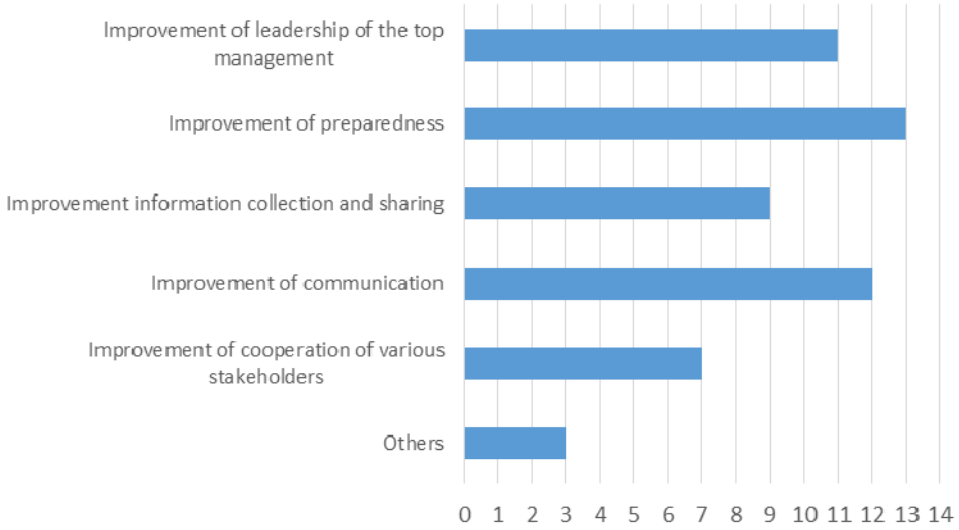


Figure 12-20 New efforts on Disaster Preparedness (multiple selection acceptable)

A long-lasting partnership among water utilities and diversified partners including private companies, development partners and NGOs in Asian countries give an opportunity for the top executives of water utilities to learn from good examples of other water utilities and to share the information. Mutual trust is one of the key factors for the partnership between Asian water utilities. Regarding this agenda, please answer the following questions.

9-a) After the previous forum in 2014 (or for the last three years for the new participants), did you visit and/or received a visit from other water utilities, private companies, development partners and NGOs, and/or hold seminars in kind to share information as a partnership?

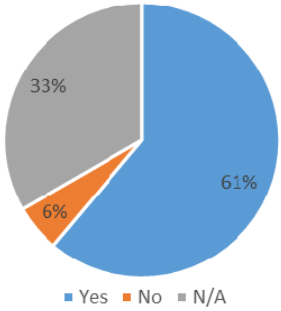


Figure 12-21 Ratio of communication with other waterworks

9-b) If yes to the above question a), What have you done on partnership? Please tick all that apply below.

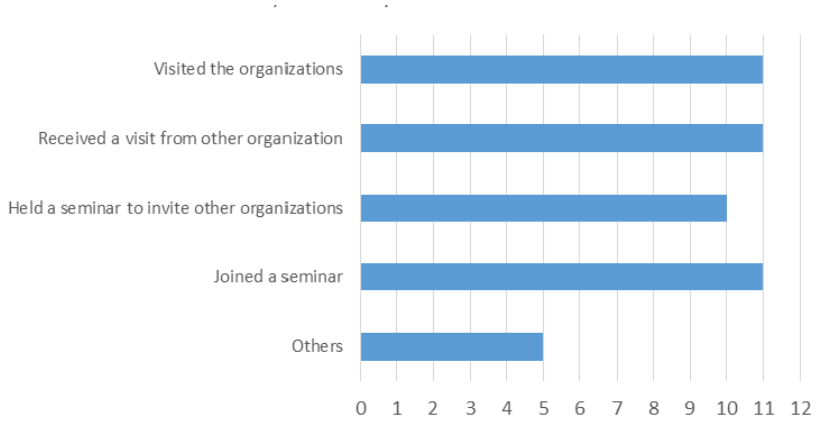


Figure 12-22 Contents of partnership (multiple selection acceptable)

A benchmarking and monitoring framework is recommended for the sustainable management of water utilities and for further strengthening our partnership between the water utilities in the Asian countries. Regarding this agenda, please answer the following questions.

10-a) After the previous forum in 2014 (or for the last three years for the new participants), did you begin/establish/improve any benchmarking systems in your utility?

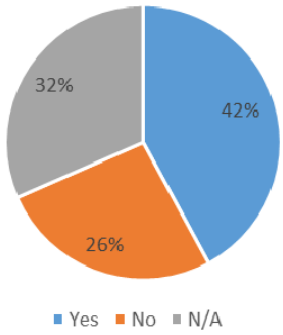


Figure 12-23 Ratio of benchmarking systems

10-b) d). After the previous forum in 2014 (or for the last three years for the new participants), did you begin/establish/improve any monitoring framework in your utility?

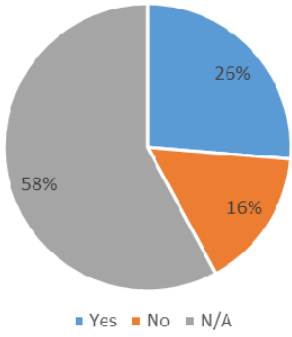


Figure 12-24 Ratio of monitoring framework

12.6.2 Section 3: Challenges and Actions

It is a very good opportunity to share “Challenges” you are currently addressing and “Actions” you are taking against the challenges with other utilities. Regarding this agenda, please answer the following questions

1-a). Do you currently have any challenges and/or issues in water service systems in your utility?

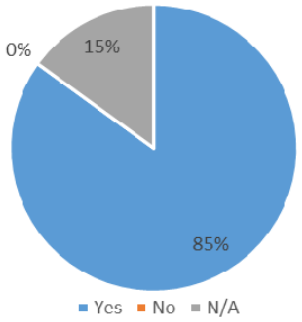


Figure 12-25 Existing of current issues in water service systems

1-b) If yes to the above question a), What challenges do you have currently? Please tick all that apply below.

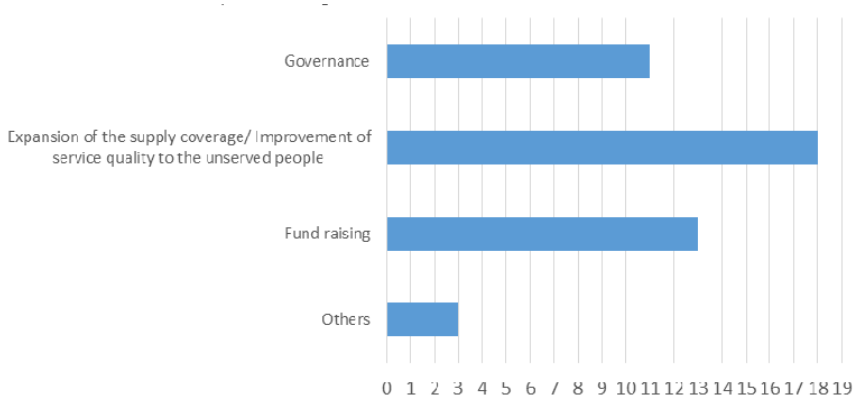


Figure 12-26 Contents of challenges (multiple selection acceptable)

10-c) If “(I) Governance” in question a) is ticked, what challenges do you have on this matter? Please tick all that apply below.

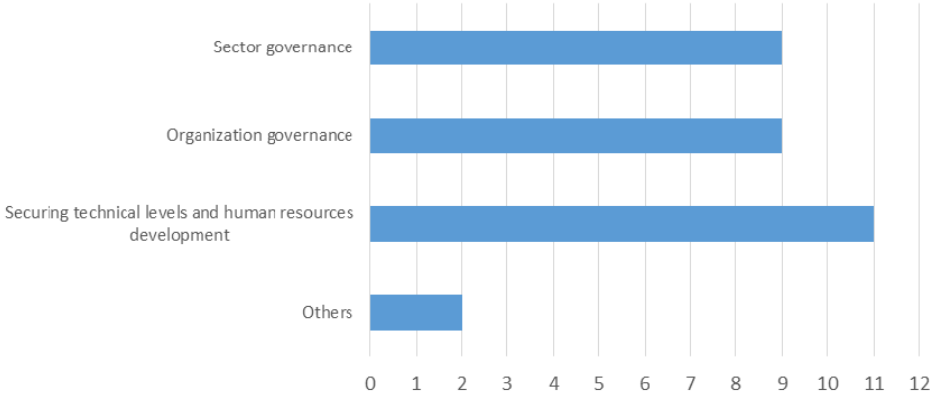


Figure 12-27 Governance challenges

10-e) If "(II) Expansion of the supply coverage / Improvement of service quality to unserved people" in question a) is ticked, what challenges do you have on this matter? Please tick all that apply below.

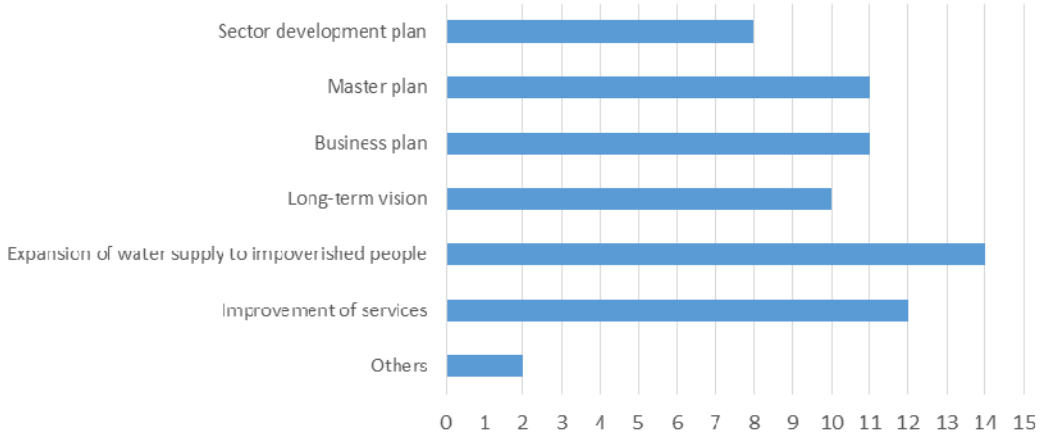


Figure 12-28 Challenges in expansion of the supply coverage / Improvement of service quality to unserved people (multiple selection acceptable)

10-g) If "(III) Fund raising" in question a) is ticked, what challenges do you have on this matter? Please tick all that apply below.

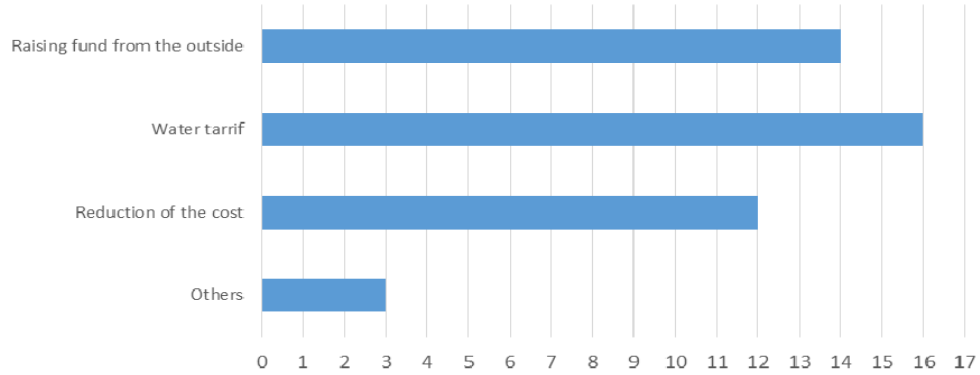


Figure 12-29 Challenges in fund raising (multiple selection acceptable)