THE THIRD EXECUTIVE FORUM FOR ENHANCING SUSTAINABILITY ON URBAN WATER SERVICE IN ASIAN REGION

- SUSTAINABLE MANAGEMENT OF WATER UTILITIES -

REPORT

AUGUST 2014

JAPAN INTERNATIONAL COOPERATION AGENCY

(JICA)

NIHON SUIDO CONSULTANTS CO., LTD.

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The Third Executive Forum for Enhancing Sustainability on Urban Water Service in Asian Region

-Sustainable Management of Water Utilities

Co-organized by

Japan International Cooperation Agency (JICA)

The City of Yokohama

Supported by

Japan Water Works Association

Consultants

Nihon Suido Consultants Co., Ltd.

August 2014

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REPORT

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The 3rd Executive Forum for Enhancing Sustainability
of Urban Water Service in Asian Region
Sustainable Management of Water Utilities
July 1 - 4, 2014 Yokohama, Japan

List of Abbreviations

Abbreviation	Description
ADB	Asian Development Bank
AFD	Agence Française de Développement
BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
BOP	Base of the Pyramid
BTO	Build, Transfer and Operate
BWSSB	Bangalore Water Supply and Sewerage Board
CEO	Chief Executive Officer
COWD	Cagayan de Oro City Water District
CPI	Consumer Price Index
CWASA	Chittagong Water Supply and Sewerage Authority
DaWACO	Danang Water Supply Corporation
DMA	District Metered Area
HRD	Human Resources Development
IRR	Internal Rate of Return
IWA	International Water Association
JICA	Japan International Cooperation Agency
JWWA	Japan Water Works Association
KPI	Key Performance Indicator
KWASA	Khulna Water Supply and Sewerage Authority
MCWD	Metropolitan Cebu Water District
MDG	Millennium Development Goals
MIH	Ministry of Industry and Handicraft
MWA	Metropolitan Waterworks Authority
MWSS	Metropolitan Waterworks and Sewerage System
NGO	Non-government Organization
NPNL	Vientiane Capital Water Supply State Enterprise
NRW	Non-Revenue Water
NWSDB	National Water Supply and Drainage Board
NWTTI	National Water works Technology Training Institute
O&M	Operation and Maintenance
ODA	Official Development Assistance
Off-JT	Off the Job Training
PDAM	Provincial Waterworks Utilities in Indonesia
PDCA	Plan Do Check and Action
PPPs	Public Private Partnerships

Abbreviation	Description
PPWSA	Phnom Penh Water Supply Authority
PWON	Pakistan Water Operators Network
RO	Regulatory Office
SCWB	Saitama City Waterworks Bureau
SOP	Standard Operation Procedure
TMWB	Tokyo Metropolitan Waterworks Bureau
TOT	Training of Trainers
WB	World Bank
WHO	World Health Organization
WOPs	Water Operators Partnerships
YWWB	Yokohama Waterworks Bureau

1. Outline of the Executive Forum

1-1 Background

This is the third time of Executive Forum for Enhancing Sustainability of Urban Water Service in the Asian Region.

The executive leaders of water supply services from 9 Asian countries: Bangladesh, Cambodia, India, Indonesia, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam, attended the in augural Executive Forum for Enhancing Sustainability of Urban Water Service in the Asian Region, from January 20th to 22nd, 2010, in Yokohama, Japan. The event was organized by the Japan International Cooperation Agency (JICA) and the City of Yokohama.

The discussions at the First Forum focused around six main themes pertinent to transforming water service systems from a "vicious cycle" to a "virtuous cycle". These are: a) Policy on Urban Water Supply, b) Finance and Management, c) Measures against Non-Revenue Water, d) Urban Water Service for the Poor, e) Safe Water and Water Quality, and f) Human Resource Development. The Yokohama Forum Statement produced at the end of the discussions was adopted by all the participants.

At the Second Executive Forum, the representatives from 9 Asian countries of Cambodia, China, India, Indonesia, Laos, Pakistan, Philippines, Thailand and Vietnam, met with their counterparts from 14 Japanese water authorities in Tokyo, Japan, from October 1st to 5th, 2011. The objective of the meeting was to build partnerships and enhance cooperation among the Asian water utilities. It was confirmed that Official Development Assistance (ODA), Water Operator Partnerships (WOPs), and Public Private Partnerships (PPPs), are the three major tools for water sector development in Asia. The participating countries agreed to launch, implement and monitor their activities in accordance with the Forum Statement.

As a follow up to the First Executive Forum, three seminars on Urban Water Service Management and Human Resource Development in the Asian Region were held from 2011-2013, attended by top management from South Eastern and South Asia.

1-2 Objective of the Third Executive Forum

The Third Executive Forum for Enhancing Sustainability of Urban Water Service in the Asian Region aimed to:

- provide an opportunity/venue to share best practices and knowledge
- monitor outcomes resulting from Japanese ODA
- raise awareness of important issues related to sustainable water supply in executive leaders of Asian water utilities
- forge new best practices and nurture new leaders in Asian countries

At the Third Executive Forum, participants discussed “sustainable management of water utilities” as the main pillar for continuous and committed improvement of water supply service. Four sessions were convened to cover the following topics: raising revenue, maintenance of water supply facilities and procurement of equipment and materials, human resources development and partnerships, as well as a special session; preparedness to disaster and continuity of water supply service. At these sessions the participants:

- shared knowledge, experiences and issues of their countries in terms of sustainable management of water utilities
- deepened their understanding of Japanese policies, experiences and new technologies, and strengthened existing partnerships and built new collaborations.

1-3 Outline of the Third Executive Forum

(1) Participants

Participants from overseas: 31 executive leaders of 26 water related organizations (water utilities, water association, local government and ministries) engaged in JICA projects and programs, from 12 countries: Bangladesh, Cambodia, India, Indonesia, Laos, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam.

Participants from Japan: representatives from the Ministry of Health, Labour and Welfare, Ministry of Economy, Trade and Industry, academic and research institutes, local governments (36 participants from 13 local governments and 57 participants from the City of Yokohama), water-related private companies, JICA and others. Around 330 people in total participated in the Third Executive Forum.

(2) Date and Venue

Date: July 1 - 4 (Tuesday - Friday), 2014
Venue: Yokohama Symposia, Yokohama, Japan

(3) Outline of the Program

Day 1 (Tuesday, 1st July)
[Morning Session]

- Opening remarks by the representatives of Yokohama City and JICA
- Panel discussion on “Changing world and sustainable water supply services”
  Perspectives of water services in a changing world were discussed from the viewpoints of private corporations, Japanese water supply utilities, participating utilities, and JICA.

[Afternoon Session]

- Session 1 “Raising revenue”

  Measures for raising revenue, such as producing and disclosing accurate financial statements , water tariff revision, water tariff collection, non-revenue water reduction (both physical loss and commercial loss), and outsourcing (private sector participation), to ensure stable management and maintenance practices of water supply facilities, were presented and discussed.

  Following points were confirmed at the Session 1;

  (1) Customer satisfaction, which can be increased by efficient management, is the key to improving collection ratio.
  (2) It is very important to achieve the sustainable cycle with customer satisfaction, efficient management (good operation & maintenance), and stable financial situation (high collection ratio).
  (3) It is necessary to make efforts to improve management efficiency before raising water tariff.

[Evening Session]

- Welcome Reception

Day 2 (Wednesday, 2nd July)

[Morning Session]

- Session 2 “Maintenance of water supply facilities and procurement of equipment and materials”

  Best practices for maintenance of water supply facilities, water quality management, and procurement of equipment and material, were presented. On maintenance of water supply facilities, importance of daily maintenance, periodical inspection, data and drawings, standard operating procedures (SOP), and preventive maintenance, were discussed. Procurement of equipment and material was discussed in terms of supply chain, standardization of specifications, quality, and life cycle cost. Issues covered under water quality management included water safety plan (WSP) with monitoring from source to tap, training of staff on testing for water quality, and water quality standards.

Following points were confirmed at the Session 2;

(1) Preventive maintenance plays a critical role in reducing the overhead costs of a water utility.
(2) Procurement of reliable and durable materials and products, and development of inspection system and guidelines contribute to lower life cycle cost (LCC).
(3) It is necessary to implement Water Safety Plan (WSP) with Standard Operating Procedures (SOPs) and monitoring system for each water treatment process in order to ensure the safety of water.

[Afternoon Session]

- Session 3 “Human resources development”

  Important issues related to human resources development for sound management of water service systems, such as top management commitments, incentive mechanisms, training environment, and communication between training section and operation section, were presented and discussed for sound management of water service system.

  Following points were confirmed at the Session 3;

  (1) Regarding human resource development, it is necessary to consider not only training but also the long-term aspect including recruitment, contingency, etc.
  (2) The improvement of morale should also be considered, not just technical skills.
  (3) It is recommended that incentive mechanisms should be established as well as monitoring of the effectiveness of the training, i.e. whether the competencies have been learned and whether the learning has been applied to improve performance.

- Special session “Preparedness to disaster and continuity of water supply service”

  Some utilities shared their experiences, lessons learned and strategies for dealing with water supply interruptions during natural disasters such as floods, typhoons and earthquakes, including Japanese utilities’ experience with the Great East Japan Earthquake. Cooperation among water utilities was also discussed.

  Following points were confirmed at the Special Session;

  (1) Mission of waterworks is to supply safe water even in the event of disasters.
  (2) In order to fulfill the mission under emergency situations, it is essential to emphasize disaster preparedness, leadership of senior management, information gathering and sharing, and cooperation with various stakeholders.

Day 3 (Thursday, 3rd July)

[Morning Session]

- Session 4 “Partnerships”

  Partnership best practices were shared. Parties involved in partnerships can include water utilities (e.g. Water Operators Partnerships: WOPs), water utility associations, academia, governments, official development assistance, NGOs, communities, and private corporations. It is recognized that partnerships are meaningful when it is clear that objectives can be realized, promoting the partnership can be justified, and there is a well-defined path and set of mechanisms for improving performance.

  Following points were confirmed at the Session 4;

  (1) Partners of collaboration and cooperation are getting diversified.
  (2) Partnership provides good opportunities to share and learn best practices from each other.
  (3) Mutual trust is essential for partnerships.

- Wrap-up of the sessions

  Professor Takizawa, Graduate School of Engineering, The University of Tokyo summarized the discussion outcomes for each session.

  For sustainable water supply in Asia, we should have right policies such as;
  - Safe drinking water (good quality): quality assurance (WSPs), continuous supply, procurement of appropriate materials
  - Appropriate tariff pricing: affordability, cost recovery
  - Efficiency: initiatives by top management
  - satisfaction beyond NRW reduction

  Following approaches were summarized to achieve sustainable water supply systems;
  - Technical and management approaches
  - Governance, leadership, institutional reform
  - Capacity building: not only technical skills, but also motivation and pride to work hard hear the voices of the residents who got piped water
  - Utilization of community power: Cut connection or let them talk and think for payment.
  - Partnerships: utility, local and central governments in/out of the countries
  - "Do not copy" or "Just Copy": Need to think your own solutions

[Afternoon Session]

- Review session

  After short remarks from all overseas participants, "Yokohama Forum Statement 2014" was presented by H.E. EK Sonn Chan, Ministry of Industry and Handicraft, Cambodia, and adopted by all participants.

- Business seminar and one-on-one meetings for networking

Day 4 (Friday, 4th July)

[Moring Session]

- Site visit: Kawai Water Purification Plant of the Yokohama Waterworks Bureau

2. Opening Remarks

2-1 Opening Remarks from Mr. Shigeru Kiyama, Vice President of the Japan International Cooperation Agency, JICA

I am Kiyama, Vice President of the Japan International Cooperation Agency, JICA. At the opening of the 3rd Executive Forum for Enhancing Sustainability of Urban Water Services, I would like to address you on behalf of JICA.

I am very pleased to open the 3rd Executive Forum and I welcome your attendance today. I would like to extend my sincere gratitude to the City of Yokohama, the co-organizers of this event, panelists, moderators, presenters and those of you who are involved in the organizing of the forum. In particular, I would like to heartily welcome the assembled leaders from the water sector in Asian countries, for coming to Japan.

Yokohama is well known as the birth place of modern waterworks in Japan. In addition, Yokohama has an important role as a gateway to the rest of Asia and beyond. 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. JICA has been emphasizing broad networks and partnerships built though joint activities and projects. This Executive Forum is one of the outcomes of this intention.

Now, I would like to share with you my 3 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. The theme of this Forum is "Sustainable Management of Water Utilities". 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. Many of you have participated in the previous forums and seminars, and are promoting your own activities for management improvement based on knowledge obtained at those forums and seminars. 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.

Secondly, I expect all of you to utilize this Forum over the next four days, as a place to build a network for cooperation and strengthen existing partnerships. At this Forum we have invited leaders from about 30 water utilities and governmental organizations from 12 Asian countries, who are working together closely with JICA. 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. There is a case of a partnership between water utilities forged at the previous forum held in 2011. It is very important to expand relationships for collaboration and cooperation in order to obtain new ideas and to initiate restructuring and improvement of your organizations based on 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 understand Japanese water utilities management and technologies and also reconfirm the partnership with Japan. I think everyone from Asian countries, who have already had cooperative relationship with Japan or JICA, will gain new ideas and knowledge. Some Japanese water utilities will also share their experiences at this Forum. Additionally, a business seminar and an exhibition by private companies belonging to the Yokohama Water Business Conference are also provided. I would like you to know Japan well through these events. As your partner, JICA will contribute to realizing sustainable management of your water utilities utilizing its broad network, know-how and financing capability.

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

2-2 Opening Remarks from Mr. Kazunari Doi, Director General of Yokohama Waterworks Bureau

Good morning to all of you. I am Kazunari Doi, Director General of the Yokohama Waterworks Bureau.

I am very pleased to see you again in Yokohama at this 3rd Executive Forum, after the 1st Forum, convened here in 2010. On behalf of the citizens of Yokohama, I sincerely welcome the 32 leaders from top management of water utilities from 12 Asian countries. I also express my gratitude to JICA for holding this Forum and Japan Water Works Association for supporting this Forum.

Currently, water utilities all over the world have a lot of common challenges. It can be said conservation of good water resources and safe water quality, preparedness for major disasters such as earthquakes and typhoons, sustainable management and human resources development for the next generation are serious challenges. In order to deal with these challenges it is important for water utilities to have strong cooperation across borders, to share experiences and technologies. I find great significance that leaders from various water utilities are gathering here and will be having intense discussions at this Forum.

Since the founding of the modern waterworks in Japan in 1887, Yokohama Waterworks Bureau has developed various technologies and built in-depth experience in the water sector over 130 years. Based on this track record, we have been engaged in international technical cooperation for over 40 years. So far, we have dispatched 259 staff to 31 countries in Asia and Africa and also accepted 2,632 trainees from 127 countries.

The City of Yokohama is the first local government to sign a comprehensive partnership agreement with JICA and is working on improvement of urban environments in developing

countries in order to contribute to global stability and development through international cooperation.

I would like to further strengthen our relationship of mutual trust, while continuing to value the personal and organizational partnerships which have been built so far. We would like to continue to contribute as much as possible to developing a collaborative relationship, to share knowledge, technologies and experiences in the water sector, and to have all the people in Asian countries use safe and reliable potable water.

Water supply services are not delivered by a public entity, such as the Yokohama Waterworks Bureau on its own. Strong partnership with many private companies is also required. A number of water-related companies, members of Yokohama Water Business Conference, are also participating at this event. They have display panels at the lobby of the venue, so please take a look at them during break times. In addition, we will provide an opportunity for presentations from private companies and one-on-one meetings at the business seminar in the afternoon of the third day, so please come to the seminar. On the fourth day, we will invite you to the Kawai Water Purification Plant built by a PFI scheme, one of three water purification plants in Yokohama. You can see the state-of-the-art facilities, including a membrane filtration system called "Cerarocca", which is a Japanese leading-edge water supply technology.

Finally, I hope that the broad networks between Asian countries and Japan will be further strengthened and new relationships and initiatives will be developed in the future.

I also hope that you will visit Yokohama in November of next year, for the International Water Association Conference on the theme of asset management.

I would like to conclude my remarks by saying that I fully expect fruitful outcomes from this Forum. Thank you very much.

3. Keynote Speech and Panel Discussion

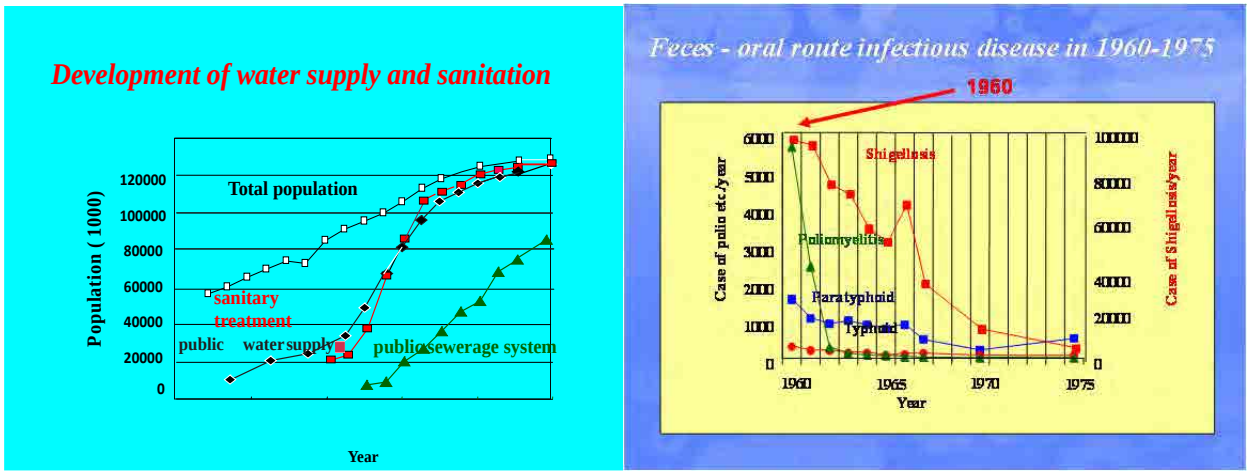
3-1 Keynote Speech “Sustainable Water Services for All - In Evolutional Society -”

Prof. Yasumoto Magara, Hokkaido University, started his keynote presentation by explaining the history behind the cholera outbreak near the Port of Yokohama in the 19th century. It led to the introduction of the first modern urban water supply infrastructure in the city in 1886.

A rapidly growing world population requires more water resources for agricultural and industrial uses. Given the limited fresh water supply available to the world, it is getting more important to share water resources equitably among different uses, such as agricultural, industrial, household, social and environmental activities.

The development of water supply infrastructure contributes significantly to the reduction of incidences of infectious diseases all over the world. Japan’s experience reveals clearly the effectiveness of water supply service in limiting infectious diseases transmitted by the fecal-oral route. Before the 1960s, there were about 100,000 cases of shigellosis and 6,000 cases of poliomyelitis a year. These numbers were reduced by 70 to 80% with the initial implementation of water supply and sanitation systems. By the 1970s, infectious diseases transmitted via the fecal-oral route were almost eradicated from Japan when the coverage of water supply and sanitary treatment reached 70%.

With the increasing number of people across the Asian region moving into urban areas, maintaining safe water and adequate sanitation and hygiene in cities where demand for fresh water is increasing is essential.

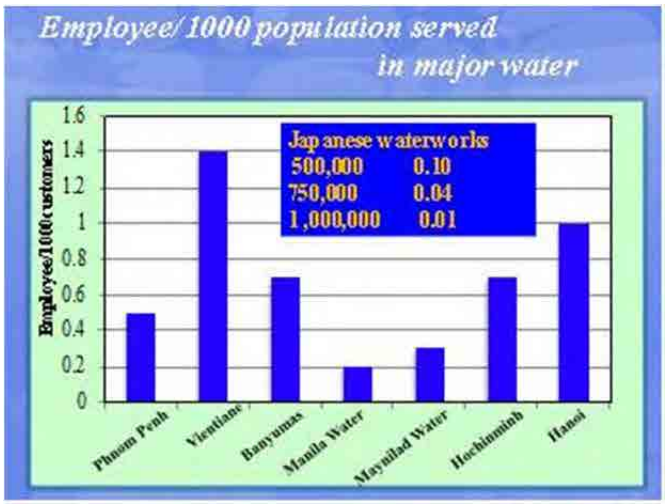


Slide 3-1 (Left) Development of water supply and Sanitation in Japan[1]

Slide 3-2 (Right) Feces - oral route infectious disease in Japan (1960-1975)

With the increasing number of people across the Asian region moving into urban areas, maintaining safe water and adequate sanitation and hygiene in cities where demand for fresh water is increasing is essential.

Japan's population continues to age rapidly, more so than other Asian countries. The declining working-age population brings about a stagnant economy, and a decrease in water demand, resulting in serious situations for water supply authorities. Furthermore, many existing water supply facilities are approaching the end of their service lives. Therefore, sophisticated management practices to renovate water supply systems to reduce excess capacity should be developed as soon as possible. These practices should include labor-saving technologies requiring fewer workers.

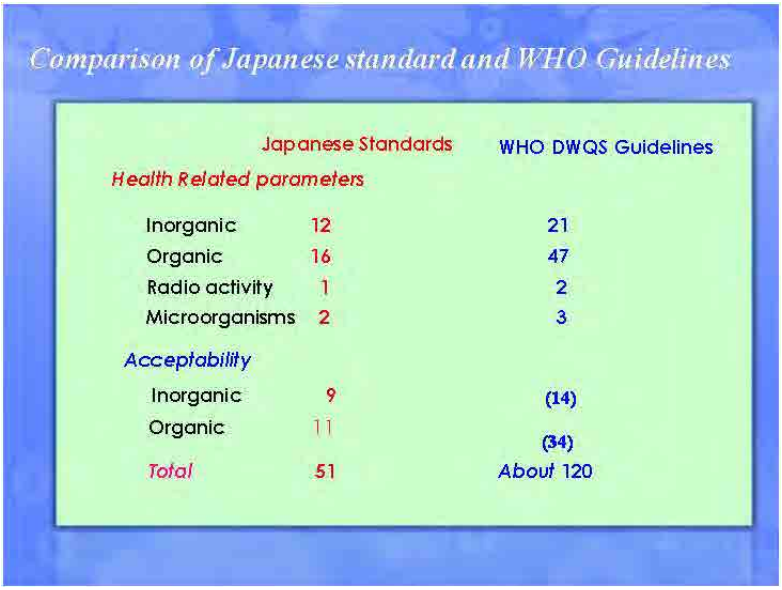


Slide 3-3 Employee/1000 population served in major waterworks

[1] Data of all presentation materials of the Third Executive Forum are included in the attached CD-R.

In contrast to the situation in Japan, many water supply systems in the Asian region are still at the expansion phase. Human resources development to meet the increasing requirement is important, while the systems are being expanded. The number of employees to be hired should be determined based on the level of service required to meet the customers' needs. In order to develop the required human resources, organizations need adequate funding, proper allocation of training personnel and training facilities. To ensure retention of trained employees and minimize turnover, the water sector must institute credible certification and promotion schemes.

Dr. Magara advocated the idea of developing effective and reasonably enforceable national drinking water quality standards. For instance, Japan uses 51 water quality parameters for its drinking water quality standards, compared to 120 for those of the WHO. A number of parameters were eliminated when a national survey showed that the maximum concentration detected for a certain substance in the water supplied was always less than 10% of its acceptable maximum concentration. Since regular water quality testing is costly, it is necessary to review the national water quality standards to ensure more cost effective and meaningful monitoring of water quality.



Slide 3-4 Comparison of Japanese standard and WHO Guidelines

Reducing the unaccounted-for water ratio is another important issue. The reasons for water loss have to be identified, and solutions developed to deal with them. Staff training and improved water infrastructure are two major ways to accomplish this.

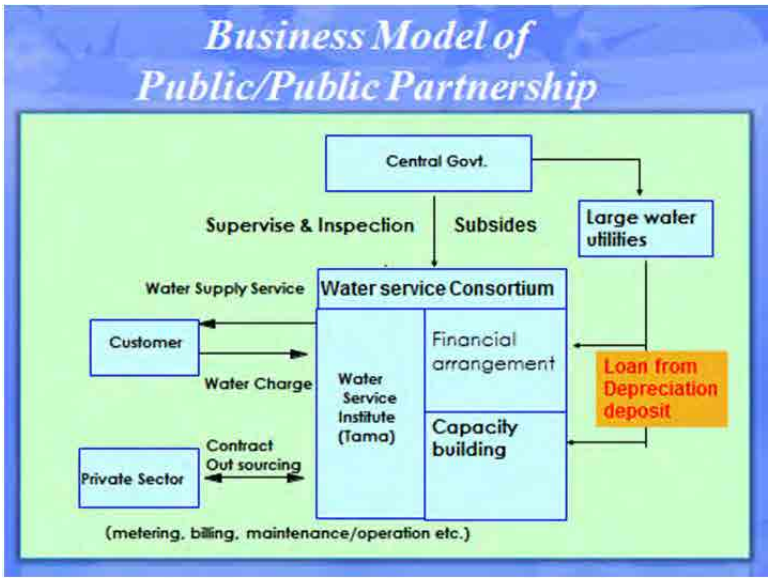
Like anywhere else in the world, the water supply service should be operated on the full cost pricing principle. It should also be what is affordable and what the customers are willing to pay.

It is important to review the master plan periodically in order to respond to the changing needs and to maintain a sustainable service. Water supply facilities have limited service lives. It is important to allocate tariff revenue for the future renovation or replacement of the facilities. Many water suppliers in Japan, however, have not used depreciation as a source of asset replacement funds and there are many concerns for the renewal of the existing water supply systems. Public private partnership could be one of the alternatives for funding water supply facilities by introducing private or market resources.

Public-public-partnership which is now under discussion in Japan could be used to renovate and maintain water supply systems, such as through having a large water supplier provide the loan from their depreciation expense to a small scale water supplier for sustainable water service.

Water business should be implemented on a full cost pricing basis. It is a very strong monopoly, and water is essential not only for healthy daily life but also for economic and social activities.

Therefore, we must continue our business in order to get satisfaction of customers by good governance and transparency of the business, financial soundness and good employees.



Slide 3-5 Business Model of PPP

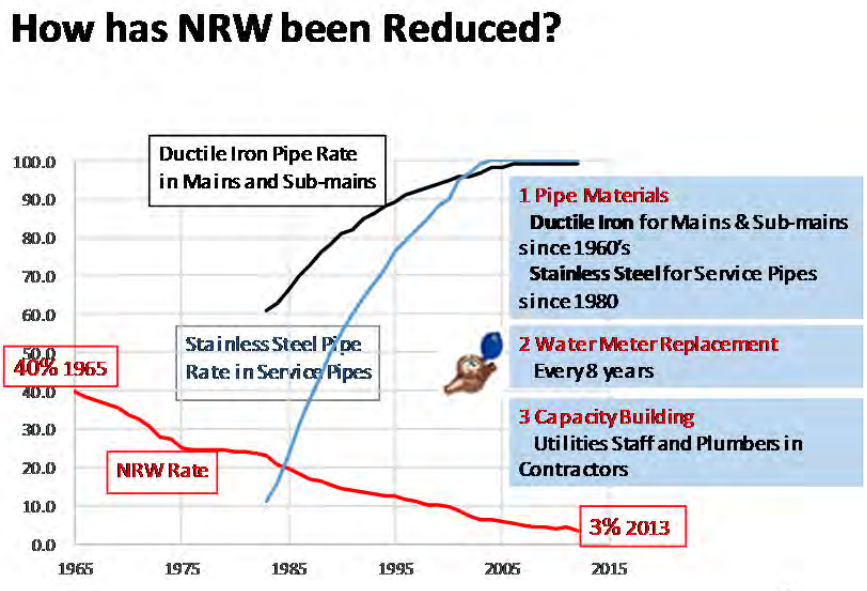
3-2 Panel Discussion

Prof. Satoshi Takizawa, Department of Urban Engineering, The University of Tokyo, started the panel discussion, stressing that sustainable water supply and population concerns were the two key areas. He emphasized the importance of identifying the changes that affect urban water supply systems, such as population changes, economic growth, government policy and international relations, new technologies, and climate change; as well as the importance of how to make organizational changes in management and how to learn from the best practices of other countries. A pro-active approach in the management of these issues would be required.

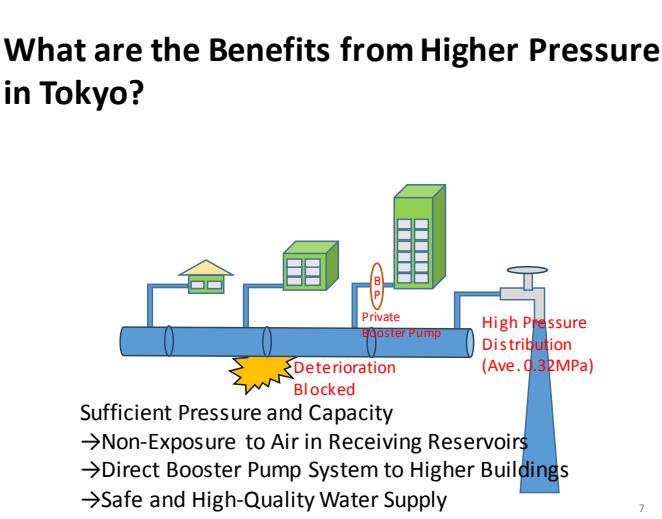
Presentation 1 "Sustainable Water Supply Management -Experience in Tokyo-"

Dr. Atsushi Masuko, CEO, TSS Tokyo Water Co., Ltd., former Director General Bureau of Waterworks, Tokyo Metropolitan Government, talked about the importance of reducing water loss (NRW), building more robust and anti-seismic piping networks, reducing adverse health risks, and improving customer service.

Main and sub-main pipes are now made of ductile cast iron materials, and corrugated stainless steel is used for service pipes. These initiatives, amongst others, have improved the NRW rate significantly from 40% in 1965 to 3% in 2013.



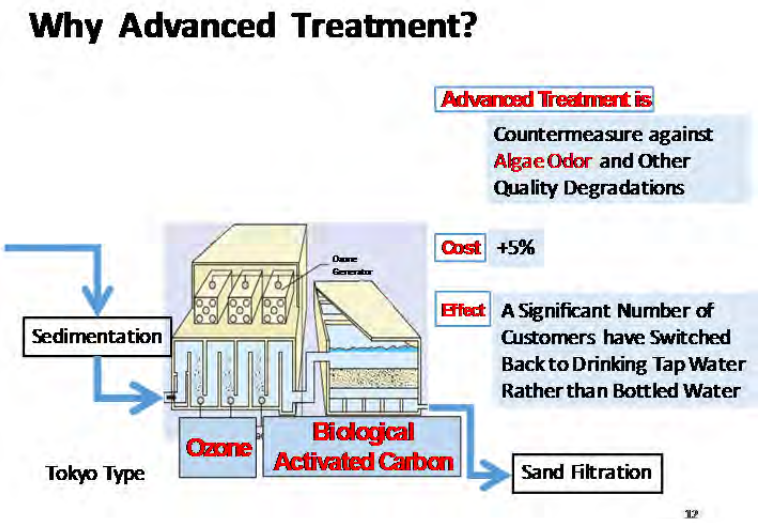
Slide 3-6 NRW reduction progree in Tokyo



Slide 3-7 Benefit fron high water pressure

Water pressure in the distribution system is also an important factor for customer satisfaction. The benefits of high pressure water distribution systems are non-exposure to air in receiving reservoirs, direct booster pump systems to higher buildings, a safe and high-quality water supply, and the avoidance of private pump suction.

Introducing advanced treatment of Tokyo's tap water to eliminate algae odor and other quality degradations has improved customer satisfaction. This initiative led to an increase from 28% to 52% in terms of those who answered "satisfied or somewhat satisfied" in a 2013 survey conducted to determine customer satisfaction of Tokyo's tap water.



Slide 3-8 Outline of advanced water Treatment

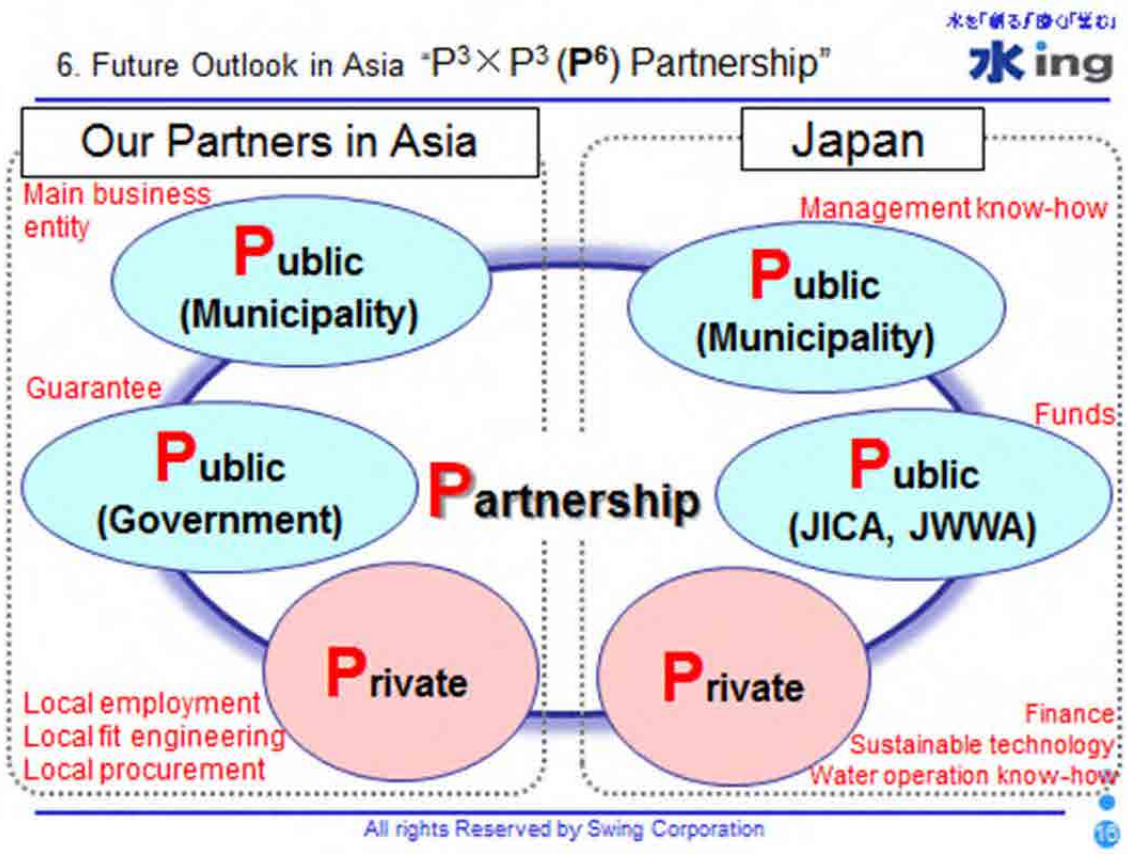
TSS Tokyo Water Co., Ltd. is continuing to make sustained efforts to improve water supply in Tokyo, and to share information and best practices with other water suppliers within the region and globally

Presentation 2 "Contribution of Japanese Water Companies in Asia"

Mr. Shigeo Mizutani, President and Chief Executive Officer, Swing Corporation, briefly described the Swing Corporation and highlighted its track record in the Japanese market, including having the largest EPC share, operation and management at more than 300 locations across Japan, contributing to 500 projects in over 50 countries, and the supplier of small- and large-scale water treatment plants, industrial waterworks, and sewage plants at various locations.

Japan is facing in a shrinking population, lower demand for water, and declining human resources. Most countries in the Asia region will eventually deal with these issues themselves, although most Asian countries are still in the construction phase of developing their water supply infrastructure. Most of the infrastructures in Asian countries have been constructed through Japanese ODA, and many private Japanese companies are continuing to work on projects in the region as of 2014.

Against a background of such long history of cooperation between Asian countries and Japan, the unique (P^6) Partnership concept, which would be supported through a partnership between the national government, municipal government, and local companies in both Asian countries and Japan, is proposed. This system is expected to help share Japanese experience overseas and provide total solutions to their customers.



Slide 3-9 P^6 framework

Presentation 3 "Success & Failure in Managing Water Supply, Cambodia Cases"

H.E. Ek Sonn Chan, Secretary of State, MIH, Cambodia, Former Director General of PPWSA, briefly introduced Cambodia's recent history, emphasizing in particular that the growing urbanization of Cambodia was already stressing an inadequate urban water supply system, and explaining that despite having abundant water resources, it was not evenly distributed, susceptible to climate change, and had poor institutional and financial capacity at provincial and local levels.

PPWSA has been enjoying success in water supply development and performance since 1993, and the operating ratio has remained low (38% as of 2012) with no increase in the water tariff since 2001. In contrast, looking at water supply outside of Phnom Penh, we find that decision making remains at the ministry level and is not decentralized; there is no clear pricing policy, no proper monitoring tools and no mechanisms for implementation of laws and regulations.

Moreover, in terms of governance, there is a lack of transparency in operations, appointment of managers, and staff promotion, and little improvement in efficiencies.

PPWSA – Before & After

1993	INDICATORS	2012
20	Staff / 1,000 connections	2.75
65,000	Production capacity, m3/day	430,000
???	Water quality	WHO
20%	Coverage area	85%
10 hr/d	Supply duration	24 hr/d
0.2 bar	Supply pressure	2.5 bar
26,881	Number of connections	234,022
72%	NRW	5.85%
48%	Collection ratio	99.9%
150%	Operation ratio	38.41%
N/A	Return on revenue	26.62%
N/A	Return on net asset	4.71%
N/A	Current ratio	2.55 times
N/A	Debt service coverage	3.25 times
N/A	Accounts receivable	24 days

Slide 3-10 Comparison between 1993 and 2012 of PPWSA

There are two opposing tendencies in the water supply business, on one side are the politicians who do not usually want a higher water tariff and on the other water utility operators who want a higher water tariff to cover the full cost of service without making much of an effort to increase efficiency.

Moreover, success or failure of the water supply industry is dependent on political will and good governance of waterworks.

Poor governance in the water sector is usually caused by: questionable appointment of top management of the water utilities, corruption in recruitment, nomination and promotion of managers and inadequate training and incompetent day to day management.

It is necessary to correctly price water to reflect its true cost. There is the need for good policy and governance for sustainable water management. Good governance comes from transparency, integrity and accountability.

Presentation 4 "JICA's Role in the Changing World towards Sustainable Water Supply Services"

Mr. Masami Fuwa, Director General, Global Environment Department, JICA, provided data on the emerging development agenda in the face of the post-MDGs era, and highlighted the relief activities by JICA and their partners for disaster risk reduction. The economies of partner countries are continuing to grow and 40% of the urban population lives in areas where they do not receive adequate water supply. The private flows of capital to developing countries are growing.

In the changing world, JICA is accelerating their initiatives to broaden and deepen relationships with the local governments and the private sector. JICA is also encouraging so-called south-south cooperation, which aims at mutual cooperation among the partner countries. Many Asian countries are already not only recipients of cooperation from JICA, but also important providers of cooperation in turn both domestically and internationally.

JICA is committed to contribute for reducing poverty and achieving human security, which is their core mission. JICA is also ensuring wider service coverage and sustainability, in response to surging population and urbanization. JICA believes that directive and informative master plans are useful, in order to organize various interventions and solicit cooperation from development partners. Those master plans should include realistic and step-wise investment plans and funding schemes. JICA continues to extend financial cooperation, including grant aid and yen loan. In addition, JICA will further encourage the private sector's involvement for continuous investment and engagement in partner countries, reflecting the growing importance of private funds.

JICA will address emerging development agenda, such as climate change and disaster risk reduction. Regarding disaster risk reduction, JICA will try to mainstream it into development work in disaster-prone countries.

JICA will further expand their partnerships with diversified actors in Asia. The partnerships will be broaden through a variety of initiatives, such as south-south cooperation, water operators' partnership, and private sector participation. JICA will also continue to be a dedicated and equal partner of Asian countries and water supply utilities.

Slide 3-11 Further expansion of the partnerships with diversified actors in Asia

Discussion

Q1: What are the similarities and differences between Japanese water supply development and the issues Asian water utilities are currently facing?

Prof. Magara stated that there was a wealth of knowledge based on past experiences that both Japanese and regional partners in particular could learn from. It was recommended that regional participants thus push their respective water supply sectors to develop multilateral or mutual cooperation for the dissemination of lessons based on this knowledge and experiences.

Q2: How do you define the sustainability of urban water supply in your country/city, and what are the most important components in sustainable management of water utilities?

Dr. Masuko answered that proactively addressing NRW to maintain good supply pressure and safe water supply was the most important component to addressing sustainable management of water utilities in Japan.

H.E. Ek Sonn Chan stated that sufficient funding, proper technology, and good policy and management were important factors to create sustainable waterworks in Cambodia. Among which, good policy and management is the most important ones.

Q3: What do you think will be the most important change, or risks, in the near future that affect urban water systems and management of water utilities in Asia?

Mr. Mizutani said that Japanese companies would need to change to facilitate localization in other countries, noting that Japanese companies should invest not only in human resources in local markets but also invest in local partners in the globalization process.

Mr. Fuwa stated that risk analysis and risk assessment were very important in order to understand the right conditions of the market to proceed to any next steps, while roles of private sector are getting bigger. There is fear that the many kind deficiencies such as financial and human resources, and correctly and carefully choosing the way forward would be essential.

Q4: What is the most important step(s) to overcome the present and future challenges and risks in urban water supply in Asia?

Prof. Magara brought up the issues discussed in the previous sessions and highlighted proper policy development as an important step toward overcoming present and future challenges.

Dr. Masuko expressed Japan's cases. Even if the leader is changed, the water supply industry does not change drastically but follow its long-term plan. He also suggested the importance of spirit to change continuously towards the improvement.

H.E. Ek Sonn Chan stated in developed countries every system has been already in place and just being implemented while in developing counties changing is something happening. Changing leaders could change the things, and the same goes for water sector.

Q5: What is the key to realizing the (P^6) Partnership?

Mr. Mizutani stated his belief that trust was the core component to this partnership, and added that Japanese organizations and businesses were reliable, hardworking, and would develop mutually beneficial and long-term relations with their partners in Asia.

Q6: What do you think of the roles of ODA and beyond?

Mr. Fuwa emphasized the need to continue cooperating in the field as well as find effective ways to involve and coordinate many partners in order to mitigate commercial and political risks.

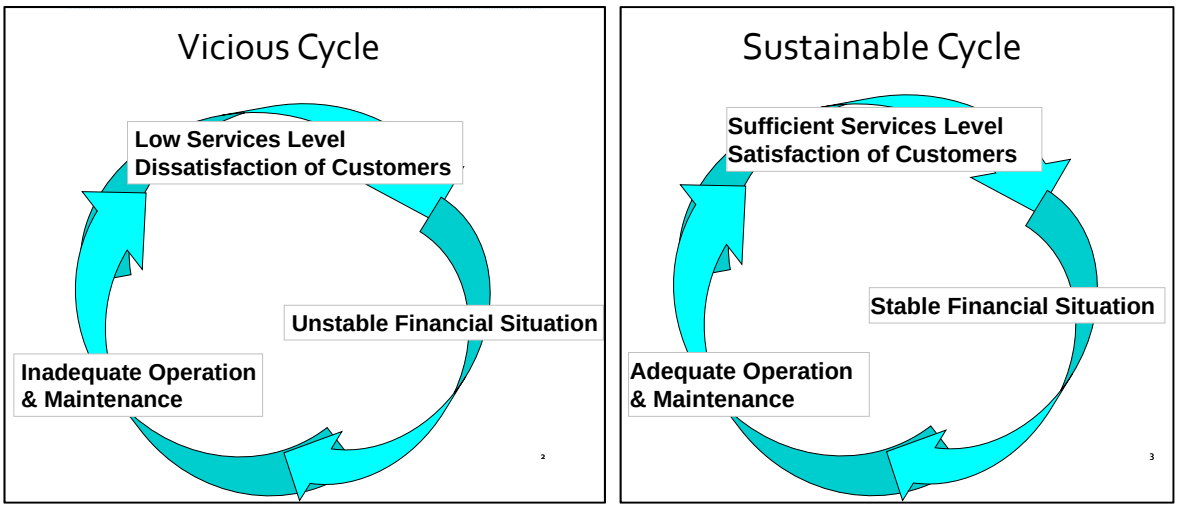
4. Session 1 “Raising Revenue”

Objective of Session 1

Raising revenue to secure stable management and maintenance of water supply facilities is one of the key initiatives that can be taken factors to transform water supply services from operating in a “vicious cycle” to a “virtuous cycle”. Session 1 focused on will introduce and discuss practices for raising revenue, such as producing and disclosing accurate financial statements and their disclosure, water tariff revision, water tariff collection, non-revenue water reduction (both physical loss and commercial loss), and outsourcing (private sector participation).

Introduction by the Moderator

Mr. Yoji Matsui, Director of International and Training Department, Japan Water Works Association (JWWA), Japan, provided the starting points for looking at “How to Make Revenue Sustainable?” by comparing vicious and sustainable (virtuous) cycle in managing water services (Slide 4-1). There are many challenges, including low levels of service, low satisfaction of customers, unstable financial situation, inadequate operation and maintenance, pressure from population growth, lack of water supply facilities, lack of budget, aging infrastructure, and low water pressure, low community awareness, or improper organization or management structure. Trying to resolve such a multitude of issues can be overwhelming. Therefore, the main purpose of this session is to organize these challenges so that they can be tackled in an orderly manner and in terms of priority.



Slide 4-1 Conceptual Schematic of Vicious and Sustainable Cycle

Mr. Matsui suggested that the issues can be sorted into four general categories:

(1) Responsibility of Government and Utility:

Regulatory reform, Policies, Efficiency, Communication

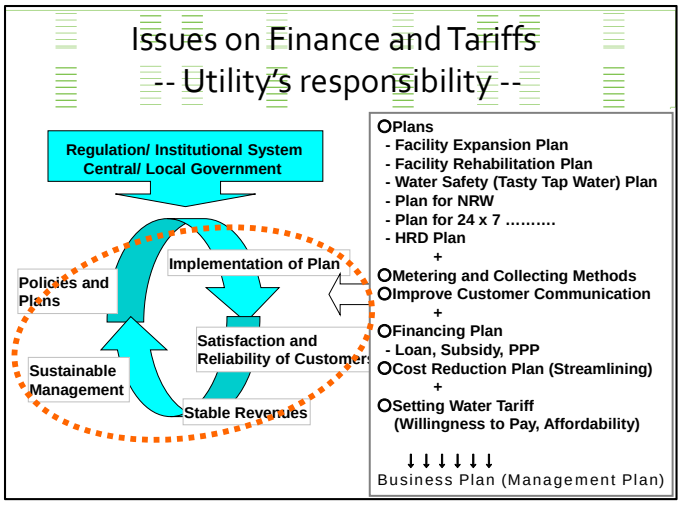
(2) Vision focusing on customers and the Management Plan:

Ultimate objectives for water utility is not just NRW reduction but also achievement of customer satisfaction

(3) (The structure of) the countermeasures and their effects

(4) (Inter-relationships between) Indicators for the management and those of services

These issues are complicated and totally dependent on actual situations of the utilities. In this session, the structure of the problems was analyzed so that the participants can sort out the problems and find solutions

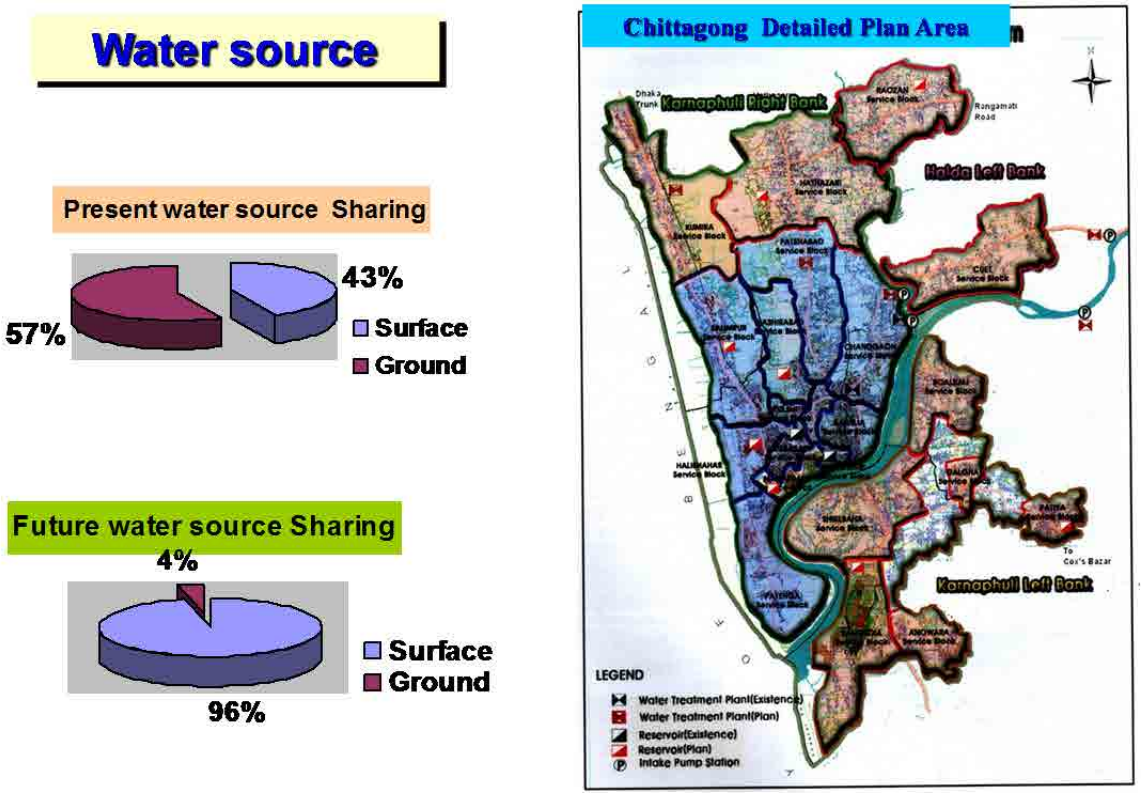


Slide 4-2 Issues on Finance and Tariffs regarding Utility's Responsibility

Presentation 1 "Water Tariff and Collection"

Mr. Fazlullah A.K.M., Managing Director, Chittagong Water Supply and Sewerage Authority (CWASA), Bangladesh, presented the background of Chittagong city and its importance as a port and trading center in Bangladesh. The principal functions and roles of the CWASA are to secure continuous water supply under the Water Act; to develop and maintain water works and sanitation works; and to advise the Government in the formulation of policies and guidelines relating to portable water standards.

The CWASA's water sources are from groundwater (57%) and surface water (43%). There are problems with sea water intrusion and turbidity in the rainy season with surface water but that the overall condition of the groundwater is good. However, due to the deterioration of groundwater quality and depreciation of groundwater level, the CWASA is planning to rely more on the surface water (up from 43% to 96%) in future. This is necessary because water demand will grow very fast and the demand supply gap will increase accordingly.



Slide 4-3 CWASA's Water Source and Supply Area

In the case of the CWASA, approaches for achieving the virtuous cycle are tariff revision and improving revenue through increasing collection ratio and NRW reduction. The strategies and actions to increase revenue are:

(1) Reduction of NRW:

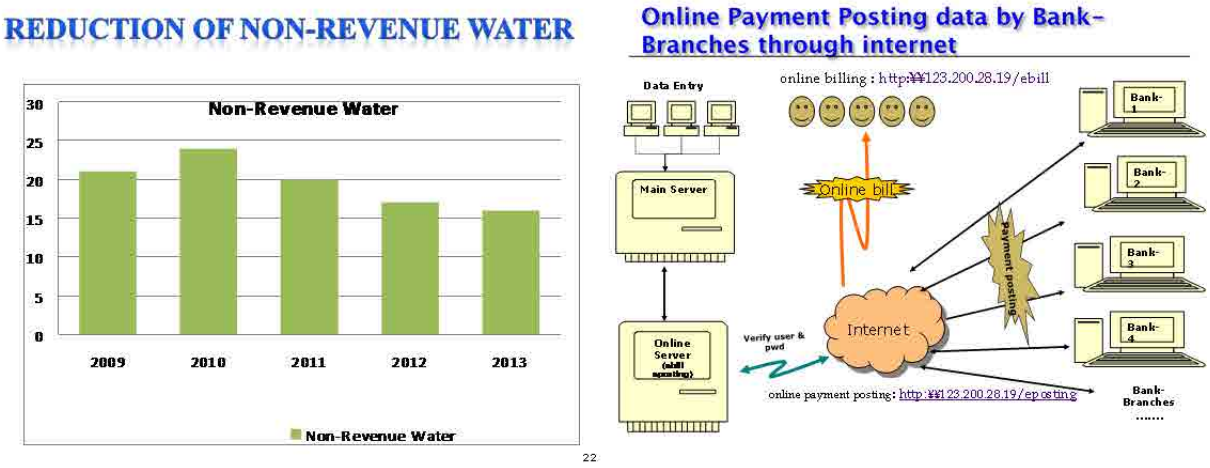
On-going cooperation with Japanese experts on OJT training and other NRW reduction activities under the Project for Advancing Non-Revenue Water Reduction Initiative (PANI-2)

(2) Restructuring Tariff:

The process for establishing a water regulatory commission is on-going. The appropriate tariff system will be determined through consultations with the relevant authorities and stakeholders. It is important that the tariff be set at an appropriate level when the water supply service is improved after the completion of the Karnaphuli Water Supply Project (massive expansion made by Japanese loan). Improved service leads to the improvement of customer satisfaction and it is easy for customers to accept increased tariff. The new tariff will be set based on operating and maintenance cost, repayment of loans and interest and revenue.

(3) On-line Billing Systems:

On-line billing and updating of payment status was introduced so that customer can easily pay and confirm the water bill.



Slide 4-4 Performance of NRW Reduction and Billing System in CWASA

Comment 1 "Revenue Realization in BWSSB"

Mr. Shivappa Krishnappa, Chief Engineer, Bangalore Water Supply and Sewerage Board (BWSSB), Bangalore, India described the situation of revenue at the BWSSB and the billing system (SPOT Billing) as initiatives taken for improvement. Although the BWSSB has not changed its tariff rate for ten years due to the government policy, the financial situation is still healthy. The revenue realization (collection ratio) is high at 97.15%. About 9 % of the total connections are in the slums and these water sales are not negligible because of the high collection ratio. SPOT billing system using devices to bill on-site and collect on-line have also helped to demonstrate transparency and reliability to the customers.

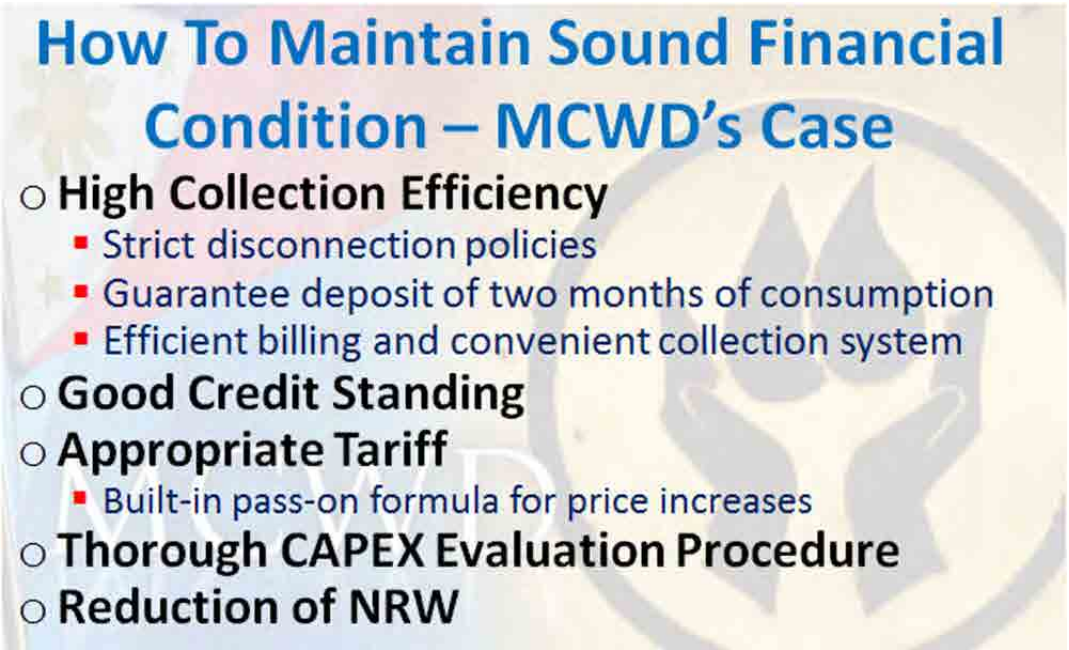
Table4-1 Revenue Realization in BWSSB

REVENUE REALISATION IN BWSSB	Category of connections;
● Total No. of Metered water supply connections in Bangalore – 747510 ● Only sanitary connections – 50450 (water from other source) ● Total No. of water supply & sanitary connections in Bangalore – 797958 ● Average Monthly Revenue Demand – Rs.56.10 Crores ● Average Monthly Collection – Rs.54.50 crore ● Percentage Revenue Realization – 97.15%	● Domestic – 671364 (48.54%) ● Non-Domestic – 33565 (37.50%) ● Partial Non-Domestic – 28913 (6.07%) ● Industries – 1780 (6.38%) ● Others – 11888 (1.51%) ● Out of existing 671364 domestic connections there are 57649 metered connections in the slums. ● Water and sanitation service connections will be increased from existing 57,649 to 77,227 households and monthly minimum service charges being levied are at Rs.83 per household, and hence per month about Rs.17 lakhs increased revenue to BWSSB from the slum communities.

Source: Presentation Material of BWSSB

Comment 2 "How to Maintain Sound Financial Condition – MCWD's Case"

Mr. Ernie Tapleras Delco, Assistant General Manager, Operations Group, Metropolitan Cebu Water District (MCWD), Philippines, explained why the MCWD could maintain sound financial status for a long time. He emphasized high collection efficiency with strict disconnection policies (automatically disconnect if payment is overdue for two months), guaranteed deposit for two months and efficient billing and a convenient collection system. He went on to stress the importance of good credit standing, appropriate tariffs (adaptation of "Built-in Pass-on Formula", for customers' price adjustment), thorough CAPEX evaluation procedures, as well as reduction of NRW.



Slide 4-5 How to Maintain Sound Financial Condition – MCWD's Case

Presentation 2 "Sound Financial Management and Non-Revenue Water Reduction"

Ms. Rachel M. Beja, General Manager, Cagayan de Oro City Water District (COWD), Philippines, started with a brief background of the Philippines and stated the COWD's vision of being an outstanding water district in the country. In the COWD's strategic roadmap for 2012-2017 for sustainable water service, financial stability including NRW reduction is very important.

Slide 4-6 COWD's Strategy and the role of Financial Management

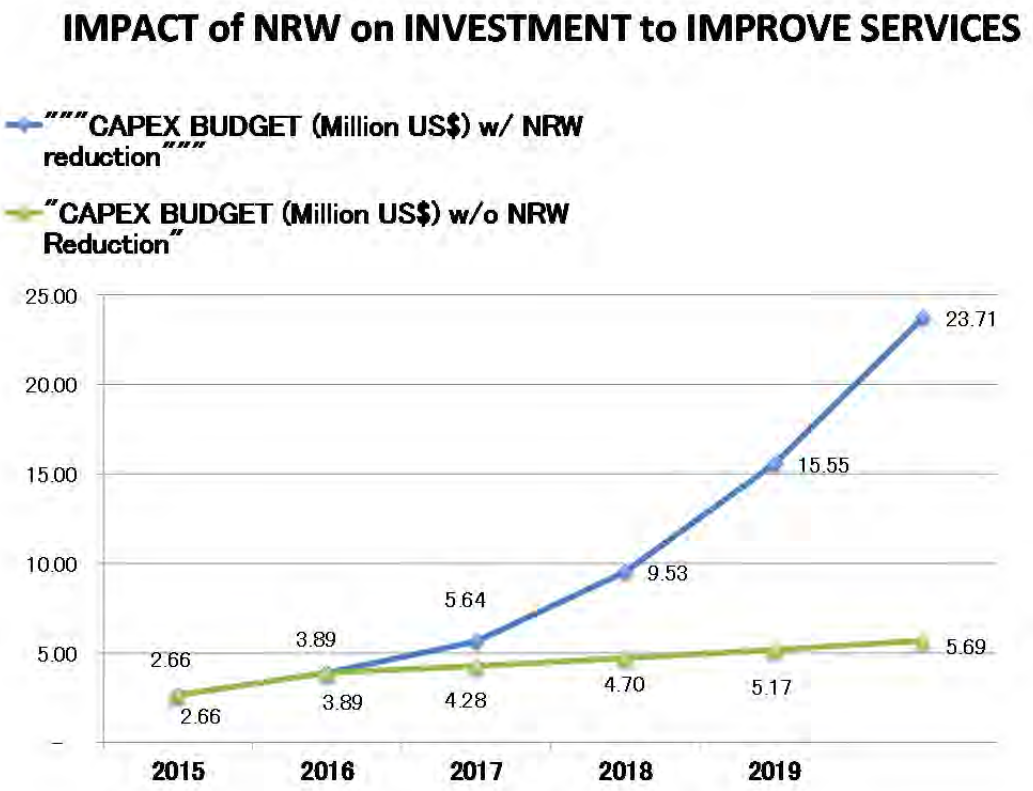
Increasing collection efficiency is one of the important measures for financial soundness. The COWD found that the important issue which was often overlooked is the account receivables (A/R). In light of the COWD's strict disconnect policy, there are many delinquent (long term delayed for payment) accounts. After thorough review and writing off of the inactive accounts and delinquent A/R, the COWD can get a better picture of its actual financial status.

More importantly, the COWD found that NRW reduction is essential and is the biggest challenge in raising revenue. NRW reduction is also important for the financing of the water supply system since NRW ratio is regarded as the one of the major indicator showing the soundness of the utility which the donors and investors scrutinize.

Motivated by the Seminar for Urban Water Service Management and Human Resource Development in Asian Region held in Yokohama in 2012, the COWD visited the PPWSA to learn how to reduce NRW,

since the two organizations share similar history and culture. The lessons learned from the PPWSA include national and international cooperation being very useful, necessity to review specifications of materials, and community education.

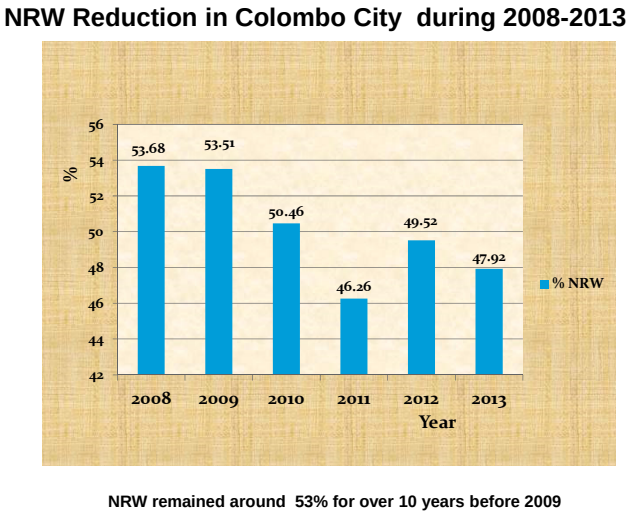
The COWD has been working with JICA on technical cooperation for NRW reduction and the results will be reported in the next Forum.

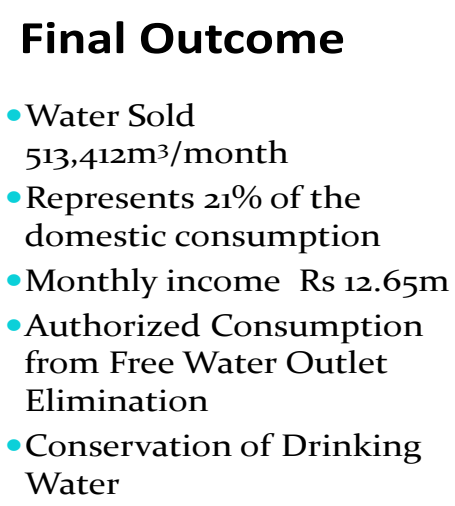


Slide 4-7 Impact of NRW on Investment to Improve Services

Comment 3 "Lessons Learnt from NRW Reduction Activities in Greater Colombo, Sri Lanka"

Mr. Kumararathna Gonapolage Asoka, Additional General Manager, Sewerage Division, National Water Supply & Drainage Board, Sri Lank, provided information on NRW reduction in Colombo City, Sri Lanka. He highlighted the conditions of the distribution pipes in Colombo City before 2009, noting that they were more than 70 years old, and that through the help of JICA they were able to begin replacing the pipelines. As a result of NRW reduction, the NWSDB raised its monthly income to Rs. 12.65 million (≒USD 97,000).





Slide 4-8 Outcome of NRW Reduction

Q&A, Discussion

(Question) How much is the capital expenditure for NRW reduction? What made it cost effective?

(Answer from Ms. Beja, COWD) The cost for replacement varies but, more importantly, if NRW is reduced, the revenue for re-investment should increase. Well planned replacement plan and monitoring as well as the initial capex are essential to make the operation sustainable.

(Question) How is an actual situation of delinquent (Inactive) account?

(Answer from Ms. Beja, COWD) The customer with a delinquent account is not exactly "not supplied" or the stealing the water. Some are just not connected again.

(Comment from H.E. Ek Sonn Chan) From the experience of the PPWSA, the most important practices to raise revenue can be summarized as follows:

1. Reduction of water loss
2. Improving collection efficiencies
3. Tariff increase

The most important thing is that top management must look into what are the real causes of water loss. The experiences in the countries here are completely different from those in Japan. Sometimes the big consumers, not the households in the slums, steal water. New pipes can be the main cause of leaks because they carry the water under high pressure and the materials used in service connection are low quality. The PPWSA did not disconnect one single poor customer who could not pay the bill. That is because customer satisfaction is more important than disconnection. In that sense, increasing tariff must also be the last measure to be taken, even though it is much easier than improving efficiency such as

water loss reduction. We must benefit the people first, if we were to be supported by the people. If there is support from the people, it is easier to convince the politician.

(Comment from Prof. Magara) Many water suppliers are using metering system. This helps to build relationship with the customer. Meter reading provides the chance for the utility and the customer to talk to each other.

Presentation 3: "Facility Renewal and Financial Resources for Sustainable Water Services"

Mr. Samreth Sovithiea, Deputy General Director, Phnom Penh Water Supply and Sewerage Authority (PPWSA), **Cambodia,** provided a brief background on the PPWSA before giving an overview of the impact of NRW reduction on service and financial improvement.

(1) Impact of NRW reduction on service and financial improvement

The PPWSA reduced its NRW ratio from 72% in 1993 to 7% in 2013. In a brief calculation, developed by the former General Director H.E. Ek Sonn Chan, the PPWSA got 25M USD per year just from NRW reduction. It is important to disseminate performance improvement information to the customers since it makes the customers put more trust in the service. In terms of water pricing and cost recovery, customer loyalty comes from good service and the fact that customers pay for 24-hour, uninterrupted, reliable water service are important..

Table 4-2 Impact of NRW reduction on service and financial improvement

A1 Impact of NRW reduction on service and financial improvement

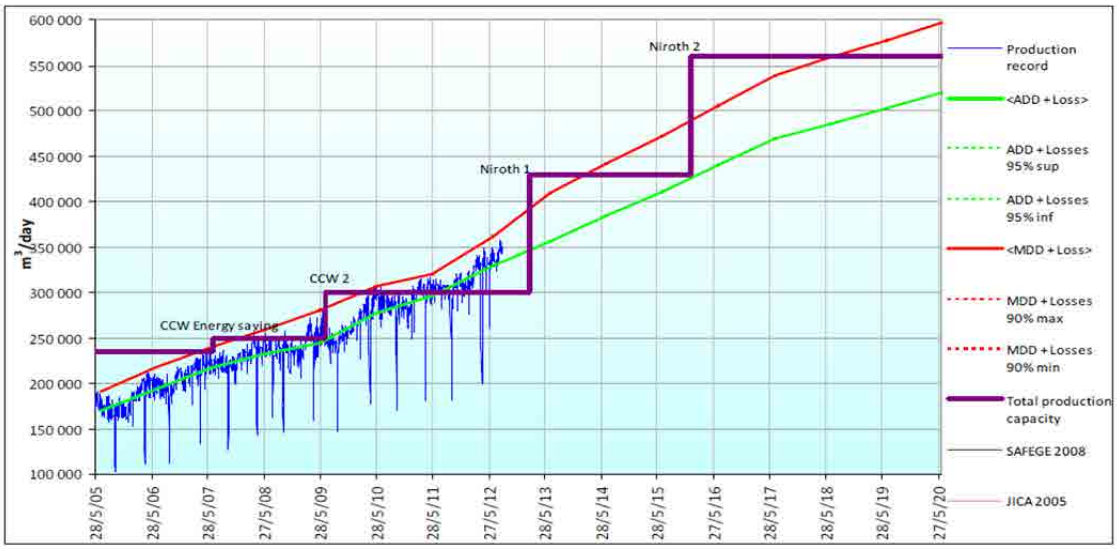
- **1993: 72% of water was lost, equivalent to 46,000m^3/day (out of 65,000m^3 production per day)**
- **2013: 7% – this means:**
  - *72 - 7 = 65% of water produced was saved,*
  - *As of today, production is 430,000m^3/day; this 65% is equivalent to 279,500m^3/day*
  - *As of PPWSA average tariff is USD 0.25/m^3; this 65% represents* ***USD 25,504,375 income per year***
  - *In order to supply the amount of NRW, it needs to build a water treatment plant of 798,571m^3/day (279,500m^3/day X 100/35), which costs about USD 168 million.*
  - *Water demand: 102,017,500m^3/year (430,000m^3 X 65% X 365 days)*

(2) Importance of capital renewal plan

Senior management must formulate long-term plans and in the process commit to the necessary investments. The formulation of master plan and subsequent implementation by the PPWSA and the partnership with JICA on a long-term basis are important factors for the PPWSA's success. Major current challenges for capital investment is the fact that the Phnom Penh Municipality still does not have a master plan, while the city is facing unprecedented growth and soaring water demand. As a result of the population increase, another water production facility would need to be built by 2020.

(3) How to raise funds for capital investment, especially for renewal?

The PPWSA has decided to maximize its income by improving efficiency instead of increasing tariff. The practices for efficiency improvement include reducing NRW, fixing tariff structure and billing system, and improving collection ratio. That approach was successful but the PPWSA still needs funds for investment. The PPWSA needs to the improve efficiency because the investors are watching the performance of the utility. The PPWSA is very careful about increasing tariff but still is considering the minimum additional cost be incorporated into the tariff after the completion of current expansion project (Niroth WPF stage II).



Slide 4-9 Water demand Projection and Planning for Expansion of PPWSA

(4) Current challenges and management indicators regarding renewal

The PPWSA needs further expansion because the water demand in and around the supply area is increasing unprecedentedly at the time when the PPWSA should reach a 100% coverage ratio around 2020. The PPWSA is monitoring the water production and demand, taking these into consideration in the future expansion plan (Slide 4-9).

Comment 4

Mr. Oloan Martumpu SIMATUPANG, Head of Sub Directorate for Technical Planning, Directorate of Water Supply, Directorate General of Human Settlements, Ministry of Public Works, Indonesia, emphasized that NRW reduction required leadership and investment, and supported the idea to use utilities' own fund together with international fund. It is easy to think about increasing tariff for investment, but improving internal efficiency should be a priority focus in raising revenue.

As in the case in Indonesia, only sound water utilities can obtain loans with guarantee from the government. Among all 422 PDAMs (provincial waterworks utilities in Indonesia), 180 are evaluated to be "sound" financially. Directorate General of Human Settlements, Ministry of Public Works, Indonesia, as the governmental agency, offers administrative and technical support according to PDAMs' business plans..

(Comment from Mr. Dody SOEDARJONO, PDAM Surabaya) As an example of a PDAM in Indonesia, PDAM Surabaya increased the number of consumers to raise the efficiency. Thanks to this effort, PDAM Surabaya has raised revenue without changing the tariff for 8 years.

(Question) How much did the PPWSA invest for pipe replacement? What are the effects of replacement?

(Answer from H.E. Ek Sonn Chan, MIH Cambodia, former General Director of PPWSA) The PPWSA replaced 288 km of old pipes totally by grant and loan from donors. It required the investment of approximately 10 million USD. There are two benefits from the replacement of old pipes. One is that the PPWSA could sell the water, that would have been lost through leakage and this is estimated to be approximately 1.8 million USD. The other is that the PPWSA could save this money for investment for new water treatment facilities.

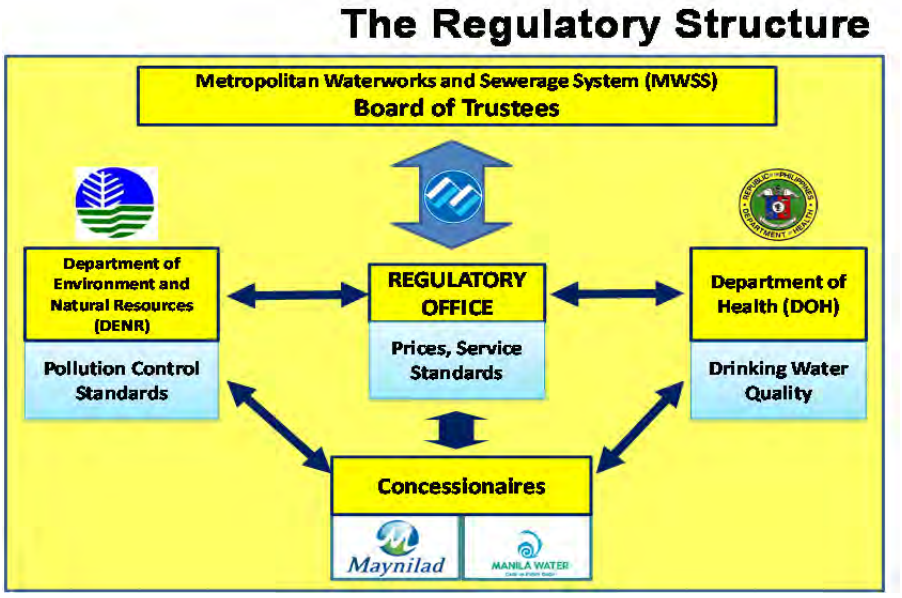
(Question) How did staff efficiency improve when the number of staff per 1000 connections was reduced from 20 to 2.5?

(Answer from H.E. Ek Sonn Chan) The PPWSA adopted three important approaches to improve staff efficiency:

1. Strict policy for recruitment
2. Incentive payment to encourage efficiency (for example, bonus for faster meter reading)
3. To improve morale of staff and utilize in-house staff

Presentation 4: "Water Concession as a Model Public Private Partnerships – Increasing Revenue"

Ms. Leonor C. Cleofas, Deputy Administrator, Metropolitan Waterworks and Sewerage System (MWSS), Philippines explained the background of the MWSS, the largest water privatization project in the world. The privatization resulted in improvement of water delivery, expansion of water coverage, and development of new water sources. Regulation and the contents of the concession agreement are important for maintaining control over the system. For this purpose, the Regulatory Office established at the MWSS is responsible for monitoring tariff and service standards. The Department of Environment and Natural Resources (DENR) and Department of Health (DOH) also regulate the concessionaires in accordance with their roles and responsibilities.

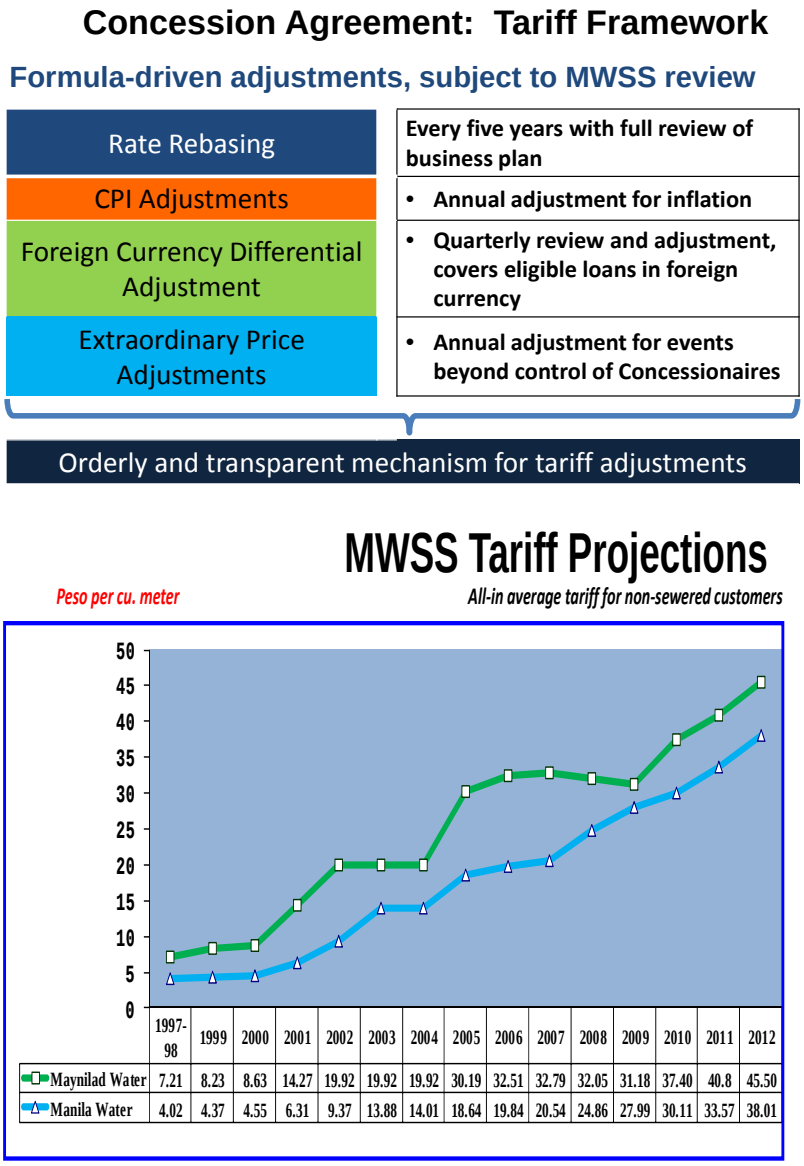


MWSS Regulatory Office
- Concessionaires compliance with the provisions of the Concession Agreement
- Monitoring and compliance as to targets obligations
- Water tariff setting in accordance with the Rate Rebasing Process (prudency and efficiency test) done every 5 years

Department of Health
- Compliance with drinking water quality standards in accordance with the National Drinking Standards
- Conduct regular water quality sampling thru the inter agency committee

Department of Environment and Natural Resources
- Compliance with the effluent standards in accordance with the Pollution Control Standards
- Regular monitoring of effluent discharges of the treatment plants.
- Impose penalties on violations

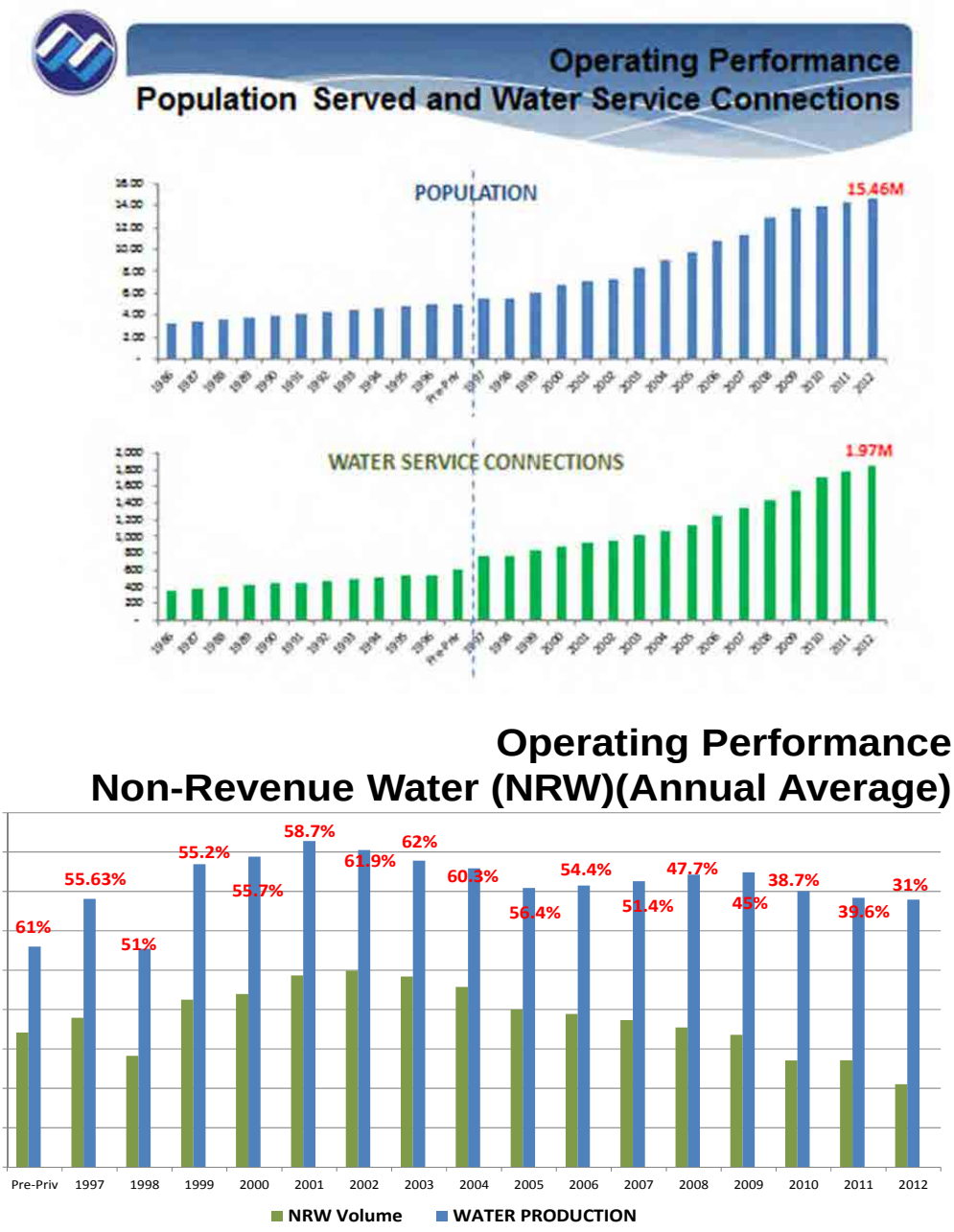
Slide 4-10 MWSS's Regulatory Structure and the Role of Regulators



Slide 4-11 MWSS's Tariff Framework and Projections

In the concession agreement, formula-driven adjustments of the tariff framework are incorporated and it is subject to MWSS review. Full reviews of the business plan is conducted every five years. The tariff framework is also adjusted based on inflation, foreign currency differential and extraordinary prices beyond control of the concessionaires.

She described the progress of operating performance of PPP projects, such as water service connections, sewerage and sanitation coverage, staff per 1000 connections, as well as the annual averages of NRW. Sanitation is one of the emerging issues which the MWSS would be working on in accordance with government policies.

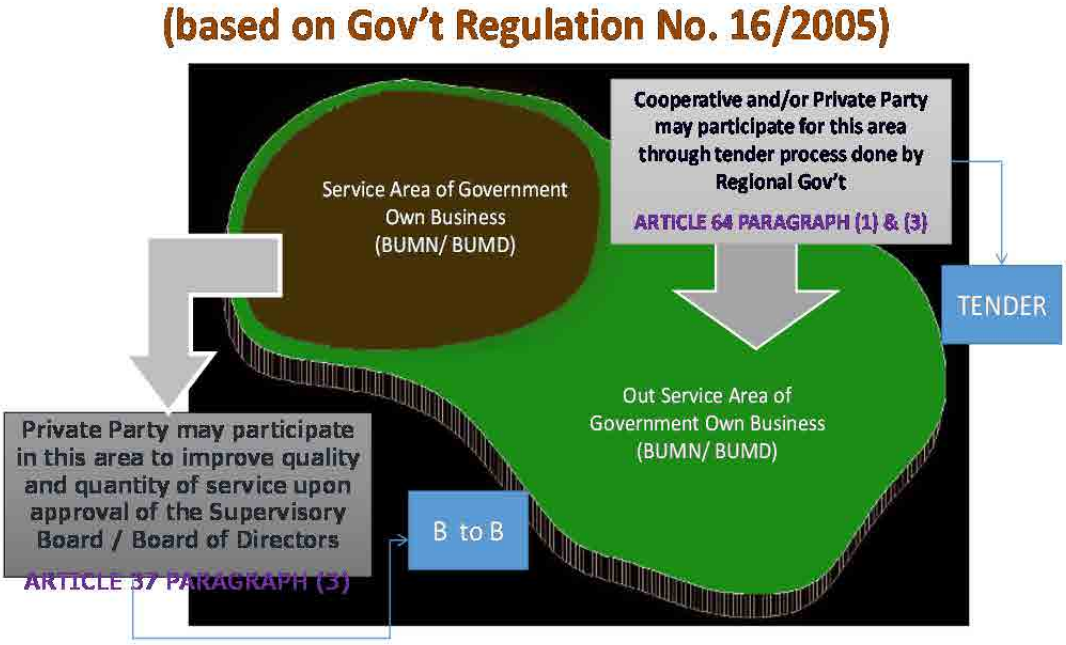


Slide 4-12 MWSS's Operating Performance Improvement

The partnership between the public agency and private proponent should continue to be enhanced, improved and nurtured. Service targets should be clear and transparent, and Key Performance Indicators (KPI) and Business Efficiency Measures (BEMs) should be established and agreed upon by all parties. Tariff setting should be transparent and straight forward to avoid any discretionary decisions on the part of the regulators. To encourage prudency and efficiency, penalties and rewards should be considered. Additionally, it is recommended that the government should endeavor to access ODA loans to mitigate tariff impact in case the expansion of service and coverage involves huge investment.

Comment 5 "Challenges & Opportunities of PPPs in Water Supply Sector"

Mr. Rudie Kusmayadi, Chairman, Indonesian Water Supply Association (PERPAMSI), Indonesia, presented an outline of the ATB (PT. Adhya Tirta Batam) concession structure in Batam and PPP projects in Jakarta. PPPs are good for Indonesia. Private parties could participate in the tender process in areas where the government does not have the expertise. They could also participate in government services upon approval by the supervisory board/board of directors.



Slide 4-13 Overview of Public Private Partnerships in Indonesia

Q&A, Discussion

(Question) What are the MWSS' strategies to maintain the current situation regarding the concession?

(Answer from Ms. Cleofas, MWSS) The Philippines government and the MWSS are strict in their implementation of the concession agreement. While unstable political situations can be a barrier, maintaining transparency is essential.

(Comment from Mr. Ernie, MCWD) The concession agreement is simply a PPP, not privatization, because the government still owns the assets of the concession. The MWSS is successful in terms of improvement of efficiency, while PPP is not the only solution for improvement. If the government run utility is doing well it is not necessary to privatized.

Wrap-up by the Moderator

Mr. Matsui emphasized that the diverse range of experiences and information from various water utilities and countries should be beneficial to all participants. Some important messages to note in terms of priority are:

- Change the management from vicious cycle to sustainable cycle
- The government and utilities have the following responsibilities -
  Government: regulatory reform and national policy
  Utilities: business plan (including plans for capital investment, efficient O&M, lower NRW, water safety, HRD, and customer awareness)
- Strife for customer satisfaction versus/along with collection efficiency
- Improve staff efficiency using incentives for achieving higher customer satisfaction/ improve morale.

The discussions are summarized as follows:

(1) Customer satisfaction along with the service quality is the most important factor to make the transition from vicious cycle to sustainable cycle, and is the reliable basis for enhancing both financing and water sales.

(2) Restructuring tariff to the appropriate level is a critical issue while improving efficiency, such as non-revenue water reduction, collection ratio improvement and appropriating the number of staff, should be implemented at the same time.

(3) Public Private Partnership: discussion to be continued at Session 4.

Main points confirmed at Session 1

- ✓ Customer satisfaction, which can be increased by efficient management, is the key to improving collection ratio.
- ✓ It is very important to achieve the sustainable cycle with customer satisfaction, efficient management (good operation & maintenance), and stable financial situation (high collection ratio).
- ✓ It is necessary to make efforts to improve management efficiency before raising water tariff.

5. Session 2 “Maintenance of Water Supply Facilities and Procurement of Equipment and Materials”

Objectives of the Session 2

Session 2 deals with three topics: maintenance of water supply facilities, water quality management, and procurement of equipment and materials. For maintenance of facilities, topics including the importance of daily maintenance, periodic inspection, data and drawings, standard operating procedures (SOPs), preventive maintenance are discussed. Issues related to water quality management include water safety plan (WSP) with monitoring from source to taps, training of staff for water quality testing, and on water quality standards. Procurement of equipment and materials will be discussed in terms of supply chain and standardization of specification, quality, and life cycle cost, to

Introduction by the Moderator

Mr. Masahiko Kiyozuka, Director of Water Supply Department, Technological Administrator, Yokohama Waterworks Bureau (YWWB), opened the session with a reminder of the discussion themes as stated in the session objectives. He cautioned that in order to achieve “Safe, Stable water supply sustainably”, the administrative and technical aspects are inseparable.

This session’s focus on the technical aspect of current operation and maintenance (O&M) practices would provide the chance for the participants to learn about specific practices that were implemented and how they were implemented under the leadership of senior management. This together with the administrative aspects discussed in Session 1, form the wheels that drive water supply systems.

Presentation 1 "Best Practices for Maintenance and Procurement"

Mr. Ernie Tapleras Delco, Assistant General Manager, Operations Group, Metropolitan Cebu Water District (MCWD), Philippines, explained that the MCWD service area is unique in that it is serving eight different cities. The MCWD had a production volume of 200,000m3/day, with a population served of 1.2 million, and the main water resource is groundwater. Mr. Ernie was assigned to the position of manager of the pipeline sections in 1984, and subsequently assigned to the position of Assistant General Manager of Operation and Maintenance group.

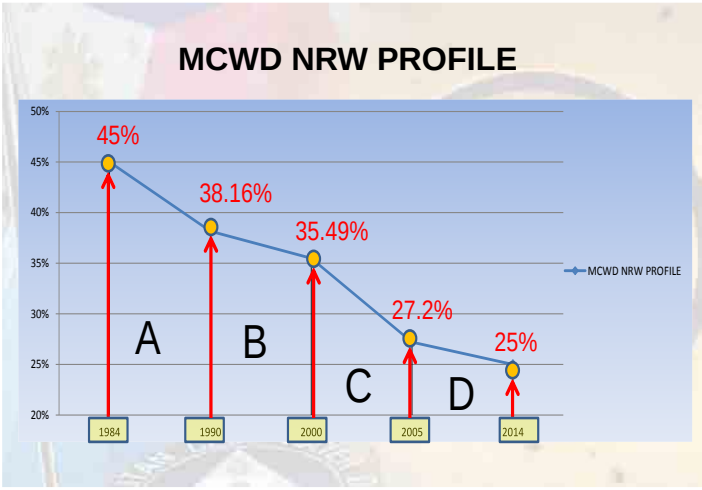
(1) Maintenance of Pipeline and NRW Reduction

The MCWD suffered from high numbers of leaks, around 1,800 leaks per month in 1984. Investigation on the causes revealed that 99 % of the leaks occurred in the service lines. The leaks did not decrease even after the service connections were fixed properly.

First, the MCWD decided to change pipe material from PB (Polybuthilene) to PE (Polyethylene). The set-up of the connections was also redesigned. The MCWD came up with the clustering customer meter set-up, called "Stub-out" (Box 1) to minimize water stealing. The third measure was the establishment of Satellite Offices, which are regional offices for dealing with leak repairs, to speed up reaction time to the occurrence of leak events. The MCWD also implemented the water meter management, setting up DMA and massive rehabilitation of 67,000 service connections. As a result, the NRW was reduced from 45% in 1984, to 25% in 2014 (**Slide 5-1**).

(2) Preventive Maintenance Strategy for Pumps and Meters

Given the high cost of energy in Philippines, any kind of energy consumption reduction would have a very beneficial effect. Some of these energy consumption reduction measures include various monitoring strategies and preventive maintenance, such as i) energy consumption monitoring, ii) pumps and motors replacement, and iii) meter maintenance. Energy consumption monitoring looks at the energy efficiency of each pumping station using a unique indicator called specific energy consumption (SEC) (kwh/ m^3



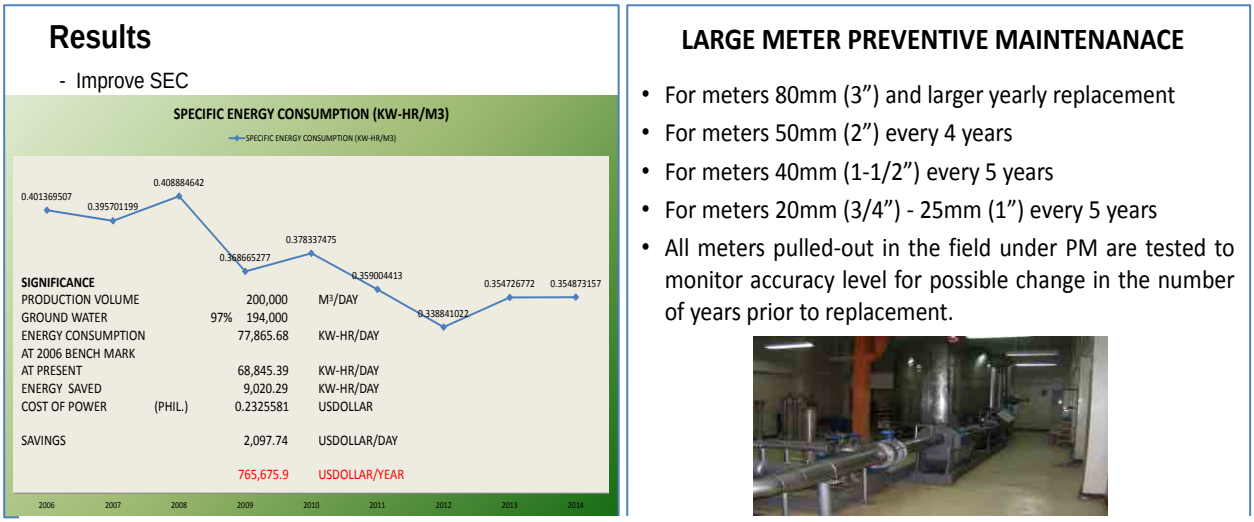
A)1984 -1990
- Transferred water meters outside of the costumer house

B) 1990 - 2000
- Started computerized monitoring leak repair reaction time
- Improved reaction time from 25 hours to less than 20 hours
- Change Preciflo meters to Arad
- Acquired leak noise correlator

C) 2000 - 2005
- Implement District Metering Area (DMA)
- Started implementing massive Service Connection rehab Project (67,000 SC's)

D) 2005 - 2014
- Continued massive SC rehabilitation
- Pressure management
- Intensified Active Leakage Control
- Abandonment of Old Distribution Lines

Slide 5-1 MCWD NRW Profile and Countermeasures for NRW Reduction



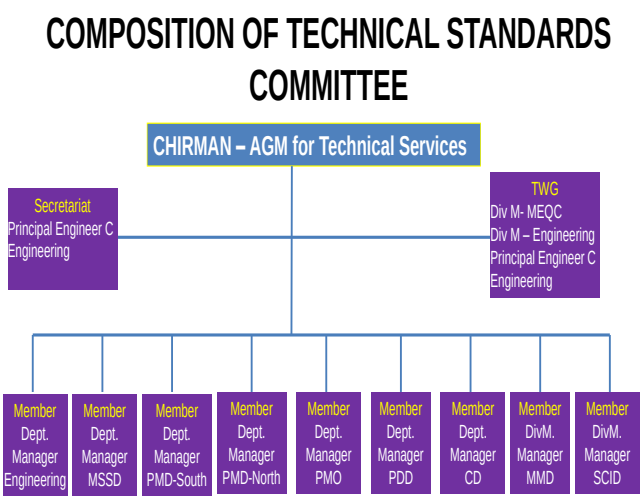
Slide 5-2 (Left) Saving Energy introducing an indicator Specific Energy Consumption (SEC), (Right) Meter Preventive Maintenance

supplied water). Pumps operating below 55% efficiency or with a declining SEC would be replaced. Meter maintenance had been implemented at least since 1992. Before the extensive rehabilitation, the MCWD was aware of the importance of meter accuracy for water sales. Preventive measures for meter maintenance include laboratory tests simulating field conditions and the yearly random tests of meters as a basis for the planning of meter replacement. Meter maintenance is also done for larger/bulk meters **(Slide 5-2)**.

(3) Procurement of Appropriate Materials and Technical Standard Manual

Meter maintenance is also useful in the procurement of the appropriate materials. The MCWD found through accelerated meter and durability tests, that there is a lot of variation in durability in products from different manufacturers. The decision was made to procure only meters which are tested in the MCWD for a year. The MCWD established an internal standards committee to maintain the uniform application of this rule (Slide 5-3). It is important not to look at the initial purchase cost only but also consider the life cycle costs (LCC), lifespan, and other factors such as installation and acquisition costs as well as performance standards. The LCC approach, which incorporates the re-installation cost in the calculation for selecting materials, is essential to reducing the cost.

The SCADA System which the MCWD is currently working on, in cooperation with JICA, is expected to realize faster response to field problems, efficient and equitable distribution of water, as well as lower NRW.



Technical Standards Manual

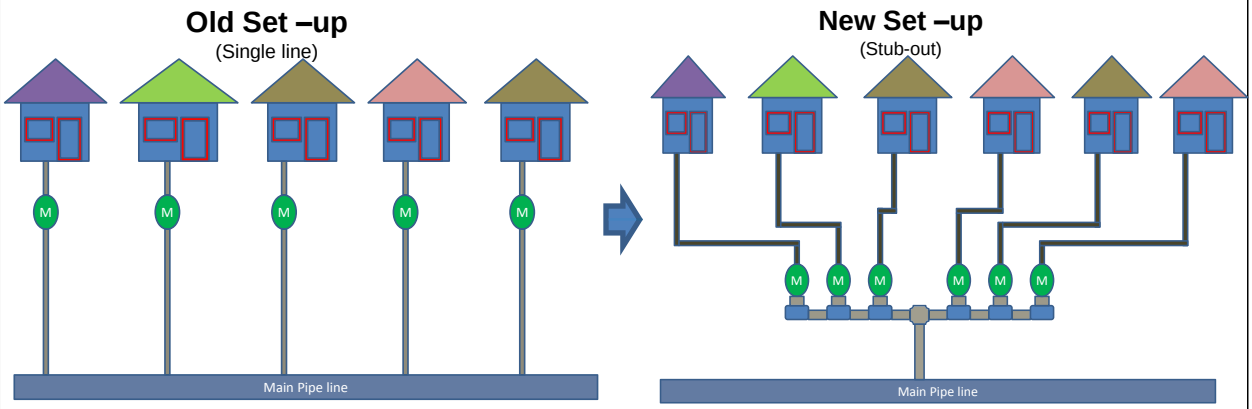
The MCWD Technical Standards Manual was prepared through the efforts of the Technical Standards Committee in reference of the standards of the following:

- Philippine National Standards (PNS)
- American Water Works Association (AWWA)
- International Organization of Standards (ISO)
- American Society of Testing Materials (ASTM)
- World Health Organization (WHO)
- Local Water Utilities Standards Manual (LWUA)
- Department of Public Works And High Ways (DPWH) Specifications Manual
- Including Manufacturer's and suppliers technical specifications

Slide 5-3 Technical Standard Committee and the Manuals of MCWD

Box 1 Stub-Out

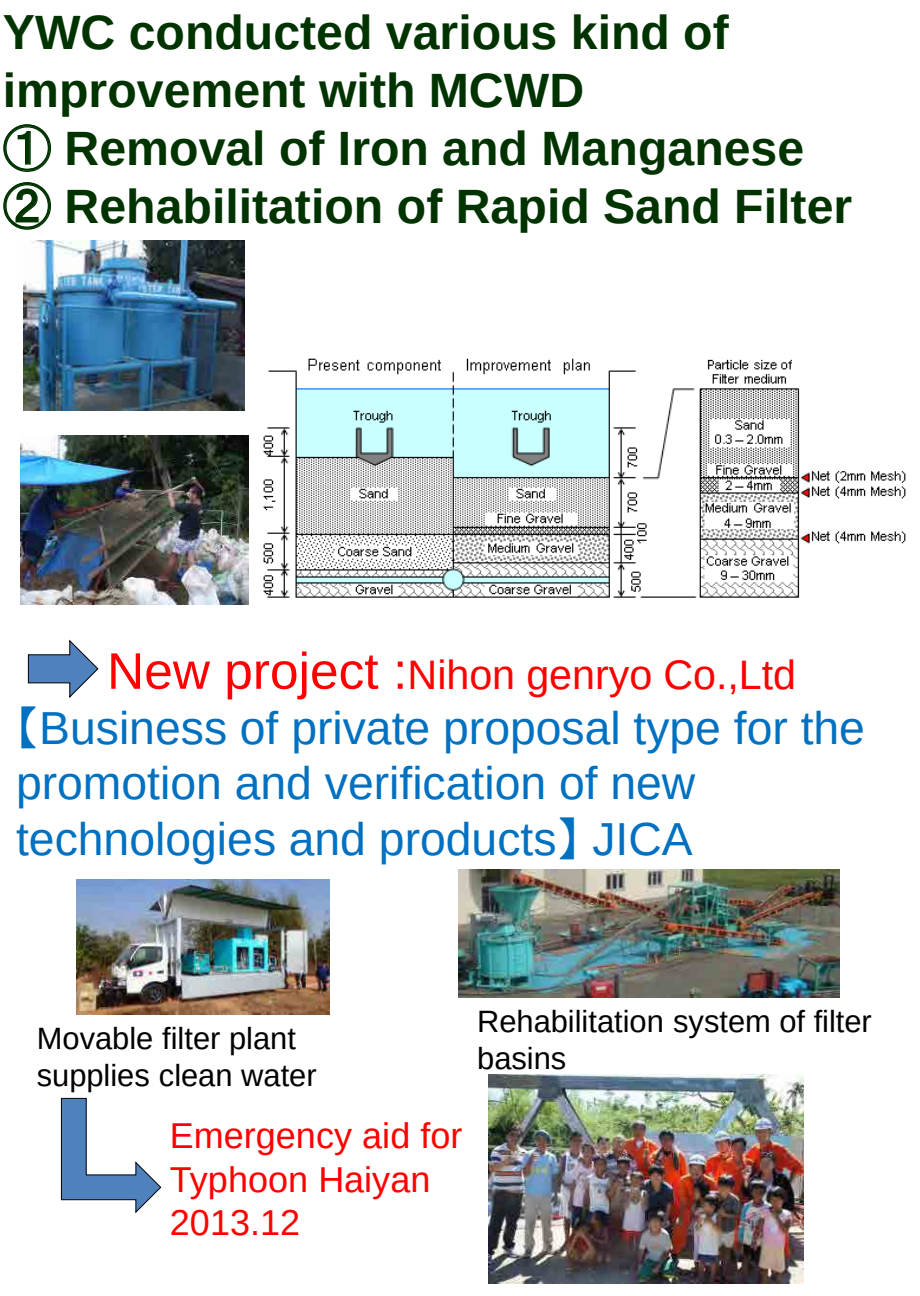
"Stub-out" is a method of clustering customer meters, which originated from MCWD. The Stub-out eased both meter maintenance and meter reading. Advantages of the Stub-outs are (1) physical loss reduction by cutting the numbers of saddle branches which cause leakage, (2) shorten the length of supply pipe which is responsible for the utility, (3) reduce water stealing because of the meter is to be visible (residents can watch the meter) and (4) reduces time for meter reading. There are some possible disadvantages, on the other hand, that (1) increasing total supply pipe length, (2) open piping could cause breakage, (3) vulnerable to pressure drop if the taps used simultaneously and (4) more durable materials are required because the meters are exposed to climate.



(Upper) MCWD Meter set-up before and after introducing "Stub-out"
(Lower) General set-up of "Stub-out"
(18 customer meters are clustered)

Comment 1 "Technical Assistant on Water Supply Operation and Management for Metropolitan Cebu Water District"

Mr. Yasutoshi Nagai, Executive Technical Advisor, Yokohama Water Co., Ltd. (YWC), Japan, commented that the YWC has cooperated with the MCWD in various improvement projects, such as the removal of iron and manganese and the rehabilitation of rapid sand filters. The YWC would continue to work with the MCWD in other projects, including a new one jointly with Nihon Genryo Co. Ltd. (**Slide 5-4**).



Slide 5-4 Improvement Projects by YWC

Comment 2 "Current Practices and Challenges for Maintenance in PPWSA"

Mr. Samreth Sovithiea, Deputy Director General, Phnom Penh Water Supply Authority (PPWSA), Cambodia, compared the NRW reduction efforts of the PPWSA and the MCWD. The PPWSA replaced old pipes before the extension of new pipes, while the MCWD replaced the old pipes only in recent years. Regarding procurement, the PPWSA takes a spirit of ownership and penalty, diverted ISO directly in terms of standard instead of having clear procurement policy as MCWD. The PPWSA basically approves that meters accuracy and the practices using as fewer brand as possible are important.

Table 5-1 Comparison of Approaches between PPWSA and MCWD

	PPWSA, Cambodia	***MCWD, Philippines***
Approach on Reduction of NRW	● Before extension of new pipes, the replacement of old pipes is the first priority PPWSA case: - Replacement 1993-2000 - Extension from 2000 forward	● Replace old pipes in recent year (2005-2014)
Procurement Policy	● Spirit of ownership ● Reward/penalty (Combat collusion and fraud for procurement officers) ● Applied Feedback mechanism between designer/orderer and users ● State of the art material ● Standardization for Major Civil, Electrical and Mechanical works used external budget and their procurement procedure to be better protected (competitive, quality-cost based)	● Don't look at purchase cost only ● Apply Life Cycle Cost Analysis ● Choose only brands that are tested/proven ● Buy spare units when applicable

Source: Presentation by PPWSA

Discussion

(As supplementary information from Ms. CLEOFAS, MWSS) Apart from the unique practice of MCWD, there are also a minimum number of national standards had been established for procurement in Philippines (as same as the other countries). The national standards are based on ISOs, AWWA and the other appropriate international standards.

(Question from Mr. H. Delviyandri, PDAM Tirtanadi North Sumatera) He suggested that utilities consider adopting the inverter (VVVF) for pump motors. In Indonesia, they could save 30% of the energy by using an inverter.

(*Answer by Mr. Ernie, MCWD*) It should be worth considering, but since the head loss of well pumps is fixed, there may be other things they can do to save energy.

(Question) How does the MCWD deal with the life cycle cost of its procurement?

(*Answer by Mr. Ernie, MCWD*) LCC is important and the MCWD has adopted the concept for procurement. However, in terms of meters, they put more emphasis on NRW reduction by meter accuracy

– it should have more impact on revenue than LCC. While the MCWD could not specify a particular brand because of its position as a public organization, they give eligibility for bidding to meters which passed MCWD's field test.

Presentation 2: "Effective Facilities Maintenance and Procurement of Pipe Materials – Replacing Aged Pipes and Improving into Earthquake Resistant Facilities –"

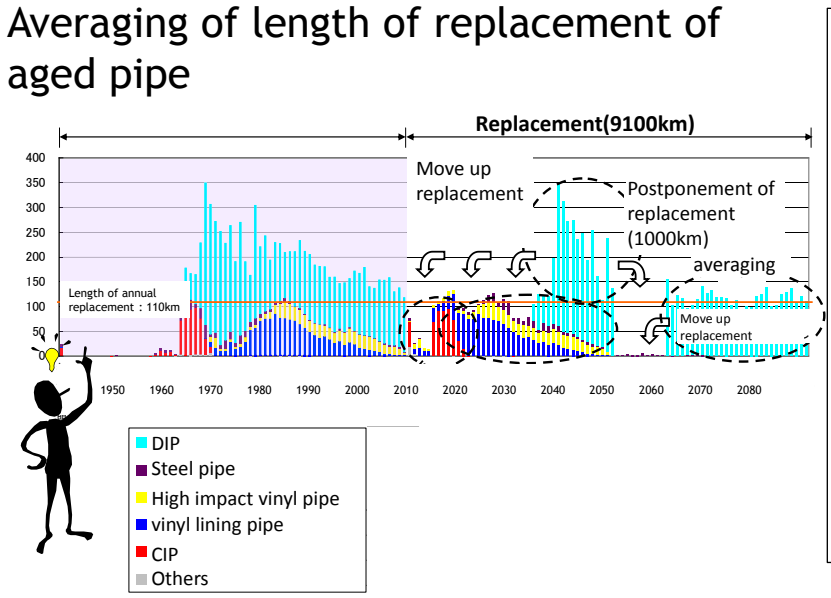
Mr. Takayuki Konishi, Assistant Manager, Water Supply Division, Water Supply Department, Yokohama Waterworks Bureau (YWWB), Japan, presented the maintenance of water utility facilities and infrastructure in YWWB focused on asset management, specifications and procurement of pipe materials.

(1) Current Issues of Yokohama Waterworks Bureau

The issues currently faced by the bureau are: i) aging facilities including 2,400 km pipelines constructed in the 1970's to serve the sudden surge in the population of Yokohama and ii) to improve the earthquake-resistance of the pipe lines, as a safety precaution, giving more priority to the main pipelines made of CIP.

(2) Asset-Management Principles of Yokohama Waterworks

Long-term planning to renew and replace parts of its pipe infrastructure is of utmost importance since the 2,400 km of pipes would need to be replaced in the coming ten years. The priority is set according to budget allocation, importance of pipes (diameters) and materials which causes leaks (e.g. CIP causes many leaks). It is important to spread the budget for replacement over the life span of 40 to 80 years (**Slide 5-5**). As a result of the replacement of aged pipes, the NRW was reduced from 20% in 1970, to 5.4% in 2011 and the number of leakages from 30,000/year in 1970, to 2,000/year in 2011



It is predicted budget and construction procurement face difficulties since over 300 km construction would be needed in a year (in 2040's);
It is important to "Average" the budget – schedule replacement ahead of deterioration – so that the replacement works go smooth.

Slide 5-5 YWWB Approach on Pipes Replacement (Averaging the Replacement Construction)

(3) Specifications of materials for water supply and procurement of pipe materials

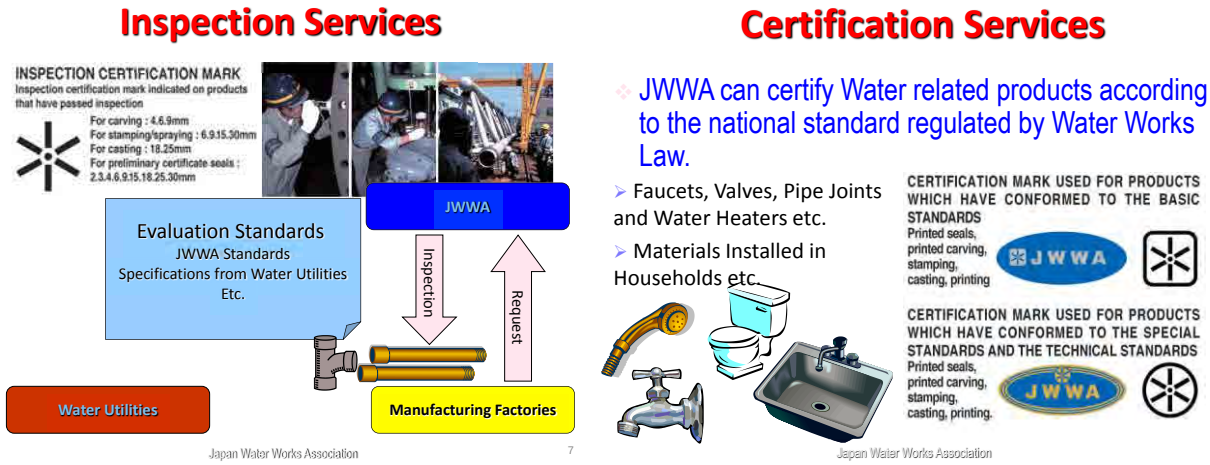
Specification of the systems are based on the Water Supply Law set by the national government, and an ordinance of the Ministry of Health, Labour and Welfare, which regulates the technical standards of water supply facilities. The criteria and specification of each water utility including the YWWB is in accordance with the guidelines and common specifications of the Japan Water Works Association (JWWA) in order to provide standardized service in the country, thus making the inspection process more efficient.

(4) Collaboration between Manufacturers and Water Utilities to Develop New Materials

At the early stages, the YWWB procured pipe materials from abroad, but has shifted to domestic suppliers in order to support the country's manufacturing industry. In return, the YWWB benefitted from the cost savings. Currently the YWWB is working with manufacturers on new quake-resistant pipe fittings adapted specifically to the field needs.

Comment 3 "JWWA's Challenge for Water-related Products"

Mr. Toru Tomioka, Director, International Division, Japan Waterworks Association (JWWA), Japan, provided information on the standardization of water distribution facilities and inspection services for a stable water supply, as well as evaluation standards. The certification services although not compulsory are adopted by almost all the utilities belonging to the JWWA. The certifications cover over 100 items, including meters, faucets, valves and all kinds of pipes and fittings. The JWWA inspection service ensures uniform quality of the materials as well as more efficient inspection.

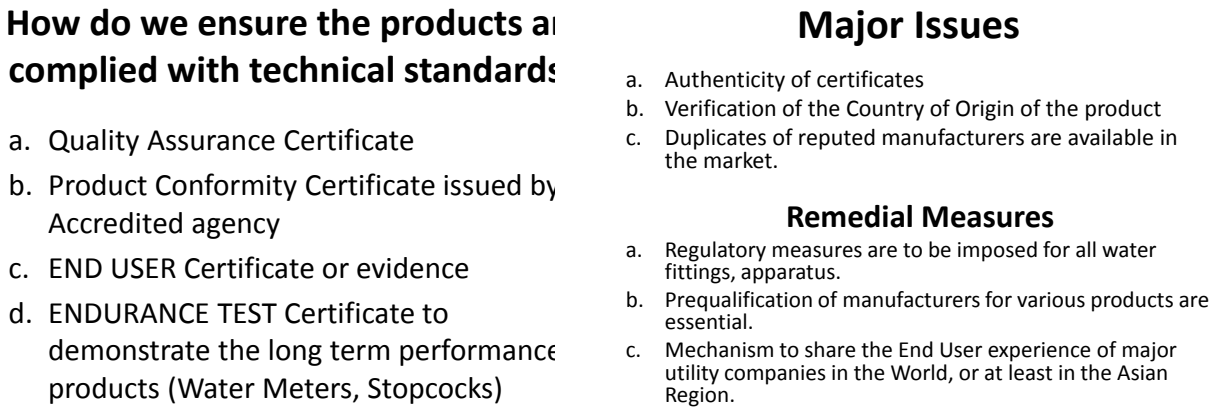


Slide 5-6 JWWA Inspection and Certification Functions

Comment 4 "Role of Product Standards in Procurement of Goods and Services"

Mr. Parana Hewage Sarath Gamini, Project Director, Greater Kandy Water Supply Project, Water Supply Division, National Water Supply and Drainage Board (NWSDB), Sri Lanka, "Utilization of Technical Standard for Better Procurement – NWSDB Case –," noted that the NWSDB would ensure that

products procured meet technical standards, by providing quality assurance certifications, product conformity certificates issued by accredited agency, end user certificate or testimonial, and endurance test certificates to demonstrate the long-term performance of the products. The NWSDB experience shows that national level standardization is important for better procurement.



Slide 5-7 Comment from National Water Supply and Sewerage Board, Sri Lanka

Q&A, Discussion

(Question from Engr. Mohammad Abdullah, KWASA) How is the lifetime of various assets determined?

(*Answer by Mr. Konishi, YWWB*) Lifetime of pipes (and accordingly the depreciating time) varies depending on the year of construction of the pipeline and material of the pipe.

Presentation 3: "Implementing Water Safety Plan at Thua Thien Hue Province in Vietnam"

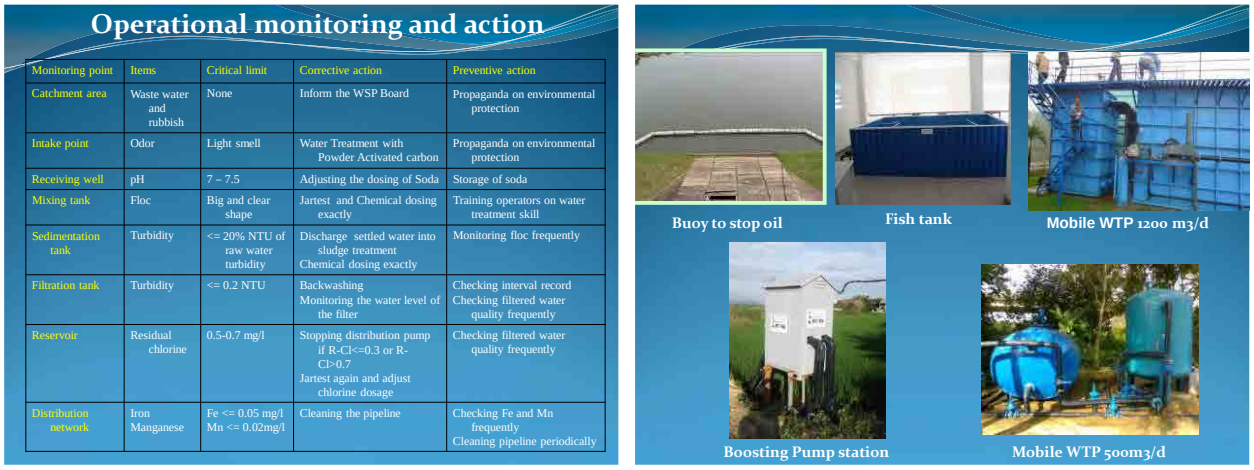
Ms. Tran Thi Minh Tam, Vice Manager, Customer Service, Thua Thien Hue Construction and Water Supply State One Member Company Limited (Hue WACO), Vietnam, introduced the background of Hue WACO Co., Ltd., which provides water supply for urban and rural areas in the Thua Thien Hue Province. Hue Waco's major goals are to serve 80% of the provincial population with 300,000 m3/day of supply capacity by 2015, and 90% by 2020, as well as to reduce the rate of NRW to 8% by 2020.

(1) Water Safety Plan Implementation

The Hue WACO pronounced the Water Safety Declaration[1] in 2009 and since then has tried its best towards achieving safe water supply that would meet the national standard, and to provide stable and continuous water supply for its customer's satisfaction. Many operational monitoring and preventive measures according to the Water Safety Plan (WSP) were taken to ensure safe water supply at each individual stage. The Hue WACO improved its laboratory, plants, and pipeline network according to the

[1] The Declaration states that the supplied water has to be drinkable and that the water supply service would be sustainable by implementing a Water Safety Plan.

priority in the WSP. The benefits are not only water safety but also better communication, changes in staffs' attitude when they understand how they should preserve water safety through operation and maintenance activities.



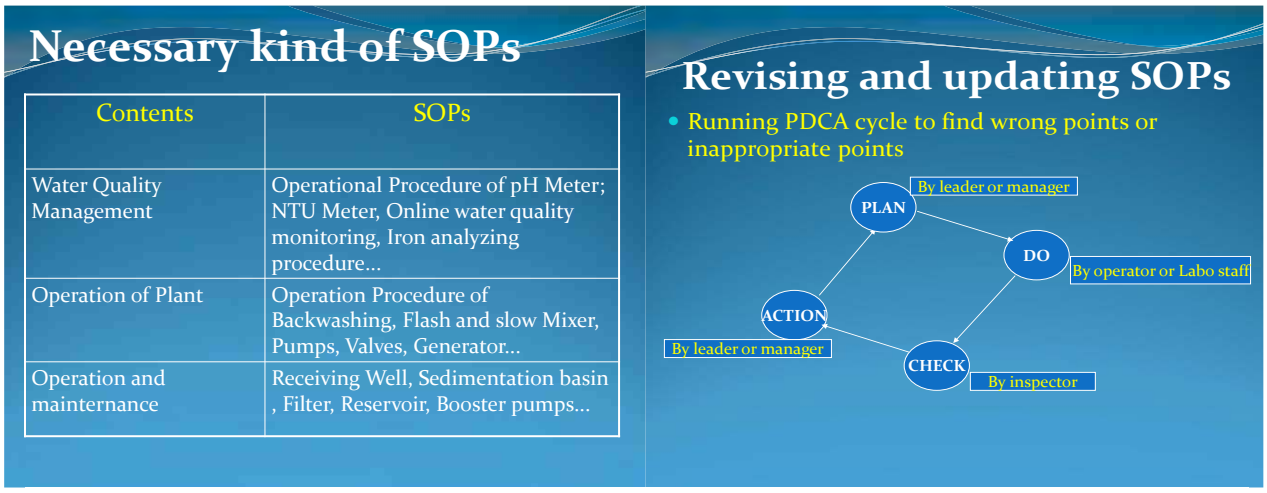
Slide 5-8 Operational Monitoring and Action on Water Safety Plan of HueWACO

Regarding challenges ahead, water source pollution is a major issue. Cooperation and sharing of responsibilities among all stakeholders would be an essential step to solve this problem.

(2) Benefits, challenges and lessons learned

The Water Safety Declaration and WSP brought them quality water service and customers are now enjoying drinkable tap water. The most important lesson learned is the need for management commitment. Determination and awareness of top management create the trust for all employees and residents in the use of safe water. Analysis of the risks and hazards – and the management of the risks require highly skilled and experienced personnel. In addition, creating a handbook and SOPs to help guide the work forward was another key for implementation.

Slide 5-9 Institutional Benefits and Lessons Learnt



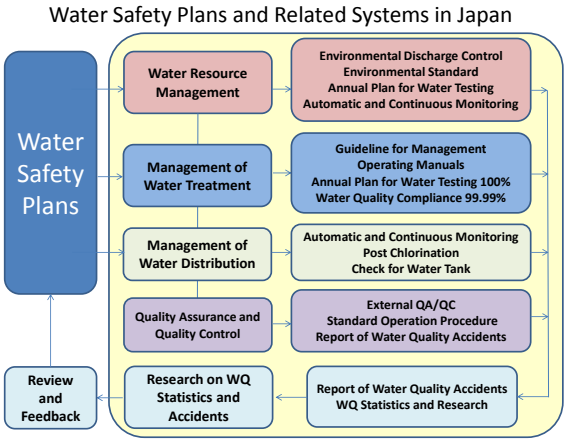
Slide 5-10 Necessity for Establishment and Revision of SOPs

(3) Introduction of SOPs for WSP

SOPs are important for the implementation of the WSP because it brings them standardized O&M procedures. The Hue WACO has three sets of SOPs: one for water quality management, another for the operation of the plant, and the third for general operation and maintenance. Running PDCA cycles is the main approach to find incorrect or inappropriate elements when revising or updating the SOPs. The SOPs can also be utilized as materials for training.

<u>Comment 5 "Water Safety and Operation & Maintenance"</u>

Dr. Mari Asami, Chief Senior Researcher, National Institute of Public Health (NIPH), Japan, commented that integration of knowledge for ensuring water safety was very important for the implementation of WSP, and that she was happy to see the process being implemented successfully in the Hue WACO. Having appropriate monitoring and feedback for every process is also very important, and that the convergence of these two aspects would result in a good water supply and customer satisfaction. Japan has also established the system to implement WSP.



Slide 5-11 (Left) Water Safety Plan as integration of knowledge, (Right) Water Safety Plan and related systems in Japan

Q&A, Discussion

(Question from Mr. Parana Hewage Sarath Gamini, NWSDB) How does the HueWACO approached the issue of recontamination in the distribution systems?

(Answer by Ms. Tran Thi Minh Tam, HueWACO) The HueWACO replaced 100 km of old iron pipes from 2003 to 2010 and installed online monitoring to detect water quality deterioration in a timely manner.

(Question from Engr. Mohammad Abdullah, KWASA) What is the benefit of implementing a water safety plan?

(Answer by Ms. Tran Thi Minh Tam, HueWACO) The first and most important benefit is providing safe drinking water for the customers. In addition, by having to talk to stakeholders about water source conservation, it is possible to develop closer relationships with them.

(Question from H.E Ek Sonn Chan) How can HueWACO assure the water is safe?

(Answer by Ms. Tran Thi Minh Tam, HueWACO) The HueWACO conducts risk analysis from water sources to the tap of the customers. If the risks increase with the change in season, more monitoring will be carried out.

(Question from H.E Ek Sonn Chan) What percentage of the total customer base drink water from the tap?

(Answer by Ms. Tran Thi Minh Tam, HueWACO) The HueWACO conducted a survey of their customers and found that nearly 70% of the people answered they could drink tap water. The HueWACO is also conducting customer seminars to inform them that the water (at least before the customer meter) is drinkable.

Wrap-up by the Moderator

Mr. Kiyozuka summarized the main points emerging from Session 2 in the following:

1. Importance of preventive maintenance:
   Utilities tend to engage only in reactive (corrective) maintenance and service disruptions. The benefits of preventive maintenance are very clearly demonstrated in the presentations in this session.
2. Importance of procuring reliable equipment and materials:
   Reliable materials improve efficiency the importance of which should be evaluated in light of its cost.
3. Importance of safe water:
   Water Safety Plan is an important tool to assure water safety.

Main points confirmed at Session 2

- ✓ Preventive maintenance plays a critical role in reducing the overhead costs of a water utility.
- ✓ Procurement of reliable and durable materials and products, and development of inspection system and guidelines contribute to lower life cycle cost (LCC).
- ✓ It is necessary to implement Water Safety Plan (WSP) with Standard Operating Procedures (SOPs) and monitoring system for each water treatment process in order to ensure the safety of water.

6. Session 3 “Human Resources Development”

Objectives of the Session 3

Sound management of water service system can be accomplished with human resource development. This session reviewed important issues such as senior management’s commitment, incentive mechanisms, training environment, and communication between training section and operation section.

Introduction by the Moderator

Mr. Yasuhiro Kawashima, Deputy Director of Engineering Department, Saitama City Waterworks Bureau, Japan, listed the objectives to be covered, including the development of human resources for the sound management of water service systems, sharing important issues and case studies on items such as incentive mechanisms and training environments, and reiterated the agenda for Session 3.

Presentation 1 “MWA’s Human Resources Development”

Mr. Yongyuth Arpaichiraratana, Deputy Governor (Planning and Development), Metropolitan Waterworks Authority (MWA), Thailand, provided some general information on the MWA, which is responsible for supplying tap water to Bangkok as well as Nonthaburi and Samutprakarn provinces

After the implementation of the NWTTI project, the MWA has been engaged in HRD to improve staff knowledge, skills, and attitude in accordance with its vision and mission statements. The HRD initiatives include generating competency profiles on specific and job roles to identify competency gaps, providing on-the-job training and various specific training courses, implementing practices for senior staff to pass

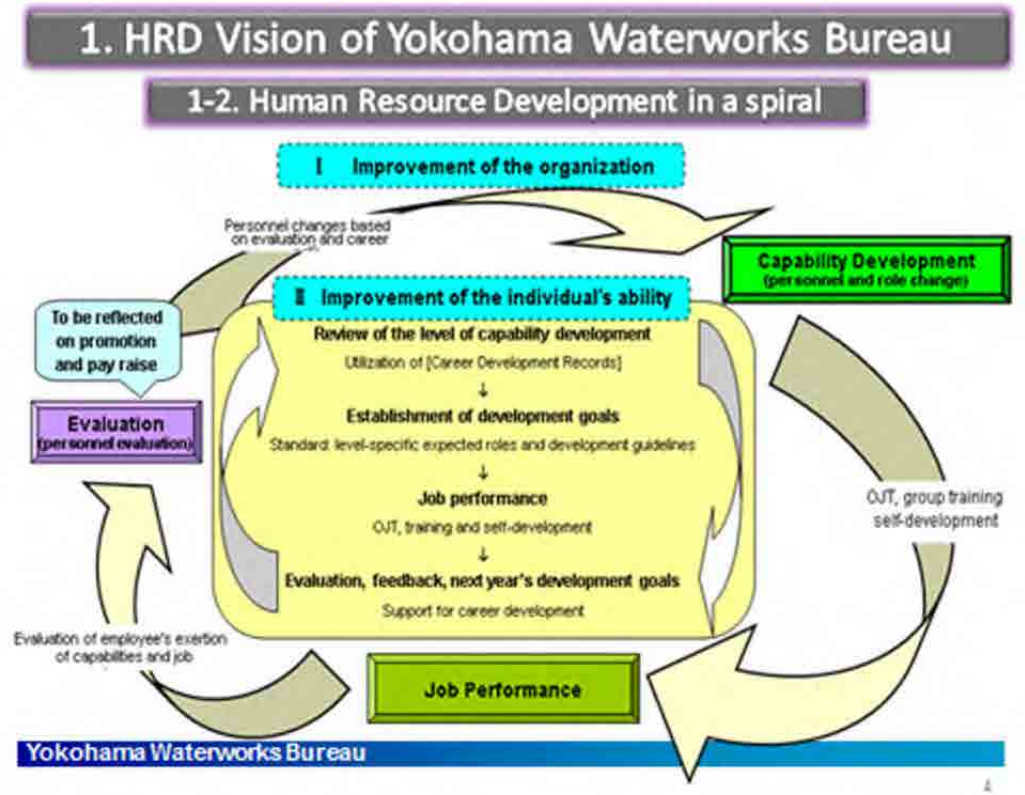
on their knowledge to junior employees, as well as collaborative research, development and innovation activities with academia. Leakage management and customer service using GIS based applications are showing outstanding results. The MWA has been helping other water utilities through overseas cooperation, and providing external trainings for MWA contractors, Thailand Municipality staff, and participants from other Asian countries.

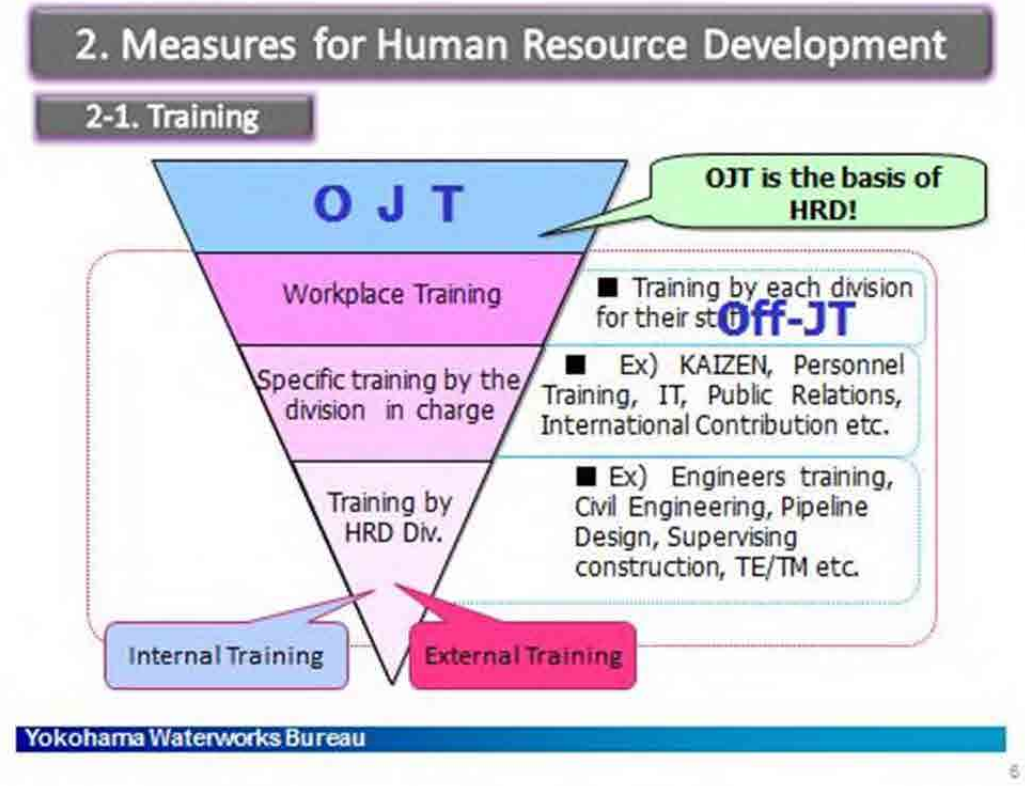
Slide 6-1 (Left) Competency Based Management, (Right) Future Challenge on HRD

The MWA's future HRD challenges include leadership training, staff preparation for AEC (ASEAN Economic Community), improvement of training environment, and the improvement of communication between training and operational units. In order to implement MWA's policy for sustainable growth, it is necessary to generate a sustainable and stable growth direction in terms of revenue and corporate structure, a stable production and transmission system, and promote sufficiency of product and service improvement to balance stakeholder interests in terms of sufficient quantity and quality water supply as well as to reduce social inequality.

Comment 1 "Human Resources Development in YWWB"

Mr. Toshihiro Yamaguchi, Manager, International Operations Division, Yokohama Waterworks Bureau, Japan described the ideal personnel model of the YWWB as staff with a sense of responsibility, who are sensitive to customer needs, equipped with the appropriate knowledge and skills, self-motivated, as well as enthusiastic about achieving organizational goals. The YWWB is promoting HRD plan in a spiral way by two cycles of the organization and individual, that is, improvement of the organization is achieved by the cycle of individual capability development through OJT and other trainings, improvement of job performance, and evaluation of individual capability. Especially, OJT, improvement of daily work, is emphasized as the basis of HRD. For succession of technology and skill and fostering of internal instructors to junior engineers, YWWB introduced Master Engineers System. YWWB also proceeds KAIZEN approaches, which means continuous improvement promotion through proposals from staff.





Slide 6-2 (Up) HRD Vision, (Bottom) Measures for HRD

Comment 2 "Achieving Sound Management through HRD"

Mr. Mohammad Abdullah, Managing Director (CEO), Khulna Water Supply and Sewerage Authority (KWASA), Bangladesh, remarked that the objective of human resource development is to achieve sound management through which the vicious cycles can be reverted to virtuous cycles.

HRD is an important and challenging issue for water utilities because it is related not only to individual capacity development but also effectiveness of the organization. Success of human resource development programs depend on commitment from top management, effective motivation, morale boosting, attitude improving incentive mechanisms, conducive training environment including good trainers and facilities, and communication between training and operational units; periodic evaluation and effective monitoring; as well as collaboration and assistance from other partners.

Table 6-1 HRD for Sound Management

Achieving Sound Management through HRD	Success of HRD Program depend on:
● The main objective of HRD is to achieve sound management by improving the elements of vicious cycle and moving towards virtuous cycle. ● To identify properly the weak and threat areas of management issues through proper diagnosis of the organizational activities. ● Selecting the areas of management problems by analyzing performance indicator such as High NRW, Low water tariff, Low revenue collection, Poor customer service, Low water coverage and short service hours, Water source depletion and contamination, Financial constraint. ● For achieving the objective suitable program/tools to be prepared and applied: motivational activities, Incentive schemes, Reward/Punishment system, well prepared training program with facilities and hiring competent resource persons from water sector professionals. ● To provide necessary budget allocation for implementing HRD program.	● Chief executive/Top management commitment. ● Effective motivation and Incentive mechanism. ● Good training environment. ● Well communication and good understanding between training section and other operating sections. ● Periodical evaluation and effective monitoring system. ● Collaboration and assistance from other utilities, International networking and donor agency/development partner.

Source: Slides prepared by Mr. Mohammad Abdullah

Comment 3 "Training and Technical Development Center of the Tokyo Metropolitan Waterworks Bureau" (Video)

The video presentation provided an introduction of the Training and Technical Development Center of the Tokyo Metropolitan Waterworks Bureau, such as experience-based training, watch-and-learn based training, and training with well-equipped on-site learning facilities, research and development, and initiatives for cooperation with partners overseas.

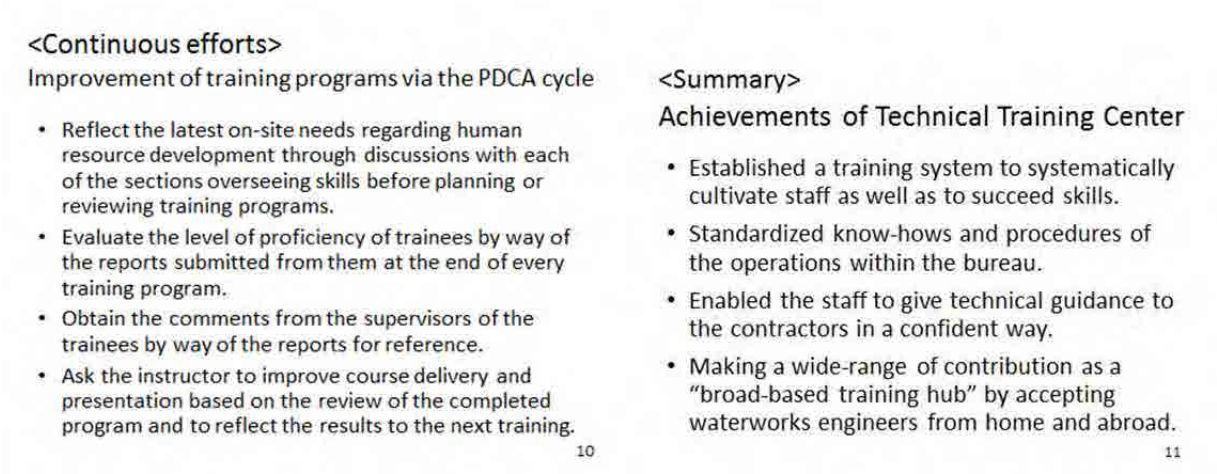
Presentation 2 "Successful Human Resource Development-Best Practices at Technical Training Center"

Mr. Yuji Honda, Chief, Technical Training Center, Nagoya City Water and Sewerage Bureau, Japan, provided a background on the status of employees before the training center was established, noting that improvements made in some key areas.

The Technical Training Center of Nagoya Waterworks and Sewerage Bureau was established in 1984, in response to the need for skill training for junior staff and for standardizing instruction methods. In the 1980s, senior management organized working groups from different sections to make plans for the curriculum, learning materials, and equipment. Highly regarded technicians with superior skills and leadership abilities were chosen and assigned as full-time instructors. The center currently provides practical training on water pipelines with various pipe types and pipe diameters, water service equipment, and sewage pipes, and serves as a place to verify and disseminate new technologies.

The permanent staff of the Center is improving training programs via the PDCA cycle. Specifically they reflect the latest on-site needs regarding human resource development through discussions with each section before planning or reviewing training programs. They also evaluate the level of proficiency of the trainees by the reports submitted from them at the end of every training program. They also obtain comments from the supervisors of the trainees and improve course delivery based on the reviews.

The achievements of the Technical Training Center include the establishment of a staff training system as well as development of skills, standardization of know-hows and procedures within the bureau, and enabling staff to confidently provide technical guidance to contractors. It has become as a "broad-based training hub" by accepting waterworks engineers from Japan as well as overseas.



Slide 6-4 PDCA Cycle and Achievement of the Technical Training Center

Q&A, Discussion

(Comment from Mr. Khampheuy VONGSAKJAMPHOUI, Vientiane Capital Water Supply State Enterprise, NPNL) There are three key components in their HRD effort. The first one is the central government's water works strategy and staff training plan. The second is the training courses developed by the NPNL and its Waterworks Technical Training Centre (WTTC). The third is the funding for training provided by the provincial water utility. The WTTC was established with the assistance of AFD. Under a JICA technical cooperation project, the NWTTI in Thailand showed the NPNL how to run the courses at the training center. They have on-going training activities and are using the training materials developed under the JICA project.

(Comment from Mr. Ghanasham BHATTARAI, Melamchi Water Supply Development Board, MWSDB) The operation of their training center started off slowly in 1984. The government provides basic training and TOT for staff working for water supply in the rural areas. The serious issue for small scale water works in Nepal is the retention of skilled personnel after they benefitted from the training.

(Comment from Mr. Chandra Lal NAKALMI, Kathmandu Upatyaka Khanipani Limited, KUKL) The main problem in KUKL, Kathmandu is how to deal with five trade unions (labor unions). KUKL is trying to promote HRD for NRW reduction. Last June, JICA coordinated a visit to Cambodia to learn from them the management of urban waterworks, especially NRW control. There was also a field visit to the Phnom Penh Water Supply Authority (PPWSA) and Siem Reap Water Supply Authority (SRWSA).

(Question from Mr. Ernie Tapleras Delco, MCWD) He is interested in the training courses presented by Tokyo and Nagoya and would like to know how to evaluate the training courses and the trainees.

(Answer from Tokyo Metropolitan Waterworks Bureau) The TMWB evaluates the training courses by reviewing trainees' reports and use this feedback to improve the training program. The trainees are evaluated based on the feedback from their supervisors.

(*Comment from Ms. Indrarini Tenrisau, United Cities and Local Governments Asia Pacific, Indonesia*) It is important to clarify an employee's career plan and determine his/her training needs, as well as assess and evaluate improvement of staff abilities after training

(Comment from Ms. Yamamoto, Advisor to the Forum, former Senior Advisor of JICA) Supervisors would check staff's capability against job requirement and provide the training to fill the gaps as required.

(Comment from Mr. PARANA HEWAGE Sarath Gamini, NWSDB) Sri Lanka needs to motivate and promote young people to become skilled technicians.

(Comment from H.E. Ek Sonn Chan, Ministry of Industry and Handicraft, Cambodia,) The five points to be considered in HRD.

1. We have to consider not only the training itself but also the reason for training.
2. We have to be concerned about the technical capability of the employees as well as their morale. Knowledge and skills can be developed through training, but it is more difficult to change an

employee's morale and attitude.

3. HRD requires long term development plan, including long term backup and replacement program to nurture qualified staff.
4. The recruitment system must identify clearly the key qualifications required for specific positions.
5. We have to tackle any deliberate manipulation of the hiring process in order to hire the suitable staff.

Interim Wrap-up by the Moderator

Mr. Yasuhiro Kawashima proposed ideas for improving and securing training staff, materials, budget, training facilities and equipment. These include greater cooperation among utilities and industries, as well as making use of JICA's Group Training courses and the Japanese philosophy of KAIZEN in order to solve major issues of HRD, such as the TOT system, materials, and facilities, equipment of a training center, motivation and incentive of staff. He also pointed out that national policies / initiatives, water related legislations, water standards, and national and regional training systems, all help to promote HRD of water utilities.

Presentation 3 "Human Resources Improvement Program for Water Supply System"

Mr. Oloan Martumpu SIMATUPANG, Head of Sub Directorate for Technical Planning, Directorate of Water Supply, Directorate of Human Settlements, Ministry of Public Works, Indonesia, presented some background information on Indonesia and an overview of its challenges in water supply. In order to raise the current 67.73 % (2013) access rate to universal access to safe drinking water in Indonesia, an additional 50,000 staff would be required. The human resource development plan for water supply enterprises, includes providing a 1-year course for high school graduates, a 3-year diploma program, field training, short and long-term university courses, and the training of trainers (TOT).

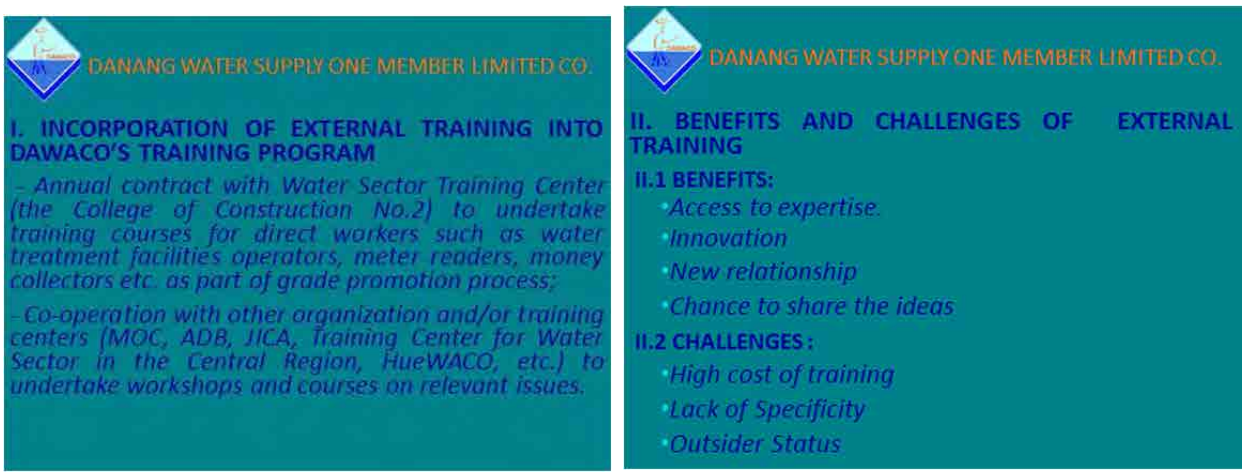
As national training facilities have limited capacities, the COE (Center of Excellence) program was introduced in 2012. The objective of the COE program is to enhance HR competency of water supply enterprises using a multi-level approach to educate various levels of staff through TOT. The building and settlements development information center are used as the training place for the training of professional trainers.

In 2013, the COE program covered the topics of NRW, energy efficiency and trained staff from 3 provinces (South Sumatra, South Sulawesi and Bali) and graduated 18 trainers and 133 technical personnel. They are planning to dispatch trainers to 31 provinces around Indonesia in 2014.

Slide 6-5 Background and progress of COE program

<u>Comment 4 "Benefit and Challenges of External Training"</u>

Ms. Le Thi Hong Van, Deputy Manager, Department of Personnel and Administration, Da Nang Water Supply One Member Limited Company (DaWACO), Vietnam, talked about the incorporation of external training into DaWACO's training program. They have an annual contract with the Water Sector Training Center (the College of Construction No.2) for training courses for water treatment facilities operators, meter readers, bill collectors etc. as part of the promotion process. There are cooperation with other organizations and training centers to undertake workshops and courses on relevant issues.



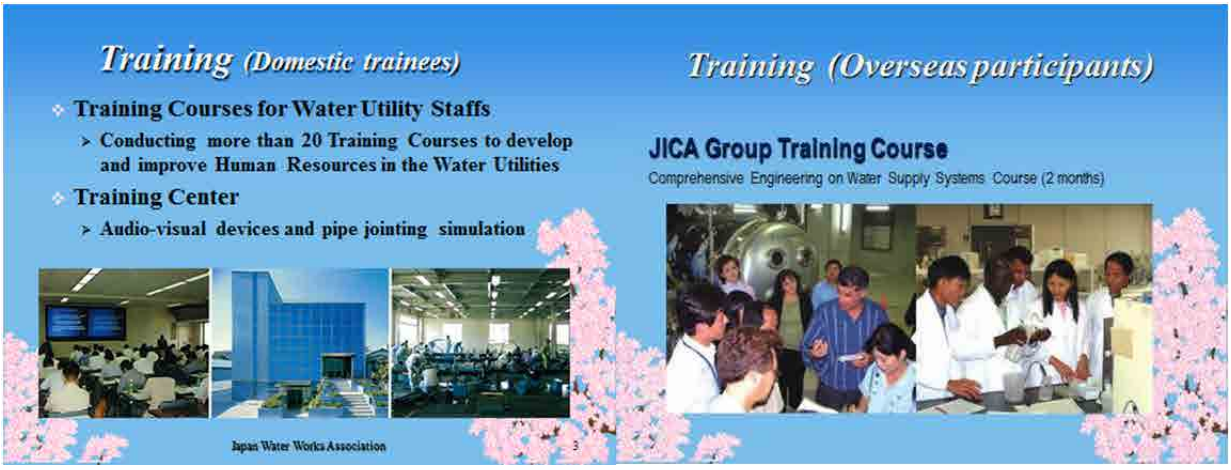
Slide 6-6 External training of DaWACO

The benefits of external training include access to expertise and innovative ideas, chance to share information and to develop new relationships with other companies and/or other departments in the same organization. Workers from different organizations could achieve the same level of technical capability. On the other hand, external training can be more costly and may lack specific relevance to the trainees'

work environment. Another disadvantage could be that the trainer may not be familiar with trainee's organization and its issues.

Comment 5 "JWWA's Challenge for Capacity Building"

Mr. Toru Tomioka, Director, International Division, Japan Waterworks Association (JWWA), Japan, said JWWA conducted more than 20 training courses to develop and improve HR in water utilities. Small and medium scale water utilities with limited capacity to provide enough internal training, in particular, utilize JWWA training courses. JWWA also provides 4 overseas training courses per year.



Slide 6-7 Training Courses of JWWA

Summary Comment

H.E. Ek Sonn Chan, Secretary of State, Ministry of Industry and Handicraft (MIH), Cambodia, Sustainable water supply needs a sound human resource development plan which incorporates aspects of staff recruitment, backup, training, and motivation. Recruitment plans must specify the number of staff required in the future and the qualification they need to possess. Backup plans should be devised for 10-year periods with three candidates for top managements. Training plans should be based on the assessment of what training is required and would include guidelines on how to prepare the training staff, materials, tools, equipment, as well as course outlines. Training plans should also state budget estimates. In-house trainers are preferable to external trainers. The most suitable training materials are those customized for the needs of the trainees. Internal training shall not be ignored even when external or overseas trainings are implemented. Training should be viewed as the beginning of a process. Monitoring the tangible results after the training – looking for the improvement of knowledge, skill, and attitude – should not be neglected. Training can be one of factors which would help the employees advance in the organization.

Because wages in most of the public water utilities are lower than in private companies, it is recommended to have employment contracts (e.g. 10-year), as a means to retain employees after they are provided with expensive overseas training. Reward (bonuses or salary raises) and penalty should also be

considered as tools to motivate staff to do the job right.. If staff performance is evaluated after training, they would be motivated to apply what they have learned. These efforts would benefit the organization and gradually change its culture. One of the positive changes would be to increase the participation of women in the workforce.

JICA is requested to implement a benchmarking program, to monitor progress between forums every two years; and to create a "water family" who shares the same culture, same actions and benefits from results in the future.

Discussion

(Comment from Ms. Le Thi Hong Van, Dawaco) Every water utility is careful with its expenditures, including training costs, at the same time keen to recruit well qualified employees. The Dawaco pays referral bonus to encourage employees put forward suitable candidates from their social networks, as a cost effective and efficient recruitment method. The utility's HRD plan for staffing the more senior positions includes: preparing a long-term plan and a list of potential candidates in the first year, evaluating these candidates on their abilities, skills, knowledge, and attitudes over the second year, and then selecting the most promising ones for training and subsequent promotion. In case that there is interference to the promotion of the internal candidate, two positions may be proffered to accommodate the situation. Because they think the outside candidate may bring new experience and knowledge to the organization.

(Comment from Ms. Cleofas, MWSS) Training is not the only major concern in human resource development. The MWSS is facing the issues of succession planning, budgeting, and recruitment. The MWSS is considering implementing attractive compensation package, especially when competing with private companies paying higher salaries. For sustainable management, we need to develop competency not only in technical staff but also in staff in financial management, training, communication, community and customer care.

(Comment from Japanese private company, Fuji Tecom) Fuji Tecom has been providing leak detector training programs at their training yard to more than 5,000 people.

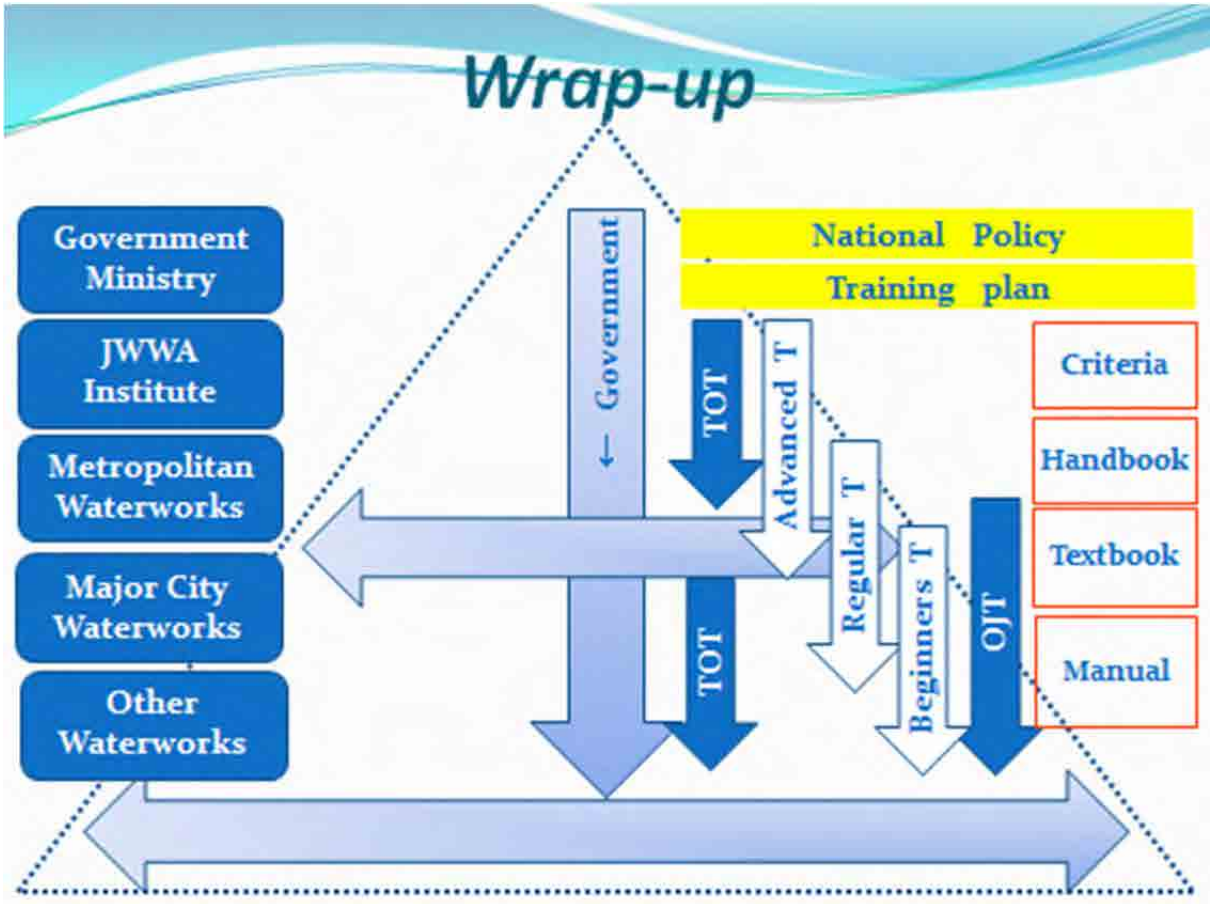
(Comment from Mr. Doi, YWWB) He made a comment citing "water family". He noted that staff engaged in water works understand the mission "to provide drinking water to people" and are customer-conscious and cost-conscious. He was impressed with the action of the staff of water works bureaus after the Great East Japan Earthquake and other disasters, how they delivered drinking water to disaster victims by water trucks, working together with other water utilities staff and volunteers. He believed that since the water works bureau has its own independent accounting system, its staff is keener on reducing NRW and being attentive to customer care. They can discuss with academic institutions and private companies in order to improve the water supply service. He would like to see that this mindset and ability is passed onto the next generation of personnel.

The YWWB has been dispatching staff to African countries under the JICA program for their HRD, and would be pleased to do the same for Asian countries.

(Comment from Ms. Yamamoto, Advisor to the Forum, former Senior Advisor of JIC)) She pointed out that training in a training center is not enough. Especially for the water supply field, OJT is very important. Currently, Japan has no big water supply projects and young people here have no chance to gain such experience. Some are sent to Myanmar to participate in a big project. She would like the participants give a chance to Japanese young staff to participate in big projects in their countries.

Wrap-up by Moderator

Mr. Yasuhiro Kawashima explained the training system in Japan in terms of the water family pyramid. The JWWA prepares the national training plan on behalf of the Ministry. The Metropolitan Waterworks, a major city water works, and other waterworks prepare their respective training programs and training systems based on the JWWA plan. The JWWA also prepares guidelines for design and OM, and the waterworks prepare their own textbook and manuals based on their needs.



Slide 6-8 Water family pyramid

From the discussion of this session, we find following key sentences.

A) National Policies / Initiatives to formulate for HRD
B) Needs for establishment / securement resources to implement trainings
- Training center, Teachers, Materials and Budget
- Share and standardize the recourse

C) HRD for sustainable water supply services
- Top commitment to HRD plan
- Importance of Human Resources Capacity to formulate Mid-Long term plan
- Incentives to Teachers and Participants
- Awareness to gap of needs for HRD
- Monitoring for outputs / outcomes
- Sustainable HRD

Main points confirmed at Session 3

- ✓ Regarding human resource development, it is necessary to consider not only training but also the long-term aspect including recruitment, contingency, etc.
- ✓ The improvement of morale should also be considered, not just technical skills.
- ✓ It is recommended that incentive mechanisms should be established as well as monitoring of the effectiveness of the training, i.e. whether the competencies have been learned and whether the learning has been applied to improve performance.

7. Special Session: "Disaster Preparedness and Mission of Water Utilities"

Objectives of the Special Session

Water utilities are expected to prepare for disasters, in terms of both hardware and software, to minimize the damage, and maintain supply without interruption or swiftly restart their service. Some utilities would share their experiences and measures taken against disasters such as floods, typhoons and earthquakes, including Japanese experience with the Great East Japan Earthquake. Mutual cooperation among water utilities in handling disasters will be also presented.

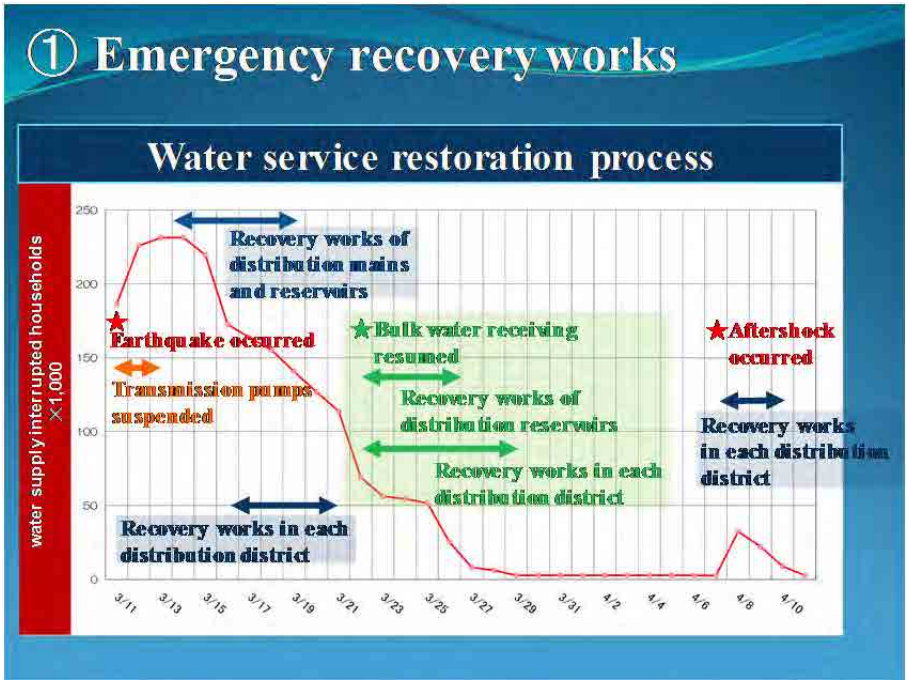
Introduction by the Moderator

Ms. Keiko Yamamoto, Advisor to the Third Forum, opened the session by recognizing that all the regional countries represented at the forum shared the common challenges in disaster preparedness.

Presentation 1 "Lessons Learned from the Great East Japan Earthquake"

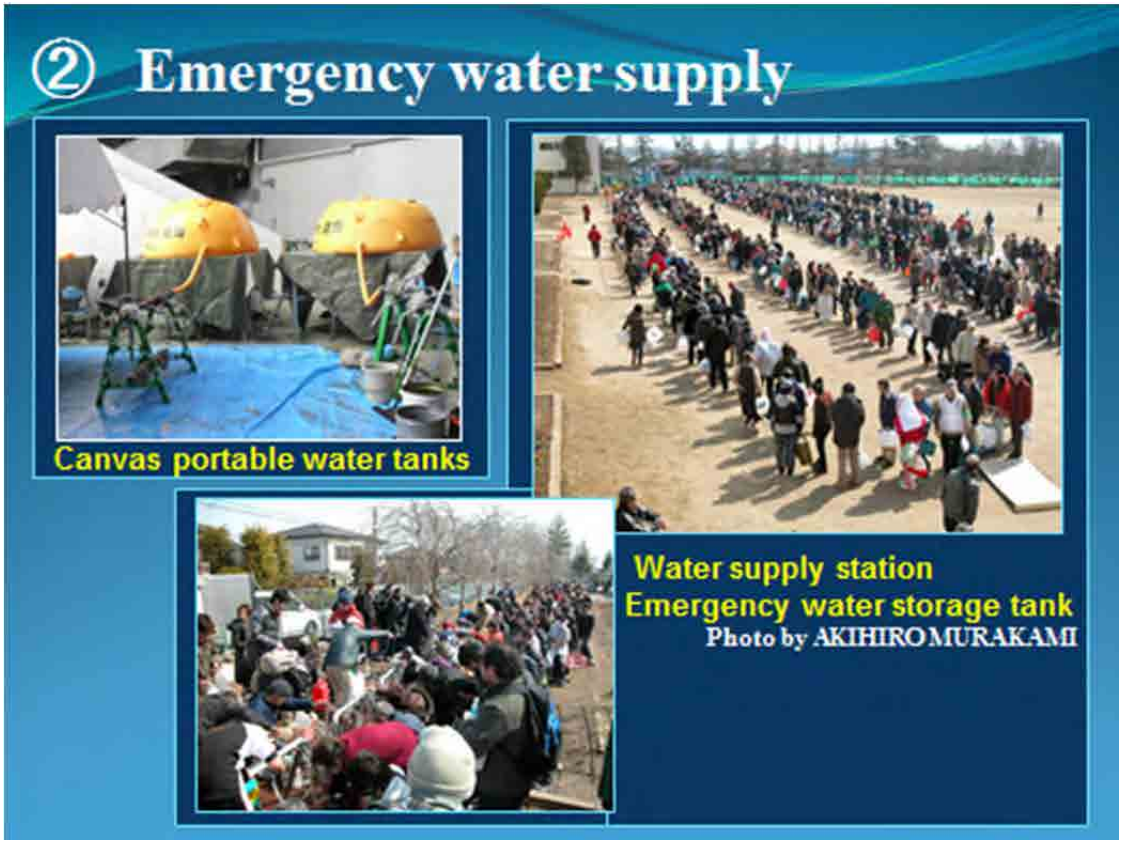
Mr. Kiyoshi Sakai, Assistant Director and Administration Subsection Manager, Planning Section, Water Supply Department, Sendai City Waterworks Bureau, Japan, presented the experiences and lessons learned from the Great East Japan Earthquake.

The Sendai Waterworks Bureau has a service area of approximately 363 km^2 and serves most of the greater Sendai area. When the Great East Japan Earthquake hit Sendai City on March 11 2011, many industrial plants, sewage treatment plants, shopping malls, schools, and houses in the coastal area were destroyed by the tsunami. Tilted plates and baffled plates in the sedimentation basins damaged the purification plants. There were 1,064 damage points, to 50% of the service pipes, and 40% of the transmission and distribution pipelines.



Slide 7-1 Emergency restoration process

Water supply was restored to the distribution districts by March 21, with the exception of those affected by the tsunami. Nineteen water supply stations consisting of 100 m^3 emergency water storage tanks were made available to the people of Sendai in the immediate aftermath of the disaster. Forty-three canvas portable water tanks were installed at evacuation centers. Emergency water supply was provided by 75 water trucks a day, which were operated by water supply support teams dispatched from other cities under the memorandum on mutual aid program for disasters through the network of Japan Waterworks Association and Miyagi Plumbing Constructor's Association.



Slide 7-2 Emergency water supply

The monitoring and control aspects of the water operating system proved to be extremely effective for the initial response phase after the occurrence of the earthquake. Based on the experience of the Great East Japan Earthquake, the system was reviewed and subsequently altered to make the allocation of duties and inter-organization collaboration more smooth and efficient.

Since the earthquake in 1978 the Sendai Waterworks Bureau has made efforts to improve the earthquake resistance of water pipes by building water operation systems with overall monitoring and control by dividing water distribution into blocks. These efforts mitigated damage to the facility by reducing the extent of disruption to the water supply, formulating emergency restoration and water supply plan, and efficiency of the operations.

The Sendai Waterworks Bureau has a risk management manual and the pocket edition was distributed to all the staff. Their full understanding and awareness of risk management resulted in quick initial response. Appropriate manpower allocation had to be maintained in pace with the progress of emergency response activities to deal with the scale of damages. The emergency response activities were critically important when the disaster event was protracted and the damages were massive.

The water supply facilities must be restored urgently, emergency water supply has to be provided immediately, and the water utilities must communicate the information on the response activities to the public, such as establishment of water supply stations and expected date of restoration. Restoration of water facilities is the most important priority. It is, therefore, critical to secure manpower needed to restore and maintain the operations of the water facilities. Only limited number of staff can be allocated for emergency water supply activities. It is necessary to establish in advance mutual support system among water suppliers to dispatch water supply support teams and with collaborative private and public entities. Educational activities were also conducted to encourage citizens to join emergency water supply activities.

Presentation 2 "Preparedness of Disaster and Continuity of Water Supply Service"

Mr. Yongyuth Arpaichiraratana, Deputy Governor (Planning and Development), Metropolitan Waterworks Authority (MWA), Thailand, described the flooding in Thailand from July to October 2011, when five tropical storms hit the northern part of the country and flooded a large part of the country.

Slide 7-3 MWA's Mission to response the Flood Crisis

Although there was more than one month to prepare for the flooding, ability to control or respond to the situation was seriously tested. Preparations included building protective brick walls around substations and stocking chemicals for treatment of the water supply. The work was arduous and took long days and nights.

MWA committed to provide continuous water supply services with controlling quantity and quality under the flood crisis by protecting the water treatment plant and transmission system to maintain the continuous service without shortage. MWA frequently informed the public to know the situation with the truth and individuals affected by the flooding were supplied with mobile water treatment units and free supply taps. MWA also coordinated and cooperated with external agencies both local and international to strengthen stability and security.

Slide 7-4 Key of Success

Mr. Yongyuth stressed that natural disasters in one country are no longer one state's problem but a global problem, and to respond to such disasters, bold integrated efforts of all stakeholders: private, public, academic, and civil society, along with the international community would be required.

Presentation 3 "Disaster Preparedness and Continuity of Water Supply"

Ms. Rachel M. Beja, General Manager, Cagayan de Oro City Water District (COWD), Philippines, reminded the participants that the Philippines is frequently hit by major typhoons.

Typhoon Washi in December 2011 heavily damaged the main booster station and laboratory, resulted in the loss of 16,000 service connections and more than US$3 million worth of damage in Cagayan de Oro city. The total water supply was down by about 43%. About 60% of the service area was without water supply for at least 16 days. In addition, half of the COWD employees were directly affected by the typhoon (lost homes, properties and family members).

Slide 7-5 COWD's facilities damaged by Typhoon Washi

An assessment of the damaged facilities was conducted on the first day and an emergency executive meeting was held at which responsibilities and remedial measures to alleviate the damage were designated. Boil water advisory was immediately issued since the laboratory was completely damaged and safe water could not be guaranteed. Valves, fire hydrants, and production wells were opened to distribute water to the public. The international and local communities' offer for assistance was overwhelming. After restoration of supply, there were still many challenges in the immediate aftermath of the typhoon, such as frequent interruptions in supply, and an increase in NRW, probably due to damaged

service connection lines. These damaged facilities were replaced with the aid of JICA, and new facilities were installed at higher elevations.

Learning from these experiences, COWD prepared a manual in “Risk Reduction Plan”. When there was another huge typhoon “Bopha” in Dec. 2012, COWD could behave in line with the manual which described the immediate actions to be taken. For instances, the emergency executive meeting were held before the typhoon hit, information on the climate and the safe shelter location were distributed for all the staffs and the mitigation measures such as moving water quality testing equipment to the upper floors were implemented. In this emergency care, leadership were utmost important to take early and appropriate countermeasures.

A.	ADMINISTRATIVE MEASURES	TIME LINE
1	Assessment of damaged facilities	DAY1
2	EMERGENCY EXECUTIVE MEETING	DAY1
3	Emergency Board Meeting	DAY1
4	Creation of Committees & Designation for Specific Assignments	DAY1 onwards
5	Press Releases through the Tri-Media	DAY1 onwards
6	Open Communication	DAY1 onwards

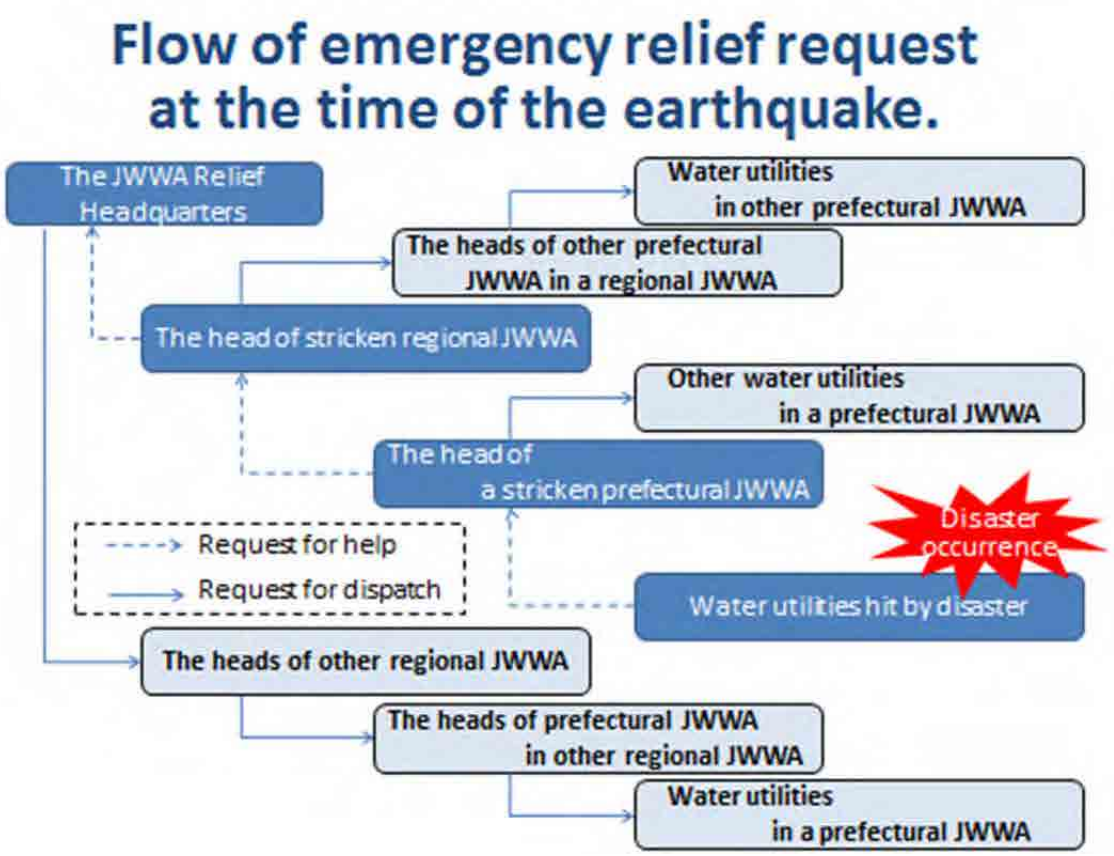
Slide 7-6 COWD’s administrative measures and timeline

Q&A, Discussion

(Comment from Bangladesh) There were two major natural disasters five years ago when two areas were severely affected. Fortunately, the areas were remote and did not have water work systems.

Comment 1 "Support system for water utilities and its effect in Japan"

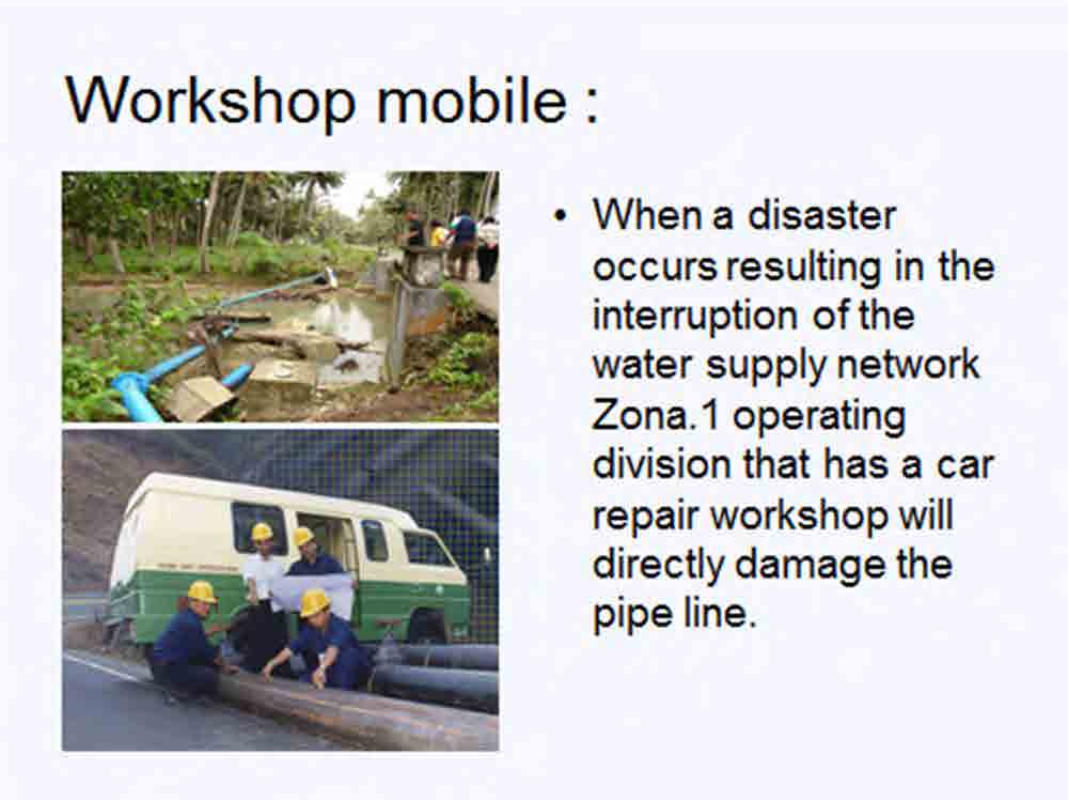
Mr. Daisuke Kimura, Assistant Manager of Water Supply Operations Section, Northern Area First Water Supply Maintenance Division, Yokohama Waterworks Bureau, Japan, introduced the JWWA, which has 1,354 members, with a mandate to provide support and assistance to one another upon request under the mutual support system in case of emergency. Using the Great East Japan Earthquake as an example, he demonstrated how the YWWB dispatched staff to the affected areas immediately after the earthquake and tsunami struck.



Slide 7-7 Flow of emergency relief request at the time of the earthquake

Comment 2 "How to allocate water in times of disaster"

Mr. Mangindang Ritonga, Operation Director, PDAM Tirtanadi Medan, Indonesia, explained that Indonesia frequently suffered from natural disasters such as earthquakes. Many important measures have to be taken to provide water for the affected population in times of disaster. These include the provision of tank cars containing clean water for the affected population; making repairs as quickly as possible to the damaged pipelines and water supply installations; and preparing a generator as a backup source of electricity.



Slide 7-8 Workshop mobile

Wrap-up by the Moderator

Ms. Yamamoto complimented the strong leadership at the water utilities and their efforts to supply drinking water to the affected population while dealing with damages to their facilities, at times of natural disasters.

In Japan there are agreements among utilities and other organizations, including private companies, to help each other in case of disasters. In the Philippines and Thailand even though they do not have similar agreements, people were very cooperative. In this regard, communicating water supply situations to the people is very important.

We are always concerned about natural disasters. Cooperation among water utilities is very important to prepare for them.

Main points confirmed at Special Session

- ✓ Mission of waterworks is to supply safe water even in the event of disasters.
- ✓ In order to fulfill the mission under emergency situations, it is essential to emphasize disaster preparedness, leadership of senior management, information gathering and sharing, and cooperation with various stakeholders.

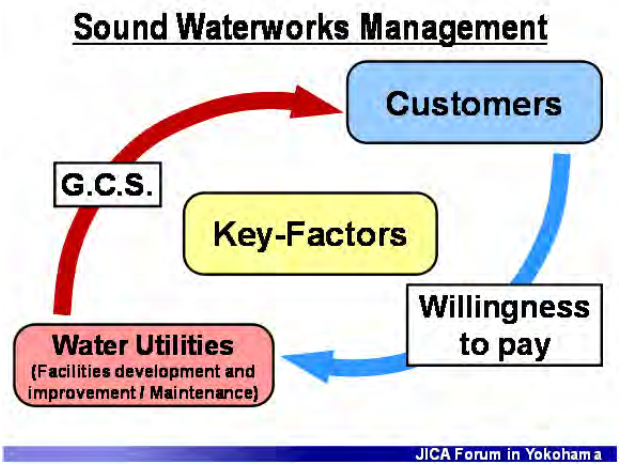
8. Session 4 “Partnership”

Objectives of the Session 4

To share best practices in partnerships for sustainable management. Partnerships can involve water utilities (Water Operators Partnerships: WOPs), water utilities associations, academia, governments, official development assistance, NGOs, communities, and private corporations. Partnerships are meaningful when it is clear that objectives can be realized and promoting the partnership can be justified, and there is a well-defined path and set of mechanisms for improving performance.

Introduction by the Moderator

Mr. Ikuo Mitake, Senior International Director, Japan Waterworks Association, stated that the session highlights partnership and cooperation in order to find a way to approach sustainable management of water utilities. He believed that the participants need to explore how to improve the relationship between utilities and customers, such as what factors affect customers’ willingness to pay. Good customer service could be one of them. It is found that each utility makes efforts to increase customer satisfaction from discussions during Session 1-3. In addition to the efforts, it is necessary to take advantages of outside resources beyond individual utility. That is “partnership”.



Slide 8-1 Key factors for sound waterworks management

Presentation 1 "Mutual Cooperation between Vientiane Capital Water Supply (NPNL) and Saitama City Waterworks (SCWB)

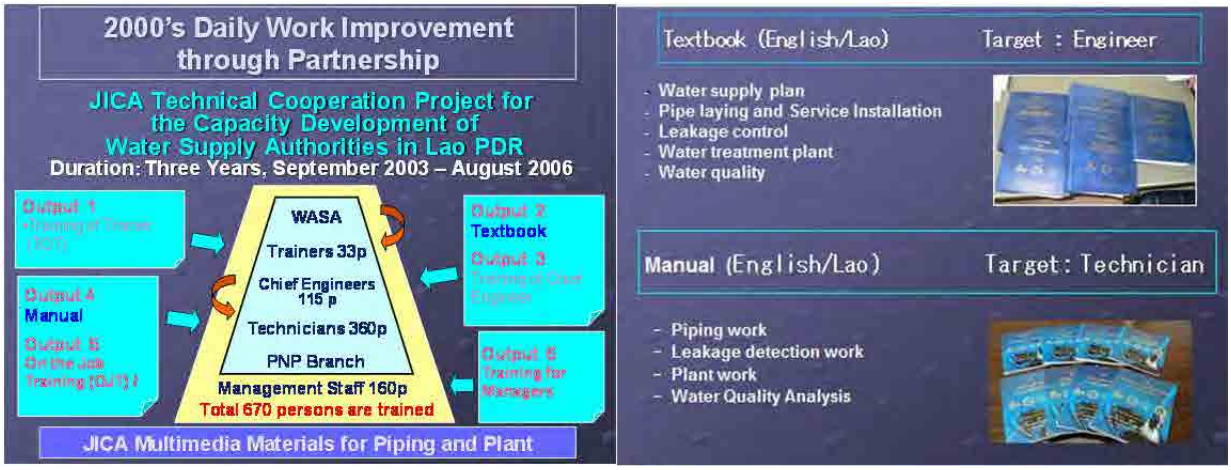
Mr. Khampheuy Vongsakhamphoui, General Manager, Vientiane Capital Water Supply State Enterprise (NPNL), Lao PDR gave a brief introduction on Laos, specifically its geography and challenges involved in procuring water supply. Lack of funding, experience, and skilled staff are some of the difficulties. The NPNL welcomes assistance from different donors, and would be pleased to learn from and share experience with neighboring countries.

Cooperation between the NPNL and SCWB started in the 1990s and is still continuing today. The outcomes during 1990s were the development of a water supply plan in Vientiane and identification of management issues. During 2000s the NPNL improved its day-to-day operation through the partnership. The training program developed included textbooks, operation manuals, and a TOT system, as well as staff awareness activities. Currently, the NPNL's strategy for improvement is promoted by the partnerships supported by the Technical Cooperation Project of JICA. The remaining challenges include securing the budget for sending staff to Saitama for training, improving their English for communication, and acquiring equipment with advanced technologies. Horizontal development would be essential to improve the capacities of other water utilities in Laos.

Slide 8-2 Cooperation history, process and outcome between NPNL and SCWB

Mr. Yasuhiro Kawashima, Deputy Director of Engineering Department, Saitama City Waterworks Bureau (SCWB), Japan, started his presentation on the NPNL's improvement of staff and daily work through various partnerships with NPNL. The SCWB dispatched the first mission to Vientiane in 1992. Since then its staff has been serving as JICA experts. The SCWB was also engaged in the JICA Technical Cooperation Project for the Capacity Development of Water Supply Authorities in Lao PDR, which was the first JICA attempt at tackling waterworks in Laos. The SCWB contributed to the project for the development of TOT system, OJT, manuals, texts, etc. and for raising customers' awareness by water-saving campaigns.

The SCWB has been implementing the JICA Grass Root Technical Cooperation –Partnership Program, to improve pipeline maintenance management in Vientiane and four major provinces in Laos. Trainees are trained in Japan, they then return to Laos to share their knowledge with domestic facilities. The Twinning Partnership Program started in the 2010s. It is a two-year program between the NPNL and SCWB to train junior staff. At the end of the training, they attend a closing seminar on improvement of the Laos water supply sector. At this time, Saitama's contribution is reviewed and Japanese technology is introduced.



Slide 8-3 2000's Daily Work Improvement through Partnership between NPNL and SCWB

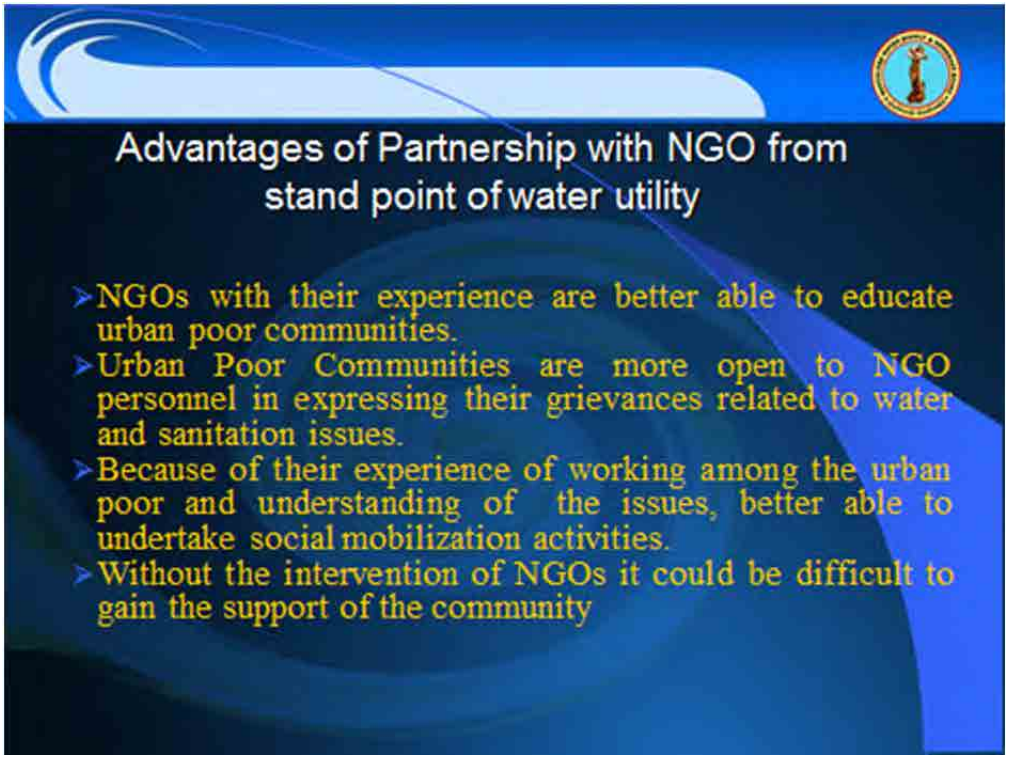
The final stage is the MaWaSu Project (Capacity Development Project for Improvement of Management Ability of Water Supply Authorities in Lao PDR) from 2012-2017, which is a capacity development project for the improvement of management ability of the water supply authority in Lao PDR. The SCWB dispatches many experts for each subject together with Saitama Pref., Yokohama and Kawasaki.

Mr. Kawashima also stressed they enhanced the skill levels of younger staff through these partnerships with NPNL.

Presentation 2 "Partnerships with NGO / CBO for Service Delivery to Poor"

Mr. SIVANAPPA KRISHNAPPA, Chief Engineer, Bangalore Water Supply and Sewerage Board (BWSSB), India, began his presentation with an overview of Bangalore and an introduction to the BWSSB. The BWSSB was established in 1964 as a government organization to provide safe drinking water and sewerage facilities to about 9.5 million people in Bangalore City. As the communication with many of those areas was poor, the BWSSB asked for the assistance of the NGOs, to mobilize and educate the urban communities in order to facilitate the implementation and improvement of piped water and sewerage services in the slums. Four NGOs were selected for this purpose. Their scope of work included the assessment of socio-economic conditions, water supply and sanitation conditions in the slums, and organizing social mobilization activities. Under JICA's cooperation, slum development in 181 slums with 77,277 households and population of 0.4 million was undertaken in three phases.

Due to the NGOs' better knowledge and access to slum areas they were able to educate these communities and in turn these communities were more open to discussion with NGO personnel. Without NGO support, it would have been difficult to gain trust from the communities. However, there were also challenges. The NGO's often had trouble with producing timely reports on outcomes and impacts of their interventions, affecting BWSSB's reporting to JICA. It was also difficult to adhere to a timeline due to non-cooperation by urban slum leaders. People were resistant to paying fees after having free water from illegal connections for a long time. The turnover of COB member was also high, which really slow the progress of the project.



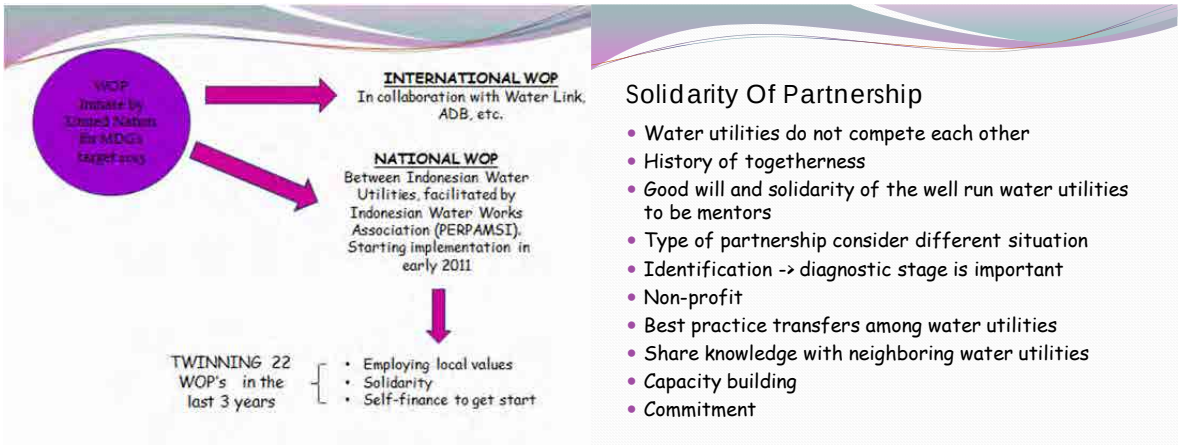
Slide 8-4 Advantages of Partnership with NGOs

There were many challenges in implementing water and sewerage works because of the multiple forces at play in a slum environment. A great deal of manpower was needed for education, an area at which the NGO's excelled. Creating community awareness and individual and collective responsibility were important components of the project. By educating slum communities through the help of the NGO's, it not only yielded better results. The communities as a whole and individual consumers also learned to use water more responsibly, as well as monitor their usage.

Presentation 3 "Indonesian WOPs solidarity-based partnership"

Ms. Indrarini Tenrisau, Senior Technical Advisor of Water Resources Management, United Cities and Local Governments Asia Pacific, Indonesia, described her experience with Surabaya Water Supply Enterprises. She emphasized the importance of sharing knowledge and experience. In Indonesia, 52% of water utilities were evaluated as "unhealthy" performance and Indonesian water operator partnerships

(WOPs) are solidarity-based partnerships, hoping to improve the water utilities performance in all aspects. National WOPs activities were initiated in 2011 and are facilitated by the Indonesian Water Works Association (PERPAMSI), employing local values, solidarity and self-financing. The mentees (PDAM as recipients) of WOPs with foreign water utilities became the mentors of Indonesian national WOPs based on the experiences. PDAM Surabaya was also encouraged to be a mentor of five PDAMs to share the experience of NRW reduction which they learned from WOPs with Ranhill, Malaysia.



Slide 8-5 Background and Solidarity of Indonesian WOPs

The partnerships are based on solidarity in the water family, with the well-run water utilities as mentors, and recognizing the importance of sharing knowledge and best practices, increasing capacity building, as well as enhancing commitment.

Table 8-1 Challenges of PERPAMSI, Mentors and Recipients

PERPAMSI	Mentors	Recipients
• How to develop an Indonesian way of WOP's, • The availability of subsidiary budget, • Need of supporting PDAM's to enhance and expand the WOP program coming year, • How to coordinate mentors and recipients, • To fit both mentor & recipient based on the similarity of geographical and distribution water system, • How to improve controlling system to mentor & recipient periodically, • Employing local values , self-finance to start	• Improvement & capacity building for the staff as instructore • How to find out issues of recipient • Time consuming limited (Study exchange, diagnostic, monitoring) • Supporting and accuracy data from recipient • Encouraging to continue their solidarity partnership • Learning spirit	• Availability of budget • Sustaining the changes / reforms made • Willingness the top level management & decision makers • Need of supporting partners to enhance &expand WOP's • Time consuming limited • Limited equipment & technology • Learning spirit • Open management to the mentors • Setting KPI's for internal evaluation • Administrating & the way of communicating • Encouraging to be mentors • Assigning to share knowledge with neighboring water utilities

Source:Presentation materials prepared by Ms. Indrarini

Lessons learned through PERPAMSI WOPs include the acknowledgement that international WOPs inevitably faced cultural barriers and some knowledge and technology may not be inapplicable locally. The PERPAMSI facilitated WOPs are designed to take into account the culture, customs as well as local knowledge; and recipients at the end of the pilot project would acquire new knowledge and skills and be able to better analyze daily problems. There are still challenges for PERPAMSI mentors and recipients.

The outcomes of national WOPs are as follows: the pilot project under WOPs resulted in improved performance and increased revenue; the personnel acquired new knowledge, skills and experiences and WOPs have a positive impact in capacity building of all parties involved; and will continue to do so in the future.

Comment 1 "Learnings from PPWSA"

Ms. Rachel M. Beja, General Manager, Cagayan de Oro City Water District (COWD), Philippines, gave her comments on important lessons learned on their visit to the PPWSA, stressing that she thought that the PPWSA circumstances are similar to theirs. One of their realizations is that NRW reduction is a capital-intensive undertaking, and requires a proper budget. The next challenge is to be well-prepared to sustain the initiative, in order to avoid a vicious cycle. The partnerships are valuable for sustainable water supply management and the COWD is exploring the WOPs and mutual cooperation concept. JICA was very instrumental for the COWD to learn about the success from the PPWSA at the 3rd Seminar held in Yokohama last year. She hopes that partnerships are promoted through cooperation projects by JICA.

Table 8-2 Learnings from PPWSA

IMPORTANT LEARNINGS from PPWSA VISIT	LEARNINGS from PPWSA
1. National & International Cooperation is very instrumental; 2. Review of specifications of materials used is very necessary; 3. Construction of DMA's and sub-districts and close monitoring of these as an important element to a successful NRW management; 4. Community education and involvement as an essential key to effective NRW management as well; 5. Pipe replacement of very old pipes as the first major thing to consider to arrest physical losses;	1. Bill and meter reading once every 2 months ADVANTAGES: can give meter readers more time to examine more closely every water connection POSSIBLE DISADVANTAGES: danger of unaffordability by consumer; financial impact on COWD PROGRESS: COWD is studying the matter 2. Use of HDPE over PVC material for pipes and fittings PROGRESS: inventory of pipes and explore possible suppliers 3. Great advantage of DMA's as an important element to a successful NRW management PROGRESS: on progress with the JICA Grant for a Comprehensive Plan in Reducing NRW, which includes design of DMA's 4. Importance of community education and involvement as an important key to effective NRW management PROGRESS: COWD conducts annual activities with selected communities

Source: Presentation prepared by COWD

Comment 2 "PWON's Current Activities and Efforts for Future Development"

Mr. Muazzam Jamil Malik, Deputy Secretary, Housing Urban Development and Public Health Engineering Department (HUD&PHED), Govt. of Punjab, Pakistan, said that Pakistan Water Operators Network (PWON) was launched in 2011. It is a network of all the urban water utilities in Pakistan and provides a national platform for the service providers to improve their capacity. The objective is to enable the water utilities to improve their service delivery with particular focus on the urban poor and un-served population through their efficiency benchmarking, social accountability and transparency, knowledge sharing and networking by involving key players in the water sector. They are now promoting the way forward, including the establishment of the PWON network with the Japan Water Works Association and Indonesia Water Works Association, the development of standards and standard operating procedures with the technical support of the JWWA, for community-partnership model implementation, more partnerships and networking at all levels, and pro-poor focused research and development.

Slide 8-6 Background and way forward of PWON

Q&A, Discussion

(Question from Mr. PARANA HEWAGE Sarath Gamini, NWSDB) How do you shape partnerships in Indonesia and what criteria are used to form WOPs?

(Answer by Ms. Indrarini Tenrisau, United Cities and Local Governments Asia Pacific) They do not have specific criteria or target areas and the mentor's goodwill and the parties' commitment is more important than set criteria.

(Question from Mr. PARANA HEWAGE Sarath Gamini, NWSDB) What is the goal of WOPs, is it to improve service quality, increase of revenue or upgrade the level of technology?

(Answer by Ms. Indrarini Tenrisau, United Cities and Local Governments Asia Pacific) Our WOPs are still in learning process and will be expanded in the future. At this stage, they are not setting specific goals,

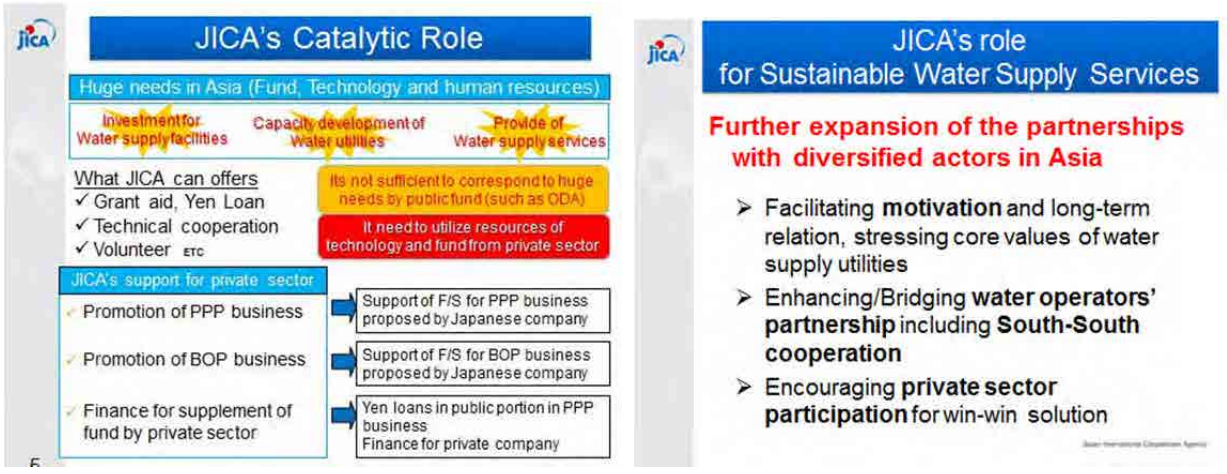
or strictly quantifying results. They are currently focused on simply producing results and building on these results. Their recipient PDAM achieved energy saving at their water treatment plant and has quantified the outcome.

Presentation 4 "JICA's Role as Partnership Builder – Mobilizing Resource –"

Mr. Taisuke Watanabe, Senior Advisor to Director General, Global Environment Department, Japan International Cooperation Agency (JICA), expressed his interest in building partnerships and provided details on JICA's role in said partnerships.

JICA have played catalytic roles, such as 1) bringing Japanese institutions, 2) promoting south-south cooperation, 3) promoting exchange of site visit to other operators, and 4) facilitating private sector participation. Under technical cooperation projects, JICA promotes collaboration between Asian water utilities and Japanese water utilities/experts for sharing knowledge by utilization of experience accumulated in Japanese water utilities. JICA also facilitates mutual cooperation among the partnering water utilities through partnership programs in south-south cooperation. For example, the National Waterworks Technology Training Institute (NWTTI) in Thailand has been offering training courses to other countries and the Phnom Penh Water Supply Authority (PPWSA) in Cambodia received delegations from other Asian countries and has been supporting other water supply utilities in Cambodia. Responding to huge needs in Asian countries, JICA provides support to the private sector to promote PPP business, BOP business, as well as financing for private companies.

The central government is a key player to motivate water operators to provide better service. It could provide incentives and establish institutional mechanisms. Water operators are seeking innovative ideas and best practices, high-level trainers, and willing to share experiences. Other partners such as NGOs and communities can become advocates to consumers and residents and can be involved in managing the public tap. Good supervision of the contractors is important. Water operators can institute a registration or certification system to clearly identify good vendors.



Slide 8-7 JICA's catalytic role for sustainable water supply services

These players can be brought together through networking organizations such as Water Works Association, information hubs, twinning and matching programs, and facilities for training. Proactive motivation is critical to improving partnerships. JICA intends to further expand partnerships with diverse actors in Asia, facilitating motivation and long-term relations, emphasizing the core values of water supply utilities.

Comment 3 "How to Cooperate with the Private Operators as Regulatory Body"

Ms. Leonor C. Cleofas,, Deputy Administrator, Engineering and Operation, Metropolitan Waterworks and Sewerage System (MWSS), Philippines, highlighted the cooperation and support activities of the MWSS, and emphasized the need for partnership with the private sector and objectives of privatization. For those partnerships, open communication among parties, asset owners, Regulatory Office (RO), and concessionaires are important. In order to motivate the private sector we have to make clear and transparent commitments especially in the regulatory frameworks. Setting tariffs is quite important to the private sector. In the case of the MWSS, the RO developed and agreed with the concessionaires the sets of Key Performance Indicators which set the targets on service improvements. A reward and penalty system was also developed and agreed upon with the concessionaires. Cooperation and support from the public sector should be maintained in partnerships at all times, and professionalism should be kept at all levels of the management hierarchy.

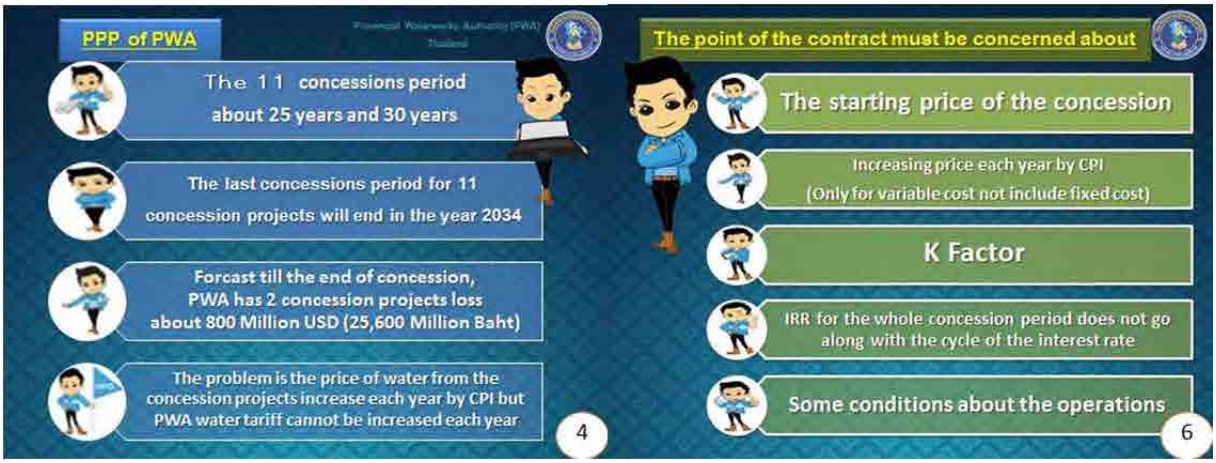
Slide 8-8 MWSS Public Private Partnership

Comment 4 "PWA's experience of Public-Private Partnership Projects"

Ms. Ratana Kitchawan, Governor, Provincial Waterworks Authority, Thailand, commented on her experience with PPP projects.

The PWA is involved in 11 concession projects, four BOOT projects, five BOO projects, one BTO project and one lease contract. The periods of those concession projects are about 25 to 30 years and the last one will end in the year 2034. The problem is that the prices of water from the concession projects increase each year being linked to the CPI (consumer price index), but the PWA water tariffs cannot be increased

each year. The economic loss is borne by the PWA. It would be useful if the contracts were transparent, and if the details of the starting price of the concession were determined. The PPP contract must be concerned about the starting price of the concession, the possibility of increasing prices due to changing CPI, K factor, and if IRR for the entire concession period does not match the changes in interest rate.



Slide 8-9　Left）PPP of PWA,（Right）Points of the PPP contracts

Q&A, Discussion

(Question from Mr. PARANA HEWAGE Sarath Gamini, NWSDB) What is the cost of water in your organizations compared to the private sector and the price setting in PPP projects?

(Answer by Ms. Ratana Kitchawan, PWA) PWA has loss due to concessionaires' water price setting linked with CPI. Their PPP projects were initiated by the government. Although water tariff was increased at the first stage of PPP projects, the projects failed.

(Answer by Ms. Leonor C. Cleofas,, MWSS) CPI adjustment is necessary in concession agreement considering the bottom line of the concession. Their government controls and regulates the performance of the private sector. Although the price of water is adjusted according to the CPI once a year, it is also decided based on performance, efficiency, and other capabilities. The successful concession projects must have clear and transparent concession agreements, the commitment of the government, and specific considerations when working with the private sector.

(Comment from Mr. Ernie Tapleras Delco, MCWD) PPP is a very contentious issue. Water services are basic services, which should be in the hands of the government whether involved with PPP or not. When there is a lack of funds, lack of technical expertise or technology, and slow speed of procurement or the inefficiency due to bureaucracy, PPP could help the government. It is very difficult to say whether monopoly is good or bad. However, the MCWD is competing with private companies and there are pricing concerns. While private companies would increase water tariff, as a public sector provider, the MCWD has not raised water tariff for eight years.

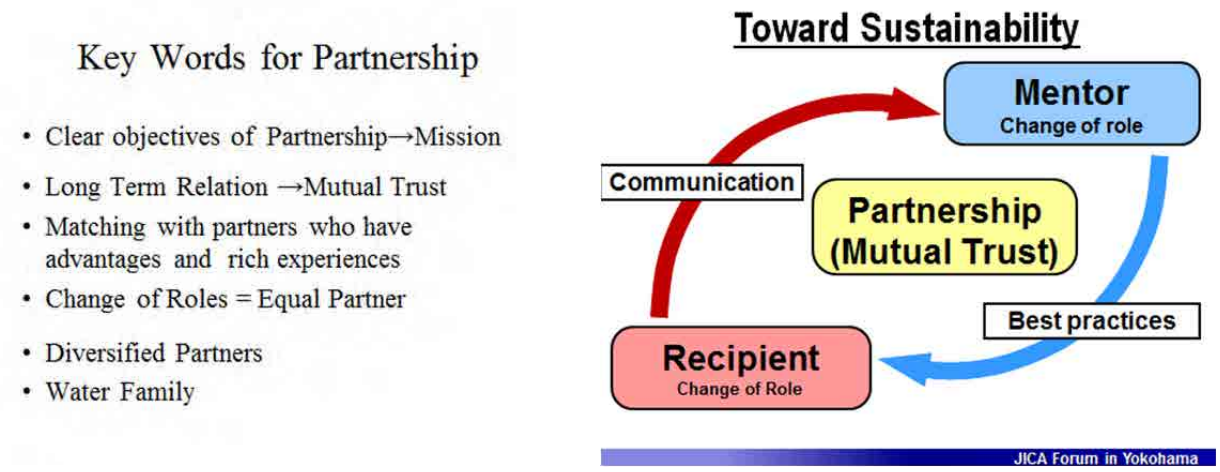
(Question form Mr. Mazzam Jamil Malik, HUD&PHED, Govt. of Punjab) What are the features of the agreement in working with NGOs?

(Answered by Mr. SIVANAPPA KRISHNAPPA, BWSSB) The BWSSB is paying about 1% of the total contract value, but the terms are mostly based on objective conditions.

Wrap-up by the Moderator

Mr. Mitake concluded the session with keywords for partnerships, such as having clear objectives or a focused mission, building mutual trust and long-term relationships, or to have diversified partners.

He summarized how partnership models work and the relationship between mentors and recipients, emphasizing communication and the exchange of best practices. He then presented keys to achieving sound management, which are sharing best practices on management, keeping an open channel for communication, and securing good customer relations. He added that accountability, transparency, and leadership are crucial for partnerships as well.



Slide 8-10 Wrap-up by the Moderator

Main points confirmed at Session 4

- ✓ Partners of collaboration and cooperation are getting diversified.
- ✓ Partnership provides good opportunities to share and learn best practices from each other.
- ✓ Mutual trust is essential for partnerships.

9. Review Session

Summary of the all the sessions of the Third Executive Forum was presented by Prof. Satoshi Takizawa, Professor, Department of Urban Engineering, Graduate School of Engineering, The University of Tokyo. He concluded that all participating utilities and agencies are making steady and significant progress in improving services and management. He emphasized that the cases and comments presented were the best examples of the practice of water supply utilities in the world; and that Japan is working closely with the Asian water utilities and will continue to contribute to the sustainable services and management in future in anticipation of forthcoming changes and uncertainties.

In the panel discussion, the context of our challenges were presented as “Changing World” - population and demand increase, limitation of water resources in terms of both quality/quantity and economic growth/variability – so that we could come up with the realistic solution for “Sustainable” water supply in Asia. In this context, we should have *Right Policy* such as;

- Safe drinking water (good quality): quality assurance (WSPs), continuous supply, procurement of appropriate materials
- Appropriate tariff pricing: affordability, cost recovery
- Efficiency: initiatives by top management,
- Customer satisfaction beyond NRW reduction

In addition, panelists presented their approaches to maintain water supply as a clues to achieve sustainable water supply systems;

- Technical and management approaches
- Governance, leadership, institutional reform
- Capacity building: not only technical skills, but also motivation and pride to work hard hear the voices of the residents who got piped water
- Community power: Cut connection or let them talk and think for payment.
- Partnerships: utility, local and central governments in/out of the countries
- “Do not copy” or “Just Copy”: Need to think your own solutions

In this context, participants discussed many topics for specific themes in four sessions and a special session. In preparation of the Yokohama Forum Statement 2014 as a result of discussion in whole these sessions, the floor was opened to all the participants for the comment and discussion.

H.E. EK Sonn Chan, Secretary of State, Ministry of Industry and Handicraft, Cambodia

"I **propose that every participant bring home clearly one single commitment,** since we are working under lots of constraint, and we cannot implement everything at the same time."

Maintenance and Procurement: Based on the presentation from Yokohama City Waterworks Bureau, we will start to make long term plan to 2040 for the replacement our facilities.

Mr. Ernie Tapleras Delco, Assistant General Manager, Operations Group, Metropolitan Cebu Water District (MCWD), Phillipines

Importance of the pressure control of distribution line to maintain the service for the customers

"Let us continue to discuss the role of the public in water supply sector and merits of natural monopoly (Session 4) in the next time."

Mr. KUMARARATHNA G. Asoka, Additional General Manager, Sewerage Division, National Water Supply & Drainage Board, Sri Lanka

Importance of asset management plan: "This is important for our pipeline system which is 70 years old. I would like to utilize the knowledge gained for the maintenance of our pipelines."

Mr. Hla Moe Tun, Director (Acting head of department), Department of Engineer (Water Supply and Sanitation), Nay Pyi Taw Development Committee, Myanmar

Importance of Human Resources Development: Facing with massive expansion in our utility, we would like to apply the knowledge learned in this forum to nurture technical staff, establish certification system and much more.

Mr. SAMRETH Sovithiea, Deputy Director General, Phnom Penh Water Supply Authority, Cambodia

Sharing Knowledge: " I am impressed with how many participants such as from Philippines, Vietnam and Laos, have learned from the PPWSA's experience. Why not our utility and country? I am determined to share the knowledge of the PPWSA, as well as what we have learned in this forum, with the utilities and the province."

Ms. TRAN Thi Minh Tam, Vice Manager, Customer Service, Thua Thien Hue Construction and Water Supply State One Member Company Limited (HueWACO), Vietnam

Disaster Preparedness: "If we do not want to have disruption to the supply of safe water, we need to be prepared in advance. - I would like to incorporate the measures in our company plan to minimize the damage when disaster happens."

Mr. Sivanappa Krishnappa, Chief Engineer, Bangalore Water Supply & Sewerage Board (BWSSB), Bangalore, India

Importance of household connections for NRW reduction: Most of the NRW occurs in household connections.

"I would like to request JICA for the monitoring of our action and for giving a chance for junior staff in our utilities to learn what we have learned at this Forum."

Ms. CLEOFAS Leonor Castro, Deputy Administrator, Metropolitan Wasterworks and Sewerage System (MWSS), Philippines

Continuous networking: Updating of information and communication is important.

Not only technical but also administrative cooperation is important.

"I have found large utility can also learn many things from small utilities. We can update information and communicate even when we don't get together."

Ms. Supodjana WONGWORAPITAK, General Administrative Officer (Secretary to Governor) , PWA, Thailand

Importance of Disaster Preparedness: "I have learned from the Japanese response to the great earthquake."

Ms. Ratana Kitchawan, Governor, Provincial Waterworks Authority PWA, Thailand

Shared values and information: "We would like to request JICA to provide benchmarking indicators, information to compare and make some suggestion to the participants."

Mr. Ghanasham BHATTARAI, Deputy Executive Director, Melamchi Water Supply Development Board (MWSDB), Nepal

Increasing tariff is not the only method for raising revenue: "We will try to improve efficiency including NRW reduction."

"We wish to share the knowledge on community management in the next Forum"

Mr. H. Delviyandri, Head Division of Technial Equipment, PDAM Tirtanadi North Sumatera, Indonesia

Importance of preparation for disasters: as a part of the Ring of Fire

Mr. Muazzam Jamil Malik, Deputy Secretary, Govt. of Punjab, Pakistan

"Problems are more or less similar among the utilities. The Forum is a catalyst to transforming the vicious cycle to the virtuous cycle"

Importance of improving capacity for reducing NRW: There are five utilities in Pakistan and the NRW ratios are around 35-40%. So we have to try our best to reduce NRW.

Mr. Khanngeun SENGIEM, General Director, Khammouane Water Supply State Enterprise, Lao PDR

"I would like to try our best to meet our goal, which we set in the cooperation with JICA "Supply good water, raising access to 80% by 2020" utilizing the knowledge learned at this Forum"

Mr. Rudie KUSMAYADI, Chairman, Indonesian Water Supply Association (PERPAMSI), Managing Director, PDAM Kabupaten Bandung, Indonesia

Raising Revenue: "We must find ways to improve the earnings of the corporation, because if we don't have money we cannot do anything.."

Mr. SRENG Sokvung, Officer, Department of Potable Water Supply, Ministry of Industry and Handicraft ,Cambodia

Customer Satisfaction through transparency and accountability: for sustainable water services

Mr. Soe Si, Committee Member, Yangon City Development Committee (YCDC), Myanmar

Importance of improving efficiency and sharing knowledge: "Yangon City is tackling decreasing pressures and NRW since some of the 50 year old facilities are deteriorating. We will utilize the knowledge leaned at this Forum in our efforts to rehabilitate our facilities."

Mr. Khampheuy VONGSAKJAMPHOUI, General Manager, Vientiane Capital, Water Supply State Enterprise (NPNL), Lao PDR

Importance of Public Private Partnerships and Training of Trainer (TOT) system

Mr. Oloan Martumpu SIMATUPANG, Head of Sub Directorate for Technical Planning, Directorate of Water Supply, Directorate General of Human Settlements, Ministry of Public Works, Indonesia

Pro-poor policy and practices learned from the experience of Bangalore: Partnership with various actors such as NGOs and working with the communities

Mr. Chandra Lal NAKALMI, General Manager, Kathmandu Upatyaka Khanipani Limited (KUKL), Nepal

Importance of Long-term Plan incorporated with Human Resources Development; in the light of our many kinds of water resources

Mr. Dody SOEDARJONO, Senior manager, Corporate Development, Suryas Sembada Surabaya Water Supply Enterprise, Indonesia

Importance of Water Safety Plan

Mr. Mangindang RITONGA, Operation Director, PDAM Tirtanadi North Sumatera ,Indonesia

Continue and expand partnership with Yokohama City Water Works Bureau

Engr. A K M FAZLULLAH, Managing Director, Chittagong Water Supply and Sewerage Authority (CWASA), Bangladesh

Tackle the issue of slums and urban poor

Needs for countermeasures for corruption

Ms. RACHEL M. BEJA, General Manager, Cagayan de Oro City Water District (COWD), Phipplipines

Human Resources Development for the staff and the leaders: Leaders are the heart of the HRD; with well-capacitated leaders, financial sustainability and improved efficiency are ensured, and the institution is always ready to come up with best approaches in partnerships and preparedness to disasters.

M s. LE Thi Hong Van, Deputy Manager, Department of Personnel and Administration, Da Nang Water Supply One Member Limited Company (DAWACO), Vietnam

Bring back **everything** to our utility and make priority for implementation
Immediately utilize the knowledge especially for **Public Private Partnership**

Mr. PARANA HEWAGE Sarath Gamini, Project Director, Greater Kandy Water Supply Project, Water Supply Division, National Water Supply & Drainage Board, Sri Lanka

1. Each country should have a national procurement policy and its objective should be to achieve: a. overall economic benefits, b. high quality products, c. timely delivery of goods and services. In order to procure quality goods and services, life cycle cost should be considered providing end user database is available. If not, endurance test results could be used. Quality goods and services are essential for long-term sustainability of water supply.
2. We should not forget that water is a vital nutrient.

Mr. Yongyuth Arpaichiraratana, Deputy Governor (Planning and Development), Metropolitan Waterworks Authority, Thailand

Importance of **long-term rehabilitation plan to reduce NRW**

Engr. Mohammad Abdullah, Managing Director (CEO), Khulna Water Supply and Sewerage Authority (KWASA), Bangladesh

1. **Technical management:** Need to be achieved overall sound management and proper timely decision by the leader
2. **Human Resources Management:** Training is of primary importance but human quality and behavior cannot be changed only by training alone. We need formal and informal mechanisms. HRD has many challenges
3. **Partnership:** not exclude people without access, needs for knowledge from technical cooperation with development partners should be broadened.

Ms. RAVELO Myra Evelyn Petralba, Assistant General Manager, Finance and Customer Service Group, Metropolitan Cebu Water District (MCWD), Philippines

Disaster preparedness: equal cooperation among water utilities

Request for the next time: “topic on customer service, marketing and tariff setting.”

Ms. Indrarini Tenrisau, Senior Technical Advisor of Water Resources Management, United Cities and Local Governments Asia Pacific, Indonesia

“ Yokohama forum is important and good trigger to facilitate improvements.”

Gathering and nurturing network: to help each other is a way for development and to share the benefits.

Mr. Tint Lwin, Head, Water & Sanitation Department, Mandalay City Development Committee, Myanmar

Importance of Public Private Partnerships:

"Bring back the knowledge to introduce PPPs"

10. Yokohama Forum Statement 2014

The following four points were proposed by the participants in the review session:

1) Because of the changes in water demand, water resources, climate, and economic and political situations in the future, it is essential to convert the vicious cycle to the virtuous cycle for sustainable management in water utilities.

2) In order to achieve sustainable management of each urban water utility in the Asian region, leaders of water utilities have to take proactive and forward-looking actions in raising revenue, maintenance and procurement, human resource development, disaster prevention and partnerships.

3) It is necessary to develop a framework for monitoring the performance of water utilities through a benchmarking system.

4) It is recommended that mutual collaboration between countries of Asia be promoted.

All participants agreed to improve management at their respective utilities and to strengthen partnerships, and adopt the "Yokohama Forum Statement 2014", as a so-called "Water Family", whose members share common values and mission.

Yokohama Forum Statement 2014

July 3rd, 2014

The Third Executive Forum for Enhancing Sustainability on Urban Water Service in Asian Region on sustainable management of water utilities in a changing world, co-organized by Japan International Cooperation Agency (JICA) and City of Yokohama, was held on July 1-4, 2014, in Yokohama, Japan. The executive leaders of urban water supply utilities and high officials of government agencies from twelve Asian countries, namely, Bangladesh, Cambodia, India, Indonesia, Lao PDR, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand and Viet Nam, were invited to join the chief executives of the Japanese water utilities and the water industry leaders in this forum.

We, the participants of this forum, recognized that turning the Vicious Cycle of utility management to the Virtuous Cycle is crucially important to the sustainable management of water utilities under the future changes in water demand, water resources, climate, economy and policy. Therefore, to take pro-active and preventive actions in a changing world, we agreed to put forward the following visions and policies for the sustainable water supply in Asian cities.

Raising Revenue

1. Winning customer satisfaction is the key to improve willingness-to-pay, and thus to raise the revenue of water utilities. Improving the efficiency of water utility management, such as reduction of non-revenue water (NRW), higher bill-collection rates, and higher work-force productivities, brings about a higher rate of customer satisfaction. In this way, higher customer satisfaction and a better efficiency of water utility management constitute a virtuous cycle.

2. Good management including good policy and good governance of the water utilities is essential factor to sustainable water supply. The recognition of the true value of water through correct pricing of water and decentralized management system to nurture ownership are also keys to improve the efficiency of water utility. Transparency, integrity and accountability are keys ingredient of good water governance. Incentive and penalty should be fairly applied in water management to improve efficiency.

Maintenance of water supply facilities and procurement of equipment and materials

3. Preventive maintenance, such as active leakage control, service monitoring and facility rehabilitation plan plays an important role in reducing the total cost of water supply and brings about net profit to the water utilities.

4. Procurement of non-standardized materials and equipment will increase the repair and replacement costs, while reliable and durable materials reduce the Life Cycle Cost (LCC). Thus, establishment of good procurement systems based on LCC by setting correct guidelines and proper inspection systems is highly recommended.

5. 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 Operational Procedure (SOP).

Human Resources Development (HRD)

6. The sustainable supply of water needs sound Human Resources Development. HRD includes many schemes, such as staff recruitment plan, back-up program, training program, long-term human resources development plan. Every utility is encouraged to have those schemes fitting to actual situation.

7. Training of human resources was discussed in detail. 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..

Disaster Preparedness

8. 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.

Partnerships

9. 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.

10. A benchmarking and monitoring framework based on our discussion in the Yokohama Forum is recommended for the sustainable management of water utilities and for further strengthening our partnership between the water utilities in the Asian countries.

During the discussion in the forum, we recognized ourselves to be the members of a "Water family" having the same mission of safe water supply and sharing common values in the importance of water. Thus, we are determined to act together as one for the common goal of safe water supply by the sustainable management of water utilities in a changing world. For this purpose, we advance the afore-mentioned visions and policies. We also agreed to put our efforts to maintain a long-lasting partnership between the Asian water utilities in the future.

July 3, 2014
Yokohama, Japan

11. Closing Remarks

Closing Remarks from Mr. Katsunori Watanabe, Deputy Mayor of City of Yokohama

Good afternoon, everyone. I am Katsunori Watanabe, Deputy Mayor of City of Yokohama.

I would like to thank many of those in attendance from overseas and various parts of Japan for coming to the Third Executive Forum for Enhancing Sustainability of Urban Water Service in Asia Region. On behalf of City of Yokohama, I would like express my appreciation especially to all the senior officials who traveled great distances to Yokohama.

The success of this Forum is achieved by our close collaboration with JICA, which has rich experience in international cooperation. We believe that you have shared a lot of knowledge and findings through discussions on improvement of waterworks in Asian region over the last three days.

Through the Forum, there were active discussions among leaders from 12 Asian countries, as well as Japanese experts and specialists from academic institutions, water utilities and private companies. I am very pleased that as the result of the Forum, "Yokohama Forum Statement 2014" was declared by H.E. Ek Sonn Chan, Secretary of State, Ministry of Industry and Handicraft, Cambodia 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, and Japanese participants will utilize what they have heard here for their human resource development in international cooperation.

In collaboration with JICA, the City of Yokohama will continue to pursue solutions for various urban issues including waterworks, with private companies and universities. We also hope to work together with everyone here for the peace and development of Asia, and in strengthening our relationships.

We are very pleased that you enjoyed your stay in Yokohama. We wish the rest of your time in Yokohama will be fun and memorable.

In November next year, we will hold the "IWA LESAM 2015 Yokohama", the 6th International Water Association Asset Management Conference, the first time in Asia, with specialists from around the world. We hope you visit Yokohama again for that event.

Finally, we expect the outcomes of the Forum to contribute to your waterworks improvement. Thank you very much.

12. Outcome of the Third Executive Forum

Participants shared knowledge, experiences and issues of each country in sustainable management of water utilities, through presentations and discussions at five sessions (raising revenue, maintenance of water supply facilities and procurement of equipment and materials, human resources development, and partnerships, as well as disaster preparedness and continuity of water supply service). Overseas participants also deepened their understanding of Japanese policies, experiences and new technologies at the business seminar and visit to Kawai Water Purification Plant in the City of Yokohama. New networks are being established among participants and existing partnerships are strengthened through all the activities at the Third Executive Forum.

The Third Executive Forum served the following important roles, benefitting from the cumulated outcomes of the First and Second Executive Forum and three seminars for "Urban Water Service Management and Human Resource Development in Asian Region".

(1) Provision of an opportunity/venue to share best practices and knowledge in the Asian region.

Senior executives and experts from overseas and Japan gathered in Yokohama and shared best practices and knowledge based on differences and common issues of waterworks in the Asian region as follows:

- At the presentation on measures of Non-Revenue Water (NRW) from Phnom Penh Water Supply Authority (PPWSA) in Cambodia, there was a comment that we gained a new understanding that efficiency of management, as well as revision of water tariff and reduction of NRW, was important for management improvement.
- At the presentation on procurement of meters with high accuracy from Metro Cebu Water District (MCWD) in the Philippines, participants shared the knowledge on how a water utility as public sector entity handles bidding conditions to procure better quality goods.
- In discussing the problem about turnover of staff who received training, participants agreed that improvement of morale and attitude is important, and long-term efforts and incentives are required in human resource development.
- At the presentations about public private partnerships from Provincial Waterworks Authority (PWA) in Thailand and Metropolitan Waterworks and Sewerage System (MWSS) in the Philippines, water tariff comparison between public utilities and private companies were discussed.

Japan has been a top donor in the water and sanitation sector and contributed to mainly Asian countries through construction/expansion by financial assistance (yen loans) and management improvement of water utilities by technical cooperation projects including training programs supported by Japanese water utilities. In addition, Japanese water-related companies are recently expanding their overseas activities. Under such circumstances, The Third Executive Forum played a significant role to provide an opportunity/venue that water utilities in Asian countries, Japanese water utilities, Japanese water-related companies and JICA as an aid agency came together to share above best practices and challenges in Asian region.

(2) Confirmation of impacts after Japanese cooperation

Participants shared information on the efforts of Asia water utilities, conducted under Japanese cooperation. The Cagayan de Oro Water District (COWD) in the Philippines made the presentation about their study tour to the Phnom Penh Water Supply Authority (PPWSA). They learned how to measure non-revenue water by their own budget based on their action plan prepared at the 3rd Seminar for Urban Water Service Management and Human Resource Development in Asian Region held in Yokohama in January 2013.

JICA also organized the basic information and data on participating water utilities. The information and data will be utilized as monitoring tools in future.

(3) Contribution to raising awareness in senior management of Asian water utilities

The Third Forum contributed to raising awareness in senior management of Asian water utilities. Comments from overseas participants showing their commitment include: “We, as the water utility, would like to control the quality of materials and equipment procured instead of leaving the quality control to the private sector” (National Water Supply & Drainage Board, Sri Lanka). “I learned about utilities in Asian countries and the discipline of Japan. I would like to incorporate them into my own organization after returning home” (Housing Urban Development and Public Health Engineering Department, Government of Punjab, Pakistan).

(4) Recognition of emerging new leaders conversant with best practices

Participants reaffirmed the strong leadership of H.E. EK Sonn Chan, Secretary of State, Ministry of Industry and Handicraft, Cambodia (former General Director of PPWSA) who also participated in the First Forum in 2010. Through the presentations on best practices and efforts by the Metropolitan Cebu Water District, Cagayan de Oro Water District, Thua Thien Hue Construction and Water Supply State One Member Company Limited (HueWACO), etc. and their respective successful achievements, participants also confirmed that the new leaders in the fast-growing Asian countries have come a long way.

13. Evaluation of the Third Executive Forum

13-1 Evaluation of the Program of the Third Executive Forum

As the Third Executive Forum, the four topics were selected in line with six agenda summarized at the First Executive Forum in Yokohama; 1) Policy on Urban Water Supply, 2) Finance and Management, 3) Measures against Non-Revenue Water (NRW), 4) Urban Water Service for the Poor people, 5) Safe Water and Water Quality and 6) Human resource development. In the broad topics of 1) Finance and Management, discussion was focused on an issue regarding the raising revenue which many utilities are currently facing with. Operation and Maintenance and the procurement were selected to discuss specific matters of 5) Safe Water and Water Quality. 3) NRW was discussed from two aspects – Financial and Technical. 6) Human resources development (HRD), as one of three elements of the management, was dealt with from the point of view of two major approaches of financial and technical. Discussion on "Dialogue and Collaboration", which was the main theme of the Second Executive Forum in Tokyo, was expanded to partnerships with various partners as one of the solutions to make the three elements work as a sustainable cycle. In addition, a special session for disaster preparedness was held because there are urgent needs to prepare increasing natural disasters such as flooding, typhoon, earthquake and tsunami, especially in Asian countries.

In preparation of the Third Executive Forum, moderators of the sessions and secretaries of the Third Executive Forum had formulated the concept and agenda of the Forum, selected presenters and commentators in line with the sessions' concepts and agenda, and requested them to prepare the presentation materials. It was successful that the Yokohama Forum Statement 2014 was adopted as the direction of waterworks management based on the voice of every participant through deep discussions in the five sessions facilitated by the moderators, though there were some points to be improved in operation - the time frame of the Forum was too limited and background information behind the sessions should be explained more to facilitate understanding of all the participants. Continuous communication among the utilities, agencies and institutions from Asian countries including Japan was further deepened. All the participants might be able to found themselves united as in the word "Water Family" from the comment of H.E. Ek Son Chan. This unity is one of the most important outcomes of the series of the three Executive Forums from 2010.

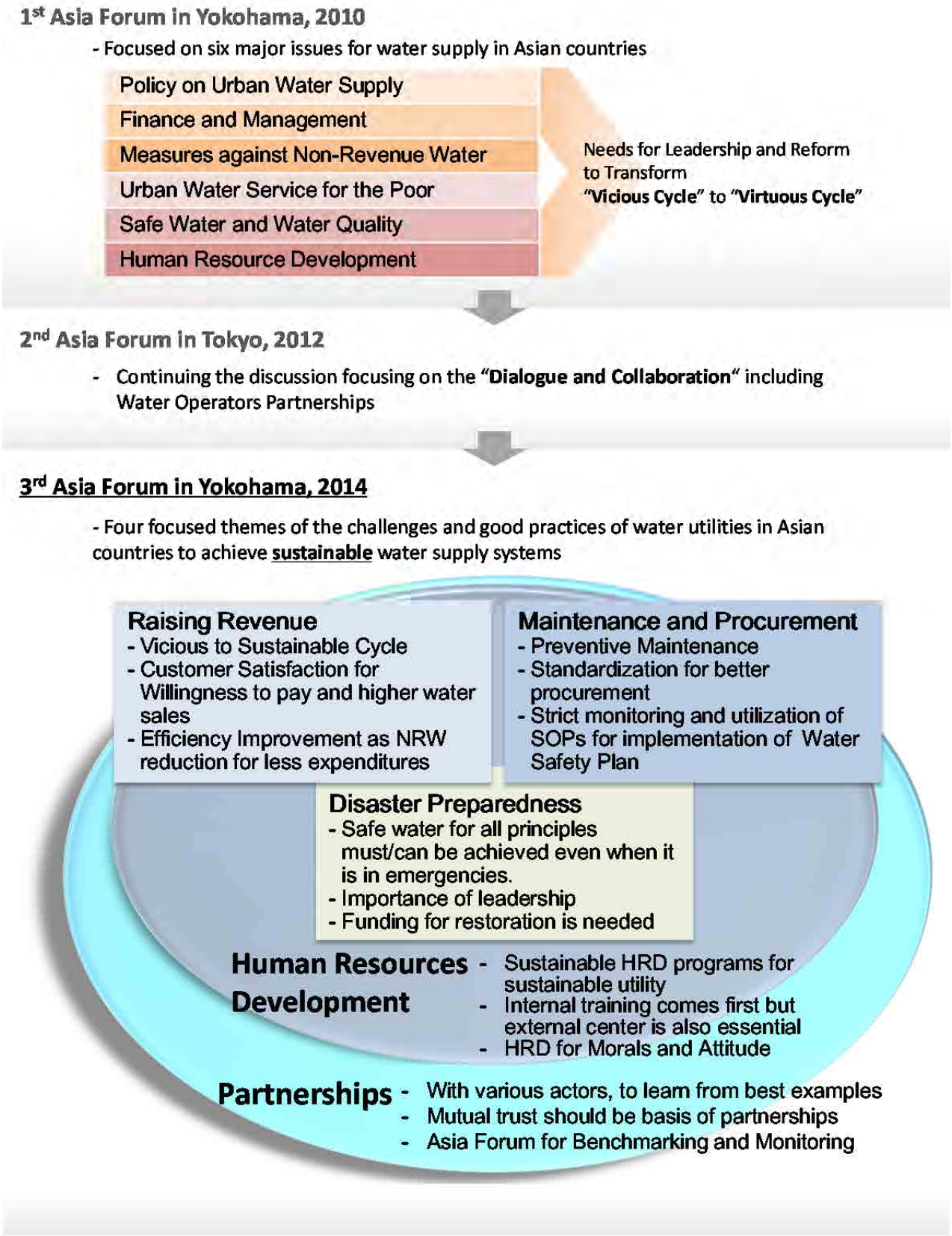


Figure 13-1 History of Executive Forum and Their Themes

In the Session 1, agenda “Raising Revenue” was set to come up with the solutions to transform vicious cycle to virtuous/sustainable cycle of utilities’ management focusing on challenges and best practices regarding tariff revision and collection, impact of NRW reduction and PPP. The highlighted point of the discussion of the Session 1 was that improvement of customer satisfaction, willingness-to-pay and efficiency, such as NRW reduction, shall be considered in advance instead of stating the issues of low tariff pricing and issues around its revision. Improvements of customer satisfaction and efficiency contribute not only to increase revenue directly but also to facilitate communication with various stakeholders such as politician and other government agencies that have political power to revise water tariff. The approach for improvement of customer satisfaction has a high potential to lead the tariff revision, which is always with the difficulties. It was also highlighted that the service expansion or rehabilitation was one of the best timings to start communication for tariff revision. It is valuable conclusion that customer satisfaction and service improvement are the keys for raising revenue.

In the Session 2, the discussion was focused on preventive maintenance, procurement for reliable materials and equipment, water safety plan implementation and the role of Standard Operation Procedures (SOPs) to assure the water safety. The Session 2 is one of the most warmed-up sessions which attracted a lot of comments and discussions from the participants, and thus it indicates that the technical matters are of lot concern of the participants. Presentations from MCWD (Philippine) and PPWSA (Cambodia) suggested there was no universal solution but there were different approaches for good maintenance and procurement. There was a high degree of attention for “drinkable water” which HueWACO (Vietnam) provided for their customers. The presentations and discussions are valuable not only for suggesting realistic methods and lessons to assure water safety but also for realizing all the participants that the “drinkable water” is achievable. A presentation on facility rehabilitation plan attracted surprisingly high response from the participants, and thus it was found that there were much awareness in the leading-edge practices even though the background situations of the utilities are much different. It is also valuable that the discussions were deepened for preventive maintenance and water safety in the context of sustainable management.

In the Session 3, the topics were focused on trainings for sustainable and systematic HRD to secure the human resources which were essential for sound management. Following to the presentations regarding utilization of external training center and internal training system, the importance of the incentives, training needs assessment and monitoring were pointed out in the discussion. Some important points were suggested that 1) HRD is not only for specific skills but also for the attitudes and morals and 2) long term planning including recruitment plan and backup plan for management is important. Broad ranges of points such as technical succession and turnover after trainings were raised at the discussion. It was meaningful that the utilities from Nepal and Myanmar in the stage of service expansion evaluated the HRD session raise much awareness on HRD as the take-home issue.

In the Session 4, four utilities and institutions presented successful practices for partnerships as examples to solve the issues discussed from the Session 1 to 3. The presentations showed diversification of partnerships such as with NGOs, through waterworks associations as well as Water Operators Partnerships (WOPs) both international and domestic. The common factor for successful partnerships was analyzed to be mutual trust. The presentations on PPP raised the discussion on roles of regulations, the

pros and cons of PPP, proactive partnerships with private sector, as well as natural monopoly of water supply. In this discussion, it was found that the role of partnerships is something to overcome the limitation of the efforts to improve the management and services by single utility itself. Furthermore, there were comments from participants who had been continuously participated in the Executive Forum that the Executive Forum itself promoted and strengthened the partnerships.

In the Special Session, actual voices of the utilities which experienced the huge disasters reminded all the participants of the mission of a water utility, which is to provide safe water continuously.

In the Review Session, overseas participants commented about their awareness as take-home tasks to implement in their utilities. All the participants commented their raised awareness regarding human resources development, disaster preparedness, importance of water safety, countermeasures to the corruption as the basis of all the practices, and the importance of continuous networking. It can be highly evaluated that the Third Executive Forum catalyzed the awareness for improvement of their management.

13-2 Roles of the Executive Forums

The ultimate goal of the Executive Forums is "to improve management of water utilities in Asian region". However, the goal can be achieved through not only the Executive Forums but also efforts of water utilities themselves, partnerships with other water utilities and private companies, and assistance from development partners including JICA. Because the Executive Forums are just venues where senior management of the water utilities in the Asian region share best practices and knowledge, and increase their motivations and awareness, actions based on the results of the Executive Forums leave to the participants. The Executive Forums also provide opportunities for building networks, and their continuation also depend on the participants. Therefore, it is expected that outcomes from the Executive Forums expand and develop like a spiral way; the participants reflect the knowledge obtained from the Executive Forum into their utilities' activities including JICA projects, they repot the outcomes of their activities at next Executive Forum, and then they bring back and reflect the knowledge newly obtained there.

At the review session, participants who attended previous Executive Forums and seminars proposed monitoring and benchmarking system. It is considered that those participants recognized that the Executive Forums should play a role to monitor participants' progresses of their future activities in addition to the role to share new knowledge. According to the results of the questionnaire to the overseas participants, most of them expressed their willingness to utilize the knowledge obtained from the Third Executive Forum and some participants had made contacts with other participants and planned to visit. Therefore it is expected that the results of the Third Forum will be utilized by the participating utilities and that the networks built by the Third Forum will continue.

At the First and the Second Executive Forums, discussions were held focusing on the most important issues under the changing circumstances surrounding the water supply sector. It can be said that the previous Executive Forums were held with the occasion according to the times, and it was difficult to find the continuity of the discussions. On the other hand, the Third Executive Forum enabled each participating utility to affect each other more closely, and continuity from the previous Forums was

created. It is considered that continuous implementation of the Executive Forums leads to improve motivations of the participating utilities through making presentations on their successful practices and deepening discussions. In terms of aiming to improve the overall management of water utilities, this can be evaluated that the Executive Forums had complemented activities of single water system development project or single technical cooperation project. Therefore the Third Executive Forum was valuable to work as one of the programs for improvement of waterworks management and to show the possibility that the Executive Forum works for mutual monitoring.

14. Recommendations

14-1 Implementation of benchmarking

The participants at the Third Executive Forum proposed that a benchmarking system be established to continuously monitor on-going challenges, efforts made and improvements achieved.

(1) Utility Profiles

At the Third Executive Forum, "Utility Profiles" were prepared and shared among participants to provide basic information on the participating utilities and show how they compare with each other. The Utility profiles included general and specific information that was reviewed by each participating utility. Through the review process, each utility could note its current situation and performance in terms of the key challenges that were discussed under the five sessions at the Third Executive Forum.

The profiles show the baseline or initial situation. Subsequent periodic updates would provide an indication of performance improvements over time. The framework used for building the profiles is shown in Table 14-1.

Table 14-1 Framework Used to Develop the Utility Profiles

Category	Items/Indicator, etc.	Purpose
Basic Information	・ Outline of the utility (background information including, size of population served, water sources, number of employees, service area, etc.) ・ Contact information	・ For communicating with other utilities ・ For comparison on the scale of the operations
Financial Condition	・ Financial information including P/L ・ Collection ratio (%) ・ Operational cost (USD/m^3 Production) ・ Tariff structure	・ For comparison of profitability, efficiency, etc.
Maintenance and Procurement	・ NRW ratio (%) ・ Staff per 1,000 connections	・ For tracking significant achievement on the reduction of NRW, etc. including capturing the details on the efforts to reduce NRW.
Human Resources Development	・ Name of external training center and frequency of use ・ Internal training ・ Budget and strategy	・ For tracking unique strategies or training efforts
Partnerships	・ Water operator partnerships (WOPs) ・ JICA projects ・ Other donor supported projects	・ For understanding about partnership programs and collaboration/ cooperation with donors

It is necessary to note the following:

- ✓ Draft profiles were prepared by the consultants based on available information and subsequently reviewed and confirmed by the participating utilities. However, some utilities did not respond to the request to review the draft profiles.
- ✓ Some information is missing and not forthcoming. Many utilities did not provide information on human resources development.

(2) Purposes and Process of Benchmarking

The benchmarking exercise aims to achieve sustainable management of water utilities and to strengthen and expand water operator partnerships by doing the following:

- ✓ Continuously monitor performance, specifically looking for improvements in operations and gains in efficiency
- ✓ Identify issues through comparisons with other utilities
- ✓ Learn best practices from utilities with improved performance

The following actions will be taken:

1) Evaluations at Executive Forums and/or Seminars on Urban Water Service Management and Human Resource Development in the Asia Region

The Utility Profiles will be updated at these meetings to show the progress and achievements made. Efforts will be made to encourage the recognition of a more integrated approach to improvements. For instance, NRW reduction usually focuses singularly on “Non-Revenue Water Ratio/Amount”, while tangible improvements might also be seen in increased revenue, profitability and stronger senior management commitments.

2) Establishment of a universal platform for benchmarking

Many international donors appreciate the value of benchmarking. Nevertheless, there are not so many continuous or periodic benchmarking reviews being carried out because of the effort required to collect and provide the required information. A well designed and maintained universal platform for benchmarking will facilitate this effort and will go a long way to convince the utilities to embrace the exercise and recognize the benefits that it can bring. It is recommended that JICA establish and promote a platform for benchmarking, and that utilities establish systems for regular data collection, monitoring the process of improvement and learning best practices from other utilities through the benchmarked indicators.

Table 14-2 Examples of Benchmarking Efforts

Utility	Responsible division/personnel	Tasks
Yokohama Water Works Bureau	・ Management ・ Administration	・ Prepare management policies and a long term plan ・ Carry out benchmarking through the JWWA
Metropolitan Cebu Water District	・ Corporate Planning Division ・ The Chief Officer responsible for benchmarking indicators	・ Prepare a corporate plan and an annual plan, and management policies ・ Monitor indicators and prepare reports

Source: Consultants' observation

14-2 Continuous Networking

1) Enhanced communication

Many participants understand that "the continuation of networking is important," and that "it is realized not only at executive forums, but also through the internet and personal communication." It is part of the day-to-day work routine, not requiring any senior management oversight. Nevertheless, the following is a simple check list as an extra reminder in case heavy work load takes over:

Personal communication with other utilities

- ☐ Did you send e-mails to participants after the Third Executive Forum?
- ☐ Did you ask the presenters further questions on the subjects of particular interest to you? Can you explain his/her answers to someone else? If not, did you ask again? You can deepen the relationship through further communication with him/her.
- ☐ Do you have any opportunity to see him/her again at a conference or workshop in future? You can continue with the communication though these opportunities.

Internal communication

- ☐ Did you talk with JICA experts regarding the Forum? Discuss with these experts the possibility of introducing other utilities' practices into your utility.
- ☐ Did you share the presentation documents and Yokohama Forum Statement 2014 with others in your utility? Through discussions with your colleagues, you could see similarities and differences with other utilities and determine what to do in your utility.

Other opportunities of communication

- ☐ Visit other water utilities: to obtain more detailed information on their programs.
- ☐ Conduct regional workshops: It would be worthwhile to have workshops with neighboring utilities.
- ☐ Prepare a mailing list

2) Proposals for the Fourth Executive Forum

At the Third Executive Forum, participants enhanced their channels of communication, deepened and strengthened their bonds as members of the "Water Family" as announced in the Yokohama Statement 2014 by H.E. Ek Sonn Chan. This outcome is cumulated from the First and Second Forums and other Seminars held in the past.

Water supply presents important challenges to developing countries, and water utilities have very important roles to play in shaping their countries' future. Senior managers at water utilities are instrumental in improving the water supply services and it is crucial that they have the opportunity to share the lessons of their successful experience and useful information as much as possible.

The Executive Forums succeeded in enhancing the communication among water utilities which resulted in raising senior management's awareness of and commitment to its roles and responsibilities. In preparation for the next Forum, it is recommended that the following actions be taken:

- ✓ The participants will promote the outcomes of the Executive Forums and the Yokohama Statement 2014 using every possible opportunity.
- ✓ JICA and Yokohama will present the outcomes of the Third Executive Forum and the key points of the Yokohama Statement 2014 at their training programs to promote broad understanding and wide acceptance.
- ✓ Plans will be prepared for the Forth Executive Forum taking into consideration the outcomes of the Third Executive Forum.

Appendix

A-1 Overseas Participants List

Bangladesh

Engr. A K M FAZLULLAH
Managing Director, Chittagong Water Supply and Sewerage Authority (CWASA)

Engr. Mohammad Abdullah
Managing Director (CEO), Khulna Water Supply and Sewerage Authority (KWASA)

Cambodia

H.E. EK Sonn Chan
Secretary of State, Ministry of Industry and Handicraft

Mr. SRENG Sokvung
Officer, Department of Potable Water Supply

Mr. SAMRETH Sovithiea
Deputy Director General, Phnom Penh Water Supply Authority

India

Mr. SIVANAPPA KRISHNAPPA
Chief Engineer, Bangalore Water Supply & Sewerage Board (BWSSB)

Indonesia

Mr. Rudie KUSMAYADI
Chairman, Indonesian Water Supply Association (PERPAMSI)
Managing Director, PDAM Kabupaten Bandung

Mr. Oloan Martumpu SIMATUPANG
Head of Sub Directorate for Technical Planning, Directorate of Water Supply, Directorate General of Human Settlements, Ministry of Public Works

Mr. Mangindang RITONGA,
Operation Director, PDAM Tirtanadi North Sumatera

Mr. Delviyandri
Head Division of Technial Equipment, PDAM Tirtanadi North Sumatera

Mr. Dody SOEDARJONO
Senior manager, Corporate Development, Suryas Sembada Surabaya Water Supply Enterprise

Ms. Indrarini Tenrisau
Senior Technical Advisor, Water Resources Management, United Cities and Local Governments Asia Pacific

Laos

Mr. Khampheuy VONGSAKHAMPHOUI
General Manager, Vientiane Capital Water Supply State Enterprise (NPNL)

Mr. Khanngeun SENGIEM
General Director, Khammouane Water Supply State Enterprise

Myanmar

Mr. Soe Si
Committee Member, Yangon City Development Committee (YCDC)

Mr. Tint Lwin
Head, Water & Sanitation Department, Mandalay City Development Committee

Mr. Hla Moe Tun
Director (Acting head of department), Department of Engineer (Water Supply and Sanitation), Nay Pyi Taw Development Committee

Nepal

Mr. Chandra Lal NAKALMI
General Manager, Kathmandu Upatyaka Khanipani Limited (KUKL)

Mr. GHANASHYAM BHATTARAI
Deputy Executive Director, Melamchi Water Supply Development Board (MWSDB)

Pakistan

Mr. Muazzam Jamil Malik
Deputy Secretary, HUD&PHED, Govt. of Punjab

Philippines

Ms. RACHEL M. BEJA
General Manager, Cagayan de Oro City Water District (COWD)

Ms. Leonor C. Cleofas
Deputy Administrator, Engineering and Operation, Metropolitan Waterworks and Sewerage System (MWSS)

Mr. Ernie Tapleras Delco
Assistant General Manager, Operations Group, Metropolitan Cebu Water District (MCWD)

Ms. Myra Evelyn Petralba Ravelo
Assistant General Manager, Finance and Customer Service Group, Metropolitan Cebu Water District

Sri Lanka

Mr. KUMARARATHNA Gonapolage Asoka
Additional General Manager, Sewerage Division, National Water Supply & Drainage Board

Mr. PARANA HEWAGE Sarath Gamini
Project Director, Greater Kandy Water Supply Project, Water Supply Division, National Water Supply & Drainage Board

Thailand

Mr. Yongyuth Arpaichiraratana
Deputy Governor (Planning and Development), Metropolitan Waterworks Authority

Ms. Ratana Kitchawan,
Governor, Provincial Waterworks Authority

Ms. Supodjana WONGWORAPITAK
General Administrative Officer (Secretary to Governor)

Vietnam

Ms. TRAN Thi Minh Tam
Vice Manager, Customer Service, Thua Thien Hue Construction and Water Supply State One Member Company Limited (HueWACO)

Ms. LE Thi Hong Van
Deputy Manager, Departmenet of Personnel and Administration, Da Nang Water Supply One Member Limited Company (DAWACO)

A-2　Japanese resource persons and participating organizations

Japanese resource persons

Opening Remarks

Mr. Shigeru Kiyama, Vice President, JCA

Mr. Kazunari Doi, Director General, Yokohama Waterworks Bureau

Closing Remarks

Mr. Katsunori Watanabe, Deputy Mayor

Keynote Speech

Prof. Yasumoto Magara, Professor, Research Center for Environmental Nano and Bio Engineering, Hokkaido University

Panelists

Dr. Atsushi Masuko, CEO, TSS Tokyo Water Co., Ltd.

Mr. Shigeo Mizutani, President and Chief Executive Officer, Swing Corporation

Mr. Masami Fuwa, Director General, Global Environment Department, JICA

General Moderators

Prof. Satoshi Takizawa, Professor, Department of Urban Engineering, Graduate School of Engineering, The University of Tokyo

Moderators

Mr. Yoji Matsui, Director of International and Training Department, Japan Waterworks Association (JWWA)

Mr. Masahiko Kiyozuka, Director of Water Supply Department (Technological Administrator), Yokohama Waterworks Bureau

Mr. Yasuhiro Kawashima, Deputy Director of Engineering Department, Saitama City Waterworks Bureau

Ms. Keiko Yamamoto, Advisor to the Forum (former Senior Advisor, JICA)

Mr. Ikuo Mitake, Senior International Director, Japan Waterworks Association (JWWA)

Mr. Takeo Tanaka, International Operations Division, Yokohama Waterworks Bureau

Ms. Yuki Honda, Assistant Manager, Purification Equipment, Engineering Section, Higashimurayama Purification Administration Office, Tokyo Metropolitan Waterworks Bureau

Mr. Kenta Mikami, Training Program Division, Yokohama International Center, JICA

Mr. Hidetake Aoki, Water Resources Management Division 1, Global Environment Department, JICA

Ms. Mina Yariuchi, Water Resources Management Division 1, Global Environment Department, JICA

Presentators

Mr. Takayuki Konishi, Assistant Manager of Water Supply Division, Yokohama Waterworks Bureau

Mr. Toshihiro Yamaguchi, Manager of International Operations Division, Yokohama Waterworks Bureau

Mr. Yuji Honda, Chief, Technical Training Center, Nagoya City Waterworks and Sewerage Bureau

Mr. Kiyoshi Sakai, Assistant Director and Administration Subsection Manager, Planning Section, Water Supply Department, Sendai City Waterworks Bureau

Mr. Taisuke Watanabe, Senior Advisor to the Director General, Global Environment Department, JICA

Commentators

Mr. Yasutoshi Nagai, Executive technical advisor, Yokohama Water Co., Ltd.

Ms. Mari Asami, Chief Senior Researcher, National Institute of Public Health

Mr. Toru Tomioka, Director, International Division, Japan Waterworks Association (JWWA)

Mr. Hiroshi Sakanoue, Supervisor for Planning and Coordination, Training Section, Training and Technical Development Center, Bureau of Waterworks, Tokyo Metropolitan Government

Ms. Harumi Oto, Supervisor for International Affairs Teams, Investigation Section, General Affairs Division, Bureau of Waterworks, Tokyo Metropolitan Government

Mr. Daisuke Kimura, Assistant manager of water supply operations section, Northern area first

water supply maintenance division, Yokohama Waterworks Bureau

Japanese participating organizations

Related Authorities, Institute

Ministry of Health, Labour and Welfare

Ministry of Economy, Trade and Industry

Japan Water Research Center

Engineering and Consulting Firms Association

Water Supply Utilities of Japan

Sapporo City Waterworks Bureau

Saitama Prefecture Bureau of Public Enterprise

Saitama City Waterworks Bureau

Bureau of Waterworks, Tokyo Metropolitan Government

Kanagawa Prefectural Public Enterprises Agency

Waterworks Bureau, City of Kawasaki

Nagoya City Waterworks and Sewerage Bureau

Mie Prefecture Public Utilities Agency

Kyoto City Waterworks Bureau

Kobe City Waterworks Bureau

Waterworks Bureau, The City of Hiroshima

Kitakyushu City Water and Sewer Bureau

Okinawa Prefectural Enterprise Bureau

Companies

Aichi Tokei Denki Co.,Ltd.

AMCON INC.

Azbil Corporation

CTI Engineering Co., Ltd.

Exidia, Ltd.

FUJI TECOM INC.

GOODMAN CO., LTD.

Hamagin Research Institute, Ltd.

Hitachi, Ltd.

Japan Techno Co., Ltd.

JFE ENGINEERING Corporation

JGC CORPORATION

KOKUSAI KOGYO CO., LTD.

METAWATER Co., Ltd.

Mitsubishi Electric Corporation

Mizuho Research Institute Ltd.

Nihon Suido Consultants Co., Ltd.

Nihon Genryo Co., Ltd.

NIPPON KOEI CO., LTD.

NJS Consultants Co. Ltd.

NSS System Co., Ltd

Original Engineering Consultants Co., Ltd.

Pacific Consultants Co., Ltd.

Sanyu Rec Co., Ltd.

Suidou Technical Service Co, .Ltd

SUMITOMO CORPORATION

Swing Corporation

TEC INTERNATIONAL Co., Ltd.

TOSHIBA CORPORATION

TSS Tokyo Water Co., Ltd.

URBAN RESILIENCE Co., Ltd

Wellthy Corporation）

Yokogawa Solution Service Corporation

Yokohama Water Co., Ltd.

The Organizers

Japan International Cooperation Agency (Co-organizer)

City of Yokohama (Co-organizer)

Japan Waterworks Association (Supporter)

A-3 Program of the Third Executive Forum

The 3rd Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region

Program

July 1, 2014 (Day 1)

Opening and Panel Discussion

Time	Theme / Presenter
9:00-	**Opening remarks:** Mr. Shigeru Kiyama, Vice President, JICA Mr. Kazunari Doi, Director General, Yokohama Waterworks Bureau
9:15-	**Group Photo**
9:30-	**Keynote Speech: "Sustainable Water Services for All - in evolutional society –"** Prof. Yasumoto Magara, Professor, Hokkaido University
10:10-	—Coffee Break —
10:25-	**Introduction of the Panel Discussion, and Panelists** Moderator: Prof. Satoshi Takizawa, Professor, Department of Urban Engineering, Graduate School of Engineering, The University of Tokyo
10:35-	**(Presentation) "Sustainable Water Supply Management - Experience in Tokyo –"** Dr. Atsushi Masuko, CEO, TSS Tokyo Water Co.,Ltd.
10:50-	**(Presentation) "Contribution of Japanese Water Companies in Asia"** Mr. Shigeo Mizutani, President and Chief Executive Officer, Swing Corporation
11:05-	**(Presentation) "Success & Failure In Managing Water Supply, Cambodia Cases"** H.E. Ek Sonn Chan, Secretary of State, Ministry of Industry and Handicraft, Cambodia
11:20-	**(Presentation) "JICA's Role in the Changing World towards Sustainable Water Supply Services"** Mr. Masami Fuwa, Director General, Global Environment Department, JICA
11:35- 12:30	**Discussion**

Orientation of Yokohama Forum 2014

Time	Theme / Presenter
14:20-	**Orientation of Yokohama Forum 2014** Ms. Keiko Yamamoto, Advisor

Session 1 "Raising Revenue"

Time	Theme / Presenter
14:30-	**Orientation of the session** Moderator: Mr. Yoji Matsui, Director of International and Training Department, Japan Water Works Association (JWWA), Japan

14:50-	**(Presentation) Challenge 1: "Water Tariff and Collection"** Mr. FAZLULLAH A. K. M., Managing Director, Chittagong Water and Sanitation Authority (CWASA), Bangladesh
15:10-	**Comments: Toward effective tariff collection** Comment 1: Mr. Shivappa Krishnappa, Chief Engineer, Bangalore Water Supply & Sewerage Board (BWSSB), "ICT and water rate collection" Comment 2: Mr. Ernie Tapleras DELCO, Assistant General Manager, Operations Group, Metropolitan Cebu Water District (MCWD), Philippines
15:20-	**Q&A, Open Discussion**
15:35-	**(Presentation) Challenge 2: "Sound Financial Management and Non-Revenue Water Reduction"** Ms. Rachel M. Beja, General Manager, Cagayan de Oro City Water District (COWD), Philippines
15:55-	**Comments: Multiple aspects of challenge and effect on NRW reduction** Comment 3: Mr. KUMARARATHNA Gonapolage Asoka., Additional General Manager, Sewerage Division, National Water Supply & Drainage Board, Sri Lanka
16:00-	**Q&A, Open Discussion**
16:15-	**—**Coffee Break **—**
16:30-	**(Presentation) Good Practice 1: "Facility renewal and financial resources for sustainable water services"** Mr. Samreth Sovithiea, Deputy Director General, Phnom Penh Water and Sewerage Authority (PPWSA), Cambodia
16:50-	**Comment: Challenges for financial balancing through the reimbursement of project loan** Comment 4: Mr. Oloan Martumpu SIMATUPANG, Head of Sub Directorate for Technical Planning, Directorate of Water Supply, Directorate General of Human Settlements, Ministry of Public Works, Indonesia
16:55-	**Q&A, Open Discussion**
17:15-	**(Presentation) Good Practice 2: "Water Concession as a Model Public Private Partnerships - Increasing Revenue"** Ms. Leonal C. Cleofas, Deputy Administrator, Metropolitan Waterworks and Sewerage System (MWSS), Philippines
17:35-	**Comment and Discussion: Challenges & opportunities of PPPs in water supply sector** Comment 5: Mr. Rudie Kusmayadi, Chairman, Indonesian Water Supply Association (PERPAMSI), Indonesia
17:40-	**Q&A, Open Discussion**
18:00- 18:10	**Wrap-up** Mr. Yoji Matsui, Director of International and Training Department, Japan Water Works Association (JWWA), Japan

July 2, 2014 (Day 2)

Session 2 "Maintenance of Water Supply Facilities and Procurement of Equipment and Materials"

Time	Theme / Presenter
9:00-	**Orientation of the session** Moderator: Mr. Masahiko Kiyozuka, Director of Water Supply Department (Technological Administrator), Yokohama Waterworks Bureau(YWWB), Japan
9:10-	**Presentation 1: "Good Practices on Maintenance and Procurement"** Mr. Ernie Tapleras DELCO, Assistant General Manager, Operations Group, Metropolitan Cebu Water District (MCWD), Philippines
9:40-	**Comments and Discussion:** Comment 1: Mr. Yasutoshi Nagai, Executive technical advisor, Yokohama Water Co., Ltd., Japan Cambodia Comment 2: Mr. Samreth Sovithiea, Deputy Director General, Phnom Penh Water and Sewerage Authority (PPWSA),
9:50-	**Open Discussion**
10:10-	**Presentation 2: "Effective Facilities Maintenance and Procurement of Pipe Materials - Replacing Aged Pipes and Improving into Earthquake Resistant Facilities-"** Mr. Takayuki Konishi, Assistant Manager, Water Supply Division, Water Supply Department, Yokohama Waterworks Bureau(YWWB), Japan
10:30-	**Comments and Discussion:** Comment 3: Mr. Toru Tomioka, Director, International Division, Japan Waterworks Association (JWWA), Japan "JWWA's Challenge for Water-related Products" Comment 4: Mr. PARANA HEWAGE Sarath Gamini, Project Director, Greater Kandy Water Supply Project, Water Supply Division, National Water Supply & Drainage Board, Sri Lanka "Utilization of Technical Standard for better procurement – NWSDB Case –"
10:40-	**Open Discussion**
10:55-	**—** Break **—**
11:10-	**Presentation 3: "Implementing Water Safety Plan at Thua Thien Hue Province in Vietnam"** Ms. Tran Thi Minh Tam, Vice Manager, Customer Service, Thua Thien Hue Construction and Water Supply State One Member Company Limited (HueWACO), Vietnam
11:30-	**Comments and Discussion:** Comment 5: Dr. Mari Asami, National Institute of Public Health(NIPH), Japan
11:35-	**Open Discussion**
11:50- 12:00	**Wrap-up by Moderator** Mr. Masahiko Kiyozuka, Director of Water Supply Department (Technological Administrator), Yokohama Waterworks Bureau(YWWB), Japan

Session 3 "Human Resources Development"

Time	Theme / Presenter
13:30-	**Orientation of the session** Moderator: Mr. Yasuhiro Kawashima, Deputy Director of Engineering Department, Saitama City Waterworks Bureau, Japan
13:40-	**Presentation 1: "MWA's Human Resources Development"** Mr. Yongyuth Arpaichiraratana, Deputy Governor (Planning and Development), Metropolitan Waterworks Authority (MWA), Thailand
14:00-	**Comment 1:** Mr. Toshihiro Yamaguchi, Manager, International Operations Division, Yokohama Waterworks Bureau, Japan "Human Resource Development in YWWB"
14:05-	**Comment 2:** Mr. Mohammad Abdullah, Managing Director (CEO), Khulna Water Supply and Sewerage Authority (KWASA), Bangladesh
14:10-	**Comment 3 (Video):** Introduction of Training and Technical Development Center of Tokyo Metropolitan Waterworks Bureau
14:15-	**Presentation 2: "Successful Human Resource Development-Best Practices at Technical Training Center"** Mr. Yuji Honda, Chief, Technical Training Center, Nagoya City Water and Sewerage Bureau, Japan
14:25-	**Open Discussion: Human Resources Development in the Utility**
14:55-	— Break —
15:10-	**Interim Wrap-up:** Mr. Yasuhiro Kawashima, Saitama City Waterworks Bureau, Japan
15:20-	**Presentation 3: "Water Utilities' Human Resources Development by Ministry of Public Works" (Temp)** Mr. Oloan Martumpu SIMATUPANG, Head of Sub Directorate for Technical Planning, Directorate of Water Supply, Directorate General of Human Settlements, Ministry of Public Works, Indonesia
15:25-	**Comment 4:** Ms. LE Thi Hong Van, Deputy Manager, Department of Personnel and Administration, Da Nang Water Supply One Member Limited Company (DaWACO), Vietnam
15:30-	**Comment 5:** (TBA), Japan Waterworks Association (JWWA), Japan
15:35-	**Summary Comment:** H.E. Ek Sonn Chan, Secretary of State, Ministry of Industry and Handicraft (MIH), Cambodia
15:45-	**Q&A, Open Discussion**
16:15- 16:30	**Wrap-up:** Mr. Yasuhiro Kawashima, Saitama City Waterworks Bureau, Japan

Special Session: "Disaster Preparedness and Mission of Water Utilities"

Time	Theme / Presenter
16:30-	**Introduction** Moderator: Ms. Keiko Yamamoto, Advisor

16:35-	**Presentation 1: "Lessons learned from the Great East Japan Earthquake (Temp)"** Mr. Kiyoshi Sakai, Assistant Director and Administration Subsection Manager, Planning Section, Water Supply Department, Sendai City Waterworks Bureau, Japan
16:55-	**Presentation 2: "Preparedness of Disaster and Continuity of Water Supply Service"** Mr. Yongyuth Arpaichiraratana, Deputy Governor (Planning and Development), Metropolitan Waterworks Authority (MWA), Thailand
17:15-	**Presentation 3: "Disaster Preparedness and Continuity of Water Supply"** Ms. Rachel M. Beja, Cagayan de Oro City Water District (COWD), Philippines
17:40-	**Comment 1:** Mr. Daisuke KIMURA , Assistant manager of water supply operations section, Northern area first water supply maintenance division, Yokohama Waterworks Bureau, Japan
17:50	**Comment 2:** Mr. Mangindang RITONGA, Operation Director, PDAM Tirtanadi Medan, Indonesia
17:55	**Open Discussion**
18:05- 18:10	**Wrap-up** Ms. Keiko Yamamoto, Advisor

July 3, 2014 (Day 3)

Session 4 "Partnerships"

Time	Theme / Presenter
9:00-	**Introduction of the session** Moderator: Mr. Ikuo Mitake, Senior International Director, Japan Waterworks Association, Japan
9:15-	**Presentation 1: "Mutual Cooperation between Vientiane Capital Water Supply (NPNL) and Saitama City Waterworks"** Mr. Khampheuy VONGSAKHAMPHOUI, General Manager, Vientiane Capital Water Supply (NPNL), Lao PDR and Mr. Yasuhiro KAWASHIMA, Deputy Director of Engineering Department, Saitama City Waterworks, Japan
9:30-	**Presentation 2: "Partnership with NGO / CBO for Service Delivery to Poor"** Mr. Shri M. S. Ravishankar I.A.S., Chairman, Bangalore, Water Supply & Sewerage Board (BWSSB), India
9:45-	**Presentation 3: "Twining with 5PDAM and PERPAMSI"** Ms. Indrarini Tenrisau, Senior Technical Advisor of Water Resources Management, United Cities and Local Governments Asia Pacific, Indonesia
9:50--	**Comment 1: "LEARNINGS from PPWSA"** Comment; Ms. Rachel M. Beja, General Manager, Cagayan de Oro City Water District (COWD), Philippines
9:55-	**Comment 2: "PWON's current activities and efforts for future development"** (Case Introduction from Moderator) Water Sanitation Agency, Faisalabad, Pakistan
10:00	**Comment from Moderator, Q&A, Open Discussion (1)**
10:15	**—** Break **—**

10:35-	**Presentation 4: "JICA's Role as Partnership Builder - Mobilizing Resource -** Mr. Taisuke Watanabe, Senior Advisor to Director General, Global Environment Department, Japan International Cooperation Agency (JICA)
10:50-	**Comment 3: "How to cooperate with the private operator as Regulatory Body?"** Ms. CLEOFAS Leonor Castro, Metropolitan Waterworks and Sewerage System (MWSS) , Philippines
10:55-	**Comment 4:** Ms. Ratana Kitchawan, Governor, Provincial Waterworks Authority, Thailand
11:00-	**Open Discussion (2)**
11:15- 11:30	**Wrap-up of the session** Mr. Ikuo Mitake, Senior International Director, Japan Waterworks Association, Japan

Wrap-up & Closing of the Forum

Time	Theme / Presenter
11:30-	**Wrap-up of the Forum** Moderator: Prof. Satoshi Takizawa, Professor, Department of Urban Engineering, Graduate School of Engineering, The University of Tokyo
11:50-	- Lunch-
13:20-	**Comment from Participants and Summary of the Forum** Moderator: Prof. Satoshi Takizawa, Professor, Department of Urban Engineering, Graduate School of Engineering, The University of Tokyo
14:20-	**Declaration of Yokohama Forum Statement 2014** H.E. Ek Sonn Chan, Secretary of State, Ministry of Industry and Handicraft, Cambodia
14:30- 14:45	**Closing Remarks** Mr. Katsunori Watanabe, Deputy Mayor, City of Yokohama

Business Seminar

Time	Program
14:45- 17:00	**Business Seminar and Networking** Arranged by Yokohama Water Business Conference

July 4, 2014 (Day 4)

Site Observation

Time	Program
8:00- 11:00	**Site Observation to Kawai Water Purification Plant** Arranged by Yokohama Waterworks Bureau

A-4 Results of Questionnaire to overseas participants

Questionnaire to the participants

Yokohama Forum 2014

Response Rate: **39%**
12 effective answers from 11 utilities/agencies/institutions
(Among 31 participants from 26 utilities/agencies/institutions)

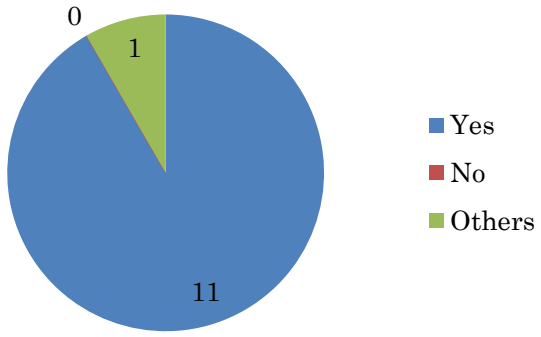
Question 1: Name of your Utility/Agency/Institution

Vientiane Capital Water Supply State Enterprise, PPWSA, National Water Supply & Drainage Board, Metropolitan Cebu Water District, Danang Water Supply One Member Limited Company (Dawaco), METROPOLITAN CEBU WATER DISTRICT (2 answers), CAGAYAN DE ORO CITY WATER DISTRICT, Metropolitan Waterworks and Sewerage System (Manila, Philippines), Chittagong Water Supply and Sewerage Authority

Question 2: Do you recommend JICA and City of Yokohama to hold next Executive Forum?

Answer: Yes 11/12, No 0/12, Others 1/12

Others: Maybe (hold the forum in) other city so we can take the opportunity to visit other facilities.



Question 3: How do you utilize the knowledge from the Third Executive Forum? Please describe your actions and practices to improve your management if any.

Answer:

Yes we try to do utilize from this forum, for each topic and session translate to " The Strategic Actions Plan Step "
We bring the experience and innovations from our neighbor countries and also Japan to adapt to our own organizations
By preparing action plan and applying good practices of successful utilities.
- Water loss reduction - PPP project - Financial management - Capacity building - Others
Disseminated the related Session and recommendation of the Third Executive Forum to PPWSA

management during our general meeting in July 2014. Distribution of catalogues of products, technologies, Firms, received in the Forum to our related department for their consideration.

Long Term sustainability of a water supply scheme is the theme and efforts taken by various countries on reduction of NRW is very useful.

Possible actions

1. Think of hiring of services from competent contractors on profit sharing basis
2. Selection of appropriate maintenance contractor for a longer period is very critical and performance indicators are to be developed to measure the overall benefits of the outsource mechanism.
3. During the session, it was realized that due to lack of procurement vision most of the countries are suffering.
   Effects due to poor procurement practices were observed in various countries.
4. I would like to carry out extensive campaign to promote procurement objective of Sri Lanka and to procure quality goods and services.
   As I have already initiated such programme, now I have a confident that quality goods and services with overall economic benefits provide the way for sustainability.
5. Need of water safety plans were highlighted and I would like to carry out campaigns to show my institution the effect due to poorly maintained distribution on water safety.
6. Need of long term human resource development plan was strongly felt during this session.
   Special attention to be given during the staff recruitment, and programmes to replace the retired personnel attract young talents to the utility campaigns.
7. It is very difficult to convince our management the need of quality human resource and human resources to be developed.
   Create interest on their job and develop their skills.
   The training should provide not only knowledge, but skills and good attitudes as well.
8. Need of sufficient budget for Human Resource Development activities.
   I would like to carry out a presentation on human resource development and procurement aspects to the National Water Supply & Drainage Board (NWSDB) management.
9. Sharing Mechanism
   Need of sharing mechanism of knowledge and strategies were strongly felt.
   Try to establish email database among participants.
   Disaster preparedness was a new aspect for me and contingency plans are to be implemented during natural disasters.

1. On the technical side, we will try to adopt the practice of Tokyo to eliminate cistern tank for big customers
2. Being the new General Manager, we are now changing our culture here, for instance, we are now teaching everybody the importance of being prompt and punctual in everything that we do
3. We also will convince government to restore policy of exclusive franchise in the Philippines as a support to public utilities and to eliminate unfair competition between us and private suppliers

Enhance cost efficiency: sustain reasonable bill collection efficiency and reduction of inactive accounts

- Reactive pipe repair --> preventive pipe maintenance
- Planned pipe replacement: preventive approach
- The roll of management under strict implementation and clear monitoring in process of setting up objectives and Standard Operation Procedures (SOPs) for implementation of WSP
- To prepare long term HRD plan for staff recruitment, back-up of skilled staff, budget and training system with realistic evaluation and monitoring
- Since the sole utility has a limitation in terms of capacity, external training systems are utilized in accordance with institutional coordination and national policy
- HRD begins in staff recruitment and motivation

1. Disaster Management

Philippines is unfortunately located in a disaster-prone area. And with climate change beginning to show its effects, this makes disaster management more important than ever. MCWD will be institutionalized its Disaster Management Committee complete with manual, standard operating procedures and guidelines on how to prepare and react to different kinds and levels of disasters. We will also enhance partnerships and cooperation with suppliers, other local government units, and water providers. Also, MCWD will invest in additional reservoirs and generator sets to ensure continuance of water supply after disaster.

2. Improvement of Training Program

The training facilities presented during the forum were quite impressive. On its own, MCWD will put up a training facility specifically intended to train our personnel on leak repair, leak detection, pipelaying, plumbing works, operating and maintaining valves and other appurtenances, etc.

3. NRW Reduction

MCWD is already shifting its pipe material to Ductile Iron. It was good to note that Japan and other countries are also advocating the use of DI pipes and it sort of validates our decision. Over the next seven (7) years, MCWD will invest in more than One Billion Pesos in mainline renewal. Hopefully, this will bring down NRW to 15%.

4. Partnerships

Since MCWD has to grow at a faster rate in the next seven (7) years to keep up with the increasing water demand, the water district will partner with the private sector and enter into bulk water supply arrangements. The financial resources of MCWD will be focused on distribution pipelines.

Also, MCWD will continue to partner with local government units and social groups in environmental protection and expansion of water services. In addition, benchmarking as a continuing educational program will be maintained and whatever it is that we will learn from the bigger and better water utilities will paid forward by MCWD to other smaller water districts in the Philippines.

5. Management of Accounts Receivable

MCWD has a huge uncollectible account which accumulated over the years. The plan of MCWD is to offer payment schemes to consumers in more acceptable terms. However, since MCWD is also a government institution, this should be done in compliance with regulatory requirements of the

government.

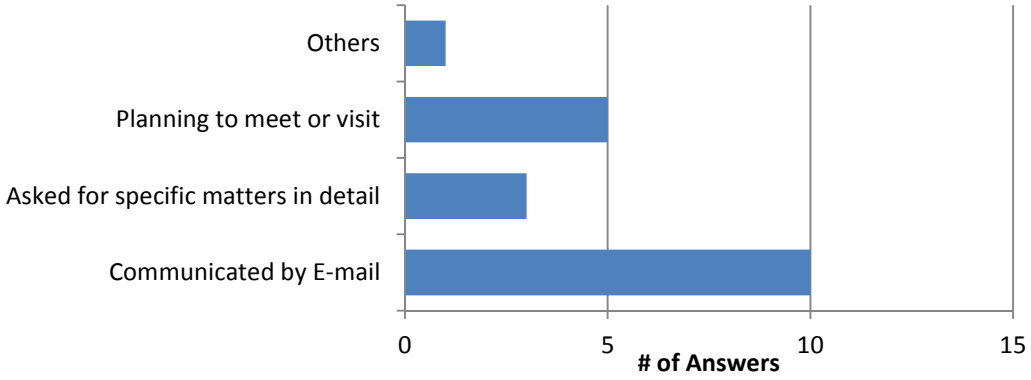
Must be more aggressive in implementing initiatives to reduce NRW: survey of inactive accounts; rehabilitation of service connection lines; replacement of pipes; construction of DMAs

The prominent subjects that were discussed in the Forum are (1) Human Resources Development; (2) Asset Management and; (3) Emergency Preparedness Plan. Shared knowledge from these subjects will be enhanced in our operations

1. Prepare long term HRD plan for staff recruitment, back-up of skilled staff, budget and training system with realistic evaluation and monitoring.
2. Restructure long term debt plan.
3. Plan and implement measures to increase revenue generation.
4. Motivate staffs to change the attitude and work hard.
5. Prepare and review the training policy and implement it accordingly.

Question 4: What actions would you take to activate the network between participated utilities and agencies?

Answer:



Item	Selected	All	Note
Communicated by E-mail	10	12	
Asked for specific matters in detail	3	12	
Planning to meet or visit	5	12	(PWA,Vientian, MCWD, CWASA)
Others	1	12	(MWSS: Establishing a Network)

Question 5: How do you utilize the knowledge and network in the on-going JICA Project (if any)?

Answer:

We support to this activities in capacity building site.

To get connections

Capacity building of the organization

following by guideline of project

No action because JICA Loan project is going to Closed by July 2014.

Communicate with other JICA funded projects and other large scale projects to find the ways and means to procure quality goods and services

for better and faster response to customer problems and for improved services

SCADA is going to be a tremendous boost to MCWD's operational efficiency. It will enable us to react faster and more accurately to distribution problems. In the end, it will assist MCWD make informed decisions and significantly help reduce NRW.
However, since the technology is something that is new to us, there is so much that MCWD should learn about SCADA, specifically on how to operate, maintain and improve the system. There should be comprehensive and in-depth training to all personnel involved from the manager down to the staff. The people and partners we have met during the forum can give us a pointer or two on how to manage this system.
Further, once MCWD will shift to SCADA and abandon its current manual procedure, MCWD should implement appropriate risk management programs in case of breakdown and disasters. As an important component of our operations, we should ensure that the SCADA is up and running even during and after disasters.

THE NETWORK CAN BE MADE AS REFERENCE FOR CONSULTATION ON BEST PARACTICES WHEN COWD SHALL IMPLEMENT THE NRW REDUCTION PROGRAM

By sharing best practices presented in the forum by Echo Seminar with engineers and practitioners.

1. To complete the Project Successfully.
2. Follow preventive maintenance approach to maintain the existing and future projects.
3. Share and Transfer of knowledge between the Water Supply organizations.

Question 6: What is your major challenge/goal to achieve in next two years?

Answer:

I suppose the challenge will come from human resources.

Quality Control and NRW

To reduce the NRW to an acceptable level by enhancing the skills and efficiency of employees through HR development program

Water Shortage Financial Water loss HRD

To complete the extension of production (130MLD) and distribution project (240km) on time. To reduce NRW as much as possible. To improve HR management in terms of quantity and quality
To find a development fund for update the Master Plan 2017-2030

How do we convince utility higher management and political authorities that following aspects are important and to be addressed?
1. Cost recovery – present poor cost recovery status and available potentials to improve the billing rates.
2. Develop revenue potentials.
3. How do we convince treasury officials, ministry officials and general public?

4. Political authorities need to introduce regulatory measures for water fittings for the entire Sri Lanka. This may be the only way to procure quality goods for the utility agencies and consumers.

Relationship and coordination with other government agencies

- Increase of water demand:

Water demand is increasing quickly in line with the brisk economic growth and the requirements of the newly constructed industrial zones and special development areas. Coverage and access to water supply still lags at 80% of actual demand.

- Human resources development:

It is necessary to increase technical staff in response to increased water demand and new facilities.

- Water quality control:

The main source of surface water is threatened by high levels of turbidity, and by saline water intrusion during the dry season.

INCREASING MARKET COVERAGE. At present, MCWD only serves 43% of the demand. The rest of the people in Metro Cebu either dig their own wells or buy their water from other suppliers. The mandate of MCWD is to serve ALL consumers and to ensure sustainable water resource for all. The problem with people buying or sourcing water outside not from MCWD is that almost always, they get their water from the ground aquifer which, based on a 2010 JICA Study is in a critical state already. Further, the cost of buying from other suppliers is more expensive than MCWD own water rates. It is a major disservice to our mandate if MCWD cannot keep up with the water demand in Metro Cebu.

In line with increasing the market coverage, MCWD is looking at these related challenges:

1. Review of the Tariff Structure and adopt one which is most appropriate at present
2. Focus resources on expansion lines, distribution efficiency and asset renewal and resort to partnerships with the private sector on water sourcing
3. Augmenting Marketing and Sales function
4. Resorting to surface water sources to make the groundwater source more sustainable

Limited capacity, skills and knowledge of COWD workforce in implementing the NRW Reduction Program; Procurement process according to the provisions of the law, which are tedious and can take a toll in the implementation of the NRW Reduction Program

Implementation of 3 big projects of MWSS: AWTIP, New Centennial Water Supply Project and Bulacan Bulk Water Supply Project

Major Goal:

1. To complete the ongoing Water Supply Projects.
2. To make the organization customer support oriented and economically viable.

Major Challenges:

1. Successful completion of ongoing projects.
2. Restructuring tariff system in order to cover up operational expenses, Loan repayment and interests and Profit of the organization.
3. To make the organization efficient and customer oriented.

Question 7: Please make any suggestions and comments on the Third Executive Forum in Japan.

Answer:

It's very nice discussion, really we meet people who has experience in water utilities, suggestion for next forum making small group discussion for more detail plan.

The schedule is too tight and has little time to get to know each other :)

Opportunity for Twining or WOP program could be developed within the participant water utilities and also with other Japanese Water utilities. The schedule of the Third Executive Forum was too tight, scope for one day sight seeing of important historical place of Japan could make the program more appropriate in all respect.

Every Section was going well, but some day was long meeting.

No comment

• It is better to send a guideline for selection of participants. May be you could request a write up to justify the participation.
• Seniority should not be the criteria. Practical issues are to be identified in various utility agencies by carrying out a survey.
• Programme should not last more than 7 to 8 hours.
• Promote more case studies with sufficient time.
• Topics are to be selected to cover the interest of majority of utility agencies.
• Instead of 8 to 9 themes, it is better to concentrate 4 -5 relevant important key themes.
• Circulate the issues of various utility countries among participants before they arrive to the Forum. Give them an opportunity to interact with respective countries informally as well.

For the next forum I suggest we include discussions on "monopoly status for public utilities: good or bad?" I already mentioned in the last forum that Cebu has this problem now and I think with the increasing number of businessmen focusing on water business, this will also happen to other utilities in other countries soon.

The Third Executive Forum in Japan has been well organized with enthusiasm, helpfulness, hardworking of JICA consultants without any mistake. The issues discussed and agreed at the Forum have been critical and useful for water utilities in Asian region. The Japanese people have been so kind, friendly and hospitable. The weather has been so nice and the streets have been so clean.
However the schedule has been arranged so tight that the Forum participants had no time to go sightseeing.

The Third Executive Forum was a good venue for people in Asia to come together and share their best practices. While each country has its own economic, political and cultural climate by which water utilities operate in, we, the participants, could always learn a thing or two from our fellow participants and probably tweak them to suit our own unique environment. For this reason, I find fellowships and more opportunities to interact with our fellow participants important. It is sometimes in informal conversations that we can validate and reinforce our knowledge acquired

during the presentations.

Further, if I may suggest, as I have already articulated during the session, MCWD as a utility company is keeping up with the competition and is facing a lot of commercial challenges. Hence, I would like to suggest that there will be more detailed topics on finance particularly on tariff setting, micro-financing for consumers and marketing and sales.

While tariff setting was supposed to be included in the sessions, I have not heard it being discussed in length. I was hoping to learn more about how to set tariff for our consumers (uniform or full cost pricing vs socialized pricing, affordability issues, etc). Over time, tariff should be set in accordance with the challenges faced by the utility company.

On micro-financing, in third world countries with several slum areas, consumers are to lay pipes as far as 150 meters from their house to the meter stand. The cost could be very substantial for those in the low income level and a deterrent to their application. I have heard of other countries offering micro-financiang to consumers and I would like to learn about this as well.

On marketing and sales, given the challenge I have expounded in No. six (6), this one is new to most water utilities and will be of extreme help to MCWD.

The forum was very well handled; discussions were very helpful. However, probably, in the next forum, looking at how the international community can influence the national policies on sustainable water supply management of each Asian country can be a good consideration as well. Maybe, in the next Forum, high-ranking officials from the National Government who can influence in setting the direction on water resource management of the country may be invited.

The participants discussed and appreciated the experiences gained in the Public-Private Partnership. It is suggested that participants should have a hands on experience on the PPP.

In the 3rd Executive Forum, the sessions covered important topics like Raising Revenue, Human Resource Development and Preventive maintenance of water supply system which was very helpful. Also participants and lecturers from different water Authority discussed their Problems and Approach towards the improvement of their organization. It was an ample opportunity for us to share our problems and knowledge. I hope this Forum can contribute more in future to make the water authorities efficient and customer oriented.

A-5 Outlines of the First, the Second and the Third Executive Forum

	The First Executive Forum	The Second Executive Forum	The Third Executive Forum
Date	2010/1/20-2010/1/22	2011/9/30 - 2011/10/6	2014/7/1～2014/7/4
Organaizers	JICA and the City of Yokohama	JICA	JICA and the City of Yokohama
Supporters	Ministry of Health, Labour and Welfare (MHLW), Japan, Japan Water Works Association, Federation of Japan Water Industries, Japan Water Research Center, Water Works Bureau of Tokyo Metropolitan Government, Osaka Prefectural Government, Osaka City, Kitakyushu City, Saitama City, Sapporo City, and Nagoya City Water Works & Sewerage Bureau Japan Water Forum	Japan Water Works Association, Federation of Japan Water Industries, Japan Water Research Center, Water Works Bureau of Tokyo Metropolitan Government, Osaka Prefectural Government, Osaka Municipal Waterworks Bureau, Kitakyushu Waterworks Bureau, Saitama Waterworks Bureau, Sapporo City, Nagoya City Water Works & Sewerage Bureau and Japan Water Forum	Japan Water Works Association
Consultants	Japan International Corporation of Welfare Services (JICWELS)	Japan International Cooperation Center(JICE) , SunFlare Co., Ltd.	Nihon Suido Consultants Co., Ltd., Stage Inc.
Venue	Yokohama Symposia and JICA Yokohama	JICA Research Institute	Yokohama Symposia and JICA Yokohama
Participants	Total 314 participants (1) Participants from Overseas : 32 (senior government officials and top managements of water utilities) from Bangladesh, Cambodia, India, Indonesia, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam. One from JICA office. (2) Participants from Japan:106 from JICA and the City of Yokohama, 62 as presenters and from supporting organizations, 12 media personnel and 101 of others.	Over 50 participants (1) Participants from overseas: Total 18 （13 governmental municipal and utility executives from Cambodia, Phillipines, China, India, Indonesia and Pakistan, and 5 lecturers from Thailand, Vietnam, Laos and Cambodia.) (2) Participants from Japan : Over 30 from JICA, Ministry of Health, Labour and Welfare, Japan Water Works Association, and organizations related to waterworks)	Total 332 participatns (1) Participants from overseas: 31 executive leaders of 26 water related organizations (water utilities, water association, local government and directors of ministries) engaged in JICA projects and programs, from 12 countries: Bangladesh, Cambodia, India, Indonesia, Laos, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam. (2) Participants from Japan: representatives from the Ministry of Health, Labour and Welfare, Ministry of Economy, Trade and Industry, academic and research institutes, local governments (36 participants from 13 local governments and 57 participants from the City of Yokohama), water-related private companies, JICA and others.
Background	Recently, problems of water shortages, deterioration of water quality, and the like are becoming serious in developing nations, caused by economic development and rapid population increase. In the international community, the Millennium Development Goals (MDGs) were established, targeting achievement by the year of 2015. In the MDGS, goals ofincreasing the coverage ratio of safe water and sanitation base are set, and the World Water Forum and various other activities are being carried out. To achieve the Goals, the importance of "enforcement of water governance,""capacity development," and "financing ofwater supply utilities" are pointed out once again. Under such circumstances, Japan announced the Water and Sanitation Broad Partnership Initiative (WASABI) in March 2006 and is actively cooperating with many countries, centered in the Asian region, to tackle the issues in the field of water in those countries. JICA has been conducting many cooperation projects in the area of water supply systems,including construction of water treatment facilities and technical cooperation through yen loan cooperation and grant aid. However, in order for these facilities to demonstrate their full capacity after completion and to cope with water demand appropriately, not only improvement of operation and maintenance capabilities of these facilities but also strengthening of water supply utilities, including their business management capacity and development of human resources working there, become increasingly important issues. Since the Meiji era (started in 1868), Japan has promoted the development and pervasion of modern waterworks (Yokohama is its birthplace), realized high standards of operational and management skills, and acquired a high level of technologies by meeting increasing demand for water accompanying rapid urbanization and economic growth after World War II. In the Forum, top management persons of water supply utilities and senior government officials who are responsible for administrative management of water policy were invited from each country to share useful experiences and knowledge mutually among representatives of participating countries, and held discussions. Through such processes, key issues to tackle in the future were sorted out and confirmed. The Forum is expected to bring about many useful "tips" for the future improvement of facility management, operation, and maintenance in each country and the cultivation and enforcement of related human resources. JICA itself is expected to obtain suggestions for effective and high-quality cooperation in the future.	Recent rapid economic growth and population increase have caused serious problems of water shortage and/or degradation in developing countries. To solve these water-related problems, the international community has been doing its best to improve water and sanitary facilities all over the world with setting a target as one of the Millennium Development Goals (MDGs). Under such circumstances, Japan announced the Water and Sanitation Broad Partnership Initiative (WASABI) in March 2006 and is actively cooperating with many countries, centered in the Asian region, to tackle the issues in the field of water in those countries. JICA has continued efforts to provide financial assistance for waterworks construction and technical cooperation for their operation and maintenance. On the other hand, in order to utilize sufficient capacities of these facilities and to respond appropriately to the water demand, capacity development of water utilities including technical capabilities and sustainable human resources development is highlighted as important issues. Based on such awareness of the issues, JICA, in cooperating with numerous water supply bureaus of local governments, private organizations, and enterprises, held "Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region" in Yokohama in January 2010 through co-organization with Yokohama City. JICA invited top management persons of water supply utilities and senior government officials who are responsible for administrative management of water policy from nine countries in Asian region. Through sharing knowledge and discussions, 6 issues (1) policy of urban water supply, 2) finance and management, 3) measures against non-revenue water, 4) urban water service for the poor people, 5) safe water and water quality, and 6) human resources development.) to be tackled in future were summarized in Yokohama Forum Statement. Participants obtained many useful "tips" for the future improvement of national policy, management and human resources development in each country. JICA also obtained suggestions for effective and high-quality cooperation. In addition, participants confirmed the importance of continuation of the Forum and it was decided to be held every two years.	JICA has been conducting many cooperation projects in the area of water supply systems, including construction of water treatment facilities through yen loan cooperation and grant aid and capacity development through technical cooperation. However, in order for these facilities to demonstrate their full capacity after completion and to provide continuous appropriate services, not only rehabilitation and operation & maintenance of these facilities but also strengthening of water supply utilities, including development of human resources, partnerships with related organizations and raising funds become increasingly important issues for stable management. Based on such awareness of the issues, JICA, in cooperating with numerous water works bureaus of local governments, private organizations and enterprises, held "The First Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region" in Yokohama in January 2010 through co-organization with Yokohama City. In the Forum, top management of water supply utilities and senior government officials who were responsible for administrative management of water policy were invited from Asian countries and held discussions the main topic "virtuous cycle from the vicious circle". Through discussions of the First Forum, Yokohama Forum Statement was adopted and participants confirmed that it was necessary to solve 6 key issues (a. Policy on Urban Water Supply; commitments from both water utilities and central and local governments are important, b. Finance and Management; from the vicious circle to virtuous cycle, c. Measures against Non-Revenue Water; reduction of NRW is more economical than a new water source development, d. Urban Water Service for the Poor, e. Safe Water and Water Quality, and f. Human Resource Development). "The Second Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region" on the theme of "Dialogue and Collaboration" was held in Tokyo in October 2011 and it was reaffirmed the need for resolution of the 6 key issues stated in Yokohama Forum Statement. It was also confirmed that Official Development Assistance (ODA), Water Operator Partnerships (WOPs), and Public Private Partnerships (PPPs), are the three major tools for water sector development in Asia. The participants agreed to launch, implement and monitor their activities in accordance with the Forum Statement. As a follow up to the First Executive Forum, three seminars on Urban Water Service Management and Human Resource Development in the Asian Region were held from 2011-2013. The seminar was aimed at South Eastern Asian countries in 2010, at South Asian countries in 2011 and at both South East Asian countries and Southern Asian Countries in 2013. At the Third Forum on the theme of "sustainable management of water utilities", five topics; "Raising revenue", "Maintenance of water supply facilities and procurement of equipment and materials", "Human resources development", "Preparedness to disaster and continuity of water supply service" and "Partnerships" are picked up. In addition, the Third Forum provides an opportunity to confirm efforts and achievements of water utilities after the First Forum. It is scheduled to invite water utilities which attended at the First and Second Forums, and Seminars. These water utilities are/will be undertaking projects of JICA's financial assistance and/or technical cooperation. It is expected that participating water utilities utilize experiences and knowledge through discussions and networks among them after the Third Forum. It is also expected that the Third Forum contributes capacity development and institutional improvement of water utilities and facilitates effective utilization of water supply facilities developed by Japanese ODA, sound management, and institutional development for new facilities.
Objectives （Implementation Plan）	Senior managements and top managements understand the importance of improvement of management and operation & maintenance by the Forum, and utilize the knowledge learned from Japan and other countries for their projects and activities. JICA obtains some suggestions for their projects in order to utilize the knowledge.	Executive leaders of water related ministries, local governments and water utilities understand their own issues related to waterworks and find solutions. They also share each experience and knowledge and try to solve the issues by building and strengthening partnerships.	Through introduction of best practices and exchange of opinions at the Third Forum, efforts of participating water utilities are monitored and their motivations are improved.
Expected outcomes （Implementation Plan）	1. Participants confirm the importance of formulation and enforcement of policies, improvement of operation and maintenance of facilities, and improvement of management capacity. 2. Measures to solve current issues, centered on maintenance of water supply facilities and improvement of business management capability through yen loans are reviewed. 3. A proposal is made concerning JICA projects, such as projects of accepting overseas trainees, which are necessary for executing the measures mentioned above. 4. Current status and issues of water supply services of participating countries are shared by Japanese and overseas participants. 5. Through introduction of Japan's water supply services and water supply industries, participants share their recognition toward Japan's water supply technologies.	1. Participants analyze and understand 6 issues (a. Policy on Urban Water Supply, b. Finance and Management, c. Measures against Non-Revenue Water, d. Urban Water Service for the Poor, e. Safe Water and Water Quality, and f. Human Resource Development) summarized at the First Forum. 2. Participants share experiences and knowledge of governments, water utilities and waterworks associations in Japan and other countries and try to solve the issues by building and strengthening partnerships.	1. Efforts and activities taken by water utility who participated in previous Forum and Seminar are reviewed. 2. Efforts and activities of selected utilities are introduced and 6 issues (a. Policy on Urban Water Supply, b. Finance and Management, c. Measures against Non-Revenue Water, d. Urban Water Service for the Poor, e. Safe Water and Water Quality, and f. Human Resource Development) are discussed by participants. 3. Action plans and policies of participating organizations are prepared based on the Third Forum Statement.
Objectives （Report of the Forum）	(1) Top managers of water supply utilities and government officials of countries to which yen loan cooperation, grant aid, and technical cooperation were extended get together, share experiences and issues of each country, hold discussions and deepen recognition on Japan's policies, experiences, and new technologies of water supply utilities in Japan and the efforts of water industries in Japan, and by doing so, participants obtain some tips for the improvement of water utility services and policy perspectives. (2) Participating countries, in coping with issues reported and reviewed in the Forum, organize items which they expect from cooperation from Japan/JICA, while JICA uses such items for useful suggestions for future cooperation, including improvement and formulation of training projects. (3) Representatives of waterworks in Japan deepen their understanding on issues of water supply utilities of participating countries, and the partnership among participants will be enforced.	Based on the resuluts of the First Forum held in January 2010, the Second Forum provides an opportunity to discuss ways to solve the issues confirmed at the First Forum. The topic of the Second Forum is "Dialogue and Collaboration" and promote partnerships, such as WOPs, public and private partnerships, waterworks associations,etc. Participants also participate in IWA ASPIRE held at the same time of the Second Forum, share information beyond donors and reciepients, and build networks.	The Third Executive Forum for Enhancing Sustainability of Urban Water Service in the Asian Region aimed to: - provide an opportunity/venue to share best practices and knowledge - monitor outcomes resulting from Japanese ODA - raise awareness of important issues related to sustainable water supply in executive leaders of Asian water utilities - forge new best practices and nurture new leaders in Asian countries
Outline of the program	After opening remarks from Mr. Hashimoto, Vice President of JICA and Ms. Hayashi, Mayor of the City of Yokohama, Prof. Tanbo, Professor Emeritus of Hokkaido University (Former President of International Water Association, made keynote speech "Modern and Post Modern Civilization From 1 to 10 Billion World". There were presentations from both overseas and Japanese participants and active discussions regarding 1. Policy on Urban Water Supply, 2. Sound Management of Urban Water Service, 3. Measures against Non-revenue Water, 4. Public and Private Partnership on Urban Water Service and New Technologies at the All-Participant Session, 5. Introduction of JICA's cooperation in Urban Water Service Sector and 6. Development of Human Resource in Urban Water Service. Also presentations and discussions were made at each group session of 1. Urban Water Service for the Poor, 2. Financing Water Supply, Water Tariff System, and 3. Safe Water and Water Quality Management. Overseas participants also visited Nishiya Purification plant and Waterworks Commemoration Hall of Yokohama Waterworks Bureau. Based on the discussions, Yokohama Statement was adopted by all participants and the Forum was closed. It was agreed by both Asian and Japanese participants to cooperate in order to secure safe water supply. Especially for JICA, the Forum became a big step to strengthen the collaboration between financial assistance and technical assistance for urban water service in Asian region.	1) Review of the First Forum and explanation of objectives of the Second Forum 2) Sharing and promotion of WOPs 3) Sharing partnerships with private sector 4) Participation to Special workshop of IWA-ASPIRE 5) Policies toward solution by partnerships 6) Wrap-up Meeting, conclusion of the Forum, closing ceremony and farewell party	After opening remarks from Mr. Kiyama, Vice President of JICA and Mr. Doi, Director General of the Yokohama Waterworks Bureau, Prof. Magara, Professor of Hokkaido University made keynote speech "Sustainable Water Services for All - In Evolutional Society -" and Prof. Takizawa, Graduate School of Engineering, The University of Tokyo moderated panel discussion. There were active discussions at five sessions; "Raising revenue", "Maintenance of water supply facilities and procurement of equipment and materials", "Human resources development" , "Preparedness to disaster and continuity of water supply service" and "Partnerships". At the review session, all participants agreed to improve management at their respective utilities and to strengthen partnerships, and adopt the "Yokohama Forum Statement 2014", as a so-called "Water Family", whose members share common values and mission. Mr. Watanabe, Deputy Mayor of City of Yokohama, made closing remarks and the Third Forum was closed successfully. Overseas participants attended Business Seminar by Yokohama Water Business Conference and visited Kawai Water Treatment Purification Plant of the Yokohama Waterworks Bureau.
Outline of the discussion	1) Some cases were introduced by participants and active discussions were made on water supply towards increased population in urban areas as common agenda of Asian countries. It 2) Not only senior managements from Asian countries but also Japanese public organizations, private organizations and academic organizations could gather for the Forum, detailed information was exchanged by each other, and networks were expanded. 3) Because the Forum was coorganized by JICA and the City of Yokohama and supported by many local governments, many various participants from overseas, Japanese municipal govements and Japanese private companies could make beneficial discussions about 1. common agenda among water utilities and partnership, 2. public and private partnerships, 3. minimum technical standards, 4, management of water utility. 4) It was confirmed that human resources management of all levels from management to technicians was important. For the expansion and strength of various partnerships and the improvement of training programs for capacity development of water utilities, Yokohaman Forum Statement was adopted. The Forum was closed with great outcomes.	1) Official Development Assistance (ODA), Water Operator Partnerships (WOPs), and Public and Private Partnership (PPP) are the three major tools for water sector development in Asia. It is of essence to make their effective and complement use. 2) The twinning program, a main component of Asian Development Bank's WOPs is a peer to peer knowledge exchange with tangible objectives and an implementation-driven tool rather than just a study or report. It may be a small input but cost-effective. WOPs also may become seeds for future projects of ODA and/or PPP by fostering mutual trust between mentor and recipient countries. In view of the above understanding, the participants of the second forum will establish their way forward and join in the monitoring process. Since JICA continues to provide opportunities to meet and discuss for leaders of water supply services in Asia, the next forum will be a place to report their advances. The friendship and unity among Asian nations is always an engine for future development. The participants will start their duties after returning to their countries.	The following four points were proposed at the Third Forum: 1) Because of the changes in water demand, water resources, climate, and economic and political situations in the future, it is essential to convert the vicious cycle to the virtuous cycle for sustainable management in water utilities. 2) In order to achieve sustainable management of each urban water utility in the Asian region, leaders of water utilities have to take proactive and forward-looking actions in raising revenue, maintenance and procurement, human resource development, disaster prevention and partnerships. 3) It is necessary to develop a framework for monitoring the performance of water utilities through a benchmarking system. 4) It is recommended that mutual collaboration between countries of Asia be promoted. All participants agreed to improve management at their respective utilities and to strengthen partnerships, and adopt the "Yokohama Forum Statement 2014", as a so-called "Water Family", whose members share common values and mission.
Follow-up	As a follow up to the Yokohama Forum Statement adopted at the First Executive Forum, three seminars on Urban Water Service Management and Human Resource Development in the Asian Region were held from 2011-2013 in order to deepen and adapt various management strategies and methods discussed at the Forum and to promote sound management. The first seminar was held for South Eastern Asian countries in 2010 , the second seminar was for South Asian countries in 2011 and the third seminar in 2013 was for former participants from South East Asian countries and Southern Asian Countries and new country, Myanmar where JICA resumed Yen loans.	At the wrap-up session of the last day of the Second Forum, monitoring methods was explained for building and strengthening of partnerships. ACTION MONITORING SHEETs were distributed to all participants for preparation of the Third Forum scheduled in 2013 and participants agreed to setup their goals on the ACTION MONITORING SHEETs earlier.	

"Yokohama Forum Statement"
by the Participants in
the Executive Forum for Enhancing Sustainability of
Urban Water Service in Asian Region
2010

The executive leaders of water supply services from 9 countries in Asia, Bangladesh, Cambodia, India, Indonesia, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam, gathered in Yokohama, Japan from January 20th to 22nd, 2010 at the Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region, co-organized by Japan International Cooperation Agency (JICA) and City of Yokohama.

The participants, including Japanese resource persons from academic institutes, water-related organizations, the central government, local governments and JICA, discussed issues on the urban water service so that they could learn each other's experiences as lessons to be shared for the improvement of the service in each of participating countries.

The leaders of each country have been making good efforts for the betterment of water supply in various ways as reported in the Forum. Japanese Official Development Assistance (ODA) has been extended to the urban water sector through ODA loans and technical cooperation projects, both of which are now handled by JICA since October 2008. Japanese water utilities of local governments, together with the public and academic institutes, have been cooperating in the Japanese ODA projects. All of the Forum participants, including those from Japan, earnestly wish the water supply is to be facilitated in a sustainable manner for the people in each country by utilizing all of their efforts in addition to the outcome of Japanese ODA projects.

On the last day of the Forum, the participants agreed to let every stakeholder know that they discussed the following issues, measures and actions to be taken into account for and with the people.

1. In the era of rapid expansion of urban population, the urban water service, facing explosive demands by the people, is to be improved not only by the water utilities but together with the strong commitment of central and local governments.
2. Our target is to transform the service system from "vicious cycle" to a "virtuous cycle" that consists of investment, service of availability and quality, customers' satisfaction, reliability, revenue, operation and maintenance. It is reassured of the importance of human resource development from top manager to frontline workers with clear motivation and vision.

3. The Japanese experience on the mechanisms of national subsidy and local bond for water supply system, legislation for safe water supply, standardization of water quality and so on was introduced for the consideration by the participants, although it is also shared that the way of improvement may differ country by country.

4. It is reported that the outcome from the measures against non-revenue water (NRW) proved that it might be more economical than the cost of new water resource development, while the target rate of NRW is to be appropriately decided in each area so that the users would agree to the measures based on their willingness to pay.

5. The issue on the water for the poor should be considered not only from engineering viewpoints but also from sociological aspects for the welfare of people. The mobilization of the slum dwellers and the cooperation with NGOs might be a choice in spreading water service throughout slum communities, although the connection fee remains as an obstacle to be overcome in any ways. A participant commented that JICA could deepen a bit more involvement in poverty reduction field in order to bring much better result.

6. Each country has been tackling to establish the fair and appropriate water tariff system to be accepted by target groups. A participant said the taxpayers' understanding is essential for the introduction of subsidy, although it might be necessary for the better infrastructure. The way of public-private partnership (PPP) is to be carefully scrutinized whether it fits the socio-cultural background of the area because it may directly affect the service for the customers. It is recommended that a concrete set of performance indicators (PI) is applied for the concession contract.

7. The water supply volume has been considerably increased in Asian Region. The focus is gradually shifting to quality. It is highly evaluated that "Water Safety Plan" of WHO has been contributing to the water quality management from source to tap. Safe water that is supplied through integral water distribution network is vital to our healthy life including disinfection.

8. It is explained that JICA has been so integrated to deal with Yen Loan, grant aid and technical cooperation as a single aid agency that it is able to execute the development program seamlessly from the stage of survey to that of actual implementation regardless of grant or loan.

9. It is recognized that JICA human resource development program should be reinforced with mutual understanding to cope with ever increasing needs of water supply sector in Asian region. It is suggested that the program will be connected more closely with the on-going projects on site. It is reconfirmed that an action for human resource development is the most indispensable to be taken for any of the issues we are facing.

10. It is recognized that sanitation issue is also important to be taken into consideration in terms of MDGs.

11. The Forum concluded that it encourages the partnership and continuous dialogues among the region interactively, from the policy level to the project level, not only government-to-government, but also government-to-utility domestically and also utility-to-utility internationally. All of the stakeholders including associations of utilities are welcomed into such a partnership.

12. It is proposed that the Forum would meet again in near future bringing in the results of practicing what were discussed in this Forum.

January 22, 2010
Yokohama, Japan

Conclusions of the Second Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region October, 2011

In January 2010, the Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region had ended at Yokohama, Japan with "Yokohama Forum Statement" which recommends establishing a system to promote further collaboration among Asian nations and emphasizes that the participants should meet again in near future.

Now Japan International Cooperation Agency (JICA) called to open the second forum particularly focusing on "Dialogue and Collaboration" to build partnerships and enhance cooperation among the Asian water sector. Then executive leaders of water supply sector from the 9 Asian countries of Cambodia, China, India, Indonesia, Laos, Pakistan, Philippines, Thailand and Vietnam gathered with the 14 Japanese water authorities in Tokyo, Japan from October 1st to 5th, 2011.

After reviewing the Yokohama Forum Statement, the participants confirmed that Asian countries are still facing the common 6 challenges, which are 1) policy of urban water supply, 2) finance and management, 3) measures against non-revenue water, 4) urban water service for the poor people, 5) safe water and water quality, and 6) human resource development. In order to find possible solutions for these 6 challenges, the participants have discussed together and reached the following understanding:

1. The successful development of urban water sector in Thailand, Cambodia, Laos, Vietnam, Philippines has proved that every society can overcome its challenges when they have strong commitment and proper strategies to turn a vicious cycle into a virtuous one.

2. Official Development Assistance (ODA), Water Operator Partnerships (WOPs), and Public and Private Partnership (PPP) are the three major tools for water sector development in Asia. It is of essence to make their effective and complement use.

3. The Japanese ODA in Asian countries in the past has shown its effectiveness in the water sector development. However because ODA of technical cooperation and grant aid is being shifted to less developed countries, the other tools such as WOPs, PPP, ODA loan and research collaboration have increased in their importance for the urban water development.

4. The twinning program, a main component of Asian Development Bank's WOPs is a peer to peer knowledge exchange with tangible objectives and an implementation-driven tool rather than just a study or report. It may be a small input but cost-effective. WOPs also may become seeds for future projects of ODA and/or PPP by fostering mutual trust between mentor and recipient countries.

5. Japanese water operators and their Water Works Association experienced unique cooperation among them after the Great East Japan Earthquake on March 11, 2011 so as to recover the disastrous situation. Water operators in other Asian countries can learn domestic (in-country) collaboration systems for disaster management through WOPs programs with Japanese water operators or their association.

6. In order to promote PPP, it is important to provide feasible water market to the private sector by making fair regulations and by giving governmental support including concessional conditions and any continuous assistance whenever required. On the other hand, it is the private sector's responsibility to provide not only efficient management in operation & maintenance but also good and friendly community relationships with visible customer contacts and affordable tariffs.

7. For the better management, the water sector particularly small scale water utilities need integration for wide area operation, collaboration between public and private sectors and technology innovation with research efforts.

8. The best combination of ODA, WOPs, PPP and academic sector's collaboration needs to be explored further for accelerating the water sector development in Asia.

9. At the 4th IWA-ASPIRE Conference and Exhibition, the participants had learned new initiatives of a platform of Japanese Water Utilities for International Cooperation, JWWA's worldwide collaboration with other nations' associations, JICA's PPP and BOP (Bottom of Pyramid) business promotion schemes and JBIC's financial supports. The water sector is one of mainly targets for these. In view of the above understanding, the participants of the second forum will establish their way forward and join in the monitoring process. Since JICA continues to provide opportunities to meet and discuss for leaders of water supply services in Asia, the next forum will be a place to report their advances. The friendship and unity among Asian nations is always an engine for future development. The participants will start their duties after returning to their countries.

October 5, 2011
Tokyo, Japan

A-6 Working schedule for "the 3rd Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region"

Working schedule for "the 3rd Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region"

Period of the Forum：from July 1 to 4, 2014　　Target Country： 12 Countries

Target： Executives (General Director or Deputy General Director) of Water Supply Utility

No.	Items	Contents	Output
1	Secretariat preparatory meetings	Discussion on concept, program, contents of each session, invitees, logistic arrangement etc. and sharing progress of each preparation work	
2	Kick-off Meeting	Discussing subject, concept, and organization of secretariat	Confirmation on concept of the forum, idea for secretariat organization, implementation schedule
3	Pick-up candidates for overseas participants	Reviewing overseas participants in past forums and seminars	Criteria to select candidates for overseas participants
4	Discussing concept and outline program of the Forum	Classifying topics and ideas raised through past forums and seminars into 6 categories	Matrix of topics (interested issues, country, candidates)
5	Reviewing candidates for overseas participants	Selecting core members and finalizing concept to collect information for selecting candidates for overseas participant	list of overseas core members, outline of outsourcing TOR
6	Collecting information on candidates for overseas participants	Collecting information form relevant JICA divisions on candidates for overseas participant	List of candidates for participant, information on utilities for case study
7	Collecting information on utilities for case study	Collecting information on overseas utilities to select cases presenting good practice	information on utilities to select utilities for case study
8	Selecting candidates for Japanese resources persons	Discussing candidates for Japanese resource persons	Allocation Matrix of Japanese resource persons (person x session)
9	Making overall program and schedule	Making outline of the Forum; structure of forum (sessions), programs and schedule	Draft of Program and schedule
10	Deciding overseas utilities for case study	Selecting case utilities and the practices to be presented	Finalized list of utilities for case study
11	Making contents of each session	Discussing contents and presentations of each session	Draft outline of each session
12	Procedures for making contract with a consultant for substantial work	Making necessary arrangements for making contract	Contract for outsourcing
13	Selecting candidates for overseas participants	Finalizing candidate for overseas participants	Finalized list of candidates for overseas participant
14	Arrangement on the venue	Selecting venue and coordinating for venue arrangement	Selecting venue, and confirmation of arrangement to be prepared
15	Preparation of invitation for overseas participants	Making General Information of the Program (invitation) for overseas participants	GI
16	Budgeting and requesting for making necessary arrangement for overseas participants	Making a request to JICA Yokohama	
17	Contact overseas participants (advance)	Informing all candidates for overall participants of schedule of the Forum in advance	Reserving schedule of candidates for overseas participant
18	Collecting information on all utilities to be invited	Collecting and arranging information on invited overseas utilities	Utility profiles
19	Request for cooperation to Japanese resource persons	Making request for Japanese resource persons; moderators, panelists, presentators, commentators.	Finalization of Japanese resource persons
20	Meetings with Japanese resource persons by each session	Discussing contents of each session with moderators based on outline prepared by secretariat	Scenario of each session
21	Procedures for making contract with a consultant for logistic assistance	Making necessary arrangements for making contract	Contract for outsourcing
22	Survey to interview and analyze utilities for case study	Interviewing with participants form case utilities, and analyzing the good practices to be presented effectively	finalized contents of case study
23	Official invitation procedures for overseas participants	Sending GI and receiving official applications from overseas participants	Application forms of overseas participants
24	Finalizing program and schedule	Finalizing program and schedule	finalized program and schedule
25	Request for preparation and revision of presentations, comments to overseas participants	Making request for presentators and commentators, collecting their first draft and commenting on them to improve	Finalized presentations and comments of overseas participants
26	Preparation for venue arrangement	Preparation for venue, and logistic arrangement	
27	Sending invitations to Japanese participants (utilities, related authorities)	Sending invitations and receiving registrations of Japanese participants from water supply utilities and related authorities	Finalized list of Japanese participants
28	**Implementation of the Forum**		
29	Preparation of the implementation report		Implementation report