

**Report  
on  
Executive Forum for Enhancing Sustainability  
of Urban Water Service in Asian Region**

**- Sharing and Mutual Learning of Experience  
Based on Partnership of Water Operators in Asia -**

**March 2010**

**JAPAN INTERNATIONAL COOPERATION AGENCY  
THE CITY OF YOKOHAMA**

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# **Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region**

**- Sharing and Mutual Learning of Experience  
Based on Partnership of Water Operators in Asia -**

**March 2010**

**Co-organized by  
Japan International Cooperation Agency (JICA)  
and the City of Yokohama**

**Supported by  
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**

**Consultant  
Japan International Corporation of Welfare Services (JICWELS)**



# Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region



Japan International Cooperation Agency

January 20 - 22, 2010 Yokohama, Japan



City of Yokohama





This report summarizes the activities of the Executive Forum for Enhancing Sustainability of Urban Water Service in the Asian Region held over the three-day period from Wednesday, January 20 through Friday, January 22, 2010 at Yokohama Symposia (located in the Yokohama Industry & Trade Center), cosponsored by the Japan International Cooperation Agency (JICA) and the City of Yokohama.

This Forum, attended by government officials and urban waterworks executives from nine Asian nations that have received aid from Japan in the field of water, through means including yen loans and technical cooperation, was intended to share hints toward solutions to the problems faced by urban waterworks in Asia, through learning from the experiences of each nation including Japan. In order to communicate a message from the Japanese side with a broad impact, the Forum was moderated by Prof. Yasumoto Magara of Hokkaido University, and featured a wide range of presentations and discussions with the cooperation of academic experts from Japan, including the keynote speaker Prof. Norihito Tambo, former President of the International Water Association (IWA), and representatives of waterworks services, organizations and companies related to water and waterworks from across Japan that have supported technical cooperation organized by the Ministry of Health, Labor and Welfare and JICA.

In addition, the Forum attracted considerable interest of participants from the general public, with more persons desiring to attend than could be accommodated by the venue's seating capacity. The Japanese news media also reported actively on the Forum, with NHK, Fuji TV, Asahi Shimbun, Nihon Keizai Shimbun, and various waterworks industry publications reporting on it over several days.

We would like to take this opportunity once again to express our gratitude to the parties who cooperated in the Forum in various aspects and to request further guidance and support in the future in deployment of international cooperation in this field.

March, 2010

Japan International Cooperation Agency (JICA)  
The City of Yokohama (coorganizers)





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(Attached CD) Executive Forum for Enhancing Sustainability of Urban Water Service in Asian  
Region (English) and Presentation data

## **Opening remarks from Mr. Eiji Hashimoto, Vice President, Japan International Cooperation Agency (JICA)**

Good morning to all of you.

I would like to thank Mayor Fumiko Hayashi of the City of Yokohama, Professor Norihito Tambo, former President of Hokkaido University, the representatives of waterworks in Japan, and members of the media for attending this Executive Forum for Enhancing Sustainability of Urban Water Service in the Asian Region cosponsored by the Japan International Cooperation Agency (JICA) and the City of Yokohama.

In particular, I would like to thank the assembled leaders in the waterworks field in Asian nations for coming to Japan for this Forum.

As the moderator introduced me, I am Hashimoto from the Japan International Cooperation Agency, or JICA. I would like to open this Forum with a short message, as representative of JICA.

JICA was established in 1974 as an organization carrying out official development assistance (ODA) of the Japanese government. Since then, we have worked in fields such as human development, social systems development, and infrastructure improvements as a development partner to approximately 150 countries around the world.

In October 2008, we integrated the yen loans section of the Japan Bank for International Cooperation (JBIC), to become a unique aid agency in the world in that we carry out both financial aid and technical cooperation together.

That is, we have been reborn as a multifaceted, in-depth development aid agency utilizing its collective strength in both hard and soft areas to an even greater extent than before.

The theme of this Forum is waterworks. This is an essential and fundamental infrastructure for human living, since it covers drinking water, which people need to survive. Improving waterworks is essential as a foundation for improving health and medicine and local sanitary conditions, and waterworks facilities are essential, together with electricity and transportation networks, to industrial development as well.

The four great ancient civilizations of the Yellow River, Egypt, Mesopotamia, and the Indus Valley civilizations each covered the watershed of one of the world's great rivers, and since the Greek and Roman civilizations as well the history of urban development can be said to be that of waterworks development.

However, even today in the 21st century, in most countries, regions, towns, and villages around the world there are many people who cannot receive safe water. Only recently, the World Water Forum, which is held once every three years by the World Water Council, met in Istanbul, Turkey in March of last year (2009), where it agreed upon the Istanbul Ministerial Statement. This Statement emphasized the necessity of adaptation measures in water management in response to changes occurring on a global scale and of efforts toward achievement of the United Nations Millennium Development Goals (MDGs), centered on Africa.

Regarding the Asia region, the Forum summarized and shared information on the state of improvements since the first Asia-Pacific Water Summit held in Beppu in December 2007 and on issues for the future. However, it remains the case that 500 million people have no access to safe water, 1.8 billion people have no access to appropriate sanitation, and furthermore severe conditions in which 90% of the people who have suffered from water-related disasters such as

flooding and cyclones are concentrated in the Asia-Pacific region.

Note: The MDGs consist of eight goals, 18 targets, and 48 indexes.

The waterworks representatives from 10 countries including Japan gathered here today, and the rest of us who are advancing waterworks improvements around the world, have a major goal.

This is the goal of realization of a society in which all the world's people are assured that they can drink safe, clean water at any time.

In the Millennium Summit held in 2000, representatives of 189 participating nations from around the world agreed on eight goals including those of halving extreme poverty, providing universal primary education, halting the spread of HIV/AIDS and malaria, and reducing infant mortality rates by 2015. These are what are known as the MDGs, and Target 10 of Goal 7, "ensure environmental sustainability," specifies the following goal: "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation."

Ten years after the Millennium Summit, despite various efforts that have been made in countries and regions around the world, the World Water Forum mentioned above recognized that such efforts still are incomplete. In addition, even if one assumes that the MDGs will be achieved as planned by 2015, one-half of the population in extreme poverty would still remain, and in light of the possibility of new issues arising as a result of factors such as population growth, advancing urbanization, and the effects of global warming, it is clear that considerable effort is needed to realize a society in which everybody has access to safe, clean water.

Participants in this Forum are executives and leaders from Asian nations working aggressively to improve waterworks services and representatives of local governments and waterworks services in Japan.

The written plan sent to participants in advance subtitled the Forum "Sharing knowledge and learning together through cooperation between waterworks in Asia." It also states the following three objectives for the Forum:

(i) Sharing information on the experiences of and issues in each nation, and introducing and achieving shared recognition on the experiences of policies and projects in Japan, new technologies, and the state of efforts in the waterworks industry in Japan, to provide participants with hints on project improvements and prospects for policies

→ That is, sharing experiences and expertise among participants and providing them with advice toward the future

(ii) In responding to issues reported on and studied in this Forum, organizing matters on which the cooperation of the Japanese government and JICA can be expected to provide results and using these as hints beneficial for future cooperation

→ That is, we would like to ask for constructive and practical advice and proposals

(iii) Deepening the understanding of representatives of Japanese waterworks of the issues faced by representatives of waterworks in participating nations, and working to enhance partnerships between participants

→ That is, we would like to consider this Forum a first step in development of networks for the future. We also would like to spread the influence of the content communicated to regions beyond Asia as well.

Each of the participants in this Forum is a leader in the field of waterworks in his or her country. While as experts and professionals in this area this may be a case of preaching to the choir, I believe that in areas such as waterworks facilities and leak-prevention technologies there are

differences in ways of thinking and technological levels between countries and the individual organizations within them. This is because such ways of thinking have grown in different soils. The waterworks technologies that have developed in Japan have grown in a form suited to the soil of Japan, and to make them take root in countries with differences in areas such as cultures, histories, traditions, and practices will require various improvements and adjustments on the part of engineers in such countries. The experiences and expertise from such improvements and adjustments will be useful in further adoption in and transfer to other countries as well.

In a world undergoing the process of globalization, it is becoming easier for large amounts of people, goods, and information to move, and this trend is being accelerated further by advances in ICT technologies. To share superior technologies and experience and improve the facilities and technologies in each region and country, there is a need for worldwide cooperation, connection, and coordination of effort. In an age in which it is impossible for one country or one expert to monopolize technology, how efficiently and effectively various technologies, information sources, and human resources are linked together can be said to be the key to public benefit that will generate even better results.

Waterworks projects are intended to maximize public benefit. I confidently expect that the discussions in and results of this three-day Forum will be a significant step toward realization of this goal.

Finally, I would like to conclude with two points.

First, this Forum enjoys the support of the Ministry of Health, Labor and Welfare, the Japan Water Works Association, the Federation of Japan Water Industries, Inc., the Japan Water Research Center, the Japan Water Forum, the prefectures of Tokyo and Osaka, and the cities of Sapporo, Saitama, Nagoya, Osaka, and Kitakyushu. I would like to take this opportunity to thank them for their support. I also would like to express my heartfelt gratitude to the numerous private-sector organizations and businesses that are participating.

Secondly, I would like once again to thank, from the bottom of my heart, the City of Yokohama, a coorganizer of this Forum, for its planning, preparation, management, and staging of the Forum. I am very glad that we have been able to hold this Forum here in Yokohama, the birthplace of modern waterworks in Japan.

This concludes my opening remarks for this Forum. I hope these three days will prove to be a highly meaningful forum for all participants, with lively discussion.

Thank you for listening.



## Opening remarks from Ms. Fumiko Hayashi, Mayor, the City of Yokohama

Good morning, everybody. I am Fumiko Hayashi, Mayor of the City of Yokohama. As representative of the city's 3,670,000 residents, I would like to welcome all of you to Yokohama.

I am grateful that this Executive Forum for Enhancing Sustainability of Urban Water Service in the Asian Region, coorganized by JICA and the City of Yokohama, the birthplace of modern waterworks in Japan, over the coming three days has been able to welcome a large group of attendees including waterworks executives from nine Asian nations.

Last year, Yokohama celebrated the 150th anniversary of the opening of its port to foreign vessels, marking a new start toward further growth in the coming age.

At the time its port opened to foreign vessels, Yokohama was an isolated village of only about 100 households, subsisting half on agriculture and half on fishing. With the opening of the port, it became a contact point for international exchange, and the small village of Yokohama grew to become Japan's largest trading port, as it proactively accepted culture and technologies from around the world.

While the population of Yokohama continued to grow unceasingly after the port was opened to foreign vessels, with no waterworks facilities it naturally saw not a few victims of communicable diseases due to unsanitary water.

Residents at that time dug wells to get water. Since Yokohama had grown by reclaiming land from the sea, it was not blessed with good water quality, and most well water included salt and was not suited to drinking water.

The movement toward creation of modern waterworks began as an attempt to resolve this problem. In 1887, with the cooperation of the British engineer Henry Spencer Palmer, Japan's first modern waterworks — that is, waterworks that filtered water and used iron pipes and other facilities to supply it under pressure, so that it could be used at any time — were born in Yokohama.

The cost of construction of the waterworks totaled more than 20 times the annual budget of the City of Yokohama at the time. It took great effort to realize this waterworks, and it probably could not have been carried out to completion without help from foreign countries. The modern waterworks completed in this way were the first step in development of today's Yokohama.

It is because of this history in Yokohama that we are strongly motivated to make international contributions toward solving the water problems of developing countries and are advancing related efforts. We are trying to give back to the world the technologies adopted from overseas when building Japan's first modern waterworks. Such feelings in our hearts of gratitude and desire to return the favor have been passed down continuously from our forebears. Even today, when Yokohama has grown to a population of 3,670,000, making it Japan's second largest city after the capital city of Tokyo, these feelings remain unchanged.

Each year, the cosmopolitan city of Yokohama hosts a large number of international conferences. In November of this year, the APEC Summit will be held in Yokohama. It is projected that approximately 8,000 people, including the leaders of 21 countries and territories as well as those participating in today's forum, will visit for the summit. Currently we are preparing steadily to welcome these numerous guests with a spirit of hospitality.

In advance of the summit, in October of this year plans call for Haneda Airport to open to international flights. We are greatly looking forward to this development, which will shorten

further the distance between Yokohama and your countries.

In the area of water, in January 2011 an International Water Association (IWA) Workshop is planned to be held in Yokohama, followed in January 2012 by the International Symposium on Water Supply Technology.

In the future as well, the City of Yokohama will continue working to build strong relations with cities around the world, including those of Asia, through international conferences.

Yokohama is one of the Japanese cities making the greatest effort in international contributions in the field of water.

In cooperation with JICA and the Regional Network of Local Authorities for the Management of Human Settlements (CITYNET), Yokohama has continued for 37 years as of this year international contribution activities focused on the nations of Asia.

Through now, it has dispatched 156 city employees to 27 nations as JICA experts and mission members, and has accepted 239 trainees from 25 countries and territories. It also has accepted more than 1,700 trainees on short-term training programs.

I believe the ties between people as well as those between organizations built up over this period are a precious thing. In the future as well, in addition to continuing and further developing the relations of trust built up through today, we would like to make even greater contributions to enable the people of Asia to use safer, more delicious water, utilizing the knowledge, experience, and technologies possessed by the Yokohama Waterworks.

The lobby of the venue of this Forum offers a view of the Port of Yokohama. Looking toward the sea, on the right one can see the Yokohama Bay Bridge, and on the left the Yokohama International Passenger Terminal at Osanbashi Pier.

Looking beyond the terminal, one can see the Minato Mirai 21 district, including Landmark Tower, the tallest building in Japan. From the observation floor 273 meters up, on a clear day one can see Mt. Fuji, a symbol of Japan.

Also, near the hotel where you are staying is Yokohama's Chinatown, one of the largest in the world, and a short walk away are the beautiful Sankeien Japanese gardens. A cruise of the Port of Yokohama is another enjoyable activity available only here in Yokohama.

I hope all participants in the Forum will not miss this chance to enjoy their time in Yokohama, taking back memories of their experience together with the achievements of the Forum.

Finally, I would like to take this opportunity to thank JICA, which has worked very hard to organize this Forum, as well as the Ministry of Health, Labor and Welfare, the Japan Water Works Association, the Federation of Japan Water Industries, Inc., the Japan Water Research Center, the Japan Water Forum, and each local government, for their support of the Forum.

I hope that over the three days of this Forum broad-ranging networks will be formed between the countries of Asia and Japanese waterworks services, public agencies, and private enterprises, and that as a result new relations and initiatives will be developed in Asia.

I would like to conclude my remarks with hope that the Forum will have productive results.



## 1. Background of Holding the Forum

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 of increasing 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 of water 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.

Based on such awareness of the issues, JICA, in cooperating with numerous water supply bureaus of local governments, private organizations, and enterprises, recently held “Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region” in Yokohama in January 2010 through co-organization with Yokohama City.

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.

## 2. Purpose 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.

### 3. Outline of Conducting the Forum

(1) Participants from overseas (Refer Annex 1 Participants from Overseas )

Participants with the following responsibilities are invited from the Asian countries; People's Republic of Bangladesh, Kingdom of Cambodia, Republic of India, Republic of Indonesia, Islamic Republic of Pakistan, Republic of the Philippines, Democratic Socialist Republic of Sri Lanka, Kingdom of Thailand, Socialist Republic of Viet Nam.

- Senior government official who is responsible for administrative management of policy for safe drinking-water supply
- Top management person who is responsible for management of utility for safe drinking-water supply

(2) Cooperator from Japan (Refer Annex 2 Cooperator from Japan )

Ministry of Health, Labour and Welfare (MHLW), Japan, representatives from local governments (Water Works Bureau of Yokohama City, etc.), academic experts, research institutions, organizations related to waterworks, private companies, JICA, and others

(3) Duration of Forum

3 days from January 20<sup>th</sup> (Wed) to January 22<sup>nd</sup> (Fri) 2010

(4) Venue of Forum

International Conference Hall, Yokohama Symposia and JICA Yokohama

(5) Outline of the Program (Refer Annex 3 Programme of the Forum )

#### **Day 1 (Wednesday, January 20)**

① Keynote Speech" Modern and Post Modern Civilization From 1 to 10 Billion World "

② All-Participant Session

#### **Agenda 1: Policy on Urban Water Supply**

Policy on urban water supply of each country was reviewed and issues to achieve universal access to safe drinking water and 24-hour water supply were discussed. In addition, discussion was held on the measures for local governments responsible for water supply services to improve water supply services through effective use of policy adjustments or regulatory functions by central governments and other support systems, including subsidies.

#### **Agenda 2: Sound Management of Urban Water Service**

Success cases were introduced concerning sound management of urban water service (establishment of balance between proper pricing of water charges, and operation and maintenance), and discussions were held on realistic measures for each country's context.

#### **Agenda 3: Measures against Non-revenue Water**

Cases of each country were introduced concerning causes of non-revenue water (water leakage, water theft, un-installation of water meters, incorrect measurement of water meters, incomplete billing systems, etc.) and their countermeasures, and discussion was held on measures suited for respective conditions.

## **Day 2 (Thursday, January 21)**

### **③ Group Sessions**

#### **Group 1: Urban Water Service for the Poor**

Water supply (individual connection, in particular) for the poor such as the population living in urban slums involves complicated problems, and not many success cases exist. In such circumstances, some measures were discussed based on success cases in Philippines, India, and Sri Lanka

#### **Group 2: Financing Water Supply, Water Tariff System**

Discussion was held concerning the establishment of proper water tariff where household charges and commercial/industrial charges are well balanced. Discussion was also held concerning the ways of improving financing capability of local governments which in many cases are the entities that provide water supply services.

#### **Group 3: Safe Water and Water Quality Management**

Discussion was held concerning improvement of tap water quality and its impact based on measures to supply safe water and success cases (acquisition of ISO certification and preparation of Water Safety Plans).

### **④ All-Participant Session**

#### **Agenda 4: Public and Private Partnership on Urban Water Service, and New Technologies**

Technological capabilities of private companies in Japan and their business development in overseas were introduced. Then private companies joined to give presentations concerning how new technologies are starting to be used and the possibility of their pervasion in developing nations. Also, examples of public and private partnerships (PPP) were introduced and discussion was held on what things are necessary to make the PPP successful by using PI through private contracts.

#### **Agenda 5: Introduction of JICA's cooperation in Urban Water Service sector**

Explanations were given on JICA's policies after merger and various schemes. In particular, an outline was given concerning new policies and cooperation of JICA as an organization providing yen loans, grant aid, and technical cooperation.

## **Day 3 (Friday, January 22)**

### **⑤ Study Visit to Facility**

Participants visited Yokohama Waterworks Commemoration Hall, Nishiya Purification Plant, photovoltaic power generation facilities and sewage treatment facilities (environmental consideration, etc.).

### **⑥ All-Participant Session**

#### **Agenda 6: Development of Human Resource in Urban Water Service**

Experiences and plans for human resource development of participating countries were presented. Then, based on the actual outcomes of past JICA trainings, presentations and discussions were held for future human resource development to solve problems raised in each session of the Forum.

#### **Review and Summary**

Important items extracted from each session were compiled and organized, comments of representatives of participating countries were added, and the "Yokohama Forum Statement"

by the Participants in the Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region 2010 was compiled.

**Expected Outcomes of the Forum:**

- (1) Participants will share their experience, current situation and issues of urban water service in each respective country.
- (2) Participants will confirm the importance of formulation and enforcement of policies, improvement of operation and maintenance of facilities, and improvement of business management capacity.
- (3) Participants will discuss measures directed to solution to current issues including improvement of capacity for operation, maintenance, and business management of facilities for urban water service.
- (4) Participants will discuss issues in human resources development and ideas for JICA training programs to address the above issues.
- (5) Japan's technologies for urban water supply will be shared through introduction of Japan's urban water service operators, water industries and new technologies in this field.