

WaQuAC-NET Newsletter vol.25

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1. Technical Discussion

~Review of the Executive Forum in Asia (2) ~ **"Procurement & Maintenance"**

1. Introduction and objectives

(Ms. Yariuchi) Starting from the [Newsletter Vol. 23](#),



we continue to exchange opinions, based on the contents of "The 3rd Executive Forum for Enhancing Sustainability of Urban Water Service in Asian Region"^{*1} held in July 2014, especially Session 2 "maintenance of water supply facilities and procurement of equipment and materials". This time, we focus on in particular "procurement", with cases of Metro Cebu Water District, Philippines (MCWD), presented by Mr. Ernie, Assistant General Manager of MCWD, in the Forum.

Discussion members are Mr. Aoki (JICA), Mr. Matsubara (Nissuicon), Mr. Konishi and Mr. Ono (Yokohama WWB), Ms. Yamamoto and Ms. Yariuchi (WaQuAC-NET Of.)

Let me review Mr. Ernie's presentation prior to the discussion. 1) MCWD carried out "corrective

maintenance" which repairs pump and meter once it fails. Currently, however, they have incorporated the concept of "preventive maintenance" in their maintenance work. 2) The concept was applied to measures against leakages as well. Previously, they found and repaired leakages, but now, they introduced a "Stub-out" connection style^{*2} to reduce the number of branches from distribution pipes, which functions well to prevent leakage. 3) Concerning a customer meter, MCWD disconnect 5% of installed meters selected at random every year and verify their accuracy both on site and at a test bench. Once the relative error^{*3} is confirmed not to meet the specified acceptable level, MCWD replace the meter and the other all meters of the same manufacturing lot. 4) MCWD conducts accelerated durability tests (including a test of



accumulated rotations equivalent to 10 years' usage) to confirm

stability of meter accuracy before procurement on their own. 5) MCWD adopts comparison of LCC (Life Cycle Cost) to select customer meters, which can take into account accuracy and durability of a meter in order to procure the product with long-life and stable accuracy despite of the higher initial cost.

2. Securing the Meter Accuracy

(Ms. Yamamoto) As for the water meter, MCWD **checks the accuracy and carries out the durability test by itself**. How is Japan?



(Mr. Konishi) Now, Japanese system is that waterworks bureaus confirm the quality of water meter by the result of inspection of JWUA or others, which is submitted from makers. Before, however, the present system of certification and inspection was established, waterworks bureau checked quality of equipment by themselves, I heard. The present system is applied in order to unify the methods of inspection as well as efficiency. I think this system is very effective to use materials which are certified quality exactly.

(Mr. Matsubara) The reason why MCWD could introduce leading practices for meter maintenance is that they were aware that **the meter accuracy is the basis of calculation of customers' tariff** which directly affects their income. On the other hand, they are also aware of the cost per performance – they didn't introduced Class C meters but class B meters made by selected manufactures which MCWD directly tested their performance. Most Japanese utilities rely on JIS standards and verification systems for the quality assurance of meters. In most developing countries, however,



OWNERSHIP instead of reliance should be required to assure the quality and accuracy of the equipment because we should wait long to time to truly establish good standards and verification systems.

3. The quality control and costs (standardization and LCC)

(Ms. Yariuchi) Regarding the technical standards, MCWD sets a Technical Standards Committee to formulate their own technical standards manuals not only for a meter but other equipment based on the existing standards such as ones of ISO, AWWA, PNS (Philippine National Standards), or LWUA (Local Water Utilities Administration) because they only have very limited national standards. Technical standards and standardization is important; moreover, it is more important to **monitor the actual practice of them**.

(Ms. Yamamoto) Big water utilities like MCWD can confirm the quality of equipment and materials by itself. However, it may be difficult for the small utilities to do it, I think. In the case of Nepal, ADB implemented a project that several equipment were installed in the regional water monitoring office and **water quality and meter accuracy was supposed to be checked for the small water utilities** in the region. But, the project did not start yet because of human resources problem when I visited. I thought idea was good.

(Mr. Ono) All of water meters installed in Japan are given official approval by the measurement law. And the expiration year of the water meter is 8 years. We must give again official approval or replace new one before expiration of validity term. However validity of 8 years may not be the best in every country. If we use the water meter that has lack of precision or low endurance, we cannot get proper revenue. On the other hand, if we use the water meter of over-quality, it raises cost. And also it is important to estimate the life cycle cost (LCC) like the case of MCWD. Anyway it depends on the situation of each water supply utility.



I think it is necessary to make national standard of equipment, water meter, etc, in each country, and it is necessary to produce the equipment based on the standard. It is good situation that **utilities and makers grow up each other and cooperate in own country.**

(Mr. Aoki) However, there are many developing countries which import most of equipment from the



others. It is important how to manage a quality control on the equipment with standards in these countries. If there is no certification system on imported equipment, it is one way to confirm international standards. And it may not be appropriate to directly adopt the Japanese certification system in these countries, because the certification system in Japan has been developed under the circumstances that most of equipment are domestically produced.

(Mr. Konishi) In the case of Japan, international tender is carried out in material procurement. However, particularly about pipes, Japanese products are procured.

(Mr. Ono) Concerning LCC, I hope that use of superior equipment in quality and better maintenance service like Japanese system become widespread. I recommend including the specification in the contract. For example, **easy acquisition of parts from local suppliers, sending an engineer without delay of time when the trouble happened** and so on are written. By the specification, even if trouble happens in the equipment procured, it is repaired quickly and continuously used properly.

(Mr. Aoki) LCC is generally assumed as a cost of sum of all running cost and initial costs over the full life span, but it is a new idea that MWCD considered that water meters are getting less accurate and it leads an increase of Non-Revenue Water, as a result, the water utility's revenue becomes less. We may take into account a methodology to add water fee collection loss due to deterioration of meter accuracy in LCC calculation. For the sake of this

calculation, it is important that **water utilities are strongly conscious about increase of revenue with water fee collection and decrease of operational cost.** We may say that the ownership of water supply management depends whether a water utility is responsible for this financial management. On the other hand, though life span of equipment is usually highlighted, we may also consider that a **technical innovation** will be taken place and a **better cost-effective equipment** will be put on the market during the original one's life span. Regarding the after sales services, it should be guaranteed that there are agencies of suppliers and manufacturers, and after sales services in the countries where the ODA projects are implemented, especially when equipment which is not usually used in there is procured. Additionally, a specification on the equipment will be determined by investigating fairness of tendering process according to such as the ISO standards.

4. Important points of water meter installation and maintenance

(Mr. Konishi) 1) About meter installation, for using water meter under stable condition for long time, there is a concept of "optimum use flow range" and "consumption per month". It is major element for installing the meter. For



example, when the meter is used in the less flow than "optimum use follow range", rate of measurement become low by long time use. It causes the occurrence of insensitive water volume. When used in the excess flow than "optimum use follow range", it causes trouble of meter by continuous use. Therefore, standard of water meter installation should be determined by understanding the actual situation of meter usage, like minimum flow, usual flow and maximum flow of design water consumption. 2) About maintenance, as we discussed before, even if proper meter is installed, the meter may break down or insensitive volume may increase by change of the using condition.

Therefore, when the meter is replaced, you have to check whether new meter adapts in the present situation of meter use or not. And when repaired meter is reused, abnormal meters which are with damaged case, changed form, corrosion and so on should be excluded.

5. Sharing information for controlling quality

(Ms. Yariuchi) Even if these conditions are well described in a specification, it is more difficult to make it workable. If water supply utilities in a country can **share information on good or poor suppliers/manufacturers**, especially information on good practices, both utilities and suppliers can gain the benefits. Suppliers are also expected to provide after-sales services with easy and firm access, and to realize it, they need to build local engineers' capacity up as well.

(Ms. Yamamoto) For after-sales services, it may be difficult that Japanese companies open the service branch office in each country. So, it is better that one office is established for serving several countries as core office. MCWD considered LCC benefit. When people in developing countries can consider LCC, Japanese products may become competitive there. And the possibility of overseas advance may expand.

(Mr. Konishi) We discussed the sharing information among water utilities. For example, they open a platform on the website and to share the information of makers and suppliers. **By the sharing information, they will be able to judge what kind of specification is good for them and which standard is appropriate for them.** I also have an interest that Japanese utilities support to select one which matches to local conditions, from several existing standards.

6. Conclusion

(Mr. Matsubara) In conclusion to today's discussion regarding the "Procurement", we have learned that **ownership** is the most important factors to establish ices. The *ownership*, in this context, is



the attitude that the utilities sincerely pursue the answer to the question such of "What is the source of problem?" and "What is the best solution?". MCWD continued to ask them "Why we need quality equipment and materials?" and selected realistic solutions which they came up with by themselves. They didn't stop thinking facing with desperate NRW of 45% in 1984 and found the importance of the quality of water meters. Establishing the standards is an effective approach to assure the quality of equipment, while we should think how to establish the appropriate standards in our own countries. LCC approach was useful tools to evaluate the appropriateness of standards for MCWD. Especially for the water meters, the most important principle to solve "Meters" problems is to be aware that the meter accuracy makes the source of assured basis of our income.

(Ms. Yariuchi) Thank you for your contributions.

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*1 Refer to [WaQuAC-NET Newsletter vol.22](#), 4p

*2 Stub-out : A connection method to branch a number of house connections from a exposed branch.



*3 Relative error: The error divided by the actual volume. Error: The difference between the indicated volume and the actual volume. Indicated volume: The volume of water indicated by the meter. Actual volume: The total volume of water passing through the water meter.

2. Information of Overseas Members

Introduction of a New Member ! Ms. Truong Nu Nhu Ngoc (Vietnam)

Hello WaQuAC-NET members!

First, I would like to express my gratitude to Ms. Yamamoto, who introduced me to WaQuAC-NET.

I had the opportunity to meet and get acquainted with Ms. Yamamoto in a training course in Japan, through that, I know much useful information on the management of water supply systems, as well as water quality. Especially all is known about WaQuAC-NET, the place for exchanging experience in the field of water quality.

My name is Truong Nu Nhu Ngoc, from the Project Management Unit (PMU) under Hue water company (HueWACO), Vietnam. For over years, HueWACO has received a lot of support from Japan through JICA and Yokohama Water Works Bureau, together with our effort to gradually improve and complete our system, and the aim now is providing the safe and tasty water. I am a water supply engineer, graduated from Hanoi Architectural University. As a water supply engineer, I am very lucky to be working the Thua Thien Hue Construction & Water Supply State One Member Company Limited (Huewaco).

My job is to solve the problems related all projects of the company: from the pipeline network to the treatment plant. Working in a dynamic environment and working for the investment projects



from abroad (including from JICA) gave me a good opportunity to consolidate knowledge of the water sector as well as soft skills and team work abilities.

In the year 2014, I have the opportunity to participate in training “*Water Supply Administration for Better Management of Water Supply Services (B)*” for 2 weeks in Tokyo. There, though only briefly in two weeks, but the amount of knowledge that I have access to and acquire is so enormous. The course has given me a different perspective on how to better manage the water supply system, to better understand how the water supply is safe and tasty. From there, I can see more clearly the target to be achieved, not only for myself in particular, but also with Huewaco in general.

Finally, goodbye and see you again. I also look forward to not only access more useful things from WaQuAC-NET can also contribute our knowledge for the organization, with the aim of “For safe water, do network “in the near future.

3. Activity in the World

[Report]

**Exhibition "VietWater"
in Ho Chi Minh City, Vietnam
~ and Visiting the TABUCHI local factory~**

**Gensuke Arimura
(Water supply Network News)**

From November 12 to 14, 2014, a large-scale water and sewerage exhibition "VietWater" was held in Ho Chi Minh City, Vietnam. This exhibition has already been held about



Mr. Arimura

20 times, in which nearly 10,000 people participate every year. Here, I report who is the organizer, how it was carried, and the purpose of the VietWater.

● **Exhibition unknown in Japan**

In Japan, some international exhibitions are well known among water-related people such as IWA World Conference, IWA Asia Pacific Ocean Regional Conference, Singapore International Water Week (SIWW), American Water Works Association General Assembly, and the World Water Forum exhibition. These exhibitions have been visited by a lot of Japanese every time, and reported in various media in Japan. In other words, information on the other exhibitions is very limited, and furthermore, these are mostly held in developed countries, there are few opportunities to access information on the emerging and developing countries, which should be a place of competition in the water business; what kind of technologies and products are demanded there, and what kind of events are scheduled to respond the needs.

I got to know this exhibition through Mr. Hiromasa Tabuchi, president of TABUCHI Corp (Osaka



**Skyscrapers are constructed
in Ho Chi Minh City**

based), founded in 1941, a long-established water supply equipment manufacturer. With the aim of new business development, it launched a local factory in Ho Chi Minh City suburbs in July 2014, entering the water business in Vietnam. As a part of business activities, it has exhibited at the "Viet Water" for the second time, this year.

In order to visit the exhibition and the local factory of Tabuchi, I visited there along with Dr. Magara (former Professor of Hokkaido University).

● **Organized by UBM (UK)**

The exhibition organizer is UBM Company (United Business Media), based in the UK, has held trade shows and conferences of more than 300 each year around the world, issued more than 200 magazines of the industry paper, and is to disseminate information on more than 200 websites. UBM Asia is headquartered in Hong Kong, and has offices in major cities of each country. And, they have frequently held water related exhibitions. Viet Water has been held every year in Vietnam, alternately in Hanoi and Ho Chi Minh City, and coming up to about 20 times until now.

● **Venue "Saigon International Exhibition Center"**

The venue was "SECC", the Saigon Exhibition and Convention Center. The opening ceremony was held with attendance of about 100 people at the lobby of the SECC. Mr. M. Gandhi, Managing Director of "UBM ASEAN" gave the opening

remarks. Next is Mr. Cao Lai Quang, Vice Minister of Ministry of Construction, Vietnam and concurrently Chairman of Vietnam Water Supply and Sewerage Association (VWSA). Two speakers from Japan also gave remarks; Mr. Toshihiro MITSUHASHI, machinery and industrial director of JETRO (Japan External Trade Organization) headquarters, and Mr. Satoshi Nakajima of Japanese Consulate in Ho Chi Minh City. Mr. Mitsuhashi was the first director of "water business and international infrastructure system Promotion Office" when the ministry established in 2009. In addition, Swing (Ltd.) as a gold sponsor of this event, JFE and Tsukishima Kikai as a silver sponsor have been introduced respectively.



at the opening ceremony

- **35 countries, 375 companies and organizations, and 10 000 people**

Features of VietWater are its scale and the diversity of participating countries; the exhibitors are 365 companies and organizations from 35 countries, and 10,560 visitors in the three days. The number of visitors last year was "more than 9,000", it seems that around 10,000 people have participated every year although it is difficult to count the exact number of visitors.

Japanese companies have not got a big late start to move in such an international place. I could recognize 41 Japanese names of companies in the distributed catalogue. This is the total number of the companies which directory participated from Japan, and participated from local subsidiaries or local agents stationed in Vietnam. These companies can

be grouped; some companies exhibited independently, and the others participated in as a member of Japan Pavilion organized by JETRO. Moreover, the "independent" group mainly consists of leading engineering companies such as META WATER, and water related SMEs (Small and Medium Enterprises). Of course, there were intermediate existences, regardless of the large and small, were also seen companies not a water supply and sewerage systems specialist.

- **symbol of "own route" Tabuchi**

Tabuchi is prominent among "individually developing" companies. In their exhibition booth, Tabuchi successfully attracted attentions to demonstration of connecting "snap taps with saddle" with PVC pipe, which is a main pipe material in Vietnam. "Snap taps with saddle" was introduced in Vietnam with surprises, a leading newspaper of Vietnam "THANH NIEN" reported in last December that this type of snap taps with saddle can be connected finely and be greatly effective for lowering leakages. Another group is participating companies which exhibited at the Japan Pavilion by JETRO; JETRO itself and 30 companies. The 30 companies consists of 16 from Japan, and 14 from local subsidiaries and distributors.

In addition, Dr. Magara gave a lecture, and also received TV interview.

- **Tabuchi is up a local factory**

Tabuchi launched a local factory in Tan Kim Industrial Park, Long An Province adjacent to Ho Chi Minh City, and has started production of "snap taps with saddle". The feature of this industrial park is a factory to rent, and provides a variety of services of administration and business services. Products of Tabuchi are assembled locally with locally procured parts, and targeting local market of Vietnam. As an overseas water business, Tabuchi's business is quite unique in their industrial field, scale, and business model, whose future development is

noted.



Snap taps with Saddle of Tabuchi got attentions



Local factory of Tabuchi in Vietnam



**Biological survey on water resources
in Thailand
Courtesy call to Governor, MWA
Reported by Keiko Yamamoto
(WaQuAC-NET Of.)**

From March 4, 2015, Mr. Sasaki and Ms. Yamamoto visited MWA, (Metropolitan Water works Authority) Thailand and made courtesy call to the governor, Mr. Tanasak Watanathana. We explained the result of “biological survey on water resources for water supply in central Thailand (preliminary survey)” which implemented last year and the plan of plenary survey.

Thai interim government started curtailed budget policy this year. Consequently, MWA revised regulation for research as following;

Submit application form → judge by research committee →Approval→budget

We have to follow above process in order to survey the algae. It is complicated and takes time. For that, the plenary survey is postponed. However, Mr. Sasaki carried out the supplemental biological survey cooperated by MWA staffs and OJT of field survey and biological examination for young staffs from March 6 to 17. For the change of regulation, now we are discussing method of cooperation with Ms. Sivilai and Ms. Chaweepan.



**(Center) Mr. Tanasak Watanathana
Governor, MWA**

4. Activity in Japan

[Report]

A Public Forum of the 3rd UN World Conference on Disaster Risk Reduction in Sendai, Japan

Kanae Kawamura

The UN World Conference on Disaster Reduction was held at Sendai, Japan for 5 days from March 14 to 18, 2015. The World Conference is to have the

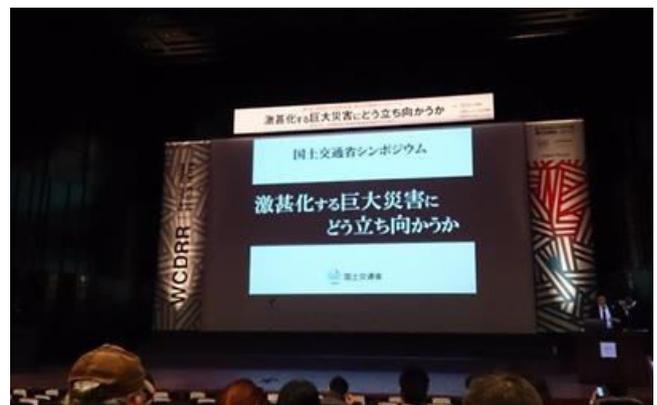


discussions on the international *Ms. Kawamura* strategy for disaster reduction organized by UN, and the 1st and the 2nd conferences have been held in Yokohama (1994) and Kobe (2005) in Japan respectively. It is first time for Sendai to host a UN conference, so I took a vacation and went to my hometown Sendai, to see my parents after a long time, and for my curiosity as well.

Besides the Main Conference organized by UN, a number of "public forums" were organized by Japanese/foreign and various kind of organizations such as government agencies, local governments and NPO. Since I have attended one symposium of them that "Towards Mitigating Loss Caused By Mega-Disasters", I report here the summary and atmosphere. The symposium was held by MLIT (Ministry of Land, Infrastructure and Transport of Japan), JSCE (Japan Society of Civil Engineers), and HELP (High-level Experts and Leaders Panel on Water and Disaster). Followed by opening remarks by Mr. Kitagawa, Vice Minister of MLIT, and Keynote Speech by Dr. Han Seung-soo, UN Special Envoy of the Secretary General for Disaster Risk Reduction and Water, a panel discussion was held by officers in charge of national infrastructure disaster management from Japan, the Philippines, Turkey, the United States and the Netherlands.

The panel discussion, under the assumption that the anti-disaster measures of infrastructure should be strived to advance prevention than measures for restoration, was focused on how to prepare to the mega disasters that may occur in the future. The keyword of the discussion was "build back better", which means the reconstruction after large-scale disasters occurred should not only return to the status before the disaster, but bring more resilient one for disaster than before.

"Build back better" is a key concept throughout the conference, and was also included in the "Sendai Framework for Disaster Risk Reduction", which was adopted by the Main Conference. Personally to say, I have associated disaster recovery with "restoration for original status" although it is in a bureaucratic way of thinking. Therefore, it is pretty fresh for me that "build back better" were focused to discuss. (I also recognized later that restoration and reconstruction were definitely different, and "build back better" had been practiced in the process of the reconstruction of the Great East Earthquake) However, I think it is difficult to decide what is the better reconstruction; especially when, who and how to evaluate "better" with criteria. In the discussion, it was also mentioned that it is too late after the disaster to begin thinking a good reconstruction. Moreover, it is necessary to make a prediction of the damage from before the disaster, to make



reconstruction goals tailored to the current

circumstances, and to take non-structural measures against the risk that cannot be prevented, and to act and think "better reconstruction" from the "now" before the disaster. With these concepts, the symposium was closed.

Despite of a short stay of three days, it was very fulfilling to touch the atmosphere of the new ideas and the world conference, also, I was warmly welcomed by people who met after a long time.

Introduction of New Members

- Mr. Riota Adachi (Japan)
- Mr. Shinichi Sekimoto (Japan)

◎ *We welcome new members anytime*◎
Please contact us

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Next Activity

Aug., 2015 Kyushu branch general meeting

Aug., 2015 Newsletter vol. 26 (JPN)

Sep., 2015 Newsletter vol. 26 (ENG)

Sep., 2015 Osaka Meeting