



IWA World Water Congress & Exhibition in Busan

Ms. Kanae Kawamura
Sendai City Waterworks Bureau

IWA World Water Congress & Exhibition was held in Busan, Korea from 16-21 September, 2012. Many water professionals attended this congress from all



Ms. Kawamura

over the world, and it became larger congress than ever before. I went to Busan with my excited heart, because it was the first time for me to join such a world congress.

BEXCO (Busan Exhibition and Convention Center), which was the main site of the congress, was a so large convention center that I couldn't know all of it. I felt passion of Korean government to make the congress a big success, probably because it was announced in the congress that Samsung Group moved into the field of water treatment business. So speech of Korean President Lee Myung-bak

was planned in the opening ceremony and key note speech. But he couldn't come to Busan because he dealt with typhoon which hit Korea then. I thought that was unfortunate.

My main purpose was to give a presentation on damage of water supply by the Great East Japan Earthquake and the rehabilitation at Japan pavilion in exhibition hall. Because it was provided in an open space, so many people who walked in exhibition hall stopped to hear my presentation. I was really impressed by the people who seriously



BEXCO that the congress was held

listened to the situation of water suspension in Sendai. What I wanted to emphasize in particular was that people's network was so important when a disaster occurred. So I took a lot of time to talk about our mutual cooperation system at emergency works. In addition, I appreciate so many helps and encouragement we received from all over Japan and foreign countries. After my presentation, some people encouraged me and I could make new network. I would like to value this network. And I renewed my resolve to hard work for the construction of disaster-proof water supply system.



Presentation at Japan Pavilion

**Member's Outstanding
Performance at the symposium**
The 9th International Symposium
on Water Supply Technology

The 9th International Symposium on Water Supply Technology was held at Pacifico Yokohama in 20th~22nd November, 2012. (sponsored by *Japan Water Research Center and Yokohama Waterworks Bureau). This symposium was started 1988 and held in Kobe City every three years. The 7th symposium was held in Yokohama City. After that, it was held in Kobe and Yokohama alternately every three years. The symposium has contributed for international water field through exchange of world water issues and technical researches of water supply.

Main theme of the symposium was "Resilient Water Supply System - Pursuing Safety, Sustainability and Environmental Friendliness". Several members of WaQuAC-NE made outstanding performances during the symposium as follows. Ms. Tran Thi Minh Tam from Hue Water Company, Vietnam gave a lecture on success of safe water supply to people living in Hue Province. It was the result of introduction of WSP and JICA technical cooperation.



Ms. Tam

Ms. Nisapas Wongpat, Mr. Somsak Passananon and other 8 persons participated in poster exhibition from MWA, Thailand. They explained flood crisis and the measures in metropolitan area of Thailand.



Mr. Somsak

(See WaQuAC-NET Newsletter no.13)

http://www.waquac.net/english/pdf/newsletter201203_en.pdf

Mr. Koseki from Osaka Water Supply Authority presented his experience of the cooperation to MWA against flood crisis as a member of Japan Disaster Relief Team at third session "Governance



Mr. Koseki

of water supply and international cooperation" in the afternoon of 21st

Many participants of several JICA training courses which held in Osaka, Nagoya and

Tokyo joined the Symposium.

Mr. Saiki from Matsuyama WWB and Mr. Goto from Fukuoka WWB participated in JICA training course for capacity development for Japanese prospective expert.



Mr. Saiki

And they presented organizational reports or chaired the country report presentation by overseas participants at the symposium place.



Mr. Goto



Ms. Nisapas and Ms. Tam

We had a friendship party with participants of the symposium, Mr. Rikimoto who is going to Vietnam as JICA expert, Mr. Sasayama, Mr. Shiota, Mr. Ide, Mr. Sasaki and Mr. Sugawara at Japanese restaurant, "Ichinokura" near Sakuragi-cho Station at the night. There were several persons who met first time each other such as young generation or coming from overseas. But they became familiar soon and their conversation in English grew more lively by alcohol power (Yamamoto)

* Japan Water Research Center

<http://www.jwrc-net.or.jp/english/index.html>



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## **MWA mission for technical cooperation came to Japan**

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WaQuAC-NET and MWA (Metropolitan Waterworks Authority, Thailand) signed in MOU of technical cooperation regarding human capacity development of water supply in August, as we informed on Newsletter no. 15. This time, MWA sent a mission with super tight schedule from 25th to 27th November. The purposes of the visit were signing of MOU with Bureau of Waterworks Tokyo Metropolitan Government and Osaka Water Supply Authority for technical cooperation respectively, and holding discussion with Yokohama Waterworks Bureau for dispatching experts of algae issue and acceptance of trainees.

The members of mission were six; Mr. Luechai (Deputy Governor), Mr. Yongyuth (Deputy Governor), Mr. Vitaya (Assistant Governor), Mr. Chaiwat (Director of Academy), Mrs. Phongpan (Chief of Compensation Administration Section), and Dr. Sangsan (Chief of Water Resources Coordinate Section). Originally, the governor would come to Japan, but he changed the plan due to the planned big scale rally of opposition force. WaQuAC-NET committed the planning of schedule and assistance of their staying.

A welcome lunch party at 'Sushi no ya (Japanese restaurant)' at Ichigaya was held on 25, Sunday and 8 persons came to join, who had deep relationship with MWA.

All participants enjoyed talking about long term relationship since 80's with tasty Sushi dishes.

After the NWTTI (National Waterworks Technology Training Institute) project closed in 1999, the relationship between MWA and Japan had been interruptive for 10 years, and it was restarted in 2010 with JICA loan project and training program. In this instance, MWA has developed cooperative relationship with three Japanese water utilities



From left to right in rear rank: Ms. Yamamoto, Mr. Matsui, Mr. Vitaya, Mr. Matsumoto, Mr. Sasaki and Mr. Shiota

From left to right in front rank :Mr. Chaiwat, Mr. Yamazaki, Mr. Yongyuth, Mr. Saito, Mr. Luechai, Mr. Haga, Ms. Phongpan and Mr. Sangsan

expansively. These three days could be said the memorable days for MWA because MWA graduated from the state of receiving Japanese ODA and starts technology exchange on an equal basis. In addition, MWA will hold a signing ceremony in Bangkok with Nagoya City Waterworks and Sewerage Bureau for similar purpose in coming January.

After the lunch, Mr. Sasaki, Mr. Shiota and Ms. Yamamoto took the members of MWA to Asakusa area for tour. Asakusa area was so crowded with many tourists who were coming with the aim of the Sky Tree (New TV tower), but we took a walk around at leisure and saw the Senso-ji temple and Nakamise (souvenir shopping street).

(by Yamamoto)



Photo with Sky Tree and five-story stupa in Asakusa

Introduction of thesis
by WaQuAC-NET member
**Measuring Efficiency
Performance of Water
Utilities in Indonesia**

Ms. Nirmala Hailinawati



Ms. Nirmala

Ms. Nirmala had come to Japan from Indonesia to study at the master course of Tokyo Institute of Technology. She passed the thesis and completed her master course in summer, 2012.

*During her research, some of members answered her questionnaire about water supply management by private company. Thank you for cooperation. Summary of her thesis is as follows. (By Yariuchi) * **

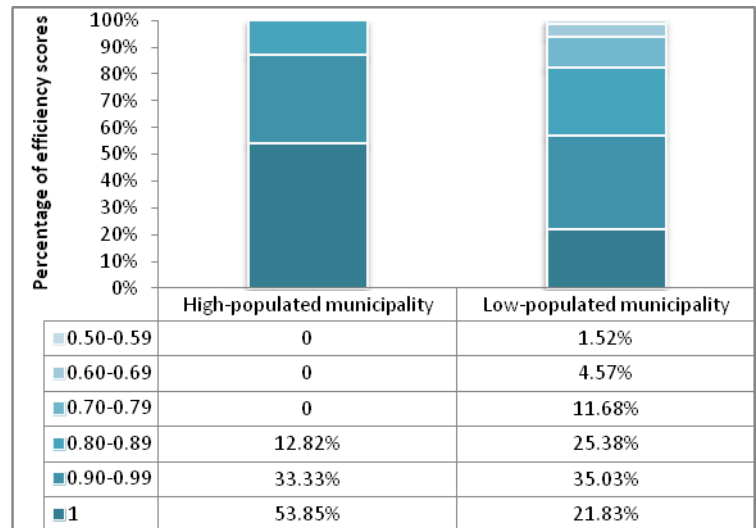
A study to measure efficiency performance of water utilities has been conducted with a case study in Indonesia. The term “efficiency performance” in this study is trying to explain *how efficient a water utility utilizes its available resources (inputs) to obtain an optimal overall performance (outputs)*. Further, the study also observes whether there is a difference of efficiency performance between water utilities with and without private participation.

The study evaluates 236 water utilities, which considered representing around 60% of water utilities in Indonesia. Equal footing based on population size is applied for fair comparison, the dataset divided into two groups by one million population threshold: high ($n_H = 39$) and low ($n_L = 197$) populated municipality.

The methodology that been employed is Data Envelopment Analysis (DEA), which able to identify “frontier” that is used to evaluate observation

representing the performance of all the entities that are to be evaluated. By DEA process, the efficiency scores for each water utilities were gained, as summarized in Figure 1.

F-1 Summary of efficiency scores percentages



The efficient water utilities are having efficiency score “1”, and the scores below “1” are showing water utilities’ efficiency level *relative* to the efficient ones. Thus, the efficient water utilities are the *benchmark* for other water utilities.

From the results, we can see that water utilities in high populated municipality is tend to perform more efficient than the ones in low populated municipality.

From DEA results, the efficiency scores of water utilities with and without private participation are identified and tested by statistical Mann-Whitney U test. The results from high (Mann–Whitney $U_H = 145$, $N_{H1} = 11$, $N_{H2} = 28$, $p > 0.05$) and low populated (Mann–Whitney $U_L = 1271$, $N_{L1} = 11$, $N_{L2} = 186$, $Z_L = 1.350$, $p > 0.05$) groups shows that we can not reject null hypothesis, which means that the distributions of efficiency scores in with and without private participation groups are not significantly different. Or, in other words, the efficiency performances of water utilities with and without private participation in Indonesia are more less similar.

Ms. Soursdey from PPWSA, Cambodia to Master Course of Hiroshima University

Ms. Hul Soursdey belongs to water quality laboratory of Phnom Penh Water Supply Authority (PPWSA), Cambodia and got a scholarship of Ministry of Education, Culture, Sports, Science and Technology of Japan and entered Graduate school for International Development and Cooperation, Hiroshima University in Oct. On Nov. 4, I went to Higashi-Hiroshima Campus to meet Ms. Soursdey with Mr. Nakashima. She looked very fine. I interviewed her at Cambodian restaurant "APSARA" in the city. (By Yamamoto)



(Q) Why did you want to study in Japan?

(A) It was suggested by Mr. Ek Sonn Chan, General Director of PPWSA (at that time) and Mr. Khut Vuthiarith, Deputy General Director. There were three candidates from PPWSA. Preparation for entrance to university was started one year ago. There were three steps. First step was paper screening including examination of English and Mathematics and submission of research program. Second step was technical interview by Japanese University. Then third step was general interview by the administration committee of *JDS program. It was long procedure, and fortunately I passed it and was able to come to Japan.

I decided that my research subject was "Development of Water Supply in Rural Area in Cambodia"

(Q) How is Japan life?

(A) I don't have any problems in Japanese life so

far, because I had stayed in Yokohama for one month in 2006 for counterpart training of JICA Capacity Building Project Phase 1. I had lost my weight during that time, therefore this time, I am staying in an apartment and cook by myself. I also have a lunch in dining restaurant of the university. Japanese food is no problem for me. Apart from the meal, there is no problem so far but I worry about cold temperature in winter. Is Hiroshima colder than Yokohama?

(Y) Although Hiroshima is located southwestern area compared to Yokohama, Hiroshima is colder. There is a lot of hot springs in Japan, so I recommend you to go to hot spring then get warm.

(Q) Which countries do students of the graduate course come from?

(A) They are Vietnam, Indonesia, Myanmar, Bangladesh, Laos, Sri Lanka, African countries and Japanese student, too.

(Q) How is your study?

(A) I had been working at PPWSA since 2005 therefore I worry whether I can study as student.

(Q) How is Japanese language?

I am able to read Hiragana, but Katakana and Kanji are difficult.

(N) I recommend you have a Japanese boyfriend, it makes progress faster.

(A) In fact, just before I come to Japan, I got married a man who lived in United States for a long time by recommendation of my parents,

(N, Y) Really! We are so nice surprised !

(A) We get contact frequently by Skype and so on, because I came to Japan before well understanding each other. However, I will concentrate in Japan.

(Q) What is your plan



Ms. Soursdey

after graduation of the graduate course?

(A) I will return to PPWSA, and then I would like to contribute the development of water supply in Cambodia, especially in the field of water quality.

*JDS: Japanese Grant Aid for Human Resource Development Scholarship
100,000 foreign student acceptance plan by Japanese Government.

···Introduction of new member···
Phnom Penh Water Supply Authority, Cambodia
Mr. Long Naro

Mr. Naro, Deputy General Director of Phnom Penh Water Supply Authority (PPWSA), visited Japan as a lecturer for UNIDO (United Nations Industrial Development Organization) for 5 days from November 12. On the first day, Mr. Naro visited Nishiya Purification Plant, Yokohama WWB with staff of UNIDO. I could come there because YWWB's staff informed me of Mr. Naro's visit in advance. Although had not been informed, when Mr. Naro found me, he raised his hands up, stood up and run in to hug me. I also gave him to hug after a while I could not react because of being upset. Cannot waiting for our finishing hug, observation group left for observing the purification plant. After the observation, Mr. Naro and I could have time to talk. As seeing us talking, staff of UNIDO was very impressed and took pictures of us.

I regretted not to have enough time to talk with him. On the evening of Nov. 13, Ms. Yamamoto and I visited him at his staying hotel in Tokyo.

Although Mr. Naro had lost his weight due to his health condition for a while several years ago, he looked well and



Sasaki (L), Long Naro (R)

healthy this time. We talked fast and non-stop with enjoying grilled chicken. After dinner, my brain was exhausted by the lively conversation.

Let me introduce a part of his talk here. He is working for construction of new water treatment plant (Niroth) for 5 days a week, working for construction of distribution network granted by JICA in Battambang Province, and Pursat Province for 3 days a week, which is contracted for implementation by the subsidiary company of PPWSA , whose director is Mr. Naro concurrently, he said. He is so busy that he feels total numbers of the day in a week do not add up.

(By Mr. Sasaki)

Condolences

Mr. Katsunobu Takenaka passed away on November 3, 2012.

I have heard that he participated in the Singapore International Water Week vigorously, even though he had been several years of struggling against his disease.

Now I feel very sorry to hear his sad news. Mr. Takenaka contributed to international cooperation as JICA Indonesia expert, director of international department of JWVA and through the activity of IWA for Long time. He had also supported WaQuAC-NET by his abundant experience. I would like to pray his soul may rest in peace heartily. (Keiko Yamamoto)





Question & Answer Corner

We welcome any opinions,
and questions to this Q & A
Corner.
Please contact us.

Q: I would like to make standard operating procedure (SOP) of countermeasure against algae obstacles. Would you introduce case example? (S.K. , Thailand)

A-1

I think the purpose of SOP for water treatment plant is to prevent algae leaking into filtered water due to operators misjudge or operation mistake as much as possible. Therefore, it is important to create SOP that avoids leaking algae to filtered water when algae blooms occur. I would like to tell you my experience.

1. How to decide chemical injection rate when algal boom occur.

Decide the coagulant (ex.PAC, Aluminum sulfate) which is effective for treating algae, its dosing rate and the dosing rate of pre-chlorination by jar test.

2. Criteria of sludge drain at the sedimentation tank

Although flock which contains many algae is not so good sedimentation efficiency in most cases, I recommend you to prove the efficiency while increasing drainage times of sludge than usual.

3. Criteria of filter washing.

- Verify the leakage of turbidity to the filtered water. And consider the criteria of head loss

- Verify the washing effect against algae, which is captured. And then decide the quantity of backwash water and backwashing duration.

. (More often filter washing is required during the breeding of algae: ex. Frequency of filter washing can be increased if there is a cleaning effect with less backwash water than usual flock.)

- If you have SOP about usual water treatment plant, you can add SOP when algal boom occurs.

Moreover, in case that algae outbreak is predicted in coming several years, I recommend that you remodel the dual filtration system which uses anthracite and sand.



Mr. Katsutoshi Kagata
Kitakyushu shi Water
Supply & Sewerage
Association

A-2

1) One of key points is who uses the manual or SOP against biological troubles. Contents of the manual should be different for different targets such as operators of treatment plant and staff of water quality management. If you combine these contents in one manual, you will meet advantage as (i) easy to look whole countermeasures of water supply utility against biological troubles, (ii) easy to prevent discrepancy in some parts while they are revised. Meanwhile, you will meet disadvantages as (i) not easy to find proper part because of too large size, (ii) much working for revising, (iii) responsible person for each part is not clear and some part is left without necessary revising. For operators, manual should be clear for their duty and easy to understand. So, I think the manual should be separated into two kinds (A manual for operators and another manual for water quality management staff). They can refer another manual each other.

2) Outline of countermeasures in water treatment Countermeasures in water treatment process

should be classified by kinds of trouble such as (i) inhibition of coagulation, (ii) filter clogging, (iii) passing through filter and (iv) odor trouble. I am not sure that algal toxin should be included. In my opinion, it will be written for water quality staff as notes.

3) Other idea

One of countermeasures against filter clogging or passing through filter is lowering flow rate of the process by reducing intake amount for more efficient treatment. For this case, water supply utility meets shortage of supplying water. Then corroboration among many departments such as public relations section should be described in the manual.

(*Mr. Hiroshi Sasayama*
Yokohama WWB/ Vietnam Project



A-3

Japan Water Works Association has published “*Handbook for Preventive Water Treatment against Biological Troubles*” in March 2006 as guidance. It is written in Japanese. I introduce it as reference. Its table of contents is as follows:

Table of contents

Chapter I: Biological troubles and new way of water quality management

1. Drinking water quality and quality and assurance of data
2. Building new system to supply safe water
3. Biological troubles relevant to water supply vision
4. Drinking water quality management
5. Overcoming biological troubles

Chapter II: Influence of living creatures to water supply system

1. Biological hazard to water supply system
2. Countermeasures against biological hazard to

water supply system

3. Non-pathogenic creatures causing hazard to water supply system

Chapter III: Biological troubles

1. History of biological troubles
2. Case study of biological troubles
3. Biological troubles handled in this handbook
4. Identification of each trouble and causing creatures
5. Biological troubles and the treatment methods

Chapter IV: Creatures causing biological troubles

1. Extraction of creatures causing biological troubles
2. Causing creatures

Chapter V: Critical value for countermeasures against biological troubles

1. Concept of critical value for countermeasures against biological troubles
2. Troubles on operation of facility
3. Trouble on quality of drinking water
4. Others

Chapter VI: Monitoring and cause survey of biological troubles

1. Procedure of monitoring and cause survey of biological troubles
2. Trouble on operation of facility
3. Trouble on quality of drinking water
4. Others
5. Quantitative analysis of trouble creature; biological examination method

Chapter VII: Countermeasures against biological troubles

1. Selecting a countermeasure method against a biological trouble
2. Countermeasure at water source or for raw water
3. Countermeasure in treatment process

4. Countermeasure in distribution process

Chapter VIII: Trouble by small animal and countermeasure

1. Small animal causing passing through filter
2. Other trouble by small animal

Chapter IX: Countermeasure against biological troubles in overseas

1. Manual of countermeasure against biological troubles by American Water Works Association (AWWA)
2. Guideline of drinking water in Australia
3. Invertebrate growth in slow sand filter and reservoir of Zurich water supply



(Mr. Yukio Kudo, JWWA)

** English translation of “Handbook for Preventive Water Treatment against Biological Troubles” (by JWWA) is responsibility of WaQuAC-NET*

** WaQuAC-NET started LETA (Let’s Talk Algae) Group activity for exchanging opinions and information about measures against algae obstacles.*

It will continue until the spring of this year. Please join us, if you have interest in it.

New member Introduction

1. Mr. Kondwani Andreah (Malawi)
2. Mr. Long Naro (Cambodia)
3. Mr. Tang Sochettra (Cambodia)

***© We welcome new member any time.
Please contact us***

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Next Activity:

March, 2013 MWA seminar in Bangkok

April, 2013 Newsletter no.17