

**A Big Step by Small Private Participation****Mr. NAKASHIMA Eiji**

In developing countries, we can see a number of imported equipment and facilities installed in their treatment plants; it is quite hard for them to purchase spare parts and consumables in developing countries. This time we made interview with Mr. Nakashima, ex-expert in the field of equipment of leakage detection, who opened a liaison office in Cambodia and visits there regularly to explore business opportunity.

High demand in developing countries

Equipment and facilities provided by ODA require various consumables continuously such as spare parts for accidents, reagents; therefore it is quite critical issue for water supply utilities in developing countries to select spare parts and to have adequate channels for procurement. Even though a utility can secure budget for consumables, they often have not enough information on where to make inquiry to purchase. In particular, provincial water utilities have more difficulty with it, and need for help. He has already received order from them such as chemicals for water treatment, spare parts of electrical and mechanical equipment and packing.

What Only I Can

So far, his business is still at voluntary base, it means, not profitable. He intends to turn it to be profitable step by step, so as to continue his business. For water utilities in developing countries it is not enough to offer channels for procurement. They often have difficulties to

identify the spare parts which exactly they needs. In such a case, it is the focal factor that the supplier knows situation of the country and has relationship of mutual trust; the supplier are expected to contact them closely and grasp their situation, for example, by photos of the trouble spot. An ordinary ordering procedure, that an order is made by product numbers written in catalogs of the necessary spare parts, cannot help to solve their problems.

Boosting private sector, too

Though there are some foreign trading companies treating foreign products in Cambodia, their products are extremely expensive comparing to a case in Japan; for example a spare part sold at of USD 0.2 in Japan costs USD 5 in Cambodia. He would want to stimulate private trading businesses as well. When he export spare parts to Cambodia, he can work with such private companies as outsourcing procedures of clearance or forwarding, which can make trading smoother and offer them appropriate profit, stimulate them to improve their services, and finally result in boosting the private sector.



*Explanation on usage of equipment
(Right : Mr. Nakashima)*

During his dispatch to Phnom Penh as an expert in the field of leakage detection

What's New?

The 5th World Water Forum

The biggest International Conference in the World;

The 5th World Water Forum was held with a main theme of "Bridging Divides for Water" in Istanbul Turkey from March 16 to 22, 2009. Several staffs from Japan Water Works Association were among 33,058 participants from 192 countries. JWWA also joined in the exhibition booth in collaboration with Tokyo Metropolitan Waterworks Bureau at the corner of the Japan Pavilion.



Istanbul, Turkey

Organized by the World Water Council, the World Water Forum takes place every three years. This year saw a large congregation of world leaders, educationists, economists and environmentalists from across the globe engaging in discussions and debating on key issues like raising importance of water on the political agenda, supporting the deepening of discussions towards the solution of international water issues, bridging the various divides in the 21st century by formulating concrete proposals, bringing their importance to the world's attention and generating political commitment.

Keynote Lecture by HH the Crown Prince of Japan

The Crown Prince of Japan made a Keynote

lecture on March 17, 2009.

He addressed the history of flood management in Japan; he noted that civilizations have always had to prioritize between disaster management, sanitation and water supply. He concluded by emphasizing the need to learn from past experiences and to bring creative minds together to chart long-term visions for the management of individual river basins.

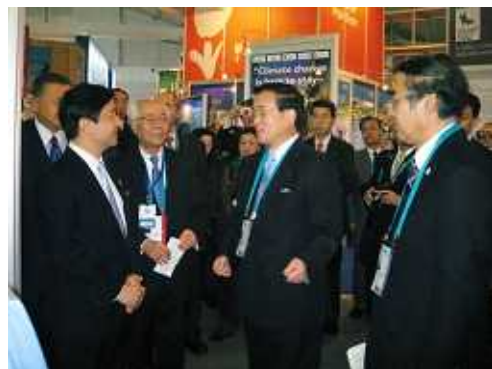
The Kyoto World Water Grand Prize

The Kyoto World Water Award received 67 entries from all over the world out of which India's WOTR (Watershed Organization Trust) emerged as the winner.

WOTR was awarded the coveted Kyoto World Water Grand Prize at a glittering closing ceremony to mark the closure of the Forum on World Water Day (March 22). The award was presented to Dr. Marcella D' Souza, Executive Director of WOTR in recognition of the outstanding contribution made towards organizing rural communities for watershed development and rain water harvesting in an inclusive, equitable, sustainable and gender sensitive manner.

MITAKE Ikuo

(Japan Waterworks Association)



HH the Crown Prince talked to Japanese participants (in the Japanese Pavilion)

Introduction of overseas member

- Hue, Vietnam -

Thua Thien Hue Construction and Water Supply State-One Member Company Limited (COWASU)

1. Outline of Water Supply

Vietnam is located in the east of Indochina peninsula and has about 2,000km length from north to south. Thua Thien Hue province is located in the middle of the country. Hue city, provincial capital, is the old capital of Nguyen dynasty and has old palace which is the main part of the world heritage. The head office of COWASU is also located in Hue city. COWASU is a public company which is entirely invested by provincial people’s committee, and supplies water at some region in the province.

Table Outline of COWASU (As of April, 2009)

| | |
|---|----------------------------|
| Water treatment plants | 13 plants |
| Capacity of production | 161,125m ³ /day |
| Coverage rate (Hue province) (Hue city) | 51% 99% |
| No. of connections | 127,000 |
| Distribution network | 1,800km |
| Supply hour | 24hours/day |
| Collection rate | 99% |
| Ratio of non revenue water | 15.4% |
| No. of staffs /1,000 connection | 3.9 |

As shown in the table, COWASU is running its business well with good collection rate of water charge. COWASU has grown up ability of staff and organization itself by two international technical cooperation programs: JICA Partnership Program (done by Yokohama Waterworks, 2003 to 2006) and JICA Technical Cooperation Project (supported by mainly Yokohama Waterworks,



Truong Tien Bridge, one of symbols of Hue city, with lighting up across the Huong River which is water source for Hue city

2007 to 2009). And COWASU has introduced ISO 9001 quality management system for treatment and distribution system, ISO/IEC 17025 quality management system for laboratory work and water safety plans for whole water quality management of water supply. COWASU declared “Safe Drinking Water in Hue City” in June 2008 and set up 15 public taps in the city to propagate that tap water is safe and drinkable to citizens and tourists.

Idea of setting public taps came from staff that saw them in Japan. Various designs of public taps are used. Some of them are referred with Japanese public taps and others are original. 2 public taps are set at the square in front of Flag Tower, one of famous tourism points. I saw domestic tourists drank water there. The tap is Japanese product designed for saving water. It includes a spring and automatically shut its outlet when a person stops holding the handle. Unpleasantly, some children tried to cancel automatic shutting function with putting a piece of brick or something else. Some taps were broken after half a year. Propagation of purpose of public taps to people is necessary more.

COWASU understands the importance of environmental protection to keep good water



*Competition by schoolboys and girls:
Quiz (above) and skit (below)*

quality of treated water. It carries out the competition on water supply and environmental protection by elementary school boys and girls. Participants show their knowledge and obtained good score in quiz section. They play a short skit to show problems of environmental pollution. Unique idea and good playing show their intention clearly. Even Japanese can understand their play in Vietnamese language well.

COWASU will declare “Safe Drinking Water in Entire Province” in August 2009 on the occasion of 100 years anniversary of water supply.

2. Water Quality Management

10 staff members, including the department manager, of water quality management department are working for water quality management of the whole province. Laboratory is at Quang Te 2 treatment plant in Hue city. Continuously monitored data of major plants are sent to the laboratory by internet. At a small treatment plant which has no continuous monitor, an operator measures water quality every hour. 22 items are analyzed at the laboratory, 44 items are

outsourced. Staff takes samples in treatment plants, at customers’ taps and in each water source area to monitor pollution.

Trihalomethanes (THMs) analysis is started with GC-ECD. Supplied water whose source is groundwater in Phu Bai district showed higher THMs. Now treated water from Hue city is mixed and supplied. Alternative water source is under search for demand increase in the future.



THMs analysis using GC-ECD

Water Safety Plans is made including solution of problem as mentioned above. Finding pollution and improving water quality in water source area cannot be done by only water supply. Therefore, a committee was established with related organizations of the provincial government to work for protection together. And role of each organization, including water supply, is mentioned clearly in water safety plans. It is very important that the provincial government think about water source pollution as their own problem. To improve water source condition, water quality data by COWASU are very important and valuable.

Staffs of COWASU, especially laboratory staffs, do action soon when they got ideas to solve problems. For example, they made experimental equipment to evaluate double



Monthly meeting of laboratory staff

layer filtration just after they saw it in Japan. While they prepared for safe drinking water declaration, they checked about 1,200 points and improved piping to keep appropriate residual chlorine at any taps. They had similar inspection in whole province for the next declaration. We, Japanese, should learn such rapid action from them.

Toxic substance such as pesticides is monitored with bioassay using fish at each treatment plant and intake office. Operators monitor it periodically to confirm safety of raw water. Laboratory staffs try to analyze some pesticides using GC-ECD to obtain condition of pesticide pollution.

SASAYAMA Hiroshi (Yokohama Waterworks)



Author drinking water at a public tap

Introduction of New Members

(as of May 2009)

- Yokoyama Hiroshi (Japan)
- Arimura Gensuke (Japan)
- Hanada Hidenori (Japan)
- Akaishi Korehiro (Japan)
- Fukuda Chiaki (Japan)
- Asami Mari (Japan)
- Takeishi Koya (Japan)
- Ms. Nisapas Wongpat (Thailand)
- Ms. Siwilai Kitpitak (Thailand)
- Ms. Thitinun Suthavatin (Thailand)
- Ms. Nguyen Thi Thanh Nhi (Viet Nam)
- Mr. Kitipat Limprasirt (Thailand)
- Ms. Amporn Kankanlaung (Thailand)
- Mr. Panin Ormtaweepoonsup (Thailand)

***We welcome new member any time.
Please contact our office.***

WaQuAC-NET Newsletter No.3
Issued in June, 2009.

WaQuAC-Net office
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Next activity
Newsletter No.4
Special Report on Metropolitan
Waterworks Authority, Bangkok,

Question & Answer Corner

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

Q What kind of advantage can we have, when we change the coagulant from aluminum sulfate to PACI (poly-aluminum chloride)? (Questioner : Ms. S. K)



A: PACI shows good performance under the condition of wide fluctuation of water quality generally. However, even if you use better coagulant, you cannot get good result without appropriate use and

This question is about consideration for changing coagulant from aluminum sulfate (alum) to PACI (poly-aluminum chloride). Both of those chemicals are excellent in coagulation for the most kinds of turbidity. Most of water treatment plants in Japan use either aluminum sulfate or PACI. In the case of alum, liquid type is commonly used rather than solid one because of usability, and used in a warm climate region because this type sets in a cold climate easily.

It has been said that PACI, compared to aluminum sulfate, has advantage in the respects of wide range of proper pH for coagulation, wide acceptable range of proper dosing rate, effectiveness of coagulation in high and low turbidity water, amount of alkali consumption and settling velocity of floc. Therefore, PACI is used in water treatment plants which have water source where the water quality fluctuates widely. On the other hand, water treatment using PACI requires proper chemical dosing such as pH control because there might remain aluminum in the water treated by PACI. Moreover, it might cost more because there is a tendency of too much use of coagulant because of its convenience.

The effect of coagulant is affected by not only the kind of coagulant but also water quality such as turbidity, color, pH, organic matters, algae

and temperature. Therefore, when you consider the change of coagulant, you need to see following procedures.

- 1) To recognize the feature of raw water.
- 2) To clarify the purpose of treatment.
- 3) To understand the characteristic of coagulant
- 4) To conduct proving test and verify its effects.
- 5) To consider the conditions for implementation including cost.

For the experiment;

You determine the target of quality value of treated water and then examine the effect of treatment by jar-test. If necessary, you conduct the small scale plant experiment. And then you consider it comprehensively.

Although the surface water in Southeast Asia is high turbid, both of those coagulants would work enough effectively there because the water temperature is high.

Even if you use better coagulant, you cannot expect to get good result without appropriate use and coagulation-sedimentation process.

Answer: Mr. Kudo Yukio,
(Japan Water works Association)

