WaQuAC-NET Newsletter
Water Quality Asian Cooperation Network
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For Safe Water, Do Network.

- Report from overseas -

Project on Human Resources Development for Water Supply in Sudan

UEMURA Saburo (Earth System Science Co.,LTD.)

1. Introduction

I went to Sudan to work for an urgent assistance project for supplying water to Ethiopian and Eritrean refugees in 1987. I had never imagined I would come to this country again. As you may know, Sudan is the country which has negative issues such as Darfur conflict and International Criminal Court's impeachment of a president Bashīr. Moreover, severe living conditions like extreme heat (more than 50□), sand storms and off-liquor, may be beyond Japanese imaginings. It is quite severe condition to work in Sudan, however, people's capacity is very high, and our activity can be conducted rather smoothly.

2. Outline of the Project

"Project on Human Resources Development for Water Supply" was started in June 2008, as the first project of resuming Japanese ODA in the northern Sudan. The project aims to strengthen function of the training center, which was set up by National Water Company (PWC), Sudan. The training center, constructed by Sudan side, had never conducted any training course, and was requested to start training soon by the State Water Companies (SWC) in the northern 15 states, because there was no opportunity for water supply sector to receive training in the country. We came here to support staff of the training center for establishing systems and strengthening management capacity to conduct training courses until May 2011.

Training course on "Management of wells"

3. Activities and outcomes

The project has implemented seven training courses as followings; 1) O&M of water treatment plant (4 times), 2) Maintenance of water supply facilities (5 times), 3) Management of Data/ GIS (5 times), 4) Management of wells (3 times). 5) Water quality analysis (2 times), 6) Management of distribution network (2 times), 7) Organizational management (3 times). I show number of times of the implementation of each training course in bracket because our project provides five times training courses at the maximum from lower level to higher to the same trainees repeatedly. That is our most distinguishing characteristic; the planned accumulative number of trainees for three years is about only 350. The project aims not for a number of training courses or trainees, puts focus on bringing up "core persons" in each SWC and prompting its spillover effect through Training of Trainers (TOT). We can find the outcomes start to make impact to each state. And at the same time staff members of the training center have developed their capacity to manage training.

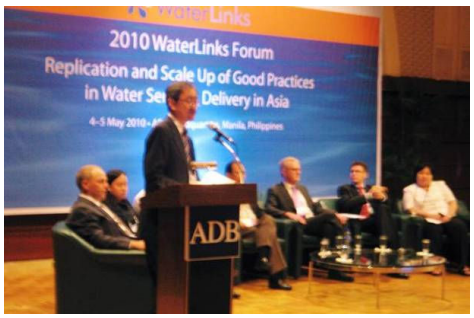
4. Future issues

Firstly, the existing small training center should be newly replaced. And it is necessary to implement further cooperation, which will be examined as the Phase 2 of the project, to make water supply stable in Sudan; by selecting pilot states because there are big gap among states.

At the last, the 21 century is said as the century of Africa. We would like to extend to all of you our warmest welcome to Sudan.

WaterLinks Forum ～Manila～

SASAYAMA Hiroshi
(Yokohama Waterworks Bureau)



I attended the Water Links Forum at Manila on 3rd and 4th May 2010. Water Links is an organization, which is established in 2008, to support Water Operators Partnership (WOPs) in Asia. It consists of ADB, IWA and USAID. This is the second forum. Examples of WOPs are reported and expected activities are discussed in the forum. I had a presentation to show the partnership between Yokohama Waterworks Bureau and Hue Provincial Water Supply Company (Vietnam) on the first day of the forum. That case is not a partnership activity of Water Links but it gave impact to audience as the first introduction of Japanese WOPs on the occasion of Water Links Forum. Before that, international cooperation in the field of water supply by Japan was not known well by members of Water Links. On the second day, participants discussed the role of water supply association of each country.

We found that common problem was lack of budget for independent activity. Partnership between two water operators is discussed with various combinations. I met 4 water supplies such as a Thai waterworks authority, 2 Vietnamese water supply companies and the water supply of Cook islands. I have obtained their needs for training and support. Common subjects are leakage protection and asset management.

In the forum, I found partnership between water operators of South East Asia had already begun. It is very impressive for me. Is Japan just looking at the situation? Result will be more excellent when a water supply utility of Japan joins the partnership. It is very important that Japan shows result of partnership by water supply utilities of Japan to the world.

Introduction of New Member

Osaki Precision Co. Ltd
Mr. OSAKI Kazuo
CEO

Our company has developed an original business for 60 years or more as e drilling machines and the special tools used for the plumbing of water service and the gas. We would like to offer overseas the experience and the technology that cultivates it in Japan and to advance the contribution and the business development with the life infrastructure development in each developing country. We will approach in the future in the business related to water service though the business related to the gas is developed with South Korea and Taiwan.

A formal request of the training for LAO P.D.R. from JICA was received and the course of ' Drilling technology with a saddle with corporation stop on Ceaseless water' was executed in our facilities as part of the Laos counterpart training in last the end of May. It is thought that they can make the_best use for

the construction substitution work according to the water leak prevention measures in the future etc. and wants to execute a technological course and the product introduction for each city in Laos in the near future. From now on, any suggestion form members will be highly appreciated.

【Event】

Welcome Party for Ms. Tam from Vietnam

Welcome party for Ms. Tam was held at a restaurant in Shinjuku station building on 14 July with 8 members. Tam-san's full name is Ms. Tran Thi Minh Tam. She is a WaQuAC-NET member and a manager of the Water Quality Management Section in Hue Construction and Water Supply Company (HueWACO) in Vietnam. Participants were Mr. Tanaka, Ms. Yamamoto, Ms. Tam, Mr. Sugawara, Ms. Kamegai, Mr. Horie, Mr. Sasaki, Mr. Nakanosono, Mr. Yokoyama from right to left in the photo below. She came to Japan for JICA training course of "Water Supply Management and Administration" as a trainer for a week and gave a lecture on water quality management and WSP; Water Safety Plan in HueWACO to 6 Trainees come from developing countries. She was a nice lecturer and will strengthen her ability as trainer moreover by piling up this kind of experiences. On the other hand, we deepened a friendship and a sense of solidarity each other at the party. We hope her leadership in HueWACO. The party grew livelier by joking "OYAJI gag" of Mr. Yokoyama who came to the party expressly from Gifu Prefecture, 700 km far from Tokyo. (written by Yamamoto)

Lecture room

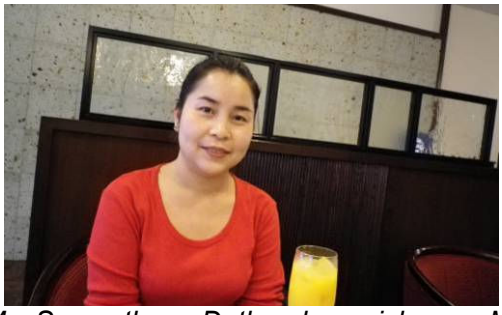
At a restaurant in Takashimaya 14th floor, Times Square, Shinjuku South

How are you? Mr. Member
Mr. TAKENAKA Katsuyoshi

Mr. Takenaka has worked for Osaka City Waterworks Bureau, Liberia and Indonesia as JICA expert, Japan Waterworks Association and IWA Japan branch office. He has contributed for international cooperation long time. After retired from JWWA, he is continuously working for water supply inside and outside in Japan.

21st July, at the beer garden near Osaka station

Interview: Ms. Mimi from Laos



Ms. Sompathana Dethoudom; nickname Mimi

She was a trainee of JICA group training course of water supply facility technology II, 2010. She stayed in Japan from May to July for two months. She played a key role in the group by taking care and helping other trainees.

Question (Q): Could you tell me your career?

Answer (A): I graduated from Lao National University in 1999. By getting scholarship from Ministry of Education of Laos for bachelor degree, I had a job in Department of House and Planning, Ministry of Public Work and Transport as a civil engineer. After working several years, I also got a scholarship by Swiss Agency for Development and Cooperation (SDC) for master degree, my field of study was urban environmental management in school of Environment, Resources and Development in Asian Institute of Technology (AIT), Thailand. I came back to the ministry in 2004. And I have been working for Northern and Central Region Water Supply and Sanitation Sector Project since 2005. This project is assisted by ADB, NORAD, UNHABITAT, OPEC.

Q: Why did you select the civil engineering?

A: I liked math, physics, computer and so on. My elder brother studied civil engineering and then I selected same major. My father didn't oppose it. But my mother recommended electrical engineering because she worked in electric company. I didn't like the electric engineering. When I entered the university, there were 13 women students in this faculty. And when I graduated from it, there were only two women including me. Another woman is now working on business. Now my office has 60 staffs in total. 15 persons out of 60 are women. And 6 persons out of 15 women are engineers.

Q: Do you manage to work and keep house at same time?

A: I got married in 2005. Now I have 2-yearold son and 3 year old son. At the moment, my mother and husband take care of them. There are my house, grandparent house, parent one and brother's one in the same lot in the center of Vientiane. Recently, working women are increasing in Vientiane too. This type of living environment is convenient for them.

Q: What do you want to do for work?

A: I want to continue the water supply project for the time being. Observation of medium and small scale water supply facilities has been very helpful in this training course. Staffs of provincial water supply have to do all works from pump operation to pipe laying alone. Therefore, I cannot say that they operate and maintain facilities well. After going back to my country, I want to work for strengthen the training system for provincial staff.

The 2nd Meeting of WaQuAC- Kyushu

The 2nd Meeting of Kyushu was held in Hukuoka City on 31st July. Participants were Mr. Nakashima, Mr. Yamashita, Mr. Kagata, Mr. Akaishi, Mr. Kakegawa, Ms. Yamamoto. After reporting the recent situation by each participant, we discussed joint system of small water companies for extending their business abroad which was proposed by Mr. Akaishi in Newsletter No.6. The conclusion of the discussion was to hold seminar for well understand the business in abroad. The seminar will consist of a presentation on the preparation of business in Cambodia and matters required attentions by Mr. Nakashima, Nakami-Japan and discussion on the possibility of joint system. Date of seminar will be fixed in October.

My First Trip to Developing Country

-Travel report to Siem Reap, Cambodia -

KAKEGAWA Tomohito

I wrote this article in August 2010, which was recording the hottest summer in Japan. Though I visited Cambodia in May, just before the rainy season, it was as hot as or hotter than one in Japan now. Before visiting Cambodia, I was asked by member of my family why I would go to Cambodia. When I thought of Cambodia, the first thing that came to my mind was "landmines" and "Angkor Wat". It seemed to be little sophisticated; moreover I felt some worries over condition of hygiene or public safety there. I could understand the reason my family asked me. I had been talked with Mr. Nakashima, one of the initial members of the WaQuAC-Net, and known some through him. As I wanted to confirm the situation there by myself, I made up my mind to visit Cambodia.

I visited Siem Reap and some sites around there. I report here what I saw and thought during my four days' staying.

I arrived at Siem Reap by the last flight of the day from Thailand. Because there was a flaw in application procedure of the visa, I worked out with an officer at the counter until the end of their operation time. He seemed to feel apparently a bother and want to go home early. I got bad impression from the contact with first Cambodian.

From the next day, I traveled remains and temples around with a tour guide, Mr. Kim. Those were far spectacular and magnificent than I had imagined. Especially the sites named "Ta Prom" and "Veng Meria" were gradually being destroyed by growth of banyan trees. They would have been collapsed in the certain future. It was precious experience to me.

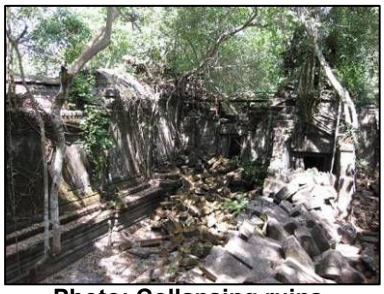


Photo: Collapsing ruins

I was also shocked that water of a moat of the Angkor Wat was used for people's daily life in neighboring area.

People used also water of the Tonle Sap Lake which was the largest lake in Cambodia, which could not be said to be clear. It was said several thousands of people living on the water there. As that area might be poorer area, children came to tourists to beg or to sell small things, saying "please, $1". Giving them some money would only make things worse; children would not go to school, I thought. And I also saw a school on the water crowded with children as nearly same old as the children who begged. I found a lot of innocent smiles there. It made me think of the way of bringing more smiles other than money.

(L)「$1, Please!!」
(R) Three sisters in a school on the water

Talking with the guide "It's hot today."

I got experience to find the Japanese was rather unlike other nationals in terms of toilet or foods. I saw and felt a lot in Cambodia, which was good experience, and may be helpful for me to participate in activities of WaQuAC-Net with more tough

- Overseas Report No. 2 -

Project on Capacity Development for Urban Water Supply Utilities in the Central Region, Vietnam

http://www.jica.go.jp/project/vietnam/003/index.html

On June 6, first three members of the Project, Mr. Sasayama (Chief advisor/ Water treatment), Mr. Wada (Distribution management), and I (Training Management/ Project coordinator) arrived at Vietnam and the project started. This project is followed to the technical cooperation project to develop capacity of ThuaThien Hue Construction and Water Supply Company (HueWACO) implemented from 2007 to 2009 in Hue, located in the Central Vietnam. Through the outcomes of the previous project, HueWACO declared "safe drinking water" firstly in Vietnam. This project aims to establish training system for strengthen capacity of whole water supply utilities in the central region under cooperation with Ministry of Construction (in charge of water supply sector), The Training Center for Water Sector in the Central Region (in charge of training activities) and HueWACO (having experience to achieve safe water).

(July 10, 2010)
Agreement on outline of the Project

As the first event of the project, we agreed on frame and schedule of the project by the first JCC (Joint Coordinating Committee) on July 22, 2010. Relevant organizations pointed out importance of the project and necessity to contribute for the project; the comments could show their enthusiasm for the project.

We have started surveys of water supply utilities in the central region to design proper training program responding to their current situations. Vietnam has long land from north to south, then the central region is also large; it may take more than 10 hours to visit a water supply utility in the central region. Therefore it is very precious occasion to see the situation of utilities. We would like to visit there and grasp needs of the training course with Vietnamese survey members; lecturers of the Training Center and staff of HueWACO. Because this project is implemented by three Vietnamese organizations, it is quite important to know and communicate among persons concerned so as to reinforce relationship among organizations. We would like to build on relationship of trust with counterparts through not only activities but through daily communication.

Dinner with counterparts of HueWACO and the training center

(by Mina Yariuchi)

□ Hue is..... □

Hue city has so many events that it is called as "City of Festival," and has sightseeing area including old royal palace of the last dynasty in Vietnam which are registered as the World Heritage. There are a lot of domestic and foreign tourists; especially during the period of the Hue Festival held in every two years, when we arrived at Hue. Usually it is quiet and calm differencing form the huge city such as capital city of Hanoi or mercantile city of Ho Chi Minh.

People talk the characteristics of Hue that having long history, long rainy season (3 to 4 months long continuous drizzling), rather hot food (using chili) and many beauties. We welcome you to visit us!

Question & Answer Corner

We welcome any opinions, and questions to this Q&A corner!

Q: 1. Control of weed in raw water channel.

2. Chemical use for removing of Duck lettuce (*Ottelia alismoides*).

(Questioner: Mr. P.O from Thailand)

A: Floating plant is kept far from intake by barrier. Submerged plant at fence is removed by tools.

No Chemical and No pesticide at anytime.

Q: Please tell me how to control water weed growing in raw water transmission channel and what measures we can take. And I would like to know what kind of pesticide is effective for removal of Duck lettuce.

(Questioner: Mr. P.O from Thailand)

A:

Species Aquatic plants are divided into two groups; floating plants and submerged plants. The typical plants you likely observe in water transmission channel are Water Hyacinth (Eichhornia crassipes) as floating plant and Brazilian Waterweed (Egeria densa), Florida Waterweed (Elodea nuttalli) as submerged plants.

Problems I have never heard that Duck lettuce causes a problem in water treatment facility or treatment system. The status of Duck lettuce is far different in several countries, for example, it is an endangered species in Japan, and however, it is decided as an invading harmful plant in United States of America. It could be an obstacle of water flow in channel and may decrease flow rate of water or change of direction of flow when it glows gregariously and make a large clump under good living condition at the intake and channel. If the dead clump flows down and is entangled with bar-screen at the intake, it might make a clog and disturb the achievement of design intake flow. The plants which are known as causation of such bar-screen clogging are Water Hyacinth, Brazilian Waterweed and Florida Waterweed.

Countermeasures Barrier is effective to prevent the floating plant from coming into the cannel. You can use bamboo for making barrier which is placed in front of intake. If you use river water directly, it will not cause serious problem because the plant will flow down easily. If you take water from channel, you need to remove the plants from the barrier by hand or by using net.

The submerged plant tangled with bar-screen is removed by drag rake with claws manually, or by dust scraper of bar screen mechanically

There are many procedures to remove water plant glowing in a channel as follows.

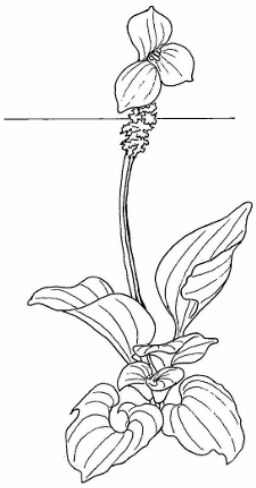
1) Staff enters the water and takes off the plant by hand.
2) You can make a small tool by wire to pick and catch the plant.
3) You can use a metal-made drag rake.
4) You can set rope over the cannel and bind the heavy iron chain at the middle of the rope, and then you drag the rope by both sides like a seine. Consequently, the submerged plants will be dredged and removed by the chain.

It is strongly recommended that you **must not** use any pesticide and chemicals.

Glossary

Duck lettuce *(Ottelia alismoides)*

General information It is annual water plant and it has similar leaf to Plantain (see the picture right). Its leaf has long petiole or leaf stalk and green-brown or purple-brown color. The shape of leaf is curly and oval or wide oval with irregular teeth and tusks at edge. The length of leaf varies widely from 10cm to 1m by living condition. It flowers only one day. The flower is white, pink or light purple bisexual flower, and the size of flower is from 2 to 3cm in diameter. It flowers on the water, individually in bract sheath in long stalk. It has obovate three petals, long oval three sepals and six stamens. After seed ripen, it will fall down in scattering on the water, and floating for a while until reaching to next place to start living.



Duck lettuce

Distribution It glows naturally in southeast Asia, north Africa, India and Australia. In Japan, it is found at paddy field, waterway, pond and wetland below Honshu and some islands such as Amami and Okinawa.

use Duck lettuce is food in countries in southeast Asia and Okinawa island in Japan. Young leaves are soft and taste ordinary so it is edible raw after washing thoroughly. It is also good garnish of meat dishes. Please allow me to introduce some more information about edible water plants. Spirogyra is a kind of algae which is eaten in peculiar area as filling of omelet, soup as well as raw diet. Swamp cabbage is famous in Chinese dishes. I love Pak-bung faidaeng (Stir-fried Morning Glory with Chili); this is a Thai dish made with it. Duck lettuce is not only known as food but also herb medicine. It is said to be effective for cough fever and diuretic.

Water plant can take in nitrogen and phosphorous in water easily and grow up quickly. As a result it can help water purification.

Introduction of New Members

(as of September 2010)

- Osaki Precision Co. Ltd
- Ms. Tith Linda (Cambodia)
- Ms. Sompathana Dethoudom (Laos)

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

WaQuAC-NET Newsletter No. 7
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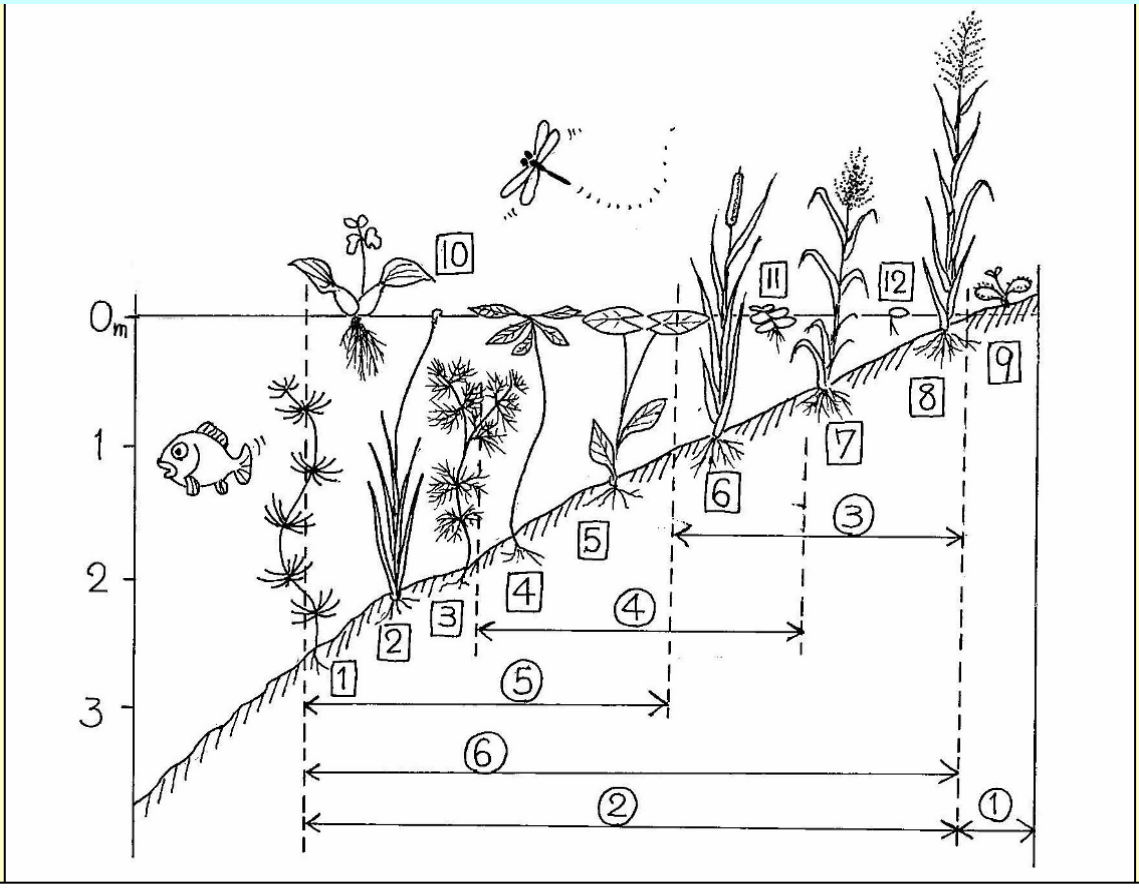
Next Activity

- Expert activity in Cambodia and Thailand for algae study
- Newsletter No.8 “Water leakage & water quality management”

Vertical distribution of water plants

The depth of water generally increases from lakefront to offshore. The vegetation of water plants varies with the depth of water from marsh plant zone at the lakeside to water plant zone at the lakeshore. The kind of water plant differs according to habitat, and forms the vertical distribution. For example; the emerged plant zone is located shallower than 1m water depth, floating- leaved plant zone is up to 5m, and submerged plant zone is up to 20m (see the figure below). Horizontally, the belt-like distribution of plants is observed from the lakefront to the location of 20m water depth that is a vegetative limit of photosynthesis plants. The limit of vegetation is the limit of photic zone. Photic zone is equal to trophorgenic zone, and out of photic zone is tropholytic zone.



Vertical distribution of Water plant

(1) marsh plant zone (hygrophyte) (2) water plant zone (hydrophyte) (3) emerged plant zone (4) floating-leaved plant zone (5) submerged plant zone (6) free-floating aquatic plant zone

[1] Axle weed (*Chara braunii*) [2] Eelgrass, tapegrass (*Vallisneria natans*) [3] Common horn weed, Coon tail (*Ceratophyllum demersum*) [4] Jesuit's nut, Water caltrops (*Trapa japonica*) [5] Nymphaea (*Nymphaea tetragona*) [6] Lesser bulrush, Narrou-leaved cattail (*Typha angustifolia*) [7] Canadian rice, Water oat (*Zizania latifolia*) [8] Bog reed (*Phragmites communis*) [9] Sundeu (*Drosera rorundifolia*) [10] Water hyacinth (*Eichhornia crassipes*) [11] Floating moss (*Salvinia natans*) [12] Big duckweed (*Spirodela polyrhiza*)

Illustration is quoted from "Japanese Water Plant Illustrated Reference Book", Dr. Otaki and Dr. Ishido, Hokurikukan, 1980
And Writer modified it.