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Introduction of the project

~The Project for the Water Resource Management in Zanzibar (Technical Cooperation Project)

Mr. Tomohiro MINAMI

I was dispatched to the Project for Water Resource Management in Zanzibar as an JICA expert from January 2024. I would like to introduce the culture in Zanzibar and the project which is conducting by JICA.

1. About Zanzibar

Independence from the United Kingdom in 1963 as the Sultanate of Zanzibar. In 1964, it merged with Tanganyika to form the United Republic of Tanganyika and Zanzibar, which became the United Republic of Tanzania in the same year. The revolutionary government of Zanzibar still has extensive autonomy except for diplomacy and national defense.

- Area : 2,650km² (slightly larger than Okinawa)
- Population : 1,889,773 pop (Whole country : 61,741,120 pop)
- Climate: Rainy season (April-May, November), It is said that the temperature generally increases from after rainy season to next year’s rainy season. Additionally, the humidity seems to be higher than Japan.
- Language: Swahili (Zanzibar is said to be the origin of the Swahili language.)

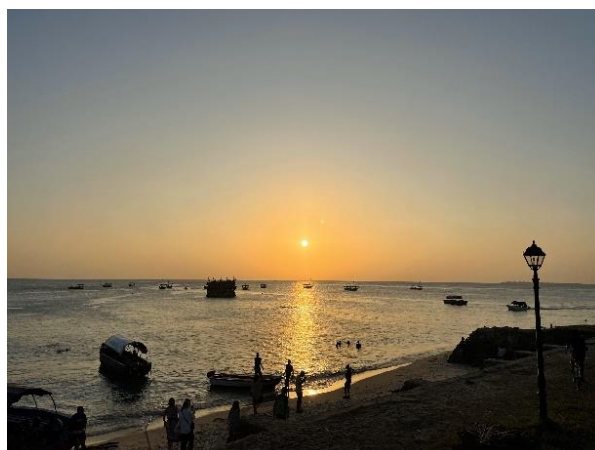
- Religion: 98% of the population is Muslim.
- Food:

There is a lot of fresh seafood since the Zanzibar is adjacent to the ocean. You can often see local people eating meat or seafood with ugali or rice.



My recommendation for local food is Urojo **Urojo (Zanzibar Mix)** in the photo upper-right, which is available for 2,000 TZS (about 120JPY)/ per plate.

- The place to visit: Stone town (world heritage), The beach in Paje and Nungwi. Because Zanzibar is an island, time seems to pass slowly like an island in Japan. While walking around the Stone Town, you will often hear that local people say “Hakuna Matata” (No problem).



Sunset from Stone Town

2. Introduction of the project for the Zanzibar Water Authority

A) Previous cooperation by JICA and current situation

Since the establishment of ZAWA (Zanzibar in 2006), JICA has implemented the Grant Aid for the facilities construction and the technical cooperation project, which aim to strengthen ZAWA's capacity for customer management and tariff revenue collection. Since the water service was free until 2007, the current meter installation ratio is about 15%, and the customers who don't have meters use water with flat rate. Most of water source is groundwater and ZAWA has a mandate to manage/ regulate all boreholes except for some boreholes such as irrigation. However, even in the urban area, the service hour is around for 8-10 hours/day, and it is unable to distribute adequate water to the citizens because there is a lot of leakage due to aging facilities. This has led to low customer satisfaction and low willingness to pay the tariff. As a result, citizens install their own private boreholes to get enough water. Although it is necessary to apply for and register with ZAWA when installing a borehole. However, this is costly. Consequently, many unregistered boreholes have been installed without notification, and signs of salinization have been observed in coastal areas.

B) About the Project

Project Name: The Project for the Water Resource Management in Zanzibar

Duration: 5 years (started July 2023)

The executing agency: Zanzibar Water Authority (ZAWA)

This project has been implemented in conjunction with the Yen Loan Project "Zanzibar Urban Water Distribution Facilities Improvement Project" in Zanzibar. The project area is Urban West Region, Zanzibar, which includes the project area where facilities will be constructed by the Yen Loan Project.

The project has been set 4 Outputs to operate and maintain new facilities constructed by yen loan project appropriately.

The project is related to groundwater management (Output 1, 2) and water supply (Output 3, 4). In groundwater management (Output 1, 2), the objective is to establish a groundwater management plan and enhance the

capacity to review the groundwater management plan based on the actual situation in order to prevent groundwater salinization.

For the water supply activities (Output 3, 4), the objective is to enhance the capacity for NRW management through water volume management from abstraction to billing, and enhance the capacity for appropriate operation and management of boreholes and water reservoirs in an appropriate way.

The project aims to realize sustainable and safe water supply in the urban water supply area through 4 Outputs, after completion of the Yen Loan Project.

3. My activity as JICA Expert

As part of the project activities, I am working with experts on water supply projects.



Working with a counterpart

Besides the project activity, I'm collecting / analyzing information which is inhibiting their business from staff throughout interview/ accompany for the site. Also, I'm preparing a water pressure measurement/ customer satisfaction survey in the urban area to understand the current situation.

4. Future aspirations

It has been 2 months since I joined in this project. It is difficult to arrange time for meeting, because working time is shorter than usual due to Ramadan period.

The project period has remained more than 4 years, I will implement activities to improve the service quality of water supply by ZAWA throughout the project and my activities.

Lastly, Zanzibar is a good place where has beautiful beach and world heritage for sightseeing. I am looking forward to seeing you in Zanzibar! **"Asante Sana!"**

**Japanese Government supports Ukraine
Sending Mobile Siphon Tank
Mr. Gensuke Arimura
Water supply Network Communication**

Four units of mobile siphon tanks were sent to Ukraine from Nihon Genryo co., Ltd, and four Ukrainians came to Japan to learn water supply technology

Russia's invasion of Ukraine, which began in February 2022, has destroyed infrastructure in all sectors in Ukraine, including water facilities.

In response to these situation, Japan Government sent the portable water purification device, "Mobile Siphon Tank", which was made by the Nihon Genryo Co., Ltd.'s to the site.

At the same time, four trainees from Ukraine came and took one week training on the operation of the "Mobile Siphon Tank" at the Takahagi Plant of Nihon Genryo Co., Ltd. in Ibaraki Prefecture.

1. Grant Aid (emergency restoration) by JICA

This scheme was based on "JICA Grant Aid to Ukraine (Phase 2)" announced by the Ministry of Foreign Affairs in March 2024.

The project involved four portable water purification devices called "Mobile Siphon Tanks" to two cities, the capital city, Kyiv and the southern port city, Odesa. The capacity in each was 1000m³/day.

The tanks were shipped by sea on November 21st, 2023. It was expected to arrive at the sites two months later, around January 13th, 2024. These would be introduced in two cities, Kiev and Odesa, but the test operation of three units would be done in Kiev and "how to use" would be decided based on the test reaction.

Three engineers and an accountant came to Japan on November 19th, 2023 and to learn operating techniques for Mobile Siphon Tanks.

The trainees' names are

- Ms. Ryubovi Avramenko (Water Quality)
- Ms. Irina Komereva (Management)
- Mr. Yuri Nikashin (Electronics Engineer)
- Mr. Sergey Stermuf (Control Engineer)

Translator: Ms. Elena Nakayama.

Ms. Nakayama has lived in Japan for 25 years after graduating from Niigata University.

Four Ukraine's couldn't speak English.

Therefore, Ms. Nakayama (the interpreter) actively worked on interpreting from Ukrainian to Japanese.

They observed the Nagasawa Water Purification Plant of the Kawasaki City Water and Sewerage Bureau on the 20th. On the same day, they moved to Nihon Genryo Takahagi Factory (in Takahagi City, Ibaraki Prefecture) and started the training on November the 21st.

They studied "water supply system in Japan" and "the system of the Mobile Siphon Tank" at the office on the 21st-22nd. They studied how to operate the machine using real one on the 23rd. On the 24th, they could operate the real machine. They participated closing meeting on the 25th. They left Japan on November 26th.

2. What are Siphon Tank and Mobile Siphon Tank?

Filtration tank itself is common equipment that many companies have commercialized for a long time. But what are the characteristics of Siphon Tank and Mobile Siphon Tank as water purification device? The most distinctive feature is the uniquely developed cleaning system called "Siphon Cleaning", in which the filter sand inside the filter is scraped up by a central screw, and washed using a three-dimensional whirlpool,

like how rice is being polished.

This system eliminates the need to replace the filter sand every few years. As a result, maintenance costs significantly reduce and maintenance-free operation is realized.

At the same time, they have developed a high-performance filtration material that can cope with the deterioration of raw water. This filtration material has more than 2.6 times the ability to trap suspended solids compared to conventional multi-layer filtration materials, and is now equipped as standard equipment. Furthermore, manganese and iron contained in groundwater can be easily removed using manganese-treated interceptors. Suspended substances captured during the filtration process are completely removed from the filter medium by washing with Siphon. The amount of backwash water can also be significantly reduced compared to conventional filtration equipment. A further development of this Siphon tank is the portable "mobile siphon tank," which can be described as a "moving water purification device." Typical filtration equipment not only includes a filter, but also has many ancillary equipment such as an electrical room and a chemical room, so it is necessary to secure installation space. However, a portable siphon tank was developed to take advantage of the characteristics of a siphon tank in a limited space. Mobile siphon tank is a water purification device that includes a filtration tank (siphon tank), control panel, piping unit, and chemical injection device.

Because it is a compact unit type, it can be loaded onto a truck, etc., and can be easily moved and relocated. Taking this advantage, it has become possible to redeploy facilities in response to population changes and to introduce them into mountainous areas and narrow areas of land.

3. *Water supply situation in Ukraine during the war*

All kinds of infrastructure are becoming targets of attacks, and with winter approaching, attacks on power facilities are becoming more intense, which is having a major impact on water facilities. Although it depends on the region, it is relatively rare for water purification plants to be completely destroyed. However, the factories that manufacture chemicals such as PAC and sodium hypochlorite needed for water purification treatment have been destroyed by airstrikes. they are being supplied by Poland and Germany.

Pipelines have been severely damaged, and many water supplies are unable to provide clean water.

Water resources are surface water like the river water, and ground water. They have enough quantity but water quality of surface water has high PH, and ground water contains iron and manganese. They must be treated.

Water supply is managed by public organization like city hall. And it seems to be managed by professional staffs.

○ *Visiting Water Supply Facilities*

Strong sense of mission and decision to win

I was worried that Ukrainian trainees seemed nervous. Their reaction was no good. However, two days later, I was relieved as they were fine and active at Takahagi Factory on 23rd.

Yasuhiro Saito, president of Nippon Genryoku impressed that Ukraine continues to operate its water treatment plants, with air raid warnings from missile and drone attacks ringing around the clock, putting lives at risk.

He said that when they came to Japan, they were unable to maintain mental balance due to the huge gap between the situation in their home country and that in Japan. He must have had

some concerns when he first visited Japan, wondering what the "special filtration tanks" were like, and whether the training would go well, even if the equipment was excellent. However, they quickly got used to Japan, and with a strong sense of mission, they tackled the training with great enthusiasm.

Mr. Yuri Nikashin, an electrical engineer from the battlefield town of Mariupol, said he distributed water to residents until the very last moment as Russian troops advanced. He evacuated his family to Germany, but he felt a strong sense of mission to remain in Ukraine and keep the water running.

On that day, he was interviewed by TV Tokyo's WBS (World Business Satellite), and it was impressive to see how resolutely he responded to the director's questions.

When asked if anything had changed now that the world's attention was focused on Israel's attack on the Gaza Strip and Ukraine was no longer in the headlines, he looked him straight in the eye and stated firmly, "Nothing has changed."

Water quality engineer, Mr. Lyubovy Avramenko, who have lived in the capital Kyiv, said: "The siphon tanks are of high quality and standard. Kyiv's water purification plants have not suffered any major physical damage so far, and I think they would be useful as a backup in case of a disaster. Many regional water supply systems use groundwater, so the siphon tanks could be put to good use." Regarding the training in Japan, he said, "I felt a strong sense of support, as the Ukrainian flag was there and the mobile tanks were painted in the colors of the flag.

"I am more grateful than words can express," he said, expressing his strong determination that "Ukraine will survive and win the war."

Mr. Sergey Stermakh, who is in charge of machine control, commented that "Japan's water

supply level was top, and the training itself was also the best."

○ ***"Ukrainian Water Persons" showed their real abilities***

What were the impressions from instructors of Nihon Genryo, who taught them on how to operate the mobile siphon tank?

Mr. Saito, who was the president of Nihon Genryo, said that they didn't pretend to understand at all. they asked lots of questions and I could understand that their strong will to master the tank operation techniques. " By the final day, Friday, they were operating the machines by themselves and had mastered them perfectly, he said. He also praised the machines, saying, "They're amazing machines. Four aren't enough. We need more."

At the same time, he said that Ukrainian surface water generally tend to be alkaline, but the pH has not yet been adjusted, so the control device is needed." At the same time, they also requested an automatic control device that would be able to proportionally inject PAC when the raw water turbidity increased.

○ ***Manganese sand was not requested***

They use groundwater to be having trouble with iron and manganese. Although Mr. Ejima repeatedly explained that manganese sand is extremely effective in removing manganese but they didn't request to introduce the manganese sand.

The results of the training were "perfect," according to President Saito. On the 23rd, it's the first day that the Mobile Siphon Tank was demonstrated. The smiles were on the students' faces when they "tasted" the purified water.

○ ***"Enjoyed Japan and trained diligently"***

Food and Sake (Japanese alcohol):

President of the Nippon Genryo, Mr. Saito and his team were surprised at how Ukrainian people can handle alcohol so well. They were fascinated by their "first sake", and at the dinner party, they drank four sake bottles (one sake bottle = 1.8 L) at a time by four people, without showing any sign of being drunk. Japanese had suggested to drink not only sake, but also wine or whiskey anytime, but they always had preferred to drink sake and never seemed to look at beers.

What appealed to them more than the sake was the food; Although one of them couldn't eat "sashimi" (raw fish), but the other three have ate it happily, and Mr. Abramenko loved natto*.

*natto: Fermented soybeans. A Japanese traditional and common food, usually eaten as a breakfast side dish.

When Mr. Saito (Section Chief) asked Mr. Abramenko, "What was delicious?", he replied, "Everything was too delicious, from the Edamame (boiled green soybeans) to the Karaage (Japanese fried chicken.)".

By the way, Ms. Elena (Interpreter) who has lived in Japan for 25 years said "Doesn't like "natto".

○ **The Pacific Ocean is a mysterious sea:**

The hotel where trainees stayed was in Hitachi City about 15 km south of Takahagi City, so they commuted to Takahagi City by train every morning, while looking out to the east at the Pacific Ocean. This situation was very fun for the trainees. In Ukraine, the Pacific Ocean is said to be a mysterious sea. Therefore, some of them went into the cold sea water. I think that they wanted to swim in that mysterious sea.

On the final day of the highly successful training (Saturday the 25th), it was reported that Russia had carried out the largest-ever attack on Ukraine using more than 70 drones.

Finally, let me conclude with a quote from Sergei Stelmakh:

"Until now, I have lived my life with the goal of satisfying material desires, like wanting a luxury car, traveling, and owning a house.

"But after the Russian invasion, I realized that it was the greatest happiness to have a healthy family and being able to live together.

It became my goal in my life. It changed me greatly."

A touchstone of Japanese water supply technology

Mr. Yasuhiro Saito

President of Nihon Genryo co., Ltd

What I felt when accepting the trainees from Ukraine was that the engineers from Ukraine had exactly, the same mindset as the "waterworks industry" or "waterworks people" in Japan, and their sense of mission to supply tap water at all costs was wonderful. The situation in Ukraine is completely unpredictable, but our company is the only one that has the technology of mobile siphon tanks, so we feel the weight of our responsibility. We have the responsibility to make Japanese waterworks technology recognized in Ukraine, so I think it can be said to be a touchstone. I am truly grateful to both our employees and the people from Ukraine for their hard work.

Ms. Kannicha Wongchai went to the water resource investigation in Kanagawa Prefecture

Ms. Kannicha Wongchai had joined in the Training of Kanagawa Prefecture from MWA (Metropolitan Waterworks Authority) from Thailand. February 15th, Ms. Fai (nickname of Ms. Kannicha Wongchai) had joined the water resource investigation by WaQuAC-Net at Kanagawa Prefecture. Participants were Ms. Fai, Mr. Sasayama, Mr. Ono, and Yamamoto. At 9:30 we gathered in JR Yokohama Station and headed to Miyagase Dam by Mr. Ono's car. At first, we observed the intake weir and intake point. After that, we took lunch at the restaurant near Miyagase dam. Menu was a very famous "Miyagase Dam Lunch". It was a funny lunch where the rice on the plate was treated as a dam, and when you pulled out the sausage at the bottom of the rice, the curry would flow out. After lunch, we walked around river side. Mr. Ono explained the water usage of Miyagase river. It was nice day. We entered Dam office. There were many explanation papers on the wall. Mr. Ono explained how manage the river and dam using the paper again. It was a nice day and we enjoyed studying water use of Miyagase River basin. (Yamamoto)



From left: Mr. Ono, Ms. Kannicha, Mr. Sasayama

2024 First Core Meeting has held

When Ms. Mina Yariuchi, who is participating in a project in South Sudan, returning to Japan temporarily, we held the WaQuAC Net core meeting and social gathering as follows. Although it was a short time of just under two hours, we reported on each other's recent activities and exchanged opinions on this year's activities.

Date and time: March 28, 2024, 16:00 - 18:00.

Place: Yaesu, Tokyo

Participants: Mr. Hiroshi Sasayama, Ms. Akiko Takano, Ms. Mina Yariuchi, Ms. Keiko Yamamoto

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Next Activities

August: Webinar "JICA Experts talk
"Carrier pass and International
cooperation"

September: Newsletter vol.61
(Japanese Version)