

September 2020

1. The COVID-19 Pandemic and the Present Water, Sanitation and Hygiene (WASH) Situation

(1) The COVID-19 and the Issues related to Water, Sanitation and Hygiene

Handwashing with water and soap is one of the most important measures to prevent the spread of coronavirus disease 2019 (COVID-19) (WHO/UNICEF 2020). Therefore, keeping the taps running and promoting hygienic practices are essential.

However, some 3 billion people, equivalent to 40% of the world's population, do not have access to both water and soap at home (WHO/UNICEF 2019), and many health facilities and schools do not have water and handwashing facilities in place. Besides, about 1 billion people in developing countries live in high-density informal settlements (Satterthwaite et al. 2020), and the access to water and handwashing facilities in informal settlements is very limited since these areas often fall outside the city's water and sanitation service areas. Thus, the risk of COVID-19 infection in informal settlement areas is critically high.

Moreover, water utilities are facing financial challenges due to the stagnation of economic activities and the draconian measures, such as the blockade of cities and the strict imposition of curfew hours during lockdowns, which have been ongoing for several weeks up to the present. Many water utilities in developing countries have reported significant revenue reductions because of the difficulty of tariff collection, the decrease of industrial and commercial water usage, and the government's remission policy on water tariff. There is then a strong concern that the substantial decrease in tariff revenue will lead to the shortage of liquidity in the immediate future, and might have a profound negative impact on water utility management in the medium to long term aspect.

(2) The Response

In the circumstances, many development partners, including JICA, are responding to prevent and curb the spread of COVID-19 by providing a supply of chemicals (Figure 1), equipment, and technical support to water utilities, as well as emergency water supply in areas where residents do not have access to water facilities.

(3) Recovery

JICA considers that support aimed at both achieving the Sustainable Development Goals (SDGs) and building of a resilient social system are necessary.

For example, as reported by Curtis and Cairncross (2003), handwashing with soap and water can reduce diarrheal diseases by 47 percent, one of the main objectives of the Water, Sanitation and Hygiene (WASH) is to "improve public health and ensure healthy living conditions." Therefore, building on the understanding of WASH's fundamental contribution to people's health, it is essential to examine measures to prevent the spread of COVID-19, especially with vulnerable groups, and to strengthen the response in terms of WASH. Furthermore, there is a need to identify countermeasures for water utilities that are severely affected and promptly implement them.



Figure 1: Tons of Chlorine procured by JICA as Support to Tajikistan in the Response Phase

2. JICA's Intervention and Response

JICA had received urgent requests from its partner water utilities in ongoing projects and quickly responded by adding assistance against COVID-19 to the original project scope as summarized in Table 1. Besides, JICA prepared a

summary of [ten possible countermeasures that may be implemented by water utilities against COVID-19](#), and distributed copies to its partners. JICA will continue to work hard to be able to respond to requests from its counterparts throughout the world.

Table 1: JICA's Response to Urgent Requests from Partners as of August 2020

Country	Target City	Request	Progress
Palestine (For utility)	Jenin City	<ul style="list-style-type: none"> • Procurement of 10,000 kg of chlorine. 	First batch of chemicals handed over on May 14, 2020.
Nepal (For utility)	Semi-Urban Areas	<ul style="list-style-type: none"> • Procurement of 14,500 kg of chlorine. 	Handed over in June 2020.
Pakistan (For utility)	Punjab Province	<ul style="list-style-type: none"> • Procurement of chlorine, hand sanitizers, and others 	Ongoing
Tajikistan (For utility)	Pyanj and Khamadoni vodokanals	<ul style="list-style-type: none"> • Procurement of 300,000 kg of chlorine. 	First batch of chemicals handed over on June 25, 2020.
Kenya (For utility)	Nine cities	<ul style="list-style-type: none"> • Procurement of chlorine good for three months in nine water service facilities. 	First batch of chemicals handed over on July 9, 2020 .
Malawi (For utility)	Lilongwe City	<ul style="list-style-type: none"> • Procurement of chlorine, hand sanitizers and others. 	Under procurement.
Rwanda (For utility)	Kigali City	<ul style="list-style-type: none"> • Water tanks and subcontract with private water tankers. • Procurement of coagulants • Water quality test kits. • Development of Business Continuity Plan • Procurement of water pipe fixing materials 	Under implementation and procurement.
South Sudan (For utility)	Juba City	<ul style="list-style-type: none"> • Procurement of 22,000 liters of fuel. • Procurement of 3,915 kg of chlorine and 13,500 kg of coagulants 	Handed over in August 2020.
Sudan (For utility)	Khartoum City	<ul style="list-style-type: none"> • Procurement of 36 tons of chlorine gas that can cover over 1 million population for six months. 	Handed over in July 2020 .
Bangladesh	Jessore District	<ul style="list-style-type: none"> • Improvement of sanitary condition in health facilities. 	Ongoing
Bolivia	Cochabamba District	<ul style="list-style-type: none"> • Procurement of materials and awareness campaign. 	Ongoing
Egypt	Schools in the country	<ul style="list-style-type: none"> • Handwashing campaign in primary schools. 	Ongoing
Ethiopia	Addis Ababa City and Bahir Dar City	<ul style="list-style-type: none"> • Procurement of materials for hand sanitizers, handwashing stations and water tanks. • Procurement of equipment for water well repair. 	Under procurement.
Uganda	Five districts	<ul style="list-style-type: none"> • Procurement of materials for hand sanitizers and handwashing stations 	Under procurement.
Zambia	Informal settlements in Lusaka City	<ul style="list-style-type: none"> • Procurement of materials and awareness campaign. 	Ongoing

Note: "For utility" means response to requests from water utilities.

3. Challenges faced by Water Utilities

The World Bank (2020) has pointed out that the COVID-19 crisis poses three main challenges to water utilities: i) Loss of revenue; ii) Reduced availability of critical elements for operation, such as chemicals and fuels; and iii) Delay of significant investments. It goes without saying that the second and third challenges are rooted in the first challenge.

(1) Revenue Loss in Developing Countries

Figure 2 shows the transition of billed and collected amounts of the Water and Sanitation Corporation (WASAC) in Rwanda from July 2019 to May 2020. WASAC has been achieving almost 100% of collection efficiency before the COVID-19 pandemic, but the collection declined drastically to 42% in May 2020. In the past four months (from February to May 2020), WASAC estimated a USD 3 million loss in revenue compared to the previous year. According to WASAC, revenue reduction is attributed to the non-payment of large customers, such as business offices, and restraints.

In the case of Guinea Water Company (Société des Eaux de Guinée: SEG), Guinea's government announced six months of water tariff exemption (from April to September 2020) for individual customers. Consequently, SEG will not be able to accumulate income of approximately USD1.5 million from its customers during that period. Several reports related to revenue loss have been received, and JICA has confirmed revenue reduction from its counterparts.

(2) Types of Request from JICA's Counterparts

In developing countries, sudden revenue decreases have affected the cash flow for many

water utilities, resulting in efforts to procure necessary materials for water supply systems' operation. This is very clear from the fact that of the 11 requests at present (with the addition of Guinea and Nigeria to the countries in Table 1), 10 are for chemicals such as chlorine. The supply of chemicals is essential because they are vital for ensuring proper water treatment, safety and reliability of tap water, as well as alleviation of the financial burden.

(3) Cases of Water Utilities in Japan

As far as revenue is concerned, water utilities in Japan are also experiencing a similar challenge. According to the Ministry of Health, Labor and Welfare, as of June 2020, 423 out of the 1,287 water utilities have introduced, or are planning to introduce, tariff mitigation or remission measures. These measures aim to provide continuous water access for handwashing by both individual and business customers affected by the COVID-19 pandemic and to address the impact of income reduction. Customers may welcome these measures, but the water utilities need to confront the revenue reduction.

The Yokohama Waterworks Bureau, the second largest utility in Japan in terms of service population, has not applied any of the measures mentioned above. However, the utility is also confronted with the revenue reduction. In April and May, household consumption increased by 6.4% (about 315 million cubic meters) compared to the same period in the previous year, while commercial usage fell by 18.6% (about 225 million cubic meters). As a result, the total distributed volume have increased, but the total revenue went down. The drop in commercial usage, which sets a higher tariff than households, has harmed revenue.

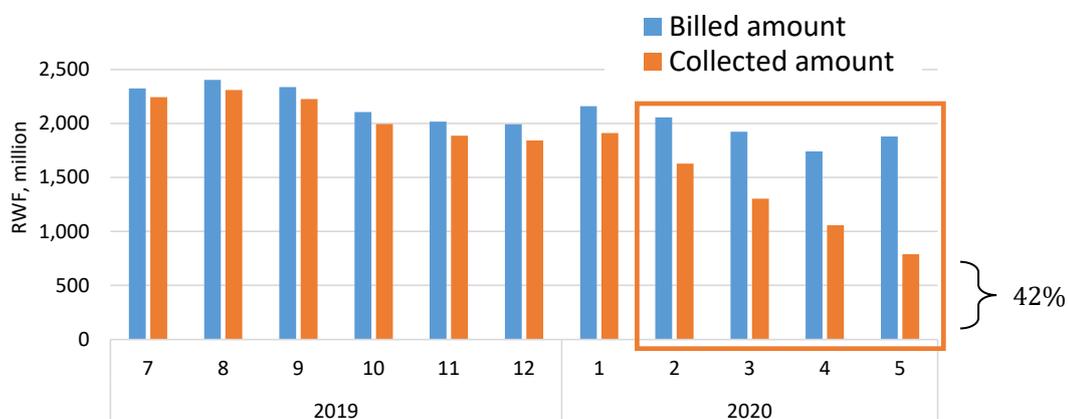


Figure 2: Comparison of Billed and Collected Amounts, WASAC, Rwanda

Source: WASAC and Nihon Suido Consultants Co., Ltd.

(4) A Case of Avoided Revenue Reduction

A water utility in Jenin Municipality had introduced a Pre-Paid Water Meter (PPWM) (Figure 3) for 1,850 of its 8,350 customers under the “Project for Strengthening the Capacity of Water Service Management in Jenin Municipality”. This is a case where the drop in collection efficiency is avoided and revenue is kept stable even during the COVID-19 pandemic.

Figure 4 indicates the collection efficiency of those equipped with PPWM and those using conventional water meters from February to May 2020. The conventional meters' collection efficiency is as low as 40% in Feb 2020, then shows a downward trend below 20%. In contrast, the collection efficiency of the PPWM achieves 100% in February 2020 and keeps its outstanding record even during the COVID-19 crisis.

There may be an argument that the PPWM is forcing payment from the vulnerable groups and the poor whose incomes are affected by COVID-19, or, the poor cannot afford to charge it so they have difficulty in obtaining potable water. Given these situations, Jenin allowed customers, based on the application, to defer payments and make water available.



Figure 3: Photo of a Pre-Paid Water Meter

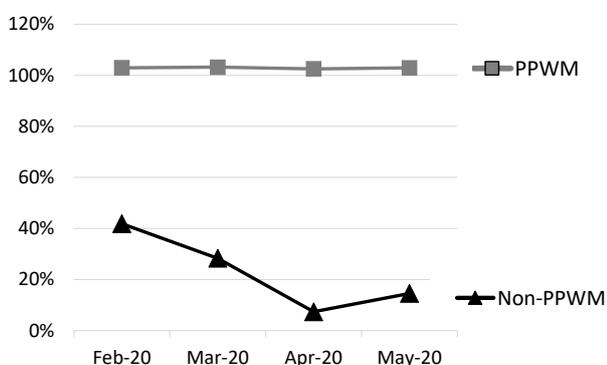


Figure 4: Collection Efficiencies of PPWM and Non-PPWM in Jenin

Source: Jenin Municipality and TEC International Co., Ltd.

Based on the remarkable fact mentioned above, Jenin decided to procure an additional of 6,500 PPWMs for the remaining customers. PPWMs might be the key to achieving a high collection efficiency and help water utilities ensure a stable revenue even under a crisis when fee collectors cannot work in the cities. JICA and Jenin are then working closely together to conduct further studies on the possibility of PPWMs for the management of water utilities.

4. Moving Forward

JICA considers that the main areas of support needed in WASH in relation to the COVID-19 crisis are as follows:

- Security of income of water utilities and continuity of water services.
- Provision of water and sanitation services to vulnerable areas, such as informal settlements and urban slums.
- WASH for essential facilities, such as schools and health facilities.
- Mainstreaming of handwashing.
- Knowledge sharing of lessons learned and experiences on countermeasures related to COVID-19.

JICA is committed to respond timely and properly to meet these needs through partnership with NGOs, comprehensive multi-sector support, enhancement of handwashing awareness activities, surveys, and research. For comments on the contents of this paper, please contact the Water Resources Group: gegwt@jica.go.jp.

REFERENCES

- 1) Curtis, V. and Cairncross, S., 2003. Effect of washing hands with soap on diarrhoea risk in the community: a systematic review. *The Lancet Infectious Diseases*.
- 2) Satterthwaite, D., Archer, D., Colenbrander, S., Dodman, D., Hardoy, J., Mitlin, D., and Patel, S., 2020. Building Resilience to Climate Change in Informal Settlements. *On Earth Review*.
- 3) WHO/UNICEF 2019. Progress on household drinking water, sanitation and hygiene 2000-2017. Special focus on inequalities.
- 4) WHO/UNICEF 2020. Water Sanitation, hygiene, and waste management for the COVID-19 virus, Interim guidance.
- 5) World Bank, 2020. Supporting Water Utilities During COVID-19. Feature Story. (Accessed 2020.08.07) <https://www.worldbank.org/en/news/feature/2020/06/30/supporting-water-utilities-during-covid-19>