



KOBELCO ECO-SOLUTIONS CO., LTD

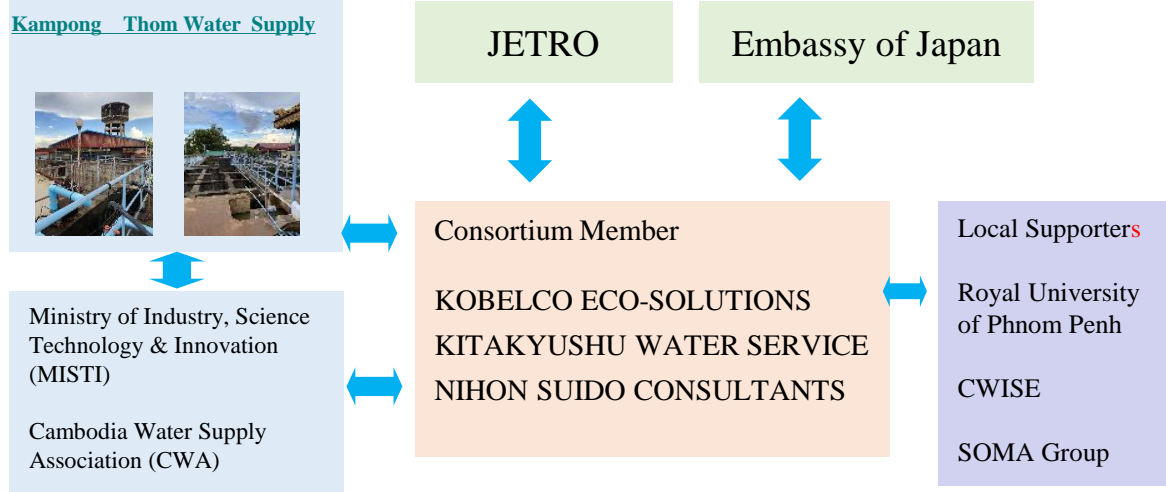
Demonstration project for optimizing water supply business through DX promotion using digitalization system in Cambodia

Objective of the project

Cambodia's government announced its national strategy for 100% urban water supply coverage by 2025. Although progress has been made in several areas on the hardware side such as the construction of water treatment plants, there has only been slight progress in improving the operation of water utilities based on data or considering demand for renewal of aging water supply facilities in the future.

Therefore, we demonstrated that we could optimize water supply business through DX promotion using digitalization system from water treatment plant operations to water bill collection.

Cooperation with local companies/governments

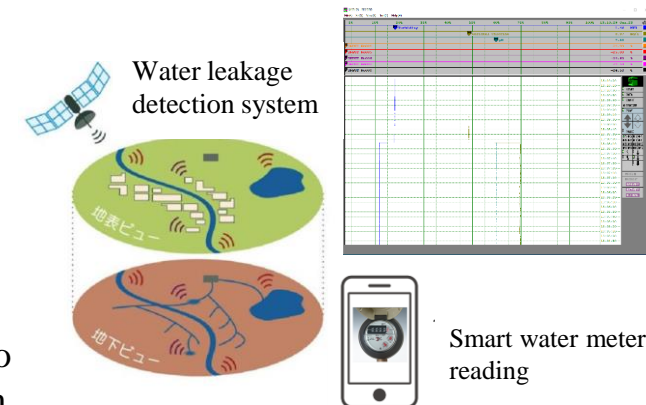


Targeted economic/social issues

There are 13 public water suppliers and over 300 private water suppliers in Cambodia. Although several new water treatment supply plants are being constructed with support from various countries and donors, many facilities have been in operation for more than 15 years, and demand for renewal will increase in the future as they age. However, the business foundations of water supply utilities are weak, and it is difficult to raise funds for additional capital investment due to strict financing conditions.

Personnel costs make up 15 to 33% of the operating expenses (OPEX) of water supply utilities and reducing them is also an issue. In particular, meter reading and water bill collections are mainly done manually, which contribute to increased labor costs, and there is a need to improve the efficiency of these operations. On the other hand, there has been a decline in knowledge due to the retirement of veteran employees, and there is a need for human resource development.

Under these circumstances, for realizing a sustainable water supply business, it is important to formulate a medium- to long-term business plan that optimizes business operations from both hardware and software aspects based on appropriately collected and managed data and also to operate the business based on that plan.



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Demonstration Period

November 2022 – January 2024

Details of demonstration

1. Satellite water leakage detection system: Based on detection results of potential leaks using microwaves emitted from satellites, water pipe leaks were identified by manual acoustic leak detection with a sound listening stick in order to demonstrate an efficient method for detecting water leaks in a short period of time.
2. Remote monitoring and advisory services: After remotely collecting and analyzing data on system operation status, business operations, etc., we proposed countermeasures and preventive maintenance as necessary and conducted interviews regarding needs for advisory services to draft and review business plans or facility improvement/expansion plans. We confirmed how to install communication equipment for transmitting regular monitoring information at water treatment plants, how to realize a VPN environment, and how to protect programs.
3. Data management system using Geographic Information System (GIS): We demonstrated a system that utilized GIS to facilitate asset and customer management. We built a management system for water quality, water quantity, and electricity data at the Kompong Thom water treatment plant.
4. Smart water meter reading and water bill collection system: We investigated the types and numbers of water meters and verified whether the automatic smartphone reading function could read meters accurately.

Project outcome / Future Plans

1. Satellite water leakage detection system: Water leakage surveys were conducted using acoustic sounding at 103 POIs (Points of Interest: areas with a high possibility of water leakage) selected through satellite data analysis. Water leaks were confirmed at 6 POIs, which is lower than expected. However, the number of leaks detected through proactive and preventive acoustic leak surveys in the same area is only about 10 per year, and the visual confirmation of six leaks in 13 days was not a bad result.
2. Remote monitoring and advisory services: Examined the feasibility of implementing a service provision project. In order to provide services that meet the needs, we discussed and adjusted implementation structure, collaboration and division of work with partner companies, and finalized various conditions for the draft contract.
3. Data management system using GIS: In order to integrate the operational data of the two water treatment plants operated by the public water department, a simple integrated data monitoring facility was installed at the Stueng Saen 1 water treatment plant and data collection tests were conducted. We also investigated and considered the operation and maintenance of water distribution facilities using GIS data.
4. Smart water meter reading and water bill collection system: We conducted a trial calculation to ensure reliable meter reading, recording, and billing, and to reduce personnel costs. Regarding the reading device, automation was not achieved because there were multiple types in the water meters that had already been installed even in the same area and the accuracy of reading numbers was low, so that we investigated the current situation and identified the barriers to system development.