

International Cooperation of Tokyo Waterworks: Support in Developing Human Resources Rooted in Local Communities

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Abstract: Although water is a fundamental infrastructure indispensable for protecting people's lives and livelihoods regardless of the country or region, there still are many countries facing with difficulties in achieving sufficient water supply.

In order to carry out self-sufficient and sustainable water business management, it is important to develop not only infrastructure in developing countries but also human resources rooted in local communities. In addition, the assistance itself must also comply to meet with local culture, climate and water supply circumstances.

Tokyo Waterworks has conducted international cooperation from the viewpoint above. This paper introduces actual examples of our cooperation and proposes an ideal form of international cooperation in the water supply project.

1. Background

Water is a fundamental infrastructure indispensable for protecting people's lives and livelihoods regardless of the country or region. However, 2.1 billion people in the world still cannot drink safely managed water. Due to lack of funds and water resources, many countries still have difficulties in achieving the same level of water supply as in Japan or other developed countries.

In order to realize self-sufficient water business management in developing countries and to achieve one of the SDGs goals as "Ensure Access to Water and Sanitation for All," we discuss and propose an ideal form of international cooperation in water supply business.

2. Points for International Cooperation

(1) Human Resources Development in Addition to Infrastructure Development

Even if huge and expensive infrastructure was arranged by financial assistance, there are some cases where maintenance and management are not well-performed after the handovers. Additionally, developing countries sometimes do not have sufficient know-how on sustainable business management such as formulation of medium- and long-term update plans and others.

Sustainable water supply business management in local communities can be realized only when local people and local business entities take responsibility for it. In order for water business entities to manage their own business by themselves, it is important to develop human resources to conduct maintenance and management

of facilities and sustainable business operations, in addition to infrastructure development.

(2) Assistance in Accordance with Local Needs: "Appropriate Technology" excels "Advanced Technology"

Even if Japan's technologies and know-how are transferred to other countries as they are, they hardly take root in the local communities continuously.

It is important to offer assistance by carefully considering local culture, climate and water supply circumstances.

3. Endeavours of Tokyo Waterworks

(1) Integrated Implementation of Infrastructure and Human Resource Development

Involvement of Tokyo Waterworks in actual construction is limited only to the minimum essentials. On the other hand, what Tokyo Waterworks involves emphatically and locally is to develop local human resources through transfer of knowledge and sharing experience.

Tokyo Waterworks transfer Japanese technology and experience in details to our counterparts by giving every possible help to convey the detailed construction technology on site (OJT) at the time of infrastructure development. At the same time, Tokyo Waterworks also learns better methods of transferring and appropriate technologies suitable in local contexts. Furthermore, Tokyo Waterworks introduces how to formulate renewal plans so that the local workers can renew facilities by themselves properly over generations. By transferring such knowledge and experience to not only our direct counterparts but also private business entities working as their contractors or sub-contractors so that Japanese technology will increasingly take root in local communities.

(2) Selection of Materials, Devices and Method in Accordance with Local Circumstances

Even if wonderful state-of-the-art materials and devices are introduced to the site, they must be restored and renewed someday in the future. Tokyo Waterworks gets local workers to understand about advantages of Japanese materials and devices by using them for actual construction works, in conjunction with using materials and devices that can be procured domestically or from neighbouring countries as possible in order local workers to make easier to conduct construction work by themselves at the time of renewal. Additionally, Tokyo Waterworks tries to make construction methods as simple and excellent in quality-retaining as possible for easier understanding. Regarding the costs, Tokyo Waterworks considers not only price but also durability and ease in procurement.

(3) Examples of Activities and Their Results

(3)-1. Non-revenue Water Reduction Project in Yangon, Myanmar

Pilot Project (October 2014 – March 2015),

Full-Scale Project (October 2016 -)

The local workers carried out all works such as replacement and repair of water pipes, and Tokyo Waterworks conducted the guidance and supervision to them. As a result of the pilot project, the non-revenue water ratio was greatly reduced (from 77% to 32%).

After the great success of the pilot project, the full-scale project was implemented with using Japan's new ODA framework that combines infrastructure development and maintenance/management. Daily maintenance and management of the distribution pipes are to be conducted sequentially from the district where the infrastructure development work has completed, and it is

planned beforehand that Yangon City Development Committee shall be responsible for operation and arrangement of funds for such maintenance and management. In addition to selecting and using low-price piping materials by considering economic circumstances and others, Tokyo Waterworks adapted an easier construction method.

(3)-2. Implementation of Training Courses in Japan

In order to convey the excellent know-how of Japan, training courses are conducted not only on-site but also in Japan. In addition to the tour of water supply facilities, Tokyo Waterworks provides practical training menu by utilizing training facilities of Tokyo Waterworks. Tokyo Waterworks implements training programs accepting 400 trainees a year on average. Moreover, Tokyo Waterworks conducts trainings for instructors to raise waterworks experts. These trainings made it possible for trained experts to locally develop sustainable human resources even after the withdrawal of Tokyo Waterworks from the countries.



Figure 3.1 Replacements of Water Pipes as a Leakage Prevention Measure (In Yangon City, Myanmar; Japanese supervisor standing on the left)



Figure 3.2 Leakage Detection (At the Training and Technical Development Centre, Bureau of Waterworks, Tokyo Metropolitan Government)

4. Conclusion

International cooperation such as developing human resources is inconspicuous and cannot lead to a certain result in a short time. However, water is indispensable for human beings as they live, and the operation of the water business is inevitably required to have sustainability and continuity. We Tokyo Waterworks strongly believes that our international cooperation aiming at fostering people and rooting in local communities steadily satisfies this requirement.

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