

Lessons learnt from JBIC's experience in assisting sewerage development in Asian countries

Many rivers in developing countries whose economies are growing rapidly are tremendously polluted and become natural sewers due to the increase of domestic waste water and inflow of industrial waste water. This poses a grave threat to the aquatic environment and sanitation in those countries, and urgent action is required to overcome the worsening situation. Among them, sewerage system development is indispensable.

In order for the investment in the sewerage system to be effective, the following action needs to be taken simultaneously.

1. Establish national financial support system for sewerage development

Since sewerage systems are very expensive and are sometimes not affordable for the majority of residents, financial support of the central government is indispensable. Economic externality of sewerage, the necessity of preserving the water quality of public water bodies, would justify the financial support by the central government.

2. Put priority on sewer networks and house connections

For sewerage systems to be effective, the sewer networks and house connections need to be constructed simultaneously or prior to the construction of the sewage treatment plant. The collection is much more complex and difficult than the treatment. This difficulty requires the governments and donors to deal with the problem of collection on priority basis. The strengthening of administrative capacity, i.e., book keeping of basic data and records on sewer networks and house connections, the strengthening of regulations to enforce the house connection obligation on residents, and the establishing the rule of the financial support and sewerage charge setting carefully designed in order to enable both the house connections of the poor residents without exception and the cost recovery of at least the cost of operation and maintenance of the whole sewerage system, are required.

3. Trial of communal sanitation

In the area where the prevailing poverty makes the house connections difficult, the installation of communal sanitation such as toilet, bathing, laundry facility for community use, can be an option. People's participation and involvement of NGOs which are competent to maintain the facilities is pre-requisite.

4. Regulatory framework

To operate sewerage systems needs a lot of laws and regulations. Among them, the most essential is the regulations to enforce the house connections as mentioned above. The regulation on industrial waste water is also essential, since the inflow of untreated industrial waste water causes hazardous effects on sewerage systems. In another word, the smooth operation of sewerage systems demands well-established environment regulation and administration, which most developing countries do not have. Therefore, the introduction of sewerage systems requires comprehensive restructuring of the environmental policy in a country.

5. Capacity development

In order for sewerage systems to work effectively, capacity development in various areas, i.e., training of engineers in designing, operation and maintenance of sewage treatment plants, strengthening of the administrative capacity of local government in order to keep

book-keeping of the basic data and records on sewer networks and house connections, strengthening of the administrative capacity of the central government in creating regulatory frameworks for house connections, industrial water, aquatic water quality control, and in creating financial support systems for sewerage development, and the environment and sanitation education.

6. Environment and sanitation education

While sanitation including sewerage service brings benefits to the residents, sewerage systems impose various obligations on the residents, i.e., the house connection obligation, payment obligation of sewerage charges and prohibition of open defecation. This is a characteristic of sewerage services which differs from other infrastructure service including water supply services. Therefore, environmental and sanitation education is essential in order to obtain the cooperation and understanding of the residents.