

Summary of the Legal Framework, Finance, and Institutional Arrangement of Japan's Sewerage System

Development of the Sewerage System in Japan

The development of a comprehensive sewerage system in Japan started only after World War II, when rapid urbanization caused by high economic growth triggered the need for urgent development of urban infrastructure. The rapid industrialization and urbanization of the 1950s and 1960s also caused serious environmental damage and pollution in the 1960s. Accumulation of solid waste in urban areas, air pollution, and pollution of public water bodies were among the major causes of serious health hazards, which were occasionally fatal. To cope with these problems, the following actions were undertaken in the 1950s and 1960s.

- Promulgation of new Sewerage Law in 1958 replacing the 1900 Sewerage Law.
- Formulation of the 1st Five-year Sewerage Development Program under the framework of the nationwide infrastructures development program in 1963.
- Enactment of the Basic Law for Environment Pollution Control in 1967.
- Enactment of the Urban Planning Law in 1968.

Environmental pollution had become a political issue by 1970. A comprehensive restructuring of Japan's environmental policy and legal as well as financial frameworks were debated in the Diet, and 14 laws relating to pollution control were newly enacted or amended, including the Water Pollution Control Law and amendment of the Sewerage Law, in which the protection of the water quality of the public water bodies was added as a purpose of the sewerage system. The Environment Agency was established in 1971 (in 2001, it was upgraded as the Ministry of the Environment).

The central government's budget to subsidize local governments' sewerage investment was reinforced and the coverage ratio of the subsidy for sewage investment was raised to more than 50%. Also, in the 3rd Five-year Sewerage Development Program started from 1971, the budget was increased to 2.8 times that of the 2nd Five-year Sewerage Development Program in order to accelerate the sewerage investment. There followed a series of consecutive Five-year Sewerage Development Programs, and recently an Infrastructure Intensive Development Plan.

Besides these policy changes, in 1975, the Japan Sewerage Works Agency (JS) was established to provide technical support for local municipalities. The local municipalities, based on their needs, obtained sewage-related technical support on construction, operation and maintenance of treatment plants. JS also conducts research and technology development.

In 1978, the Water Pollution Control Law was revised to introduce Water Quality Aggregate Regulation in order to reduce the total pollution load flowing into major water bodies such as Tokyo Bay, Ise Bay and Seto Island Sea, where eutrophication had advanced and achieving and maintaining environmental standards would be difficult with existing discharge standards. Under the regulations, the prefecture governor is given the authority to determine the targeted reduction quantity for each source of pollution load.

Achievements and Remaining Issues of Japan's Sewerage Systems

Achievements

- Investment in sewage works through five-year programs has been intensified and accelerated.

- The proportion of the population with sewerage increased from 8% in 1965 to 69.3% as of March 2006. It is targeted to reach 72% in 2007.
- Major objectives of sewerage systems were accomplished, such as prevention of inundation, improvement of living conditions, and preservation of water quality.

Remaining Issues

- Regional gap in the sewered population rate between large cities and small cities and towns.
- Urgent need for rehabilitation, reconstruction, and upgrading of sewerage systems.

Legal Framework of Sewerage Works in Japan

The Sewerage Law, Urban Planning Law, Water Pollution Control Law and Japan Sewerage Works Agency Law, among others, compose the legal framework of sewerage system development.

The Sewerage Law stipulates that the development of sewerage system within a municipality is the duty of each municipality. However, if the required sewerage system spans over two or more municipalities, a basin-wide sewerage system shall be developed by the prefecture's government. Urban Planning Law defines the sewerage system as one of the urban facilities to be included in urban planning.

The Sewerage Law stipulates that the connection to the sewer is mandatory for the residents of sewered areas within three (3) years of the day when a notice was issued of the commencement of sewerage service. The Law also obliges the pre-treatment of hazardous water to the treatment such as industrial waste water before its discharge into the sewerage system.

Under the Water Pollution Control Law, municipalities are obliged to fulfill the water quality standards when they build and operate the sewage treatment plants and they are subject to penalties if they failed to fulfill the standards. The prefecture's governor is responsible for monitoring the water quality, issuing an improvement order, ordering the use of the facilities, or temporarily banning the discharge of wastewater, if any specific facilities including sewage treatment plants are found to be discharging water in violation of the effluent standards.

Sewerage Finance

The basic principles of cost allocation are the "public money for rainwater, private money for polluted water" principle and the "polluter pays" principle. In the actual application of these principles, the Sewerage Works Finance Committee, which consists of specialists from the central Government, local government, and the private sector, was created as an advisory body to review the funding arrangements of the sewerage system. The current funding arrangements note that "taking into consideration the public nature of sewerage service, it is appropriate to cover a part of the cost for polluted water (i.e., cost for water quality control, a part of cost for advanced treatment, cost for affordable tariff setting) by the public money."

The central Government provides subsidies to the local governments responsible for construction of sewerage systems. Facilities eligible for the governmental subsidy, the ratio of subsidy, and the ratio of coverage against investment cost, are set by the central Government. Municipalities can issue bonds for a portion of the construction costs which is not eligible for or not covered by subsidy from the central Government. The prefecture governments also

provide grants to the municipalities. The central Government subsidy and municipal bond have the major portion. Around 65% of the total investment amount for sewerage systems, consisting of sewers and sewage treatment plants, are categorized as the eligible for subsidy from the central Government. The current subsidy ratio is 50% for sewers and 55% for sewage treatment plants.

In the budget for the year 2006, the total project cost for development of sewerage systems in Japan was estimated to be Yen 2,283 billion (US\$19.0 billion), and the amount of the eligible portion for subsidy was estimated to be Yen 1,480 billion (about 65%, US\$12.3 billion). The amount of central Government's subsidy was estimated to be Yen786 billion (US\$6.6 billion).

Financing Operation and Maintenance (Cost Recovery) The costs for operation and maintenance (O&M) plus redemption costs for municipal bonds of rainwater drainage shall be borne by the transfer from Municipal General Account which comprises local tax revenue as well as the distribution of local allocated tax from the central government. The costs of O&M plus redemption cost of wastewater shall be borne by both the users' sewerage charge and the transfer from Municipal General Account. The sewerage charges cover the O&M costs and a part of redemption costs for municipal bonds, another part to be covered by the transfer from Municipal General Account. In 2004, while the sewerage charge covers 197.9% of the O&M costs for wastewater system, the cover ratio is reduced to 55.8% if bond redemption costs are included. In another words, in Japan, the level of sewerage charge is set at the level which is more than enough to cover the O&M costs of wastewater management, but not at the level sufficient to recover the investment costs. On the other hand, in Japan, water rates, in principle, are set at the level to recover both the O&M costs and the investment costs.

Sewerage charges are based on metered water consumption and are usually collected with water rates although its account system is independent from water supply works. A progressive charging system is applied commonly to lessen the charge for basic sewerage. Nationwide average sewerage charges in 2000 were Yen 2,442/month/20 cubic meters (m³), whereas the nationwide average water rates in 2000 were Yen 3,083/month/20m³. Sewerage charges were lower than water rates due to the subsidies.

Countermeasures against Nonpayment of Sewerage Charges Prevention of nonpayment of sewerage charges is an important issue for developing countries. In Japan, municipalities, as the administrators of sewerage systems, can issue administrative orders to the defaulters of sewerage charges ordering them to pay, in accordance with the Local Governing Law. If the defaulter fails to fulfill the administrative order, s/he will be subject to penalties.

Sewerage Service for the Poor In many municipalities, exemption measures for sewerage and water charges apply to families on relief or households with elderly persons only. The resulting cost on the sewerage executing agency is compensated by the general account of the local government and thus the finances of the sewerage executing agency remain unaffected.

Executing Agency to Implement Sewerage Works

The sewage works in Japan are implemented (construction, operation, and renewal of sewerage facilities) mainly by prefectures and municipalities. Japan Sewerage Works Agency (JS), which is a public corporation, also undertakes the construction of sewerage system upon requests from municipalities. The Ministry of Land, Infrastructure and Transport (MLIT) has jurisdiction over the nationwide budget for sewerage works, watershed management, planning for new tasks of sewerage systems, establishment of technical standards, policy

and project evaluation, publicity and public involvement, and international cooperation.

Responsibility and Regulatory Measures for Sewerage

The Water Pollution Control Law obliges prefecture and municipal governments to implement domestic wastewater treatment facilities. It also obliges people to maintain water quality as well as to conserve public water bodies, and to cooperate with the national and local governments for implementation of measures for domestic wastewater. The responsibility and regulatory measures of the central Government, local government, and users on sewage works are summarized below.

Responsibility and Regulatory Measures of the Central Government, Local Governments, and Users on Sewerage Works

Central Government

Ministry of Land, Infrastructure and Transportation manages the public administration on sewerage; its major roles are as follows:

- Contribution of national subsidy and enactment of regulation based on the Sewerage Construction Decree
- Formulation and implementation for the Sewerage Development Program
- Approval for the Basin-Wide Sewerage Development Plan formulated by local governments based on the Sewerage Development Program
- Inspection and approval of the Formulated Sewerage Project Plan
- Indispensable project instruction, recommendation, and superintendence
- Project reevaluation
- Development and research on sewerage engineering
- Superintendence of the Japan Sewerage Works Agency

Ministry of Internal Affairs and Communications carries out licensing of the issuance of municipal bonds (bond certificates issued by local government) to be credited to the construction costs or O&M costs on sewerage facilities besides the national subsidy.

Ministry of the Environment manages the environmental conservation administration, and determines the water quality criteria applied to the nationwide public waters stipulated in the Basic Law for Environmental Pollution Control. In addition, regulatory measures for the treated water from the sewage treatment plant and drainage resulting from the corporations etc. were conducted based on the Water Pollution Control Law.

Local Governments

Local governments (prefectures and municipalities) perform the sewerage construction. They also contribute to the maintenance of the water quality in the public waters and O&M. Construction of public sewerage systems, basin-wide sewerage systems, and urban rainwater drainage systems are to be entrusted to Japan Sewerage Works Agency case by case.

Prefectures manage the following items.

- Formulation of a basin sewerage construction master plan
- Formulation and implementation of the basin-wide sewerage project
- Administrative instruction on municipalities under jurisdiction
- Contribution of subsidy to municipal sewerage projects of municipalities
- Issue of municipal bonds, etc.

Municipalities manage the following items.

- Formulation of public sewerage project planning based on the basin sewerage construction master plan
- Preparation of budgets for the public sewerage and city sewerage
- Preparation of allotted charges for the basin sewerage
- Construction and O&M of the public sewerage
- Set-up and levy of public sewerage charges
- Construction and O&M on the urban rainwater drainage system
- Issue of municipal bonds, etc.

Users

- Participation in public hearings or submission of written opinions, etc.
- Installation obligation on drainage facilities stipulated in the Sewerage Law
- Conversion of vault toilets into flush toilet stipulated in the Sewerage Law
- Responsibility for treating the toxic sewage stipulated in the Sewerage Law
- Charge obligation stipulated by the local government's ordinance based on the Sewerage Law