

Urban Environments and Water and Sewage Systems

Overview

In the urban environments and water and sewage systems sector, JICA has provided cooperation targeting waterworks; drainage and sewage systems; urban environments and waste; and housing and urban planning.

JICA's cooperation in these fields started with waterworks. In the early 1960s, JICA helped in the formulation of a master plan for development of a waterworks system in the capital of Jakarta, and in the 1970s it supported the actual construction of this system. In the 1980s, JICA also supported the construction of waterworks systems not only in Jakarta but also core regional cities, such as Surabaya and Makassar. From the mid-1980s, JICA began supporting the construction of the Water Supply and Environmental Sanitation Training Center and providing the center with technical cooperation. Here, JICA helped nurture technicians by providing training on waterworks design, maintenance, and management. In the 1990s, JICA provided cooperation for the development of waterworks systems in smaller regional cities. Such cooperation was based on the Indonesian government's policy of correcting regional disparities. And since entering the 2000s, JICA has been helping improve the operation of regional public water corporations as a response to decentralization.

JICA's efforts to address drainage and sewage treatment, which are important as countermeasures against urban flood disasters, began in Jakarta during the 1980s. They later spread to improvement projects in Denpasar and Yogyakarta in the 1990s. In Bali, JICA tied the Denpasar improvement project to a coastal protection project, thereby contributing to the protection of Bali's coasts, which are an important tourism resource.

JICA began its cooperation in the environmental management field in the 1990s. As this is a new field for Indonesia, JICA provided support to improve facilities and equipment needed to assess air and river pollution and provided pertinent technical cooperation. In addition, JICA helped establish an "eco label" system in the 2000s. And in the waste disposal field, JICA improved final disposal sites and provided garbage trucks in Jakarta, where waste disposal is an increasingly serious problem.

Results

JICA has provided cooperation that emphasizes improvement of waterworks, which have high priority among all forms of social infrastructure. It has also provided support for environmental management, sewage system improvement, and waste disposal in response to Indonesia's development.

Consequently:

- JICA provided cooperation targeting waterworks, sewage and drainage, and waste disposal measures in Jakarta. Particularly with regard to waterworks, JICA together with the Indonesian government realized new water supply to 3.4 million residents. JICA also contributed to higher garbage collection rates and reduced flood damage, and improved the overall living environment in the capital.
- JICA also contributed to water supply in Surabaya, Makassar, and other regional core cities as well as small regional cities.
- JICA not only improved waterworks facilities but also contributed to stronger organizations by training waterworks management technicians, improving the operations and services of public water corporations.
- JICA contributed to efforts to reinforce systems and capabilities for responding to urban environmental problems, which represent a new issue for Indonesia.



Water Supply and Environmental Sanitation Training Center



Lecture for technicians in the Water Supply and Environmental Sanitation Training Center

Improving urban environments in Jakarta

JICA has implemented a broad range of cooperation to improve urban environments in Indonesia's capital of Jakarta. Among those areas targeted were water and sewage systems, improvement of drainage, and establishment of waste disposal facilities.

Of this, JICA's cooperation for waterworks in Jakarta has included formulation of a master plan, construction of two purification plants, development of the water distribution network, and training for waterworks technicians.

Moreover, given that Jakarta is prone to flood damage, JICA supported the construction of a flood-control system by implementing flood-control projects and improving drainage facilities.

JICA-led cooperation also formulated a master plan for waste disposal, constructed disposal sites, and provided garbage trucks as responses to Jakarta's rapidly growing population.



The improved western Jakarta flood-control canal

Preservation of Forests and the Natural Environment

Overview

Analysis of satellite photos taken in 2006 reveals that 97.17 million hectares of Indonesia's land area, or 53.6%, are covered with forests. The majority of such forests are tropical rainforests, giving Indonesia the third largest tropical rainforest area in the world, following Brazil and the Democratic Republic of the Congo. Indonesia also has the world's largest mangrove forest, as approximately one-fourth of the world's mangrove forests (18 million hectares) are found in Indonesia. Moreover, roughly 70% of Indonesia's total coastline is made up of coral reefs; this coastline is also rich in biodiversity. It is reported that there are roughly 325,000 wild animal and plant species living in Indonesia, a figure that represents some 20% of all species on the planet.

Against this backdrop, JICA provided cooperation for industrial forestation with an eye to sustainable forestry in the 1970s. This cooperation corresponded to the Indonesian government's policy of developing forest resources to earn foreign currency and provide employment opportunities. However, as it became clear that declining forest resources were becoming a problem, JICA shifted the focus of its cooperation in the 1980s to research on tropical rainforests and forest management in order to reinforce forest preservation. In the 1990s, JICA began technical cooperation toward the development of suitable tree species for forestation, as it also provided various forms of cooperation for forest preservation. JICA also launched cooperation to preserve mangrove forests that had been declining due to aquaculture and other activities.

In addition, JICA provided technical cooperation for the purposes of managing and preserving Indonesia's diverse flora and fauna. This cooperation included improving facilities, equipment, and materials; developing biological specimens; and establishing a database for biodiversity information. JICA also worked to strengthen management in national parks to ensure the preservation of animal and plant habitats. It also started technical cooperation intended to prevent forest fires from the mid-1990s.

If CO₂ emissions caused by loss of forests and destruction of peatlands are considered, Indonesia becomes the world's third largest producer of greenhouse gases, following China and the United States. JICA put together the world's first financial support package for countermeasures against climate change, and it began providing "Climate Change Program Loans" to supply this assistance in 2008, first in coordination with the French government and later joined by the World Bank. In this way, JICA is providing financial support for comprehensive approaches to climate change countermeasures that respects Indonesia's autonomy. In addition, JICA plans to begin technical cooperation to strengthen Indonesia's capabilities in ascertaining circumstances surrounding climate change countermeasures and formulating action plans beginning in 2010.



Firefighting exercise by a community firefighting organization



Response to forest fires

Often, when a forest fire starts in Indonesia, it becomes a major disaster. Such fires have destroyed several millions of hectares of forest on Sumatra and Kalimantan. They are a serious regional problem, as the haze can reach Malaysia, Singapore, and other neighboring countries and seriously impacts on people's health, transport, and the tourist industry.

Japan has provided various forms of assistance pertaining to forest that covers both prevention and countermeasures when fires occur. The following are examples of assistance provided thus far.

-Emergency provision of firefighting equipment and dispatch of the Japan Disaster Relief Team to perform firefighting when actual fires occur.

-Support in building a system for early detection of forest fire locations ("hot spots") using satellites and developing fire-spread hazard maps.

-Support in formulating forest fire prevention guidelines and creating community firefighting organizations (taking hints from Japan's fire brigades) for national parks.

-Support in formulating provincial orders on forest fire prevention and implementing resident-led preventative activities in Riau, Jambi, and West Kalimantan Provinces, where forest fires frequently occur.

Results

In ways that meet pertinent circumstances, JICA has provided assistance toward preservation of Indonesia's diverse and valuable natural environment. As a result, JICA:

- Contributed to forest preservation (research, development forestation species, etc.) based on a long-term perspective.
- Cooperated in the preservation of Indonesia's biodiversity—which is valuable not only to Indonesia but also to the world at large—and advanced development of biological specimens. The Research and Development Center for Biology of the Indonesian Institute of Sciences, which was a recipient of cooperation, is providing valuable resources to the world and energetically continuing joint studies with international researchers.
- Introduced approaches and scientific monitoring systems from an early stage to tackle forest fires, which have become an international problem, supported the formation of community-led firefighting organizations, and reinforced early-response firefighting systems.
- Is supporting the Indonesian government's efforts to address a global issue of climate change by implementing a cooperation package that includes formulation of policies and systems, infrastructure development, and technical cooperation with financial assistance.