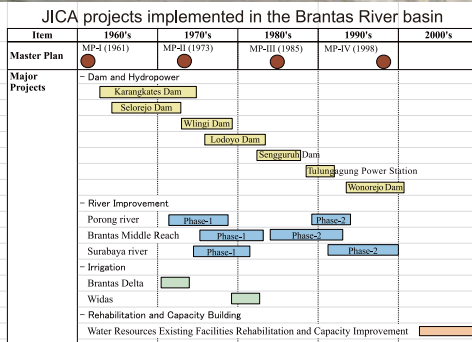


## VII. Environmental Preservation and Development of Social Infrastructure

### River Basin Development and Management



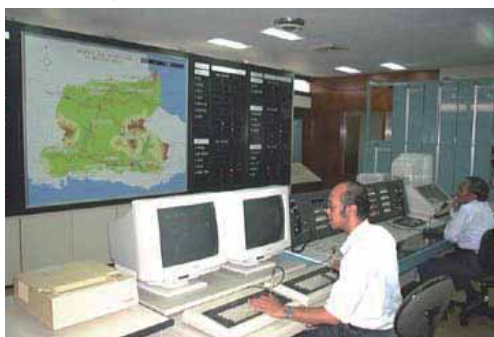
#### Comprehensive river basin development on the Brantas River

Projects started with war reparations in 1958. Based on master plans, JICA built multipurpose dams, developed irrigation, constructed hydropower stations, made river improvements, and conducted other activities from the 1960s. Such activities significantly reduced flood damage, and the construction of power and irrigation facilities brought industrial development. At the same time, the projects' implementation trained many Indonesian technicians.

#### Results

JICA has supported comprehensive river basin development and flood control projects in major regional cities. As a result:

- Comprehensive river basin development along the Brantas River, Solo River, and Jeneberang River significantly reduced flood damage, thereby bringing stability to residents' lives. It also contributed to regional economic growth, better incomes and livelihoods among residents through hydropower generation projects, supply of domestic and industrial water, and irrigation development.
- Long-term projects were systematically executed based on a process that reached from the formulation of a master plan in each river basin to project implementation, and human resource development took place through joint work by Indonesian and Japanese technicians throughout this process.
- Flood-control projects significantly reduced flood damage in targeted regions.



The flood warning system for the Brantas River

### Disaster Management

#### Overview

In the disaster management field, Japan has provided cooperation in both prevention and disaster recovery. The former is cooperation aimed at minimizing disaster damage, and the latter is cooperation that assists quick recovery should an unfortunate disaster occur.

Indonesia is one of the world's most volcanic countries. In particular, Java, which is the political and economic center of Indonesia, has more than 20 active volcanoes. Since ancient times, the people of Java have lived alongside and under the influence of volcanoes. Although volcanic eruptions provide fertile soil on the one hand, volcanic mudflows frequently cause major disasters on the other. Consequently, measures against sediment disasters represent an extremely important issue for the preservation of Indonesia's national territory and the country's economic development. In the 1970s, Japan constructed emergency volcanic sediment control facilities each time there were fears that Mt. Merapi or Mt. Semeru might erupt. And, with an eye to the long term, it established the Volcanic Sabo Technical Center and trained sediment engineers there. From the 2000s, JICA has been implementing a technical cooperation project to reinforce ability to cope with "Banjir-Bandang" disasters, in which mudflows occur when natural dams form.

During the 2000s, Indonesia suffered a succession of disasters, including a major earthquake off the coast of Sumatra and resultant tsunami (December 2004), an earthquake in central Java (May 2006), and an earthquake off the coast of Padang in West Sumatra (September 2009). Japan immediately dispatched emergency relief teams following these disasters and provided financial and technical cooperation for quick post-disaster recovery. Furthermore, JICA is seeking to reinforce Indonesia's disaster management systems in preparation for future disasters. Since the mid-2000s, JICA has been assisting with the formulation of comprehensive disaster-prevention plans, improvement of early warning systems for tsunami, and reinforcement of administrative functions to improve the seismic resistance of houses.

#### Results

JICA has supported responses to volcanic disasters that frequently threaten the lives of Indonesians. And since 2000, JICA has supported efforts to reinforce disaster-prevention and disaster-response systems in addition to supporting post-earthquake recovery. As a result:

- JICA quickly implemented emergency countermeasures in response to eruptions of Mt. Merapi and Mt. Semeru, and it contributed to improved sediment control technologies by formulating disaster-prevention plans and implementing sediment-control constructions.
- Human resources in the sediment-control field were trained through the Volcanic Sabo Technical Center.
- JICA contributed to early post-disaster recovery by quickly providing comprehensive recovery assistance following large-scale disasters.



A member of the Japan Disaster Relief Medical Team treats a disaster victim



#### Support for disaster recovery in Aceh

Following a major earthquake off the coast of Sumatra in December 2004, the Japanese government immediately dispatched an emergency relief team and then JICA implemented a series of assistance projects. These projects included formulation of a master plan for reconstruction of Banda Aceh, assistance for community recovery, emergency infrastructure recovery including transportation and water resource systems through grants and loans. Continuing from these emergency projects, JICA implemented the "Project on Self-Sustainable Community Empowerment Network Formulation in Nanggroe Aceh Darussalam" a two-year undertaking that began in 2007, to improve residents' livelihoods and the capabilities of local administrators.



#### The Project on Building Administration and Enforcement Capacity Development for Seismic Resilience (2007 to 2011)

This project had its origins in the considerable damage caused by housing collapses during an earthquake in central Java and JICA-provided technical assistance in housing reconstruction. Focusing on areas susceptible to earthquake damage, the project is diffusing information on methods for improving the seismic resistance of houses and supporting the reinforcement of inspection functions within the government.

