Building Disaster Resilient Societies
JICA's Cooperation on Disaster Management
Controlling natural hazards is difficult and, thus, enhancing social capacity to cope with disasters is one of the most effective ways to manage and reduce disaster risks. JICA, based on the concept of disaster management cycle, has been providing support to enhance the capacity of societies to cope with disasters from a multi-disciplinary perspective.

Enhancing the capacity to cope with disasters and reduce damage caused by disasters require capacity to take adequate actions in the phases of disaster prevention (mitigation and preparedness), response, and recovery and reconstruction. JICA has defined the following goals in the respective phases of the disaster management cycle, and has been cooperating with countries to achieve these goals.

**Development Strategy Goal 1 (Prevention Phase): Development of disaster-resilient communities and societies**

**Development Strategy Goal 2 (Response Phase):**
Quick and effective delivery of emergency assistance to victims (Saving human lives)

**Development Strategy Goal 3 (Recovery and Reconstruction Phase):**
Smooth transition to and implementation of recovery and reconstruction

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**Why do disasters occur?**

Natural phenomena cause natural hazards but they are not disasters by themselves. Hazards act on our societies as external forces and when these forces exceed the capacity of societies to cope with them, disasters occur. The effect of disasters can be determined based on the balance between hazards and people’s capacity to cope with these hazards.

JICA’s Policy of Cooperation in Disaster Management

Frequent climatic anomalies attributed to global climate change have been increasing the number of natural hazards throughout the world and disasters caused by these hazards have become significantly severe, especially in countries where development plans do not take disaster risks in account. In most cases, damage caused by natural disasters have greater effect on the people in developing countries than in developed countries. Natural disasters in developing countries not only seriously affect people’s health and sometimes even claim their lives, but also destroy properties and social infrastructure that people have developed over the years instantly. When natural disasters occur frequently, it becomes difficult for developing countries to effectively eradicate poverty and achieve sustainable development.

Although JICA has been engaged in various international cooperation programs assisting developing countries achieve their development goals, natural disaster has become a major obstacle in achieving sustainable development as it devastates people’s security and livelihood. As the case, JICA has been strengthening its efforts to assist developing countries build societies that are more disaster-resilient.
Project on Capacity Development in Disaster Risk Management in the Kingdom of Thailand

Thailand suffers from frequent natural disasters such as floods, landslides and tsunami. In the wake of the devastating Indian Ocean tsunami of December 2004 that left approximately 8,500 people dead or missing, policies were launched to reinforce the national disaster management system in Thailand. JICA has been assisting the Government of Thailand through the implementation of the “Project on Capacity Development in Disaster Management” (August 2006-August 2008).

The project aims at equipping individual residents with capacity to prepare for disasters through community activities. 1 pilot community has been designated from each area vulnerable to frequent floods, landslides or tsunami and the following actions have been taken in the project:
- Conducting awareness workshops, preparing hazard maps and conducting evacuation drills using the maps.
- Building early warning systems in communities using simple rain gauges.
- Educating children on disaster preparedness together with teachers and regional disaster managers in schools to promote disaster preparedness that is expected to disseminate usefull knowledge and experience then disseminate the outputs from the activities of the pilot communities to other areas.

Public awareness on the need for disaster preparedness has gradually been heightened through people’s active participation in the activities of the project such as in selecting location of evacuation shelters and evacuation routes, and maintaining the rain gauges.

Further efforts are aimed to establish community disaster prevention committees and develop community disaster prevention plans that will carry on the above-mentioned activities.

Project on Capacity Development for Disaster Risk Management in Central America “BOSAI”

Natural disasters such as hurricanes, landslides, floods, earthquakes and volcanic activities occur frequently in Central America. To respond to these disaster risks, the governments of 6 counties in the region, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama, pledged to make a concerted effort to develop disaster-resilient societies and build a regional cooperation mechanism through the Center of Coordination for the Prevention of Natural Disasters in Central America (CEPREDENAC), a regional disaster coordinating organization. JICA has been assisting regional cooperation through the Center in developing disaster-resilient societies.

The Project on Capacity Development for Disaster Risk Management in Central America (known as “BOSAI” project) aims at reducing risks and damages caused by disasters by increasing disaster management capacity of communities and local governments.

Why is it important to enhance the disaster management capacity of communities and local governments? Most disaster management projects in the past have been limited to building disaster management capacity of the central government alone is insufficient to manage or reduce the effects caused by disasters. There have been numerous cases where assistance from the central government did not reach the affected areas fast enough, especially during major disasters, due to destruction of transportation and communications infrastructure systems. Therefore, enhancing disaster management capacity of the communities and local governments on the ground has been globally recognized as the more effective way to improve disaster management.

In the BOSAI project (2007-2012) the following activities will be conducted:

- Conducting awareness workshops, preparing hazard maps and conducting evacuation drills from the planning phase with advice from the Japanese experts and play leading roles as facilitators in the actual activities.
- Manuals will be prepared based on past activities to enable local disaster managers to lead community disaster prevention activities. The disaster managers of central and local governments responsible for promoting community disaster prevention throughout the country are expected to accumulate useful knowledge and experience then disseminate the outputs from the activities of the pilot communities to other areas.

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In 2007 Earthquake that hit the central coast of Peru claimed more than 500 lives and caused devastating damage to Callalli Province in the Lima Region where the model houses stood. The model houses, however, suffered only minor damage and proved that they are resistant to earthquakes. To meet the increasing public demand for seismic resistant buildings, JICA in cooperation with the related Peruvian organizations has been continuously working to popularize seismic resistant adobe houses to reduce damages caused by earthquakes.

In response, JICA has started implementing the Project on Dissemination of Construction Technology for Low-Cost and Seismic Resistant Houses in the Republic of Peru. Peru is located in the Circum-Pacific Seismic Zone and has frequently been subjected to earthquakes that cause serious destruction to its people and their property. Poor families, in particular, are devastated when their houses collapse in the event of earthquakes. Earthquakes thus pose a great threat to the most vulnerable members of the society. In Peru, many houses, especially in the low-income communities, are built by sun-dried bricks known as adobe. Although adobe houses can easily be constructed at low cost, they are highly vulnerable to earthquakes.

Project on Dissemination of Construction Technology for Low-Cost and Seismic Resistant Houses in the Republic of Peru

JICA has designated pilot areas and provided technical assistance in constructing seismic resistant houses (Phase I: January 2006–March 2007). JICA secured the technical transfer by constructing 3 model houses with 147 construction workers from local contractors in cooperation with local NGOs. The Peruvian government gave high appraisal to the result of the project and local contractors in cooperation with local NGOs. The Peruvian government gave high appraisal to the result of the project and requested JICA to further promote seismic resistant adobe houses nationwide.

Based on the outputs of activities from Phase I of the project, Phase II will be implemented to further disseminate technology to build seismic resistant houses and to advocation its importance.

In the first step of Phase II, engineers of local municipalities were trained on construction technology in Lima. The engineers who completed the training have been constructing community facilities together with municipality workers and have transferred knowledge to construct earthquake-resistant adobe houses to them. As the engineers of municipalities obtain knowledge and skills in building seismic resistant adobe houses, a system to inspect and supervise the construction of seismic resistant adobe houses will be established, allowing further dissemination of earthquake-resistant adobe houses.

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Disaster Reduction Learning Center (DRLC)

A hub for human resources development in disaster management

JICA and the government of Hyogo Prefecture jointly established DRLC in Hyogo on April 1, 2007 as a hub for human resources development in disaster management.

Sharing Japan’s disaster management practices

The Hanshin-Awaji Great Earthquake of January 17, 1995 heavily affected southern Hyogo. The unprecedented disaster caused approximately 6,800 lives and the economic loss reached more than 10 trillion yen. However, with immediate assistance from the world, the affected areas were able to quickly recover and be rehabilitated. From this experience, the communities have been continuing their efforts in building a disaster-resistant society.

The Disaster Reduction Learning Center (DRLC) has developed a disaster reduction learning system that is an area developed to symbolize the efforts for reconstruction. DRLC works in cooperation with numerous disaster management organizations and international organizations residing in this area and the Hanshin-Awaji Great Earthquake’s disaster management knowledge and practices globally.

Disaster Reduction Learning Center (DRLC)

Activities of DRLC

DRLC will be conducting activities in the following areas, using knowledge and lessons-learned particularly from the Hanshin-Awaji Great Earthquake experience in order to train disaster managers.

(i) Coordination of training on disaster management
(ii) Training on disaster management
(iii) Development and systematic use of networks among disaster managers
(iv) Preparation and effective use of databases on human and other resources
(v) Research and development

In order to improve this situation, JICA has been taking the following measures in the Study on the Integrated Watershed Management for the Nyando River Basin (February 2008–July 2008).

1. Building a system to assist the government to take flood control measures in the Nyando River Basin.

2. Training on building among the stakeholders through the Forum.

2. Promoting the approach to incorporate flood control measures into community development plans.

3. Preparing the master plan for integrated watershed management in the Nyando River Basin.

The Nyando River Forum was evaluated highly by the Water Resources Management Authority of Kenya for its significant role as an organization effectively supporting flood control activities of the regional communities. The Forum is expected to continue its operation as a platform for water resources users after the completion of this Study.
In order for disaster victims to recover from a state of disorder and regain their ordinary life, quick, smooth transition from the response phase to the recovery and reconstruction phase is essential. JICA, in order to achieve the smooth transition of its implementation of the recovery and reconstruction, has been conducting immediate assessment of recovery and reconstruction works in the affected areas. JICA has also provided support in reconstructing houses and social infrastructure, such as water and sewerage, electricity, gas, roads, medical facilities, and schools, making them more resilient against disasters. JICA has been active in mental health care of those affected by disasters who may be suffering from post-disaster trauma.

**Development strategy goal 2:**

**Quick and effective delivery of emergency assistance to victims (saving human lives)**

When disasters strike, quick and immediate actions to save human lives are provided. Efforts were made by the JDR Medical Team to provide medical services to patients while maintaining a base in Sathibagh Government Girls High School. The JDR Medical Team opened its base in Sathibagh Government Girls High School only 2 days after the disaster. This allowed the main team to advance on the field for 10 days.

**Dispatchment of JDR Advance Assessment Team**

A new attempt was made in sending the JDR Medical Team in responding to this particular disaster. First, a 7-member advance team including two doctors and two nurses was dispatched. This advance team was able to provide immediate medical service on site only 2 days after the disaster. This allowed the main team that arrived a day later to start its activities smoothly.

**Improved assistance for medical institutions at the disaster site**

Second, improved assistance was provided to medical institutions at the disaster site. The JDR Medical Team opened a temporary clinic on the street in front of Muhammadia’s Hospital, one of the largest hospitals in the city of Banital, to support its medical operations. Initially, the JDR Medical Team started diagnosing patients who could not be treated at the hospital due to overcapacity, but soon, the team and the hospital started working complementarily by, for example, requesting to the hospital to receive patients whom the team could not provide adequate treatment due to lack of equipment. Because the hospital was well prepared for the potential eruption of Mt. Merapi, it was able to recover its medical service by the time the JDR Medical Team completed its activities and smoothly took over the activities of the JDR team.

**Providing seamless emergency assistance**

Finally, two members in charge of making assessment for rehydration assistance needs were dispatched. The team was requested to identify the needs in the recovery and reconstruction phase that followed the response phase to assist smooth and timely transition between the 2 phases. The activities of the team presented Japan’s will to provide recovery and reconstruction assistance in the areas of primary and secondary school education, health and medical care, and water supply ahead of other countries.

**Development strategy goal 3:**

**Smooth transition to and implementation of recovery and reconstruction**

Muzaffarabad, the political and commercial center of Kashmir Region, suffered devastating damage from the earthquake of October 8, 2005 that hit northern Pakistan. Located near the epicenter, the city received the most direct effect of the quake. JICA conducted the Development Study on Rehabilitation and Reconstruction in Muzaffarabad City to develop a reconstruction plan for the city by 2016 aimed to build a disaster-resistant city.

**The Development Study on Rehabilitation and Reconstruction in Muzaffarabad City in Islamic Republic of Pakistan**

Muzaffarabad was based on the idea of mutual help, which also enhanced public awareness on reconstruction efforts. The renovated Sathibagh Government Girls High School is the first earthquake-resistant public facility constructed after the disaster and it is now used as a model for earthquake-resistant design and construction. It was designed to protect the students from disasters and serve as a shelter for local people in times of disasters. The effect of the earthquake was augmented partly because there has hardly been any education conducted on disaster preparedness in Pakistan; thus people did not have much knowledge about natural disasters or disaster preparedness. Under this situation, JICA responded with the following activities, taking its base in Sathibagh Government Girls High School.

- Assessing the damage of houses and social infrastructure
- Building a system to organize CBOs to remove debris left by disasters and to monitor, warn and evacuate from possible landslides
- Conducting classes on disaster preparedness
- Preparing materials based on the knowledge from experiences of the Hanshin-Awaji Great Earthquake
- Implementing the following prioritized rehabilitation projects for quick recovery of people’s lives in cooperation with NGOs:
  - Building a system to organize CBOs to remove debris left by disasters and to monitor, warn and evacuate from possible landslides
  - Rebuilding collapsed Sathibagh Government Girls High School

JICA, while conducting the study, implemented the following prioritized rehabilitation projects for quick recovery of people’s lives in cooperation with NGOs:

- Building a system to organize CBOs to remove debris left by disasters and to monitor, warn and evacuate from possible landslides
- Rebuilding collapsed Sathibagh Government Girls High School

In order to provide disaster victims recovery from a state of disorder and regain their ordinary life, quick, smooth transition from the response phase to the recovery and reconstruction phase is essential. JICA, in order to achieve the smooth transition of its implementation of the recovery and reconstruction, has been conducting immediate assessment of recovery and reconstruction works in the affected areas. JICA has also provided support in reconstructing houses and social infrastructure, such as water and sewerage, electricity, gas, roads, medical facilities, and schools, making them more resilient against disasters. JICA has been active in mental health care of those affected by disasters who may be suffering from post-disaster trauma.

**JICA’s advance team dispatched at the time of the May 2006 Java Earthquake in Indonesia**

On May 27, 2006, an earthquake with the magnitude 6.3 hit Yogjakarta, Indonesia. The devastation from the quake left approximately 5,800 dead and 138,000 wounded. The government of Japan, by the request of the Indonesian Government, promptly sent a JDR Medical Team, which devoted its medical activities on the field for 10 days.

**Displacement of JDR Advance Assessment Team**

A new attempt was made in sending the JDR Medical Team in responding to this particular disaster. First, a 7-member advance team including two doctors and two nurses was dispatched. This advance team was able to provide immediate medical service on site only 2 days after the disaster. This allowed the main team that arrived a day later to start its activities smoothly.

**Improved mobile medical services and cooperation with international organizations**

Third, improved mobile medical service was provided jointly with an international organization.Pairs consisting of one doctor and one nurse toured 5 villages located within the 30-minute to one hour drive vicinity of Banital to provide medical services. Patients in critical conditions were relocated to nearby hospitals, willing to receive patients, after obtaining consent from the patients. Transportation of patients were conducted in cooperation with the International Organization for Migration (IOM) that deployed emergency vehicles.

**Providing seamless emergency assistance**

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**When disasters strike, quick and immediate actions to save human lives are provided. Efforts were made by the JDR Medical Team to provide medical services to patients while maintaining a base in Sathibagh Government Girls High School.**
JICA’s assistance for disaster management (FY 1997-2006)

Shown here are the cumulative totals of (1) expenditures of disaster management projects (JICA’s investments for technical assistance and Japan’s grant aid projects facilitated by JICA) and (2) numbers of JICA experts and participants of JICA training programs, by type of disaster prevention measure and by region.

JICA reimbursed 216 million dollars (56.8%) for Asia, followed by 63 million dollars (16.4%) in Central and South America, 56 million dollars (14.6%) in the Middle East.

Note: As amounts and percentages are rounded-off, they may not match their total.

Expenditures in dollars are calculated by converting the yen amount at the exchange rate of US$1=116.4 yen as designated by DAC for 2006.

JICA’s expenditure
JICA also expedited the implementation of Japan’s grant aid projects, following 63 million dollars (16.4%) in Central and South America and 56 million dollars (14.6%) in the Middle East.

JICA dispatched 3,503 experts of disaster management, of which 2,421 (68.8%) were assigned for the earthquake management, followed by 518 (14.8%) in general disaster management.

Approximately half of the participants, 1,833 (52.0%), received training in the earthquake management, followed by 518 (15.2%) in general disaster management.

JICA accepted 3,412 trainees, 1,103 (32.3%) from the Middle East, 1,046 (30.7%) from Asia and 838 (24.6%) from Central and South America.

Note: The amounts and percentages are rounded-off, they may not match their total.

Numbers of experts and participants

JICA’s expenditure

<table>
<thead>
<tr>
<th>Region</th>
<th>Total million dollars</th>
<th>JICA’s investments for technical assistance (in million dollars)</th>
<th>Japan’s grant aid projects facilitated by JICA (in million dollars)</th>
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<td>ASIA PACIFIC REGION</td>
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<td>23.4</td>
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<tr>
<td>MIDDLE EAST</td>
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<td>33.4</td>
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<tr>
<td>CENTRAL AND SOUTH AMERICA</td>
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<td>49.9</td>
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<td>OTHERS</td>
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Receiving trainees

Filtering language