

## 5. Training and Raising Public Awareness

### 5-1. Training Programs by ADRC

#### 5-1-1. JICA Seminar on Disaster Management

ADRC conducts a Seminar on Disaster Management every year based on a request by JICA and with its full support since the fiscal year 2000.

##### 1) Course Overview

Course Name: Seminar on Disaster Management

Course Period: January 19 – March 1, 2003

Implementing Organizations: JICA Hyogo International Center, ADRC

Applicants: 16 officials from 15 countries

Countries: Bhutan, Bosnia-Herzegovina, Colombia, El Salvador, Fiji, Haiti, Hungary, Jamaica, Kazakhstan, Mozambique, Pakistan, Thailand, Tonga, Turkey, and Venezuela

##### 2) Objectives

To improve disaster management and reduce damage caused by natural disasters, through the seminar using Japan's disaster management system as a model. Also, having trainees themselves understand the current situation, problems, tasks, and solutions for disaster management in their countries and surrounding regions through the exchange of experiences and opinions of other countries, and reviewing the course of actions for improvement.

##### 3) Background

Japan is located in an area frequently hit by typhoons. As seen by the recent Tokai torrential rains, every year the country suffers disasters such as torrential rains and floods. Japan is also located in the Pacific earthquake and volcanic belt where earthquakes and volcanoes are active. Particularly after the Great Hanshin-Awaji Earthquake, seismic activities such as the Tottori Seibu Earthquake, and volcanic activities such as Mt. Usu in Hokkaido and Miyakejima have been noted. Historically, there have also been numerous tsunami disasters, making Japan one of the few disaster-prone countries both meteorologically and geologically.

As a result of the country's efforts to improve disaster management based on experience and lessons learned from damage caused by numerous natural disasters in the past, Japan is one of the top advanced countries in disaster management in the world today.

On the other hand, natural disasters continue to increase in the international community, and many developing countries suffer massive human and property losses which impedes their efforts for social and economic development.

The sharing of knowledge and experience with these countries to improve disaster management is the most important and essential duty of countries like Japan, which has extensive experience with disasters and is equipped with a consistent disaster management system. This is also in line with the efforts of various countries on various levels such as with the UN, which has been promoting international disaster reduction cooperation since the 1990s. The reinforcement of such efforts needs to be continued in the 21st century, which is expected to see increased vulnerability to disasters in many countries due to climate change on a global scale and rapid urbanization. As part of Japan's international disaster reduction cooperation, this program is aimed at the sharing of knowledge and experience, with disaster management officials from various countries to promote the reduction of damage and loss of life incurred by natural disasters and contribute to the international community.

##### 4) Trainees

JICA screened 16 trainees from 15 countries this year.

## 5) Training program

## (1) Module 1: Basic Concept of Disaster Management

## ■ Programs (Implementing organizations)

- Country Report Presentation (Prof. Shiono, Nagaoka College of Technology)
- Administrative System and Disaster Management System in Japan (ADRC)
- Country Development and Disaster Management (Prof. Kaji, Keio University)

## ■ Outline

To begin the training, each trainee presented the status of disasters and disaster management in country under the coordination of Professor Shiono, and a Q&A session followed each country report. There were many questions during the Q&A session and Professor Shiono at the end of the training distributed the disaster management keyword list.

Conducting the country report sessions at the initial stages of the training program provides an opportunity for the trainees to deepen their understanding about the countries themselves and the disaster situations of these other countries.



Fig. 5-1-1-1 Country Report Presentation

Executive Director of ADRC explained the introductory geography and administration system of Japan for disaster management including the roles of central government, local government, the police, the self-defense force, etc. which differ in their countries.

Professor Kaji instructed to incorporate the disaster reduction into their countries' national development plans at the last seminar of the training. At Professor Kaji's lecture, the trainees summarized the key points after visiting a variety of organizations, which is very useful for thinking of their country's future.

## (2) Module 2: Disaster Management of the Japanese Government

## ■ Programs (Implementing organizations)

- Outline of disaster management in Japan (Japanese Cabinet Office)
- Response to disaster (Japanese Cabinet Office)
- Earthquake Disaster Reduction Information System (Japanese Cabinet Office)
- Countermeasure for flood (Ministry of Land, Infrastructure and Transportation)
- Rescue methods during disasters (Ministry of Health, Labor and Welfare)



Fig. 5-1-1-2 Training at Japanese Cabinet Office

- Seismic observation, earthquake information, tidal wave (Tsunami) warning, earthquake forecast and observation of volcanic activities (Meteorological Agency)
- Activities of Meteorological Agency for disaster prevention and reduction (Meteorological Agency)
- Tachikawa Disaster Management Headquarters
- Fire Rescue Team
- Disaster Medical Center

#### ■ Outline

Lectures by officials from ministries, agencies, and organizations on disaster management by the Japanese government, and visits to disaster reduction related facilities.

At the Cabinet Office, the trainees learned about the disaster reduction policy of Japan through lectures on the Basic Disaster Management Plan, coordination with other ministries and agencies, powers and coordination between national and municipal governments, budgeting for disaster reduction measures, and issues relating to condemnation of the land.



Fig. 5-1-1-3 Visiting the Fire Rescue Team

At the Meteorological Agency, lectures were provided on earthquake/tsunami information collections, procedures for issuing an alert or warning, volcanic activity information, and afterwards the trainees toured the rooms where various equipment and monitors were located.

At Tachikawa Disaster Management Headquarters, the trainees toured the secretary office, water reservation facility, pressroom, meeting room for ministers including the prime minister, and the satellite communication antenna facility.

At the Fire Rescue Base, trainees toured various training facilities such as the 22m-deep water tank for training in flood disaster situations, a building for firefighting training, equipment for rescues at elevated locations, and fire engines equipped with long-distance large-volume water supply capabilities. There were trainees who commented that they would like to have similar training facilities in their home countries in the future.

At the Disaster Medical Center, a tour was conducted to see the heliport and the facilities for private power generation and storage of spare beds for emergencies. Trainees asked many questions not only about natural disasters, but also about accidents in nuclear power plants, indicating that they were very interested in these topics.

This module was very significant as the trainees were able to learn Japan's disaster management and visit the Tachikawa Disaster Management Facility, which functions when the Tokyo metropolitan area is affected by a disaster.

### (3) Module 3: Disaster Management of Japanese Local Government

#### ■ Programs (Implementing organizations)

- Hyogo Prefecture Disaster Management Center, "Disaster Management by Hyogo Prefecture" (Hyogo Prefecture)
- Flood prevention works and afforestation (Hyogo Prefecture)
- Disaster management by Municipal Government (Kobe City)
- Disaster Reduction and Human Renovation Institution, "The Great Hanshin-Awaji Earthquake"

- Tour of a 3D full-scale shaking table (National Research Institute for Earth Science and Disaster Prevention)

#### ■ Outline

As examples of disaster management by local governments, trainees visited the Hyogo Prefectural Government and Kobe Municipal Government, which experienced the Great Hanshin-Awaji Earthquake.

In Kobe City Government, lectures were delivered by the Planning and Arrangement Bureau, Industrial Development Bureau, Fire Defense Agency, Urban Planning Bureau, etc. in Kobe City under the Crisis Management Office as a liaison office.

The Hyogo Erosion Control Division provided a lecture on flood control and afforestation of Mt. Rokko, and the trainees visited an erosion-control dam for Mt. Rokko.

The trainees learned about countermeasures taken by Hyogo Prefecture and Kobe City, such as emergency measures, restoration and the rehabilitation activities after the Great Hanshin-Awaji Earthquake. In Kobe City, trainees had an opportunity to acquire the comprehensive measures used by the entire City of Kobe as well as the Disaster Reduction Authority, which gained valuable lessons from the massive earthquake.

Taking into consideration that trainees' countries often encounter flood damages, at Mt. Rokko, a briefing was conducted on flood control and afforestation measures. Mt. Rokko is where people can learn about the details concerning a landslide disaster, which is common in many countries.



Fig. 5-1-1-4 Training at Hyogo Prefecture Disaster Management Center



Fig. 5-1-1-5 Visiting the full scale 3D shaking table facility

#### (4) Module 4: Roles of Private Sectors and Mass Media

##### ■ Programs (Implementing organizations)

- Resident-driven city planning (Kobe Nagata T.M.O.)
- Community-based disaster reduction teams (Municipal Office of Hokudan-cho)
- Roles of newspapers (Kobe News Paper)
- Roles of radio and improvements of disaster awareness in peacetime (MBS)
- Kobe Machizukuri Institute
- NHK

### ■ Outline

Kobe Nagata T.M.O. is the incorporated foundation formed by the residents with owners of the shopping street south of Nagata station as the center. After touring the area, trainees learned about temporary shops and restoration projects of the traditional shopping street from the leader of the residents' association.

The Kobe Machizukuri Institute conducted a lecture on the role of NPO based on its experience as a coordinating body between the residents and the local government to reconstruct the City of Kobe.

Co-op Kobe also lectured on its own measures based on its activities such as supplying commodities immediately after the earthquake and measures taken to help those who were most vulnerable to disaster such as the elderly living-alone. The officer of the municipal office of Hokudan-cho presented experiences concerning the Great Hanshin-Awaji Earthquake and explained that it was the neighbors that rescued many of the residents that had been trapped under the collapsed houses, and emphasized the importance of the community pulling together in a disaster.

At NHK, technical efforts for rapid and efficient information transmission were explained. The broadcasting center is equipped with 11 earthquake-monitoring machines and tsunami information; it was very impressive to the trainees. The trainees recognized the importance of employing state-of-the-art technologies in disaster reduction.

Kobe News Paper, MBS Radio and NHK lectured on the roles of mass media in disaster reduction not only in times of a disaster but also during normal conditions.

In the action plan, many trainees commented that "In times of large-scale disasters such as the Great Hanshin-Awaji Earthquake, the private sector such as NGO/NPO and mass media play major roles as well as administration roles", which indicates that the objectives of the training were well understood among the trainees.

MBS lectured on the role of media in terms of information dissemination and awareness of disaster reduction during normal times, which was meaningful for trainees because these kinds of activities by the private sectors and mass media have not been carried out in trainee countries.



Fig. 5-1-1-6 Visiting NHK

## (5) Module 5: International Cooperation

### ■ Programs

- Activities of Japan Disaster Relief Team, JICA
- Activities of Japanese Red Cross Society
- Efforts of UNCRD
- Efforts of UN OCHA Kobe
- Efforts of ADRC
- Participation in the international workshop organized by UNCRD

### ■ Outline

ADRC explained outlines of its activities including the latest disaster information providing service on the homepage, the geographical information system such as, GIS, cooperative projects with member countries, and visiting researcher program, etc.

UN OCHA lectured on disaster support adjustment functions and ReliefWeb, and UNCRD conducted briefings on various projects. The trainees participated in the UNCRD project report workshop.

Through lectures by UN OCHA, UNCRD, ADRC, trainees were introduced to and experienced actual activities taken by the international organizations for disaster reduction.

JICA explained various scenarios other than emergency support. The trainees are expected to play an important role in their respective home countries as the core of international cooperation for disaster reduction. ADRC will continue to provide follow-up support.

### (6) Module 6: Thematic disaster management exercises

#### ① School education for disaster reduction (Uchidehama Elementary School and Maiko High School)

Based on the successful results of last year, lecture on school education on disaster reduction was conducted again this year with the support of Hyogo Pref. Board of Education. The Maiko High School has Environment & Disaster Mitigation Course and is actively exchanging disaster-related information with a high school in Nepal through an international friendship exchange.

The trainees were very impressed by the disaster reduction awareness activities of the students, and many commented that they would like to apply it for school education in their countries.



Fig. 5-1-1-7 Discussion at Maiko High School

#### ② Industrial recovery in the stricken area (Nojima Active-fault Preservation Museum in Hokudan-cho)

Trainees visited Nojima Dislocation Memorial Hall in Hokudan-cho to experience the example first hand, which utilized commemoration of the earthquake to restore industry and boost employment.

#### ③ “ DIG ” Citizens Participating Dissemination and Education for Disaster Reduction (Fujitokoha University)

Conducted by Mr. Komura, an instructor of Fujitokoha University, the trainees toured the recovered Nagata area and learned a Disaster Imagination Game (DIG) by making hazard maps.

Since this citizens participating dissemination and education program can be easily developed at the citizen level and at a lower cost, it is expected that the trainees will promote this program among citizens in their respective home countries.



Fig. 5-1-1-8 DIG Training

## ④ Disaster Reduction and Risk Management by Corporations

With an aim to learn risk management by corporations, Dr. Yashiro, a senior researcher of ADRC, provided the lecture. Also a tour at the P&G Far East Headquarter was conducted. Since it is an American company, the briefing provided not only the details on its countermeasures of the Great Hanshin Awaji Earthquake, but also on their risk management manual in times of emergency and reflected on the terrorist attack in the United States.

## ⑤ Disaster reduction for cultural assets

The trainees visited Kyoto City Disaster Reduction Center run by the Kyoto Fire Dept. and Sennyuji temple guided by the Cultural Asset Preservation Section of the Kyoto Education Agency, through which the trainees learned the efforts being made to preserve historical buildings.



Fig. 5-1-1-9 Experiencing Earthquake at the Kyoto City Disaster Reduction Center

## ⑥ A tour to Hiroshima Peace Memorial Museum

The tour of Hiroshima, which was damaged by the atomic bomb, was conducted in response to strong requests from the trainees. The trainees also have strong concerns on disasters other than natural disasters.

## ⑦ Volcanic disaster case study (Unzen Disaster Memorial Hall)

As a training theme of natural disasters other than earthquakes, volcanic disaster, another major natural disaster in Japan, was selected. Conducted by an instructor invited from Erosion Control Dept. of the Hyogo Prefectural Government, the trainees observed countermeasures taken against the landslides of sand and stone in areas around the volcano.

Disaster-related education at schools and Citizens Participating Dissemination and Education for Disaster Reduction were highly evaluated because of its feasibility. Self-disaster reduction organizations and town development based on the residents' initiative attracted the trainees' attention due to the very same reasons. On the other hand, some of the requests voiced dealt with the introduction of triage for emergency medical treatment and emergency risk assessment of buildings immediately after a disaster.

## 6) Future Tasks

## ① Training curriculum

Based on the review results of the training program last year, more lectures and tours to learn disasters other than earthquakes were included in the program this year. However, requests for more modules for disasters other than earthquakes are still found in the questionnaire. As for the visit to Hiroshima, some trainees wanted to have lectures instead of only visiting the museum. In addition, there are requests for training for subway disaster reduction, taking into consideration the significance of the "subway sarin gas incident" in Japan and the subway fire in South Korea. Furthermore, the trainees are also expecting training concerning forest fires and droughts. Although these disasters are not frequent in Japan, ADRC would like to make efforts to find organizations that can provide training that meets their needs.

② Schedule

Travel to distant areas took place on the weekends last year; this made the whole training course very tight and with very little spare time. To attain a less rigid schedule, training this year was implemented in a 6-week period by increasing the training by 1 week.

However, the additional week was actually filled with modules for disasters other than earthquakes (requested from many trainees last year). As a result, the schedule this year was even tighter than last year. In the training schedule next year, traveling to distant areas on weekends should be avoided.

③ Observers

Same as last year, two visiting researchers of ADRC (one from Nepal, another from Mongolia) also participated in this program, which is expected to continue.

7) Others

Although the training course this year consisted of a 6-week schedule, a week longer than last year, there were trainees who wanted to have 2 to 3 months of training. Using this as an indication, there are still many themes that this program could not cover. After 6 weeks of training, however, many trainees were impressed by the Japanese disaster management system. This includes not only the national government aspects, but also the wide range of organizations and institutes, that are making efforts for disaster reduction. Many trainees felt it wise to build a solid disaster reduction system in their respective home countries using the Japanese system as a model. The training here in Japan will be helpful in reducing damage and sufferings in disasters in their respective countries.

This year was the third training program organized by ADRC, and efforts will be made to improve the program for better training.

## 5-2. Lectures by ADRC

ADRC offers lectures to personnel in various fields, such as disaster management staff and fire-fighting staff of local and national governments, disaster reduction experts and students. Many of them are participants of JICA training programs on disaster management. The following is a list of visitors from abroad who received a lecture.

Table. 5-2-1 Lectures by ADRC

Date	Country	Affiliation/Number
April 11, 2002	Malaysia	JICA Country-Specific Training Course for Malaysia - group of 25
May 28, 2002	Bangladesh, Kenya, Nicaragua, Pakistan, Turkey	JICA Training Course for Medical Treatment at Emergency - group of 6
June 17, 2002	USA	Pacific Disaster Center (PDC) Group of 2 including the Director-General
June 28, 2002	Armenia, El Salvador, Nicaragua, Sri Lanka, Thailand, Zambia	JICA Training course for Disaster Mitigation and Restoration for Infrastructure - group of 8
July 1, 2002	Bangladesh	JICA Bangladesh Dhaka Metropolitan Area Mapping Information Project Training Course - 1 participant
July 15, 2002	China	JICA China Water Utilization Human Resource Development Project - 1 participant
August 29, 2002	Bangladesh, Indonesia, Pakistan, Panama, Philippines, Thailand, Tunisia	JICA Maritime Search and Rescue Operation Course - group of 7
September 6, 2002	Turkey	JICA Turkey Training on Disaster Disaster Management and Post-Disaster Reconstruction - group of 8
September 9, 2002	China, Indonesia, Malaysia, Thailand	JICA Training on Regional Biosystem Monitoring Techniques - group of 4
September 11, 2002	Bangladesh, Madagascar, Papua New Guinea, Philippines, South Korea, Surinam, Tunisia, Zimbabwe	JICA Firefighting Techniques Training-group of 9
September 24, 2002	Iran	Research Institute of Natural Disasters of Iran group of 2
September 26, 2002	USA	US AID Counselor - group of 3
October 1, 2002	Fiji	South Pacific Applied Geoscience Commission (SOPAC) Program manager
October 9, 2002	Chile	JICA Chile Urban System Development Training Course - group of 8
October 10, 2002	USA	Asia Pacific Area Network (APAN) Project manager
October 22, 2002	China	Shanghai Seismological Bureau - group of 5
November 13, 2002	China, Iran, Pakistan, Saudi Arabia, Vietnam	JICA Training Course on Global Mapping - group of 5

November 20, 2002	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama	JICA Central America Disaster Prevention Training Course - group of 13
December 9, 2002	Bolivia, China, Kenya, Laos, Mali, Myanmar, Senegal	JICA Training Course on Planning and Management of National Mapping & Surveying - group of 8
December 18, 2002	Iran	Iran Red Crescent Society – group of 24
February 4, 2003	Romania	JICA Romania Earthquake Disaster Reduction Administration Training Course - group of 3
February 4, 2003	Afghanistan	Office of Disaster Preparedness, Gov. of Afghanistan including president - group of 9
February 4, 2003	China, Bangladesh, Egypt, El Salvador, Ghana, India, Kazakhstan, Nepal, Turkey, Uganda, Uzbekistan, Chile, Mongolia, Pakistan, Peru, Romania, Thailand	JICA Group Training Course on Disaster Management - group of 22
March 18, 2003	New Zealand	Dr. Thomas of Victoria University and company – group of 3
March 24, 2003	Barbados	Caribbean Disaster Emergency Response Agency IT specialists - group of 3
March 26, 2003	South Korea	South Korea Disaster Prevention Association - group of 36

### 5-3. Evacuation Plan in a Tsunami Disaster

A project to develop a model plan for evacuation in a tsunami disaster was conducted. The objectives and outline of the project are as below.

#### 1) Background

A questionnaire survey was conducted in 2001 on the measures taken against tsunami disasters in the municipal bodies of towns and communities which have coastlines. Based on the questionnaires, preparedness of tsunami evacuation plans and issues that should be taken into account in the planning phase were assessed.

Based on the assessment, the following proposals were made.

- Each municipal government should develop “Guidelines for the preparation of a tsunami disaster evacuation plan at the local level”.
- Each local body should develop a “Tsunami disaster evacuation plan at the local level”. The local body should provide assistance in the preparation of a “Tsunami disaster evacuation plan at the community level”.
- Each community, in collaboration with the local residents, should develop a “Tsunami disaster evacuation plan at the community level”.

In order to develop a reference for the preparation of tsunami disaster evacuation plans, “A manual for the development of tsunami disaster evacuation plan at the local level” and “A manual for the development of a tsunami disaster evacuation plan at the community level” were published. This encouraged the local bodies and communities to prepare an evacuation plan that would meet their specific situations.

On the other hand, the results of the questionnaire survey indicates that the lack of tsunami hazard maps, lack of dissemination of information to the local residents, lack of expertise of the local government officials are impeding the development of evacuation plans.

In order to put the survey results into practice this year, model regions were identified. They implemented a series of tasks such as the development of “Guidelines for the preparation of a tsunami disaster evacuation plan at the local level” by the prefectural body and the development of “Tsunami disaster evacuation plan at the community level” by the community residents. It was also decided to publish a handbook which includes opinions of the residents, problems faced and solutions attained during the preparation of the evacuation plan at the community level. Thus the completed handbook will be distributed to local communities which have coastlines to encourage the development of tsunami disaster evacuation plans in other local bodies.

#### 2) Selection of model regions

5 cities from 3 prefectures, which include Owase-shi in Mie Prefecture, Yuasa-cho, Hirokawa-cho and Taichi-cho in Wakayama Prefecture and Kochi-shi in Kochi Prefecture were selected as model cities. The selection criteria are noted below.

- a. There is a concern that Tonankai and Nankai great earthquakes may occur in the first half of this century. In case these earthquakes occur, prefectures such as Mie, Wakayama and Kochi would suffer from tsunami disasters at a scale that they have never experienced.
- b. It is anticipated that a tsunami disaster would strike Mie Prefecture if a Tonankai earthquake occurs. In particular, Owase-shi, which is designated as the reinforced region against a Tokai earthquake, would be hit severely.
- c. In Wakayama Prefecture, a tsunami disaster is anticipated if Tonankai and Nankai great earthquakes occur. Taichi-cho may be stricken by a tsunami if a Tonankai earthquake occurs, and Yuasa-cho and Hirokawa-cho, which share the same bay, may also be hit.
- d. Kochi-shi in Kochi Prefecture may also be affected by a tsunami if a Nankai earthquake occurs.

### 3) Project Outline

The outline of the project is noted below.

#### (1) Development of “Guidelines for the preparation of a tsunami disaster evacuation plan at the local level”

Officers from the prefectural government, model city bodies, and experts in tsunami disaster reduction held two discussion sessions. Based on the discussion results, each prefecture completed the “Guidelines for the preparation of a tsunami disaster evacuation plan at the local level”.

#### (2) Presentation meeting of the project

After completing the “Guidelines for the preparation of a tsunami disaster evacuation plan at the local level”, each prefecture held meetings by inviting local bodies of towns and communities which have coastlines to explain the project. At this meeting, the guidelines prepared by the prefecture were introduced, and in addition, lectures on general knowledge about tsunami disasters and understanding on workshop approaches, were provided by experts, aiming at the promotion of the project.



Fig. 5-3-1 Explanation of the project in Wakayama (Lecture by expert)

#### (3) Preparation of a “Tsunami disaster evacuation plan at the local level”

In accordance with the guidelines prepared by the prefecture, each model city or town prepared an evacuation plan that reflects the information on flood maps, timetables of expected tsunami strikes, and other actual situations of the communities. To each model city or town, advice on preparation procedures was given through the meeting held specially for them.

#### (4) Preparation of a “Tsunami disaster evacuation plan at the community level”

After completing the evacuation plan, each model city held workshops inviting the residents. In the workshops, the guest speakers from the academic sector provided lectures on the danger of tsunami disasters. These experts toured the actual evacuation routes, and gave advice for the identification of the evacuation route to the residents. Thus the evacuation plan at the community level was completed.



Fig. 5-3-2 Workshop in Owase-shi  
—Speaking about his experience of the earthquake



Fig. 5-3-3 Landmarks on the evacuation route map of Kochi-shi  
checking the actual route



Fig. 5-3-4 Workshop in Hirokawa-cho  
—Route map prepared by the residents



Fig. 5-3-5 Workshop in Yuasa-cho  
—Route map prepared by the residents

Experts participated in the project (alphabetical order):

Kawata, Yoshiaki  
Director, Research Center for Disaster Reduction System, Kyoto University

Imamura, Fumihiko  
Professor, Disaster Control Research Center, Graduate School of Engineering, Tohoku University

Koike, Nobuaki  
Associate Professor, Wakayama National College of Technology

Shigekawa, Kishie  
Associate Professor, Department of Environment and Disaster Reduction, Fuji Tokoha University

Honda, Hiroshi  
Associate Professor, Department of Earth Science, Mie University