

3 Accumulation and Provision of Information on Natural Disasters and Disaster Reduction

3-2 Information on Disaster Reduction Systems

3-2-1 Scope of Information

Elements composing the disaster reduction systems of different countries include judicial systems for setting down the basis for implementing measures to deal with disasters, organizations which actually implement these measures, and basic plans for steadily establishing the disaster reduction systems. Other elements include disaster reduction actions for each disaster, and disaster manuals which describe disaster measures.

1) Judicial systems

Not all countries have fundamental laws like Japan's "Disaster Measures Basic Law." Some countries prescribe disaster reduction systems in accordance with government decrees and rules of specified organizations. Taking into consideration the respective situation of each country, it is not easy to determine which is a better method. However the sharing of national information concerning laws and regulations is deemed a useful reference to countries that are attempting to establish legal systems or improve their current systems.

2) Organization

Usually different disaster measures are taken according to the situation of countries. Like judicial systems, the sharing of information should prove useful when devising measures to deal with similar disasters.

3) Basic plans

Only a few member countries, including Japan, have disaster reduction plans. Again, the information shared on disaster reduction plans should serve as a reference for countries intending to draw up such plans in the future, and is therefore highly likely to contribute to the reduction of damage caused by natural disasters.

4) Disaster manuals

Most disaster manuals are compiled by countries and regions based on the natural disasters that the region or country has experienced, or by the type of natural disaster specific to that country or region. Since an individual region or country deals with natural disasters independently, their experiences and measures are often unshared even for common natural disasters. This has resulted in a lack of proper or sufficient disaster countermeasures in some countries and regions. ADRC has thus been making efforts since the last fiscal year to collect information to enable the sharing of these existing disaster measures and disaster manuals. Still further efforts are required. ADRC will continue promoting the inter-regional and international sharing of experiences, knowledge, and views on measures for specific disasters that have been formed and accumulated in different countries and regions.

3-2-2 Level of Information Source

The information needs to be collected not only on the national governmental level, but at the levels of local government, regional, and even municipal if the information is useful. As a rule, when a disaster hits, it is the local government (regional, municipal) which implements the disaster measures. If the disaster scale exceeds the capability of the local level, the central government or international community will intervene to provide support in disaster management and relief. This means that the establishment of regulations, organizations, and systems by the central government does not always improve the disaster reduction and disaster measure abilities at the local or grass-root level. Therefore, it is essential to share useful information at all levels.

3-2-3 Information Accumulation Methods

As indicated in 3-1-2, since the last fiscal year, ADRC has been accumulating information on the disaster reduction systems of different countries by requesting information from member countries, implementing field surveys, holding international conferences, and by its own unique methods using the Internet.

3-2-4 Information on Disaster Reduction Systems Accumulated in Fiscal 1999 and Analysis

ADRC has gathered information on disaster reduction systems from member countries, advisor countries, etc. using the above methods. ADRC has organized its database to provide the resulting information on its homepage. The following table outlines the disaster reduction systems of different countries.

1) Judicial systems

The table shows that the judicial system of each country differs according to its situation.

Based on the systems employed, countries can be divided into three groups: countries that adopt basic disaster measure laws such as Japan (which has the Disaster Measures Basic Law), countries that adopt civil defense acts such as Russia and Singapore, and countries that implement disaster management according to regulations such as government decrees and rules set down by ministries, such as Malaysia and Bangladesh. Though it is difficult to determine which of these methods is the most effective, the establishment of some kind of judicial system, regardless of whether it is of the central government or at local level, is useful for clarifying the responsibilities of the government and disseminating disaster management information to the people.

The ADRC homepage database not only outlines the judicial systems of different countries, but also carries the whole text of laws and regulations for reference to the extent that it receives them. ADRC also enthusiastically provides hardcopy information responding to requests from countries which lack the means for reliable access to the Internet. For instance, during the Second International Meeting in December 1999, ADRC provided an English version text of Japan's Disaster Measures Basic Law to the representative from Laos in answer to their request. Laos is currently drawing up a basic law on disaster management, and ADRC hopes that such information will prove useful in their efforts. ADRC will continue to provide useful information on its homepage as well as hardcopy information when requested. Table 3-2-4-1 outlines the judicial systems of different countries.

Table 3-2-4-1 <Legal System of the ADRC Member/Advisory Countries>

Country	Descriptions
Bangladesh	Disaster Management Law under deliberation (1999)
Cambodia	Civil Defense Act passed in 1993
India	Natural disasters are dealt with at the national, district and sub-district levels
Indonesia	Presidential Decree No.43/1990 (1995)
Japan	Disaster Countermeasures Basic Act, passed in 1961
Kazakhstan	Law on Civil Defense, Law on Emergency Situations of a Natural and Technological Character, Law on Fire Safety, Law on the Emergency Rescue Services and the Status of Rescues, Law on National Safety in the Republic Kazakhstan, Law on the Health and (Epidemiological) Welfare of the Population, etc.
Korea	Natural Disaster Countermeasure Act, formulated in 1970
Nepal	Disaster Relief Act, formulated in 1982/man-made disasters covered Natural Disaster Relief Act, formulated in 1982, and amended in 1989 and 1992 Its effectiveness is not absolute as natural disaster relief provisions, which provides roles of each organization, is yet to be passed
Malaysia	National Security Council Directive No.20
Lao PDR	Framework for specific activities, regulated in 1998. A basic law on disaster management is yet to be passed.
Mongolia	Civil Defense Law, passed in 1995. Applicable to both man-made and natural disasters
Papua New Guinea	Disaster Management Act, passed in 1975. Currently studying equivalent acts for provincial and local governments
Philippines	Presidential Decree No.1566, promulgated in 1978, regulates establishment of disaster reduction coordination committees at levels from the Government to villages
Russia	1)Law on Protection and Territories against Disaster of Natural and Technological Origin, 2)Law on Disaster Relief, 3)Law on Civil Defense, 4)Law on Deliveries for the Federal State Needs, 5)Law on State Reserves of Material Assets for Response to Disasters
Singapore	Civil Defense Act, passed in 1986. Applies to both man-made and natural disasters
Sri Lanka	Disaster Countermeasures Bill under deliberation
Tajikistan	Civil Defense Act, passed in 1996
Thailand	Civil Defense Act, passed in 1979
Uzbekistan	Law on Protection of the population against acts of natural and technological accidents, formulated in 1998
Viet Nam	Local governments plan disaster reduction programs based on the Prime Minister's Directives and Political Bureau's announcements
Australia	6 out of 8 States and Territories have disaster management legislation. Federation, States, Territories, local governments, and regions in collaboration nationwide, based on the emergency control agreement
Switzerland	Civil Defense Law, passed after World War II, and amended several times. Federal Law of 1976 concerning International Development Cooperation and Humanitarian Aid

2) Organization

Individual organization systems are set up in each country. According to organization, countries can broadly be classified into: countries with inter-ministry organization set up within the government and corresponding secretariat, such as Japan's Central Disaster Prevention Council and Indonesia's National Natural Disaster Management Coordinating Board (Bakornas PB); countries with a special ministry for disaster management and relief, such as the one in Bangladesh, and countries which entrust disaster management to a special organization set up within the ministry of social welfare, such as the "National Disaster Management Center" in Sri Lanka. Table 3-2-4-3 shows the organizations of different countries.

Table 3-2-4-3 <Disaster Management Organizations of the Member and Advisory Countries>

Country	Descriptions
Bangladesh	Has a Ministry of Disaster Management and Relief, which coordinates different government agencies, as well as the National Disaster Management Council (headed by the Prime Minister), an Inter-Ministerial Disaster Management Co-ordination Committee, and a Cyclone Preparedness Programme Implementation Board
Cambodia	Disaster management policy formulated in 1995 with the establishment of the National Committee for Disaster Management, which consists of 16 cabinet members, is supervised by the Prime Minister, and is fully supported by the Cambodian Red Cross
India	In ordinary times: Crisis Management Group (headed by the Cabinet Secretary). Natural disasters are taken charge of by the Ministry of Agriculture with support from other ministries. At the state level, the Relief and Rehabilitation Department or the Department of Revenue, and on the district level, the District Level Coordination and Review Committee (chaired by the Collector), are responsible for administrative response. In the event of disaster: the Multi-disciplinary Central Government Team offers assistance to affected States.
Indonesia	The National Natural Disaster Management Coordinating Board (Bakornas PB) is responsible for overall coordination for disaster management, with the Coordinating Minister for People's Welfare and Poverty Alleviation serving as a secretariat. Consisting of the Ministry of Public Works, the Agency for the Assessment and Application of Technology, the Meteorological and Geophysical Agency, the Environmental Agency and others, the Board deals with any type of disaster and advises ministries.
Japan	The Central Disaster Prevention Council (consisting of cabinet members and chaired by the Prime Minister) formulates the Basic Plan for Disaster Prevention. The National Land Agency serves as the secretariat. Specific policies are formulated by ministries and agencies concerned. Main responsibility for local governments is disaster management and rescue activities under the supervision of the Ministry of Home Affairs.
Kazakhstan	The Agency for Emergencies is in charge of disaster management through cooperation with City Departments, the Civil Defense Division, the Centre for Emergency Medicine, the Republican Emergency Rescue Unit, the Water Rescue Service and other local bodies. The Prime Minister heads the civil defense of the country.
Korea	Chain of command for disaster mitigation: President → Prime Minister → Ministry of Government Administration and Home Affairs → Civil Defense and Disaster Management HQ, under which are placed the Disaster Prevention and Preparedness Bureau (on the basis of the Natural Disaster Countermeasures Act), the Civil Defense and Disaster Management Bureau and the Fire Administration Bureau (on the basis of the Disaster Relief Act). At the district level, local governments are in charge.
Nepal	The Central Natural Disaster Relief Committee commands the Regional Natural Disaster Relief Committee, the District Natural Disaster Relief Committee, the Local Natural Disaster Relief Committee, the Relief and Treatment Sub-Committee and the Supply, Shelter and Rehabilitation Sub-Committee. The Natural Disaster Relief Section of the Ministry of Home Affairs is responsible for the formulation of national disaster management policies, preparedness for disasters, rescue operations, data collection, and distribution of funds to victims. Coping with disaster in remote areas needs to be considered.
Lao PDR	The Ministry of Welfare serves as a secretariat for the Prime Minister's Department.
Malaysia	

	Under National Security Council Directive No.20, the National Security Division in the Prime Minister's Department is responsible for coordination. The Disaster Management and Relief Committee formulates and implements specific action plans. Disaster management is carried out at the federal, state and district levels.
Mongolia	In addition to the Ministry of Nature and Environment (formulating policy) and the State Civil Defense Department (carrying out day-to-day operations), the State Permanent Emergency Commission (consisting of cabinet members and chaired by the Prime Minister) is convened when a disaster occurs. District commissions are also convened.
Papua New Guinea	The National Disaster Management Office (NDMO) was established by the Disaster Management Act (DMA). The National Disaster Committee (NDC) declares a state of disaster and recommends action plans to the Government. Each province has a Provincial Disaster Committee (PDC).
Philippines	The National Disaster Coordination Council (NDCC) formulates disaster management plans and takes emergency and rehabilitation measures through cooperation with the private sector. Consisting of heads of 14 national ministries, the Chief of Staff of the Armed Forces of the Philippines, the Secretary-General of the Philippine National Red Cross, the Administrator of the Defense Ministry's Office of Civil Defense and others, the committee designs solutions and advises the President if a state of emergency is announced.
Russia	Has the Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM), which has its own personnel and resources.
Singapore	The Ministry of Home Affairs is responsible for disaster management. The Civil Defense Force and Police Force are responsible for implementing various activities. The Disaster Management Committee (consisting of cabinet members) is convened when a large-scale disaster occurs.
Sri Lanka	The Ministry of Social Services set up a National Centre for Disaster Management. A framework for disaster management not yet in place at the provincial and district levels.
Tajikistan	Prime Minister oversees disaster reduction and countermeasures. The Committee for Emergencies and Civil Defense of the Government of Tajikistan plays a coordinating role. Each province and district has its own committee, but provincial committees are major actors. Each province has Civil Defense Headquarters.
Thailand	The National Civil Defense Committee (chaired by the Interior Minister), established under the Civil Defense Act of 1999, coordinates ministries. The Committee consists of the Defense Ministry, Agriculture and Cooperative Ministry, and the Public Health Ministry, etc. NGOs offer assistance at the regional and local levels.
Uzbekistan	Five members of the Department of Emergency Situations, the Cabinet Ministry of Uzbekistan coordinate governmental ministries and disaster countermeasures.
Viet Nam	The Central Committee for Flood and Storm Control is responsible for disaster management through cooperation with the Provincial People's Committees and Army Headquarters. The National Centre for Hydro-Meteorological Forecasting issues early warning against natural disasters.
Australia	Each State and Territory has its own emergency management committee. Local committees, regional committees, Emergency Management Australia (EMA) and the National Emergency Management Special Committee is organized to play a coordinating role at the state level.
New Zealand	Currently reconstructing emergency management arrangements based on a risk management plan.
Switzerland	Responsibility for disaster management rests mainly with local governments. District authorities take leadership when a disaster occurs. On the federal level, the Ministry of Defense has jurisdiction over disaster management.

3) Basic plans, etc.

Countries with basic disaster reduction plans at the national level include Japan, Nepal, Papua New Guinea, the Philippines, Russia, Singapore, Sri Lanka, Tajikistan, Thailand, and Switzerland; countries which are currently considering the scheming of basic plans include Bangladesh, Kazakhstan, Malaysia, Mongolia, Viet Nam; and countries with basic plans at the state and local levels include Australia, etc.

Most disaster measures are unique to each country and region. Though it is possible to devise similar measures for common natural disasters, it is still necessary to study the disaster measures of other countries and regions while taking into account their different characteristics when devising these measures.

From this perspective, the ADRC collects, organizes, and analyzes the action plans and manuals for the disaster measures of different countries and regions. It strongly hopes that the information will serve as a useful reference in the planning and implementation of individual disaster measures in each country and region.

Specifically, ADRC provides a database of this information on its website so that anyone that has access to the Internet can access the information without restriction. Information not disclosed on the website can be searched by directly contacting the center, or be accessed by those working at the center under the foreign researcher program and those visiting the center. We hope that the database will be used to maximum potential. Table 3-2-4-4 shows the basic plans of different countries.

Table 3-2-4-4 <Basic Plans for Disaster Management of the Member and Advisory Countries>

Country	Descriptions
Bangladesh	No basic plans, but disaster countermeasure bylaws apply to each ministry and agency, in accordance with which state, local and village disaster management committees are constituted.
Cambodia	Disaster Management Act under preparation at the state level. Also formulating plans to foster leadership, build manpower at the district level.
India	Links disaster mitigation plans with the Vision 2020 development plan to incorporate the latest information technology, insurance and legal support.
Indonesia	With support from UNDP, has completed a Disaster Information System (DIS), which includes a disaster management GIS system and a disaster and rescue information database.
Japan	In accordance with the Disaster Countermeasure Basic Act, the Central Disaster Prevention Council approves basic plans for disaster prevention, which stipulate prevention, initial response and reconstruction for 4 categories of natural disasters and 8 categories of man-made disasters (fires, train accidents, etc.). Revised in '95 and '97 after the Great Hanshin-Awaji Earthquake, the plans also lay down the specific responsibilities of each ministry and agency, enterprises, municipal governments, volunteers and public service corporations.
Kazakhstan	The Agency for Emergencies is formulating disaster management emergency action plans in line with principles set within the framework of IDNDR. Formulation of a comprehensive Kazakhstan natural Disaster Preparedness Plan started.
Korea	Has disaster management programs, reserve plans and civil defense plans (for the Red Cross, volunteers, etc.). As part of their basic Five-Year Disaster Prevention Plan (1997 - 2001/Budget: U.S. \$22 bn.), the government invested U.S. \$4 billion in 22 key items from disaster countermeasures to technical development.
Nepal	The 9th Plan (1998 - 2002) underlines the need to strengthen the national disaster management system and fire fighting capability through more advanced technology. The National Committee for IDNDR formulates the National Action Plan. Has prepared a National Comprehensive Plan on Disaster Management in cooperation with UNDP and other organizations.
Lao PDR	(1) Development of disaster preparedness act and action plan, (2) Human development plan, (3) Improved communications system, (4) Secure financial sources, and (5) Early warning system
Malaysia	Formulating its own plan, modeled after the Indonesian plan, which includes mid- and long-term perspectives and requests for technical support. Also formulating forest fire fighting plan through cooperation with Australia, which stipulates the roles of ministries and agencies concerned and actions to be taken for each of the four individual cases including industrial disasters and landslides.
Mongolia	Drafting a natural disaster mitigation action plan. Civil defense forces have manuals.
Papua New Guinea	(1) District disaster management plan (for small-scale disasters that are taken care of by provincial authorities), (2) National Disaster Management Plan (under review). Ministry of Industry formulates plans for each category of disasters (oil spills, plane crashes, fires, etc.), which are reviewed by the ministries and agencies concerned every quarter.
Philippines	The Government and each ministry have and review their disaster management plans on a regular basis.
Russia	The Government formulates a basic plan for disaster management, which stipulates the roles of ministries and agencies concerned for disaster reduction, relief and rehabilitation. The Disaster Preparedness Plan stipulates a plan for each category of disaster, such as forest fires, earthquakes and floods. Depending on the scale of the disaster, either central or local authorities implement response strategies in accordance with the plan.
Singapore	Has an executive group plan, which responds to any kind of disasters and consists of 16 specific action plans (train accidents, explosions, chemical disasters, tunnel disasters, plane accidents, etc.)
Sri Lanka	

	Formulated its Basic Plan for Disaster Countermeasures in 1990. Currently considering revising the plan.
Tajikistan	Every year, the Government adopts an annual civil defense plan, which describes geographical conditions and disaster preparedness plans for local governments. Currently examining preventive/precautionary measures against collapse of banks of Lake Shaartuz, which would substantially damage neighbor countries
Thailand	A typhoon in 1988 made the Government recognize the importance of disaster countermeasures, leading to inclusion of the Disaster Countermeasures 5-Year Plan (1997 – 2001) in the National Development Plan. Based on the plan, the Civil Defense Master Plan was introduced in 1998, which defines the responsibilities of ministries and agencies concerned at times of disaster, and stipulates inter-ministerial disaster cooperative setups, efficient communications and cooperation with NGOs.
Uzbekistan	A 1997 flood in Kyrgyz Republic took 116 lives. Needs a satellite early warning system.
Viet Nam	The Department of Dike Management & Flood Control, Ministry of Agriculture & Rural Development, plans to formulate a disaster management action plan up to 2010.
Australia	States and Territories have their own disaster reduction plan. There are also the Federal Government disaster reduction plan and support plan, which stipulate the provision of support for oversea disasters. The Australia Emergency Management Manual Series covers most of the necessary responses.
Switzerland	Basic plan for domestic disaster management in place under the Ministry of Defense (includes terms and definitions for unified understanding of central and local governments). Has by-disaster-type plan for day-to-day operation. International cooperation in strategic responses to natural disaster management, which are under the jurisdiction of the Ministry of Foreign Affairs.

3-2-5 Future Tasks

As its future tasks, the ADRC plans to further reinforce and expand its database, analyze information collected, and based on the data acquired, grasp the needs of different countries to promote multi-national disaster reduction cooperation.

1) Reinforcement and expansion of disaster reduction database

In order to share the information on disaster reduction systems accumulated at ADRC between countries, the ADRC has constructed a database on its homepage to enable free retrieval and access of information on disaster reduction systems. This has enabled many countries and regions to establish and improve their own national or regional disaster reduction systems while referring to actual examples of other countries. The ADRC will continue its efforts in enhancing the contents of the database with the cooperation of member countries to realize a more easy-to-use disaster reduction system database.

2) Analysis of information and dealing with the needs of countries

Analysis of information collected helps clarify the specific situation and needs of countries. It is apparent that countries like Japan, Russia, and Singapore already have national level disaster reduction systems, while others such as Nepal, Laos, and Papua New Guinea are currently preparing to establish disaster reduction systems. We believe that the former countries need to implement various improvements to enhance and reinforce their existing systems, and that priority should be given to help the latter group of nations to complete the development, which is the common challenge of intra-region collaboration.

In order to reduce Asia's vulnerability to natural disasters, it is essential for countries to consider disaster reduction measures in their national long-term basic plans. To realize this, it is first necessary to heighten the disaster reduction awareness of the government as well as among the people. The sharing of information on disaster reduction between countries, including its systems, should be achieved at an early stage; while lawmakers, policy makers, and planners should appropriately prioritize and always include the disaster reduction issue in the basic plans of their country and region.

3) Promotion of cooperation

As agreed at both the 1st and 2nd International Meetings, it is vital that disaster reduction administrators and specialists of member countries exchange the latest information on disaster reduction systems and measures by continuing to hold regular meetings. It is also important that researchers from member countries working at ADRC help to promote active personnel and information exchange in the Asian region. In addition, to reduce the damage from natural disasters in Asia, while serving as a mediator, the ADRC is required to form a network of disaster reduction staff, technologies, and physical resources between Japan and the other countries of Asia, in order to re-

develop their flows.