1-6 Disaster Risk Management Strategy

Disaster risk management in developing countries often tends to be too heavily occupied with post-disaster response, and individual organizations are also apt to work on their own projects without collaborating with others. The following strategy is useful for making maximum use of existing resources and promoting effective disaster risk management strategy.

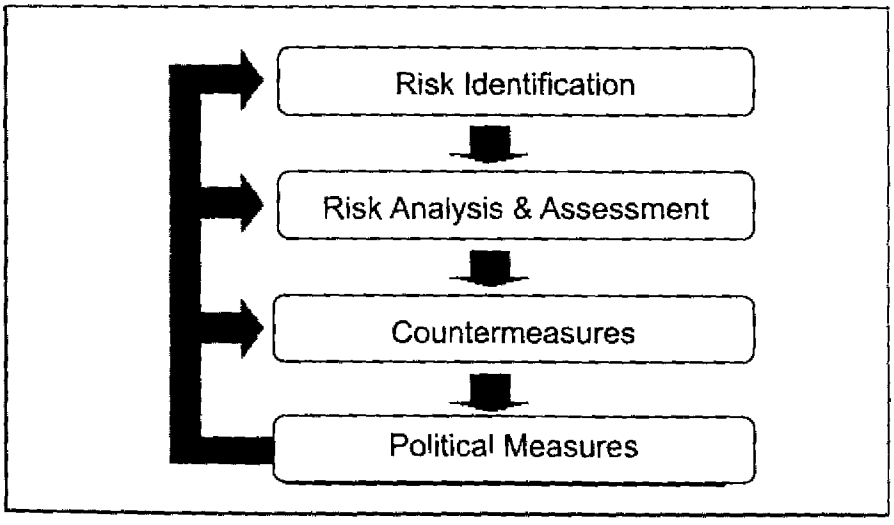
(1) Establishment of coordination mechanisms and a legal framework for disaster risk management

Some developing countries have yet to establish departments or agencies in their national or local governments for dealing disaster reduction efforts. Thus, when a disaster strikes, all activities are left to the leadership of local Red Cross Societies.

The first challenge to be set up in developing countries is to establish a system and legal framework for national disaster reduction.

It is important that national governments create the foundations for a disaster management system by, for example, developing basic legislation for natural disasters and establishing a central disaster management committee.

Figure 1-8 Risk Management Flow for Integrating Disaster Reduction Concept into National Policies and Development Plans



COLUNM Need for Basic Legislation on Disasters Risk Management (Kingdom of Cambodia)-

The National Committee for Disaster Management (NCDM) was established to serve as a national disaster management body in Cambodia in 1996. Today, with no basic policy or official guidelines regarding disaster preparedness or response, national government agencies, as well as provincial and municipal governments, have yet to recognize their roles and responsibilities. This shows that communication, decision-making, policy-making, and policy implementation functions are not working properly.

At the time of the flood in 2000, emergency response and resource management activities were conducted under the leadership of Prime Minister Hun Sen and the provincial governor. However, the country still faces the issue of developing a fundamental legal framework (such as a basic law on natural disasters), clarifying the roles and responsibilities of government agencies, and giving authority to the NCDM in its role as a coordinator, based on fundamental legislation.

Prime Minister Hun Sen emphasized the importance of disaster management at the Asian Conference on Disaster Reduction held in February 2004. He acknowledged the need to develop basic legislation for disaster countermeasures and a framework to provide the basis for promoting comprehensive disaster management. This would cover all the phases from disaster preparedness and disaster reduction, including infrastructure development, to a systematic disaster response and disaster rehabilitation efforts.

Prime Minister Hun Sen (center, front) spearheads the response to flood
Source: Cambodia National Committee for Disaster Management (NCDM)

(2) Integration of disaster reduction concepts into development planning

In order to build disaster-resilient countries, disaster reduction perspectives must be incorporated into their development plans. To do this, they must identify, analyze, and assess risks, develop a common recognition of the importance of disaster reduction as an investment target at national level, identify high-priority, effective policies, and incorporate these into national development plans.

Disaster reduction is often seen as a defensive measure against negative impacts. In most countries, it is handled separately from national development planning, given a low level of priority in national policies, and allocated limited financial resources. As a result, those countries sustain a great deal of disaster damage, spend a large amount of money on disaster response, and fall into a vicious circle that impedes their sustainable development.

Governments need to look at disaster reduction efforts as investments in the social infrastructure that will facilitate national development, and to make these efforts an investment priority because of their high cost-effectiveness and their importance in developing the country.

COLUMN Disaster Reduction Deserves Investment (People's Republic of China)-

Devastating flood along the Yangtze River in 1998 killed 3,700 people, affected 230 million, and damaged crops covering 25.44 million ha of land, roughly equivalent in area to Japan's Honshu Island (main island). Direct economic damage was of catastrophic proportions, totaling 264.2 billion yuan (about ¥4 trillion), roughly one-third of China's national budget.

After this flood, China decided to drastically shift the focus of its basic flood countermeasures from post-disaster response to disaster prevention. From 1998 to 2002, the central government invested 140 billion yuan (about US$17 billion) and Henan Province invested a total of 24 billion yuan (about US$3 billion) in river improvements. Moreover, US$440 million in overseas loans was used for projects to reinforce the embankments of the Yangtze River. These projects had the following effects:

1. Flood resiliency of rivers has been strengthened: The water retention capacity and flow volumes of rivers and lakes were improved by restoring lakes and removing reclaimed land that had obstructed the flow of water. In addition, the addition of upstream reservoirs increased the water retention capacity in upstream regions.

2. Benefits have outweighed investments: As the threat of flood has decreased, the material and financial resources needed for disaster response and relief activities have been significantly reduced at various levels of government.

3. The economic environment has improved owing to improvements in local economies and social developments: The large-scale flood control project has changed the region's industrial structure, stimulated the economy in the river basin, and triggered social development The project has also been a driving force in improving the investment environment and urban infrastructure.

4. Incomes have risen among local residents: The quality of life among farmers in the lakeside areas has dramatically improved. The flood countermeasures have not only helped these people rise above poverty level, but also have promoted investment in long-term business schemes. Many farmers have used government assistance to build new homes and relocate, and the problem of homelessness caused by large scale flood has been resolved.

5. Flood control has promoted a balance between people and nature: Relocating homes and allowing farmland to revert back to swamps or lakes allows people to live in harmony with the ecosystem and also helps reduce the threat of flood.

Source: China Institute of Water Resources and Hydropower Research

Through the yen loan, Japan has also contributed a total of ¥48 billion, through yen loans, to flood control projects in the provinces of Hunan, Hubei, and Jiangxi in the Yangtze River basin.

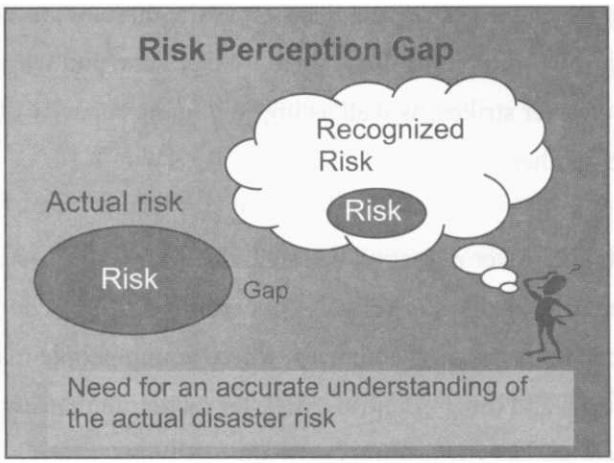
(3) Improvement of information sharing and management

Advance distribution of forecasts, warnings, and other information before typhoons, floods, landslides, volcanic eruptions and other natural disasters occur, can prevent human and economic losses.

Although meteorological bureaus in countries around Asia have access to weather image data from Japan (the Japanese Meteorological Agency, in cooperation with JICA, began transferring typhoon surveillance and forecasting technologies to countries in the

Asia-Pacific region in 2003), they do not have the systems to inform people of oncoming typhoons in a timely manner. Due to the delay in conveying necessary information to people, disasters have caused major damage.

Hazard maps for flood, potential landslide areas, and earthquakes have been created among experts, but have not been utilized at community level. This has resulted in a community level This has resulted in a large gap between the risks known to experts and the knowledge of people in local communities.



It is extremely important that early warning systems and hazard maps be used to develop a system for distributing disaster-related information so that local people have an accurate understanding of the risks and can take appropriate action.

COLUMN Importance of disaster-related information (Examples from Colombia and Japan)-

When the Nevado del Ruiz volcano erupted in Colombia in November 1985, approximately 22,000 perished in the mudslides brought about by the eruption. An accurate hazard map had actually been created by experts just a month prior to the eruption; however, the information had not been conveyed to local residents

Since areas where mudslides occurred followed the patterns predicted by the hazard maps, this disaster could have been avoided had the information been passed on to local people.

In contrast, when Mt. Usu erupted in March 2000 in Japan, , accurate early warnings were transmitted by the Coordinating Committee for the Prediction of Volcanic Eruptions

and subsequently the Usu Local Coordinating Committee, which comprises 41 relevant institutions, undertook a rapid response Due to accurate evacuation, no human life was lost. Likewise, in spite of the large scale of the eruptions of the Mayon Volcano in the Philippines from 2000 to 2001, earthquake observation systems and appropriate evacuation instructions were able to prevent any loss of life, demonstrating the success of these systems. Dissemination of accurate and timely information is vital to reduce damage.

(4) Promotion of education and public awareness

The key to reducing the impact of natural disasters is the dissemination of accurate disaster reduction knowledge to communities threatened by disasters, and which serve as the first responders when a disaster strikes, as well as improving the capacity of communities to help themselves and one another.

It is also important that disaster reduction be integrated into the curriculum for compulsory education. In particular, education in schools concerning disaster reduction can be effectively introduced in developing countries, where young people make up the majority of the population. In India and other countries, disaster reduction education has already been integrated into the compulsory education curriculum.

(5) Development of multi-stakeholder partnerships and citizen participation

Disaster reduction activities require the coordinated efforts of people in a number of different fields. Early warnings by meteorological bureaus are able to contribute to reducing the impacts of disasters only when the information is properly transferred to local communities through the media and other channels. In order to create disaster-resilient communities, it is vital that improvements resulting from civil engineering projects such as embankments, dams, and erosion control facilities be accompanied by cooperation between people involved in different activities, including soil and farmland management, appropriate land use planning, and building design codes.

1-7 Toward Sustainable Development

Disaster risk management strategies are essential for worldwide economic and social development, especially in developing countries.

In many cases, however, government policy makers only become aware of the importance of

disaster management policies and make efforts to develop fundamental policies in this area after suffering major damage from disasters.

It is not necessary for any country to experience a major disaster before it begins developing a disaster management system. As the saying goes, "Fools learn from experience, while the wise learn from history." Policy makers need to learn from the good practices and lessons of the past and take immediate steps to devise disaster risk management systems.

For example, prior to the 1960s, more than 1,000 people were killed in typhoons in Japan every year. However, comprehensive and systematic disaster risk management systems were launched following the enormously devastating Typhoon Ise-wan of 1959. In 1961, the Disaster Countermeasures Basic Act was enacted, and investment was expanded in the area of disaster reduction, such as flood control projects and weather monitoring equipment. Today typhoons cause few fatalities and little economic damage.

These investments were certainly facilitated by Japan's economic growth, but it is one good example showing the synergistic relationship between economic growth and the development of disaster risk management systems.

Japan's experiences may prove a useful model for the development of disaster risk management systems in developing countries.

Figure 1-10 Strategy for Disaster Risk Management