Background and Cambodia Disaster Situation

Context

Background

Cambodia covers an area of 181,035 square kilometers and is divided into 21 provinces. It is bordered to the North by Thailand and Laos, to the East and South by Vietnam, and to the South and Southwest by the Gulf of Thailand. Most of Cambodia's land is relatively flat with vast tracts of land given over to rice production. Other areas of Cambodia are mountainous, including the Dangrek, Cardomen and Elephant mountain ranges.

Climate and Seasons

As a tropical country, Cambodia is bathed in almost all year sunshine and has a high average temperature. There are two distinct seasons, the dry and the monsoon. The monsoon lasts from May to October with southwesterly winds ushering in the clouds that bring seventy five to eighty percent of the annual rainfall often in spectacular intense bursts for an hour at a time with fantastic lightening displays. The dry season runs from November to April averaging temperatures from 27 to 40 degrees Celsius. The coolest and most comfortable for those from cooler climates is from October to January.

Sociological hazard

Following a five-year struggle, communist Khmer Rouge forces captured Phnom Penh in 1975 and ordered the evacuation of all cities and towns; over 1 million displaced people died from execution or enforced hardships. A 1978 Vietnamese invasion drove the Khmer Rouge into the countryside and touched off 13 years of fighting. UN-sponsored elections in 1993 helped restore some semblance of normalcy, as did the rapid diminishment of the Khmer Rouge in the mid-1990s. A coalition government, formed after national elections in 1998, brought renewed political stability and the surrender of remaining Khmer Rouge forces. These were the experiences that currently still traumatize Cambodian's spirit.

Current environmental hazard

previously illegal logging activities throughout the country and strip mining for gems in the western region along the border with Thailand have resulted in habitat loss and declining biodiversity (in particular, destruction of mangrove swamps threatens natural fisheries); soil erosion; in rural areas, a majority of the population does not have access to potable water; toxic waste delivery from Taiwan sparked unrest in Kampong Saom (Sihanouk Ville) in December 1998.

Natural hazard

Severe destructions resulted from the above decade conflicts still cause Cambodia vulnerable. Natural disaster, on the other hand, which lately emerged consequently from the above experiences, has caused Cambodia highly potential-exposed to both economical and social vulnerabilities; as a result, Cambodia is highly susceptible to natural disasters, primarily floods.

Currently Cambodia is particularly prone to Annual River Flooding during the monsoon-raining season while other phenomena also frequently occur such as; tropical storms, droughts and forest fires etc. Those hazards are major factors cause occurrence of natural disasters that lead to contributory reduction of the pace of sustained economic development in this country. Many Cambodian communities, mainly communities situate along the two major watersheds; Tonle Sap and Mekong Rivers, have proven to be extremely vulnerable to the effects of those natural hazards. Localized flooding caused by monsoon thunderstorms is a serious threat as they periodically sweep the country. These natural phenomena are both a curse and a blessing as the farmers depend on the annual rainfall for crop production and have developed an extensive water management system to trap

and store water to be utilized during periods of drought. In this way, many parts of the country are capable of harvesting a primary rice crop and a secondary harvest of vegetables or other cash producing commodities. But in the series of consecutively extreme flood years, high water of flood wash away dams, dikes and distribution structures, destroy crops and livestock, damage homes, temples, schools, clinics, roads, and other community infrastructure and even cause loss of human life. This increasingly lead Cambodia to food shortage, loss of economic output, health contamination and consequently hunger and poverty.

The Mekong River and its hazards

The Mekong River is the world's 12th longest river system, with a total length of 4,400 km, a drainage area of 795,000 sq. km and an average annual runoff of 475,00 million cubic meters. The Mekong River Basin possesses the regions' largest potential water resources. Floods in the Mekong Basin are part of the daily life of the people. But food security, poverty reduction and sustainable development are not possible with extreme flood events that cause great loss of property, and severe disruption of livelihood.

Every year, floods of varying intensity affect the Cambodia along two natural major watersheds, Mekong River and Tonle Sap Lake. Both Mekong River and Tonle Sap dominate almost the land of paddies and forests of Cambodia. The Mekong River bisects the eastern third of the country north to south, flowing out of Laos through Cambodia and into Vietnam with its 500km length. Annual monsoon rains swell the Mekong causing the Tonle Sap to reverse it course, flooding Tonle Sap Lake and affecting the northwest region of the country.

Cambodia's chronic annual flooding reached catastrophic proportion in September 1996. As a result of heavy rains in China, Laos and Vietnam, the Mekong River rose dramatically in mid-September, causing serious floods in six provinces along the river. The consequence of the flooding affected 1.3 million people with over half requiring urgent emergency aids. That was generally acknowledged to be the worst flooding in more than 30 years of Cambodian history as more than 600,000 hectares of crops and 50,000 homes were damaged or destroyed. The flood also seriously damaged such infrastructure and critical facilities as schools and other public buildings. Beyond the experiences, the disastrous phenomena had consecutively threatened Cambodia, given as unexpected extreme flooding of high waters keep hitting her communities and generated even worst situation in 1999, 2000 and 2001.

In the year 2000, heavy rainstorms affected the entire Mekong River watershed early in the flood seasons starting July. This was perceived to be earlier than the usual start of the raining season. After a short dry spell, heavy rainstorms swept the Basin again in late August causing serious flooding in the lower area of the Mekong, especially in Cambodia and in Vietnam. There were beliefs that the flood of 2000 brought benefits such as natural fish spawning, increase in bio-diversity, soil nutrients, new land accretion and natural flushing, but there were also significant negative impacts. Last year's floods in the Mekong river basin were the worst in terms of damages in over 70 years, even though from the perspective of hydro-meteorology, the year 2000 flood was not significantly different from other historical flood. More than eight million people in Laos, Cambodia and Vietnam were affected, plus two million in Thailand. The estimated damages are shown as follows:

Laos- US\$ 19.5 million, 398,760 people affected and 15 dead Cambodia-US\$ 157 million, 3.5 million people affected and 347 dead Vietnam- US\$ 285.7 million, 5 million people affected and 448 dead

The flood of 2000 affected all the four countries in the Mekong River Basin including Lao PDR, Cambodia, Vietnam and Thailand. But it was in Cambodia that the most severe effects of flood were felt based on reports compiled by the Mekong River Commission (MRC). The deaths in Cambodia constituted 43% of total deaths (800) in all countries affected, while direct damages represented 40% of total damages (estimated at US\$ 400 million) in all of these countries. The member states of MRC expressed deep concern about this flood as it reached extremely high water levels. The flood of 2000 was more serious than previously recorded in Cambodia, when severe flooding in the area occurred in 1961, 1966, 1978, 1984, 1991, and 1996.

In 2001, Cambodia was again affected by flood and drought though the country was still in the process of recovering from the effects of the 2000 flood disaster. The increasing frequency of extreme climate events has resulted to worsening and more frequent damaging floods in Cambodia such as those that contributed to flooding in 2001.

HISTORY OF DISASTERS IN CAMBODIA IFRC World Disaster Report: 2002				
	1982-1991	1992-2001		
Total no. of people reported killed	100	1,094		
Total no. of people reported affected	900,000	13,336,614		

Due to effects of storm and strong rainfall affecting Thailand, Laos, and China, including the very fast water flow from Yaly Dam in Viet Nam into the Mekong River, some provinces were severely affected by flood on 13-15 August 2001, at a level that have not been experienced before. The flood also brought sedimentation into the Mekong River and Bassac River and caused damage to many national and rural roads and bridges.

On the other hand, due to strong rains in Phnom Penh and in some areas in the country and the fact that waterways are narrower downstream, the water flowed down significantly slower than its normal flow. Some districts in the provinces located near the Viet Nam border, had high flood level above the danger level for a longer period of time, a condition that was not earlier anticipated.

While vast numbers of areas were flooded in 2001, some areas in Cambodia were also affected by drought, some areas had insufficient rainfall from early months of the year until the end of 2001. Many people and livestock were faced with lack of drinking water and household water use. In some areas, people could not plant rice due to unavailable rice seeds that were depleted during the previous year and when rain came by the end of the year it appeared that the rice season would have been significantly delayed.

The flood and drought of 2001 had caused damages to so many social infrastructure systems, properties, crops, life, health of people, and animals. Listed below is a summary of Disaster Impact in Year 2001 (Damaged may be found in Disaster Damage Report Year 2001). It was estimated that the total direct damages of disasters in 2001 was at US\$36 million.

Due to these unfortunate events, the World Disaster Report published by the International Federation of Red Cross and Red Crescent Societies (IFRC) has categorized Cambodia as the third (3rd) most disaster prone countries in the entire world in years 2000 and 2001. This was computed in terms of percentage of population affected by disasters in relation to the total number of population.

At the start of 2002, Cambodia was again affected by a long dry spell severely affecting crop production in 8 provinces and affecting a total of 71,600 hectares. The expected rainfall necessary for wet season rice production did not arrive in May and a recent NCDM assessment reported severe conditions in many rural communities. Furthermore, the official declaration of the return of the global extreme climate events called El Nino would potentially exacerbate the impacts of natural disasters to Cambodia.

In year 2002 ten province were stricken by drought, seventy-six (76) districts/Khan and four hundred and twenty (420) communes/sangkat. The most severely affected provinces were Kampong Speu, Prey Veng, Takeo, Kandal and Odor Meanchey. Populations affected were 442,419 families consisting of 2,047,340 people. Total damages were approximately estimated at US\$ 21,500,000 dollars, particularly on rice plantation with 62,702 hectares damaged.

On the other hand, simultaneously effect of flood along Mekong River region was similar to the flood in year 2001, whereas flood in Tonlé Sap Lake areas was like the one in year 2000 as a result of influx rainwater from Dang Rek Mountain range after heavy rainfall. There were 89 communes, 38 districts in 6 provinces around Tonlé Sap Lake affected. Thirty-five km of Road No.6 between Siem Reap and Banteay Meanchey were flooded. Due to the flooding 12 km were cut and damaged. Also affected by flood were 129 schools, 14,356 houses and 7 health centers. Damages to infrastructure were 2 school buildings, 35 houses. On the agriculture were 45,003 hectares of rice plantation and to livestock with the death of 56 cows, 22 water buffaloes and 1,690 pigs.

Casualties from the flood resulted to 29 people dead by drowning. Children comprise most of the death with 9 females. Total damages were approximately estimated at US\$ 12,450,000 dollars.

The cabinet level institution of the Royal Government of Cambodia (RGC), the National Committee for Disaster Management (NCDM), attempted to cope with and respond to those annual catastrophes for the past seven years, however, the effort was considered largely effective under the condition of an emerging country that both the government and its people were and still are limited at preparedness to respond to a disaster of those scope and magnitude.

Limited actions of Provincial Committee for Disaster Management (PCDM) on flood early warning, weather forecasts and prediction of the extent and severity of the flooding was not accurate, as a consequence the level of preparedness was inadequate. Flood prediction was only available for one day forewarning and only at national and provincial level. Indeed, from a preparedness perspective, the length of forewarning was not adequate. Additionally, although television broadcasts provide situational update on the damages of flood, no public awareness about its consequences and what local actions need to be taken before and during the flood were provided.

Absence of partnership agreement and implementing guidelines for PCDM collaborative action prohibited the effectiveness of coordination and cooperation between PCDM, NGOs and international organizations. One of the most important lessons learned from the flood of 2000 is that there is an urgent necessity for improving inter agency or inter organizational coordination. As a starting point, if there is recognition that future-damaging disasters will happen, NCDM must be assisted to improve its capacity, system and procedures in damage and needs assessment and reporting. Such information is important if coordination have to be achieved. At the moment, there are areas that need to be improved as cited to the Assessment Team by various organizations and stakeholders.

To strengthen the local capacity building in Information Disaster Management System the project should be cover on public awareness especially among the disaster management officials of the provincial and district level, providing the training courses on Standardization of Disaster Information Definition and Reporting formats.

Those above situations clearly require and demand the urgent need for effective institutions to address the needs of the most vulnerable groups in Cambodia such as the National Committee for Disaster Management.

The National Committee for Disaster Management (NCDM) of the Royal Government of Cambodia

Vision:

NCDM is a well-functioning governmental inter-ministerial agency that is able assist the Royal Government of Cambodian in coping with disaster in the Kingdom Mission: To lead the Disaster Management in the Kingdom of Cambodia.

Mission:

To lead the Disaster Management in the Kingdom of Cambodia. Functions and Responsibilities To make recommendations to the Royal Government and issue principles, main policies to assure safety and security of people from disasters and issue warnings on Disaster Preparedness and Management cum the measures for Emergency Response and interventions during disaster.

Functions and Responsibilities

- To make recommendations to the Royal Government and issue principles, main policies to assure safety and security of people from disasters and issue warnings on Disaster Preparedness and Management cum the measures for Emergency Response and interventions during disaster.
- To coordinate with the Ministries of the Royal Government, UN agencies, IOs, NGOs, International Communities, National Associations, and Local Donors in order to appeal for aid for Emergency Response and Rehabilitation.
- To disseminate Disaster Management works to communities and strengthen the line from the National level (Ministries /Institutions concerned) to the provincial/ Municipal/District/ Precinct level along with human resource development aiming to manage Disaster works firmly and effectively.
- To put forward a proposal to the Royal Government on reserves, funds, fuel, means of working, equipment and human resources for Disaster Prevention and intervention in Emergency Response and Rehabilitation before, during, and after disaster.

Compared to its performance in the flood of 2000, the NCDM was more extensively involved in on-site damage and needs assessment in year 2001 and year 2002. This was in part due to higher level of preparedness by the NCDM for the floods of the last two years and, including the conduct of two (2) "lessons learned" workshops at the provincial level and one at the national workshop. In the provincial workshops the "joint assessment process" included members of the Provincial Committees for Disaster Management or PCDMs in the provinces of Kompong Cham, Prey Veng and Takeo. Among the issues and concerns identified during these workshops were the following:

The actions of the PCDMs were limited due to inadequacy of flood early warning. Weather forecasts and predicting the extent and severity of the flooding was not accurate. As a consequence the level of preparedness was inadequate. Flood prediction was only available for one day forewarning only. Indeed, from a preparedness perspective, the length of forewarning was not adequate. Additionally, although television broadcasts provide situational update on the damages of flood, no public awareness about its consequences and what local actions need to be taken before and during the flood were provided.

The PCDM members noted that the absence of any partnership agreement and implementing guidelines for PCDM collaborative action prohibited the effectiveness of coordination and cooperation between PCDM, NGOs and international organizations. Mobilization at the provincial level included identification of communities needing evacuation and their movement to safer place, protection of existing embankments, and distribution of relief assistance to individual families. The PCDMs in two provinces noted that NCDM training had helped them in identifying and mobilizing critical local resources that were controlled by individual government agencies. This includes the province of Kompong Cham that was provided disaster management training under the ADRC Human Resources Development on Disaster Management project.

As a result of these experiences, several provinces recommended that they should be equipped with the necessary management skills and resources to minimize damages of future disasters. The PCDMs expressed the need for them, and all PCDMs, to develop the following capabilities:

- analyze data to determine the cause-effect of "damaging" flood in their provinces, anticipate the potential dangers of flood and its consequences, and develop a PCDM disaster management plan for different types of disasters;
- receive and analyze early warning of any hazard occurrence and disseminate to the districts and commune level authorities:
- conduct immediate assessment of damages, send situation reports to NCDM and analyze and recommend the priority needs of the affected communities;

- implement and monitor the necessary local actions based on the PCDM disaster management plan and RGC policy and procedures:
- plan and make management decisions effectively based on the progress of the situation and available information;
- train the district and commune level authorities;
- conduct public awareness activities;
- draw on a stockpile of relief items and contingency fund available at the provincial level;
- mobilize resources from local donors, private business sectors and NGOs operating in the province;
- assess needs and recommend actions for recovery and rehabilitation;
- use computers and appropriate telecommunications in performing their designated responsibilities.

In other provinces, PCDMs reported the serious inadequacy of transport and communication facilities was the most important problem during the flood. Due to this, critical information from the affected communes was difficult to obtain and caused delay in government response. The transmission of damage reports to NCDM and national Ministries was also perceived to be unsatisfactory due to the same reason. PCDM stated that there are two sets of reports from the provincial level: a) sector specific report to individual Ministries, and b) PCDM report which summarized sectoral report.

The individual provincial offices routinely send reports to their national Ministries in Phnom Penh without sharing these to the PCDM of Takeo indicating inadequacy in coordination. However, several field offices such as the Health Department took the initiatives to collaborate with selected organizations such as the Cambodian Red Cross Provincial Branch in the delivery of assistance to affected communities. The respondent however critically cited the delay in their response time (outbreak of diarrhea) due to late reporting of incident and the inadequacy of transport to reach the affected area. It is important to note that the PCDM in this province had not been provided with any prior disaster management training by NCDM.

During the Feedback Workshop conducted in Phnom Penh in April of 2001, the participants among the provincial leadership further noted the importance of strengthening the PCDMs who perform dual role of coordination of response and implementation of critical activities. There is recognition that strengthening PCDM is congruent with the efforts to decentralize delivery of services from the national to the provincial and district levels. The participants also emphasized the importance of closer operational relationships with NGOs such as sharing of information of NGO resources, relief operations and results of programs to avoid duplication of assistance in some communities and also ensuring that all those communities who need assistance receive these.

The Provincial Governors were grateful to receive information that Samdech Prime Minister Hun Sen had instructed the allocation of permanent budget for NCDM. The participants recommended that PCDM must also receive the appropriate financial allocation applicable to their roles and responsibilities under disaster management. Assistance to the PCDMs must also include training in the various aspects of disaster management.

During the National Workshop conducted in 2001, comments from various respondents however revealed that there were operational and coordination problems that would necessitate improvement in the system of damage and needs assessment of NCDM. They are cited below:

UN-OCHA:

Information needed to target the most vulnerable groups are not shared by the government with NGOs in affected areas resulting to uncoordinated relief efforts at the local level. The system of comparing damage and needs information between government and NGOs such as convening the Emergency Response Group at the national level have to be strengthened. There is lack of clarity on what information are important for recovery and rehabilitation planning.

PCDM:

NCDM should provide them clearer and improved guidelines in damage and needs assessment in relation to the flood experience, particularly on what information are required by the national government to provide support to PCDM. Additionally, PCDM must also be assisted in gathering information that will help them (PCDM) make appropriate and timely decisions for actions required at the local level.

NCDM:

Focal points at the PCDM, district level, commune level to collect information have not been adequately equipped with skills and resources to perform this responsibility. PCDM Secretariats are not well established and there are no permanent offices and office equipment and supplies necessary for their functioning. There was an improvement in the cooperation of other Ministries in providing information for NCDM, but can still be enhanced. NCDM lacks the necessary logistical resources such as computers, telephones, fax machines, vehicles, and email connection.

NGOs:

The Emergency Response Group and its sub committees, as an information sharing mechanism involving NGOs, have to be more meaningful and better planned and managed. Except for Kompong Cham and Battambang, the PCDM in most provinces affected by the flood had not convened any provincial level coordination meeting that involved NGOs. However, these coordination meetings were made after it was realized that flood was severe and no proactive actions were taken prior to this event. Drawing on national and international experience, NCDM should take the lead in the process of developing consistent standards in damage and needs assessment and response and should be able to monitor compliance. A disaster management policy and the inter-ministerial agreement over policy is key. The policy must allow definition of the nature of the role of NGOs in disaster management. Disaster management must address the long-term food security issues and other unresolved development root causes such as poverty and vicious debt cycle among poor people.

One of the most important lessons learned from the flood of 2000 is that there is an urgent necessity for improving inter agency or inter organizational coordination. As a starting point, if there is recognition that future damaging disasters will happen, NCDM must be assisted to

improve its capacity, system and procedures in damage and needs assessment and reporting. Such information is important if coordination have to be achieved. At the moment, there are areas that need to be improved as cited to the Assessment Team by various organizations and stakeholders. These are:

- The system of comparing damage and needs information between government and NGOs such as convening the emergency response group at the national level and local levels have to be strengthened. There is lack of clarity on what information are important for recovery and rehabilitation planning.
- Situation reporting by NCDM lacks information necessary for crisis or contingency management to anticipate emerging severity of floods in various stages. The data storage at NCDM (currently using spread sheets) should be improved utilizing information technology (every village in Cambodia are GPS mapped and coded) already in use.
- NCDM should provide PCDMs with clearer and improved guidelines in damage and needs assessment in relation to the flood experience, particularly on what information are required by the national government to provide support to PCDM and information required for improved management of crisis at the local level.
- Focal points at the PCDM, district level, commune level to collect information have not been adequately equipped with skills and resources to perform this responsibility. PCDM secretariats are not well established and there are no permanent offices and office equipment and supplies necessary for their functioning. NCDM lacks the necessary logistical resources such as computers, telephones, fax machines, vehicles, and email/internet connection.
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Solution

In 2001, a Joint Assessment of NCDM's Capacity and Capability was initiated by NCDM, with assistance from Cambodian Red Cross (CRC) and the International Federation of Red Cross and Red Crescent Societies (IFRC). An Assessment Team was organized among these principals. To lead the Team, IFRC hired the technical services of the Philippine-based International Institute for Disaster Risk Management (IDRM). The Team also included active participation of representatives from UN-Office for the Coordination of Humanitarian Affairs (UN-OCHA) and the World Food Programme (WFP) in Cambodia.

The Assessment was comprehensive and the process led to the development of a Five-Year Institutional Development Strategy and a Two-Year Action Plan that had engaged almost all of the important stakeholders of disaster management in Cambodia. These include consultation with all the NCDM Secretariat staffs, member-Ministries, all the provincial Governors, international organizations and a number of NGOs. More importantly, the Assessment process also included close consultation with the Prime Minister Samdech Hun Sen, who also acts as President/Chairman of the National Committee for Disaster Management.

Under the institutional strategy and action plan adopted, the following components were identified and are now being given much attention and effort by the NCDM since the year 2002 so far:

- 1. Disaster Management Policy and its implementation
- 2. Disaster Preparedness and Emergency Response
- 3. Comprehensive Disaster Management Strategy
- 4. Disaster Management Information System

Major achievements have been realized by the NCDM in the implementation of the two-year action plan and the institutional development strategy. The following accomplishments have been realized:

Early Warning

Closer ties have been established with the Mekong River Commission (MRC) culminating in a 2-day Early Warning and Flood Forecasting Workshop conducted last July 2002. The workshop was attended by NCDM staff, government line ministries, PCDMs and concerned NGOs. The workshop included hands-on training for participants in accessing and interpreting flood warning and forecasting data and information that can be found at the MRC website.

Disaster Management Policy

- A new Royal decree and Sub-decree signed last February and April 2002 respectively, that more clearly defines the coordinating authority of the NCDM for disaster risk management. The new policy effectively improves the organization of the NCDM and spells out more clearly the roles and responsibilities of the various ministries as they relate to the management of disasters in the country.
- A new Circular (Circular No.1 series of 2002) has recently been approved and signed by the Prime Minister. The Circular outlines official government policy on the function of PCDMs/DCDMs and paves the way for a smoother implementation of the Damage and Needs Assessment systems and procedures.
- Orientation field visits to eleven (11) provinces to disseminate new Sub-decree and Circular by HE Nhim Vanda and senior staff of NCDM. Discussion of the Circular and the new Sub-decree with various government ministries was separately conducted last July 2002. The two circulars were then renewed the validation and mandate by Samdech Prime Minister to be the legitimated legal based documents for disaster preparedness that were disseminated and implemented in year 2003 in all flood prone provinces.

Disaster Preparedness and Emergency Response

Before the flood of 2000, preparedness for NCDM meant the yearly allocation of 400, 000,000 riels to NCDM operations and contingencies annually, withdrawing up to 400- 800 metric tons rice reserve from the Ministry of Commerce for relief operations, and the conduct of training for a) core team of trainers composed of 17 government officials (11 NCDM, 6 from other Ministries). Additionally, NCDM has recently conducted training courses for 5 PCDMs in Prey Veng, Kampot, Kompong Cham, Kandal and Pursat. Pursuant to the orders of the Prime Minister, the Ministry of Economy and Finance has allocated appropriate and adequate budget to NCDM starting at fiscal year 2002. He has also formed an initial force of 2,000 active soldiers who would compose the "Disaster Response Force" The following actions were also undertaken to address the challenges of disaster response.

- Strengthening leadership and effective coordination of various Ministries and organizations' actions in a timely and urgent manner, based on the disaster situation.
- Identification, training and equipping a "disaster strike force" within the military forces of Cambodia who are strategically located to respond and assist civilian population quickly and efficiently;

Assisting vulnerable communities in preparing plans and acquiring "disaster resistant" community infrastructures such as pagodas, schools that will help them cope with floods and other types of disasters.

Comprehensive Disaster Management Strategy

The World Bank and the Royal Government of Cambodia has agreed to a flood rehabilitation program with financial assistance from the Bank. The objective of the project is "to rehabilitate economic and social infrastructure damaged by the 2000 floods while also indirectly supporting recovery in rural production and incomes. Another objective is to assist the Government in formulating a long term strategy aimed at reducing the country's vulnerability to flooding. The World Bank Mission also cited that it would work with other donors such as the ADB, JICA and the Mekong River Commission on this aspect.

Disaster Management Information System

Current efforts of the NCDM are focus on the development and installation of a National Disaster Damage and Needs Assessment System. The UN-DMT, through the World Food Program (WFP) and UNICEF provided funding for the development of such a system.

The Disaster Management Information System

To complement UN-DMT initiatives in installing Damage and Needs Assessment System and procedure in the country, NCDM submitted a small proposal in year 2002 to the Asian Disaster Reduction Center (ADRC), a regional disaster management institution based in Kobe, Japan for funding of damage and need assessment training courses in 5 provinces. Until January 2003 the project was able to get financial support from the ADRC. However, the project activities were able to start until April 2003 due to time challenges for NCDM in response to flood year 2002.

The Damage and Needs Assessment system and procedures produced by the IDRM has been disseminated to all UNDMT members and selected NGOs (International Federation of Red Cross, CRC, OXFAM and AAH) for their comments. The final version has just been prepared by the NCDM. Under this project, a more rational and systematic reporting of damage and needs assessment in targeted provinces has been on way of setting up.

NCDM training staff worked with consultants from IDRM to develop training curriculum. By early January 2003, the final curriculum for the national level training was ready for a national level training workshop. With financial support from the World Vision International the Training Workshop for National Disaster Assessment Team was successfully conducted from Febrary12-14, 2003 in Phnom Penh by NCDM and IDRM. Then the training team of NCDM adapted the training curriculum into a provincial training level. Five training courses were delivered earlier in 5 provinces; Kandal, Prey Veng, Kampong Cham, Kratie and Kampong Speu, in which five Provincial Disaster Assessment Team (PDATs) were successfully established.

The success of the five training courses had convinced the Lutheran World Federation (LWF) financially supported another two training courses in Kampong Chhnang and Battambang Provinces. Consequently, another two PDATs were also formed that NCDM has now totally 7 PDATs in 7 provinces.

Through the project, a more rational and systematic reporting of damage and needs assessment in all **T**seventy-two (72) districts in seven (7) of the most flood-prone provinces in Cambodia were installed at the provincial and district levels. These include the provinces of Kandal (11 districts), Prey Veng (12 districts), Kratie (5 districts), Kampong Cham (16 districts), and Kampong Spue (8 districts), Kampong Chang (8 districts) and Battambang (12 districts).

In the workshops, PCDM and DCDM staff were provided with a detailed orientation on the systems and procedures for assessing damage brought about by disasters and in calculating or estimating the food and other emergency needs of the affected population. The workshop included simulation of a disaster event where actual use of the reporting formats and the procedures prescribed will be tested. Actual response times, including the time it takes for the reports to reach NCDM offices in Phnom Penh will be monitored and experiences based on the application of the project in these provinces will be used to refine the system, if and when it is found to be necessary.

It is expected that a more efficient and effective response to local disaster events, particularly flooding, will be experienced in the provinces where the workshops were conducted. In case of future severe disasters, it can be expected that the NCDM will be able to provide international disaster response organization with more reliable disaster reports in a relatively shorter period of time than previously experienced. Status or levels of Damage and Needs Assessment will be documented before and after the conduct of the workshops to determine the extent of the efficacy of the workshop and of the systems and procedures it aims to put in place. Next step NCDM will try to replicate the program in the remaining nine provinces of the Kingdom with specified training curricular adapted to the nature of the disasters in the provinces.