

## Management of Natural Disasters with Local Community as Centre

### Scope of Natural Disasters

Natural disasters here are taken to include four kinds of immediate events with serious impacts on life and property (i.e. flood and land and mud slide, tropical cyclone, earthquake, and tsunami) and three kinds of predictable and frequent events that affect a large number of people (i.e. big flood, drought and forest fire and haze or smog).

### Situation and impacts

1. As a result of climate change over the last 30 years or so, global temperature has experienced an average rise of 0.2°C every decade, leading to constantly changing weather conditions and frequent natural disasters in Thailand, including flood, land and mud slide, storm, earthquake, tsunami, drought, forest fire and haze. The impacts on society and community were unavoidable, often to such a degree as causing untold damage to life, property, economy and environment. The extent of the damage was beyond the ability of public agencies, the government or community to cope with on their own. For developing countries, natural disasters pose serious obstacles to their attempts to better living conditions of the people. It is important to pay attention to the management of natural disasters by community and society, as each community faces different kinds of disaster problems. Therefore, the community must play an important role in the management of natural disasters by itself so as to reduce all possible risks and enhance public safety.

2. Flooding and landslide in the five lower southern provinces on 22-23 May 2006 took their toll of the provinces of Uttaradit, Sukhothai, Phrae, Lampang and Nan. Eighty-seven lives were lost (75 in Uttaradit), and 29 went missing, while other 352,016 people were affected. The major flooding incident during October-November 2010 also caused a major damage to 39 provinces, 425 districts, 3,098 sub-districts and 6,197 villages, affecting 609,511 households and 1,932,405 people and causing 80 deaths. The incident caused flooding in the inner district of Hatyai, an area in the province of Songkhla, resulting in more than 10 billion baht worth of losses and 233 deaths excluding foreign victims. During 13-20 December there was another flooding in 16 districts of Songkhla inflicting hardship on a large number of people. The most recent flood starting from 25 July 2011 was caused by Tropical Storm Nok-Ten, a moderate to strong monsoon entering Thailand in its wake. The water flowed over the embankments. The affected and (flood) emergency areas covered 65 provinces, 684 districts, 4,917 sub-districts and 43,600 villages. 4,068,361 households and 13,570,873 people were affected. 2,329 houses were completely destroyed, and 96,833 partially destroyed. It was estimated that the damage was seen in 11.20 million *rai* of agricultural land, 13,961 roads, 777 drains, 982 weirs, 142 cofferdams, 724 bridges/bridge necks, 231,919 *rais* of fish/shrimp/mollusk ponds, 13.41 million cattle, 680 deaths, and three people missing. Damage was also evident in industrial estates, plants, shops, Don Muang Airport, and other businesses of enormous economic worth. Kasikon Bank Research Centre estimated that the unprecedented economic loss to Thailand was estimated at 242.2 billion baht net.

3. There were a number of major storms in Thailand. Typhoon Gay hit Chumphon Province on 4 November 1989 at a speed of 189 km/hour, causing 602 deaths, 5,495 injuries, and 134 missing, doing damage to 61,258 houses, and property worth 11.739 billion baht. It was the only storm of typhoon status that the country has ever experienced. Typhoon Ketsana made a

landfall in Vietnam and moved on to Thailand as a tropical storm at a speed of 165 km/hour ravaging the provinces of Amnat Charoen and Ubon Ratchathani. Typhoon Linda hit 11 southern and eastern provinces during 2-4 November 1997, causing storm, flood, and storm surge in a wide area. A large number of people suffered injury and were taken to the nearest hospitals and health centres. Diseases were rampant, especially the contagious kind. In places where control was ineffective, diseases were epidemic, people suffered from depression and shortage of water for use and consumption<sup>1</sup>.

4. There was a tsunami in the south in the morning of 26 December 2004 after the earthquake registered 8.9 on the Richter magnitude scale had hit the sea north of Sumatra. The ensuing consequence was an immediate and huge loss of life and property in six provinces on the Andaman coast (Phang-Nga, Krabi, Ranong, Phuket, Trang and Saton). 5,401 Thai and foreign nationals perished, 2,921 went missing, and more than 1,215 children were made orphans. The preliminary damage was estimated at 14.491 billion baht with a loss of more than 30 billion baht to the economy and tourist industry<sup>2</sup>

5. The last five years witnessed a number of tremors at some border areas, e.g. the Burmese and Lao borders and Sumatra. In 2007 tremor that struck Burma and Laos was felt in the provinces of Chiang Mai and Chiang Rai, as well as in several high-rise buildings in Bangkok. The quake in the Sumatra area was felt in high-rise buildings in Bangkok, Phuket and Phang-Nga. There were six more in 2008, which were again felt in high-rise buildings in Bangkok three times, in Chiang Mai twice, in Phuket once and in Surat Thani once. In 2009 there was a quake registered at 7.9 on the Richter scale in the middle of Sumatra, the effect of which was felt in high-rise buildings in Bangkok. In 2010 there were four tremors, felt in Chiang Rai three times and once in some high-rise buildings in Phuket, Phang-Nga, Surat Thani, Songkhla and Bangkok. More recently in 2011 a tremor struck Laos and was felt in several provinces such as Loei, Nan, Phrae, Udon Thani, Nong Khai, and Nong Bualamphu<sup>3</sup>.

6. With regard to **forest fires** and **haze**, according to the information collected since 2010, 6,763 attempts were made to put out forest fires which destroyed 81,508.6 *rai* of forest land, broken down as follows: in the **northern region** there were 4,198 attempts to put out the forest fires which ravaged 32,374 *rai* of land, an increase over the budgetary year 2019 (7222 attempts and 4,459 *rai* destroyed); in the **northeastern region** 1,560 attempts and 20,432 *rai* of land (compared to the budgetary year 2009 with 293 attempts and 42 *rai* of land), in the **central and eastern regions** 575 attempts and 7,041 *rai* of land (compared to the budgetary year 2009 with 121 attempts and 1,222 *rai* of land); in the **southern region** 430 attempts and 21,661 *rai* of land (compared to the budgetary year 2009 with 262 attempts and 16,607 *rai* of land). With regard to the **haze situation** in Thailand, the crisis was first severely experienced in the upper northern region. In February 2010 small particles (PM10) were found in quantity far beyond the standard level in several places. The situation became critical during 17-19 March 2010, especially in the province of Mae Hong Son which on 18 March 2010 saw a 24-hour average of 518.5 microgrammes per cubic metre, four times beyond the standard level, the highest in 20 years since the air quality in Thailand was first inspected (with a 24-hour average of PM10 not exceeding 120 microgrammes per cubic metre)<sup>4</sup>.

7. On the **drought** situation, the information for 2002-2010 reveals that 71 provinces suffered untold damage caused by drought. For example, the year 2005 saw 11,147,627 people in distress, 13,736,660 *rai* of agricultural land ravaged, amounting to 7.565 billion baht in terms of damage<sup>5</sup>.

8. One of the most important reasons for such enormous losses of life and property is that **the community had no plan to handle the disasters**, no good warning system in place, no communication system to which the public could get easy access, nor knowledge or understanding of self-protection from danger. At present we have some communities with a good form of disaster management, e.g. Community of Ban Phumin-Thali, Muang District, Nan Province. The community is situated on the bank of the Nan River and has long suffered from flooding. Drawing on the learning process of flood management, the community worked together to alleviate the situation and reduce the loss of life and property and came up with a 3-stage plan (before, during and after the flood). Designed to cope with flooding, the plan was put in practice. Drills were carried out before the run-off season. Funds were set up for flood victims and run by a selected committee. This is an interesting innovation involving the application of appropriate learning to the community's flood prevention, establishment of the fund and use of the walking map<sup>6</sup>. Another example is Khiriwong Village, Lansaka District, Nakhon Si Thammarat Province, systematically preparing its community in the event of any disaster.

9. Several public agencies and NGOs have made efforts to support the community to manage disasters by themselves. For instance, the Department of Disaster Prevention and Mitigation has carried out a project to empower the community, known as Community-based Disaster Risk Management (CBDRM). The project aims to encourage people participation, form networks, create awareness and readiness in disaster prevention and mitigation, and empower the community to manage preliminary disasters by themselves. Disaster prevention and mitigation plans at community level have been developed, and a number of committees established for various functions. The Provincial Disaster Prevention and Mitigation Office is responsible for selecting target risk areas subject to the provincial governor's approval and informs the central authority accordingly. The central authority will then set policy guidelines, allocate funds to the provincial authority, develop material for publicity purposes, and provide training for community leaders on such subjects as community-based disaster management, development of community information, problem analysis, prevention plan, and drills. Starting in 2004, the project has covered 6,065 areas from 26,707 risk villages in 76 provinces throughout the country. The National Disaster Warning Centre has projects to encourage the community to manage risks and disasters in six southern provinces affected by the tsunami. The idea is to prepare the community for greater awareness and readiness and to educate them on planning, warning systems, evacuation areas and drills. In addition, the Thai Red Cross has carried out other community-based projects to reduce disaster risks, organizing educational forums and training for leaders, establishing community committees, developing and drilling disaster plans. It has conducted pilot projects in the provinces of Ubon Ratchathani, Chiang Mai, Surat Thani, and Phetchabun.

### **Relevant policy and measures**

10. The Sixty-fourth World Health Assembly passed a number of resolutions urging the member states to (1) enhance health emergency and disaster risk management by incorporating it as part of the national and secondary health systems with applicable laws to raise the level of health outcomes and (2) to integrate health emergency and disaster risk management in the national and secondary health plans, coordinating and cooperating with the sectors concerned in risk analysis, development of preparedness before and in response to the disaster as well as rehabilitation.

11. There is an international agreement emerging from a conference on community-related disasters in which Thailand participated. Known as Hyogo Framework for Action (HIFA), it is an agreement reached at the World Disaster Reduction Conference focusing on the needs to develop methods for regional coordination, plans and communication systems for

greater preparedness as well as speedy and effective response to the situations beyond national capability. It aims to strengthen the community and nations in the face of disasters with tools designed to reduce risks or disaster impacts. The goal is to reduce loss of lives and social, economic and environmental assets by 2015. The responsible agency for this campaign is United Nations International Strategy for Disaster Reduction (UN/ISDR). Thailand is party to the agreement and has implemented some of HFA plans through such agencies as the Department of Disaster Prevention and Mitigation and the Red Cross.

12. Thailand has developed its **National Disaster Prevention and Mitigation Policy** in conjunction with other national plans including National Economic and Social Development Plan and National Security Policy. These plans have sections related to the **National Disaster Prevention and Mitigation Plan**<sup>7</sup> directly under the responsibility of the **National Disaster Prevention and Mitigation Committee** through the Department of Disaster Prevention and Mitigation under the National Disaster Prevention and Mitigation Act B.E. 2550 (2007). The committee, chaired by the Prime Minister or Deputy Prime Minister, is composed of permanent secretaries of various ministries concerned. One of its functions is to develop the National Prevention Plan and submit to the government for approval. Under the current plan (2010-2014) and Section 15 of the Act, every province is required to develop its disaster prevention and mitigation plan, while Section 16 stipulates that the provincial plan is to consist of plans of local administrative organizations on the procurement of material and equipment for this purpose and plans to put in place public warning signs or signals. All these plans must be inter-connected and integrated on an inter-agency basis. In addition, plans are to be reviewed periodically. However, it is noteworthy that the mechanisms and processes are still mostly government-oriented. They are set by the central authority and are lacking in clear and serious intent to promote community-based disaster management. It is therefore important to put in place a participatory process involving all sectors to review and improve the plan and to attach greater importance to natural disaster management with local community as centre as found in the **Proposed Guidelines for the Improvement of National Disaster Prevention and Mitigation Plan with Local Community as Centre** in the annex to the main document (Health Assembly 4/Main 4/Annex 1).

13. In the Integrated Flood Prevention and Solution Policy that the Yingluck Shinawatra Administration announced on 3 September 2011 under the 2P2R approach, 8 guidelines were spelled out taking into consideration the public interest and focusing on immediate and long-term preparations at the same time.

14. Published in the Government Gazette on 7 October 2011, the Prime Minister Office Regulation on the Management and Solution of Flood, Landslide and Drought Problems B.E. 2554 (2011) states that in order to ensure an integrated and systematic approach to solving flood, landslide and drought problems **a committee is to be established** as a mechanism with the **Office for the Management and Solution of Flood, Landslide and Drought Committee** undertaking administrative work.

### **Problems, constraints, and ways to manage problems**

15. In general communities in risk areas are unprepared to manage natural disasters in a systematic manner whether before, during or after the event. The people do not have enough knowledge or understanding about prevention or how to conduct themselves during the disaster. Hence, attempts should be made to educate them systematically.

16. When it comes to the role of volunteers and strong community, it is found that a large number of civic volunteers and community leaders working in the affected areas do not have

sufficient knowledge and basic skills necessary for efficient rescue and rehabilitation operations. They are not equipped to cope with medical emergency situations. They do not receive adequate material support. There is no effective management system to help them better carry out their work, coordinate and communicate information. All this makes it hard for volunteers and community organizations to operate effectively.

17. As far as the roles, missions, and capacity of responsible agencies are concerned, it is found that their operations at the moment are not in unison whether operationally or administratively. The problem is seen at national, provincial and local levels. Most tend to react to the immediate problems at hand and do not work in an integrated manner or in unison. They do not have long-term problem-solving plans. They are not adequately equipped with budget, personnel, machinery, and equipment necessary to do preliminary or specific work. They do not have specialized personnel. It is, therefore, necessary to improve the National Disaster Prevention and Mitigation Plan B.E. 2553-2557 (2010-2014) by adding a community dimension acting as a centre and to put in place a Master Plan for Promotion of Natural Disaster Management Networks with Local Community as Centre B.E. 2555-2557 (10120-2014) for the purpose.

18. Another important problem is budgetary shortage in disaster management. For example, in the budgetary year 2011 the Department of Disaster Prevention and Mitigation was given a budget of 2,541,163,300 baht representing an investment of 37.50 baht per head of the population. This is in stark contrast to the amount of losses incurred. For example, in the flooding incident at Hat Yai in 2000 alone the damage amounted to more than ten billion baht. After the flood, the government had to spend a huge sum of money on the rescue and reconstruction operations. In addition, the spending for rehabilitation in the affected areas went very slowly, thus hampering the livelihood of the population, simply because the tight budget-spending regulations hardly facilitated the work.

19. Furthermore, it is necessary for public agencies concerned to review long-term preparations for engineering infrastructure, and town planning, as well as keeping track of disaster information related to the infrastructure. They also need to come up with structural measures suited to different localities in such a way that no floodways are obstructed. Disaster risks should be reduced. Attempts must be made to ensure strict implementation of the relevant laws, including land use and care of the headwater.

20. Flooding that has a major impact on big urban community and metropolis often occurs as a result of human settlement as well as industrial plants and infrastructure obstructing natural floodways. In the long term serious attempts should be made to review and redress the town planning system, allocating places for floodways, catchment areas, (monkey-cheek) reservoirs, and canals. As to the flood and landslide affecting the rural community located on the slope and in imbalanced deforested areas, action should be taken to solve physical problems so that people can live in harmony with nature in a sustainable manner.

#### **Point for consideration by National Health Assembly**

The National Health Assembly is requested to consider Document Health Assembly 4/Draft Resolution 4

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References

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- 1 Disaster Management Development Project, People Sector, Mirror Foundation
  - 2 National Disaster Prevention and Mitigation Plan B.E. 2553-2558 (2010-1015); 4
  - 3 Statistics of Earthquakes with Impacts on Thailand, Earthquake Watch and Warning Bureau, Thai Meteorological Department
  - 4 Strategy/measure to solve problems of forest fires and hazes in 2011, Ministry of Natural Resources and Environment
  - 5 Statistics of Drought for 2002-2010, Department of Disaster Prevention and Mitigation
  - 6 Community of Ban Phumin-Thali Project for Getting United to Fight the Flood
  - 7 National Disaster Prevention and Mitigation Plan B.E. 2553-2558 (2010-1015): 105