

Thailand profiles on Disaster Risk Reduction 2011

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To

**Asian Disaster Reduction Center
(ADRC)**

Thailand Country profiles 2011



1. General Information

Thailand is located between 5° and 21° N latitude and between 97° and 106° E longitude, bordering to the North by Laos and Myanmar, to the East by Laos and Cambodia, to the South by the Gulf of Thailand and Malaysia, and to the west by the Andaman Sea and Myanmar.

1.1 Geographical Data

Situated in the heart of the Southeast Asian mainland, Thailand covers an area of 513,115 square kilometers. It is bordered by Laos to the northeast, Myanmar to the north and west, Cambodia to the east, and Malaysia to the south.

Typography

Thailand is naturally divided into four topographic regions: 1) the North, 2) the Central Plain, or Chao Phraya River basin, 3) the Northeast, or the Korat Plateau, and 4) the South, or Southern Isthmus.

The North is a mountainous region characterized by natural forests, ridges, and deep, narrow, alluvial valleys.

Central Thailand, the basin of the Chao Phraya River, is a lush, fertile valley. It is the richest and most extensive rice-producing area in the country and has often been called the "Rice Bowl of Asia." Bangkok, the capital of Thailand, is located in this region.

The Northeastern region, or Korat Plateau, is an arid region characterized by a rolling surface and undulating hills. Harsh climatic conditions often result in this region being subjected to floods and droughts.

The Southern region is hilly to mountainous, with thick virgin forests and rich deposits of minerals and ores. This region is the center for the production of rubber and the cultivation of other tropical crops

1.2 Climate information

Thailand has a tropical climate and temperatures typically range from 19-38 degrees C. The weather is warm, rather humid with an average temperature of 32.5 to 23.7 degrees Celsius.

Thailand can be separated into two climatic zones: the upper and the lower.

The upper zone, which includes the north, north-east, south-east and central regions have a climate with three distinct seasons: rainy, from June to October; cool from November to February; and of season from March to May.

The lower zone in the southern region has a tropical rainforest climate. In other words, the south has only one season annually - rainy season. Rainfall present virtually throughout the year and the average temperature of the south is 27 degree centigrade. The local climate is tropical and characterized by monsoons. There is a rainy, warm, and cloudy southwest monsoon

from mid-May to September, as well as a dry, cool northeast monsoon from November to mid-March. The southern is always hot and humid.

1.3 Demographic data

The population of Thailand is approximately 67,764,000.(As of December 2010)

Nationality : Thai 75%, Chinese 14%, other 11% Religions : Buddhist 94.6%, Muslim 4.6%, Christian 0.7%, other 0.1% (2000 census)

Languages : Thai, English (secondary language of the elite), ethnic and regional dialects.

2.Natural Hazards in Thailand

Most disasters in Thailand are associated with water. The most common disasters are floods, droughts and landslides. This is due to the geographic and climatic characteristic of the country. With a vast mountainous areas in the north from where the main rivers (i.e. Ping, Wang, Yom, Nan and Chao Phraya) are originated, large volume of water flows down to the mouth of the ocean in Bangkok passing through many provinces. This phenomenon takes places every year during the rainy season, influenced by the southwest monsoon weather which arrives annually between mid-June and October.

2.1 Natural Hazards likely to affect the country

Natural disaster situation

Looking into the past major disasters happening in Thailand, it was not only the 2004 Indian Ocean Tsunami that came to devastate the country. Long before that Thailand experienced other major natural disasters as well. These include Typhoon Gay in 1989 that hit a southern province of Chumporn, claiming almost 500 lives, and landslide in a northern part of country in 2001 where 131 people perished.

Flood, landslide, forest fire, wind damage, drought, lightening, hail and epidemics are the major disasters. Flood is by far the worst disasters in Thailand. Between 2002 and 2010 flood killed more than 1,000 people and brought damage and loss in economic terms more than 40 billion Baht. It out numbers the damage caused by all other disasters combined during the period.

Landslides occur frequently in Thailand due to the influence of monsoon rain. In most cases, landslide would occur in the northern and southern parts of the country which are mountainous. The table below provides information of large scale landslide events taken place over the past four decades.

Although drought does not pose danger to human life but it does cause a great damage to the economy and livelihood of the people especially in rural areas.

The most catastrophic natural disaster in Thailand was the Indian Ocean Tsunami in 2004, At 07.58 a.m., of 26 December 2004, the massive earthquake magnitude of 9.0, the strongest in the world since 1964, struck deep under the Indian Ocean off the west coast of Sumatra, Indonesia, and triggered the cataclysmic tidal wave that slammed on the Andaman coastal provinces, southern Thailand. The catastrophic incident devastated 6 provinces namely, Phuket, Trang, Phang Nga, Krabi, Ranong and Satun. The waves claimed the lives of 5,395 people dead and affected 58,550 victims (2,510 of whom were tourists), with a further 4,499 unaccounted for and 8,500 left homeless whose total loss was US\$ 397.8 million in Thailand.

2007 : Cyclone Lekima hit Thailand between 4 and 6 October 2007 killed 17, affected 1,552,936, and whose total loss was US\$ 30.8 million.

2008 : Cyclone Mekkahla hit between 31 September and 1 October 2008. The cyclone caused torrential rains which killed 32, affected 2,864,484 and whose total loss was US\$ 21.6 million.

2.2 Recent major disasters

In 2010 the amount of water has exceeded the capacities of either rivers or reservoirs and subsequently causes flooding. Floods began in the Northeast and Central Thailand early October due to abnormally late monsoon moisture, overflowed to the Chao Phraya River where the rivers meet the sea level, and affected Bangkok, and in the South were triggered by a tropical depression about 2 weeks later, and was later aggravated by related *La Niña* monsoon rains.

Although flooding is a common and annual occurrence in this part of the world, a combination of inadequate drainage and having a higher than average rainfall in the month of October and November 2010, catching the nation unprepared and led to disaster.

Disaster Management Activities on flood in 2010

During the year 2010, Thailand was affected by the influence of 2 main tropical storms, namely Tropical Storm Mindulle (22-28 August 2010) and Tropical Depression (31 October – 2 November). Besides the influences from Typhoon related disaster, this year Thailand was also suffered from the flooding crisis from the vigorous monsoon clouds poured heavy rainfall over Thailand which occurred in over 51 provinces of Thailand and regarded as the worst flooding in decades. More than 8.9 million people and 2.6 households had been affected by flooding since the flood hit on October 10, 2010. The death toll has reached 257 in 29 provinces and the economic loss was estimated to be more than USD 1.5 Billion.

The Tropical Storm “Mindulle” was moving over the East of Donghoi, Viet Nam. On August 24, 2010 the monsoon then increased its intensity as Severe Tropical Storm and expanded across Thailand, Lao PDR, Cambodia and Viet Nam. The effects of Mindulle caused heavy rainfall and flood in the north and northeastern parts of Thailand until September 15, 2010. The total affected areas covered more 39 provinces and affected over million populations. For 712 people were evacuated and there were 2 deaths due to the flood.

The estimated damages were over USD 185 million with damages to 87,000 hectare of agricultural areas, more than 57,000 livestock, 5,881 roads, 186 bridges, 44 schools, and 80 mines.

In the beginning of October 2010 the low pressure area, moving over Southern, Central, Eastern part coupled with South East Monsoon has caused damage to 19 provinces, 94 districts, 716 sub-district, 5,474 villages, 545,447 households and 1,694,199 persons.

Those provinces include 1 province in Northern part (Nakornsawan); 9 in Northeastern part (Nakornratchasima, Chaiyaphum, Srisakes, Surin, Khonkaen, Kalasin, Mahasarakham, Roi Et and Ubonratchathani); 9 Central Provinces (Chainart, Singburi, Angthong, Suphanburi, Pra NakhonSi Ayutthaya, Lopburi, Saraburi, Nonburi and Pathumthani). It is estimated that 6,316,156 rai of farmland (2,497,210 acres) are destroyed.

In addition, on October 31, 2010 the Tropical Depression moved into the Gulf of Thailand over the Southern part of Thailand, causes heavy rainfall and flooding which affected in 12 provinces, 133 districts, 874 sub-districts, 6,197 villages, 609,511 households and 1,932,405 persons. There were 78 casualties in 8 provinces, 1,499 injuries, over 799 houses were totally destroyed, 67,146 houses were partially destroyed, more than 128,000 hectare of agricultural areas and 466,142 livestock were destroyed, and 345 schools were totally damaged. The estimated losses were USD 104 million.

During the typhoon, Department of Disaster Prevention and Mitigation (DDPM), Ministry of Interior is working with 14 Southern provinces ensuring the disaster early warning system is ready for the upcoming monsoon season. Short Message Service (SMS) is assigned to be the mean of warning information exchange between province and the official in charge at site; and Multi-Media Message Service (MMS), communication radio, and internet network is assigned for

disaster communication during disaster stage for updated situation and timely response.

Department of Disaster Prevention and Mitigation (DDPM) dispatched 72,500 Volunteers which composed of 65,102 civil defense volunteers; 133 Emergency Response Team Officers (ERT) and 7,265 One Tambon One search and Rescue Team officers (OTOS) to support flood victim assistance throughout the country since floods occurred in Thailand in order to relieve and alleviate their difficulties

The death toll in floods 2010 by press release from Department of Disaster Prevention and Mitigation (DDPM) reported that 257 people died in 29 provinces; 93 died in Central region, 78 died in South region, 55 died in Northeast region, 28 died in North region, 3 died in East region. Causes of death mainly from drowning (227), electrocution (17), landslide (6), falling tree (3), shock/fainted (2), fire (1) and lack of oxygen (1).

Accordingly, DDPM will collaborate with DDPM provincial offices to compensate victims' funeral arrangement under Ministry of Finance Regulation and Prime Minister Office "Victim Relief Fund". DDPM will further proceed funeral arrangement compensation the amount of 25,000 baht for each family and additional compensation to family head the amount of 25,000 baht. Recently, the cabinet approval as of October 26, 2010 to victim assistance, therefore, victims' relative will receive additional compensation the amount of 50,000 baht for funeral arrangement. The victims can request assistance from 18 DDPM Regional Centers and 75 DDPM Provincial Offices or Hotline number 1784 for 24 hours.

3. Disaster Management system

3.1 Administrative System

Thailand is divided into 76 provinces. There are three types of government administrations: the central, provincial and local.

At the central administration, The Prime Minister is the head of the government or the Cabinet. The present structure of the Royal Thai Government has been the same since the 2002 "Restructuring of Government Agencies Act".

The present Cabinet has been active since the 17 December 2008, when its members were officially sworn in by the King. The Cabinet is made up of five parties that form the current governing coalition. The Cabinet comprises: 20 Ministers of State as follows;

1. Prime Minister and one Minister for Office of the Prime Minister
2. Ministry of Defence
3. Ministry of Finance
4. Ministry of Foreign Affairs
5. Ministry of Tourism and Sports
6. Ministry for Social Development and Human Security
7. Ministry of Agriculture and Cooperatives
8. Ministry of Transport
9. Ministry for Natural Resource and Environment
10. Ministry of Information and Communication Technology
11. Ministry of Energy
12. Ministry of Commerce
13. Ministry of Interior : is the main responsible body of disaster management

14. Ministry of Justice
15. Ministry of Labour
16. Ministry of Culture
17. Ministry of Science and Technology
18. Ministry of Education
19. Ministry of Public Health
20. Ministry of Industry

Provincial Administration

There are 76 provinces (changwats) in Thailand. The changwat governor is the head of the changwat administration. All changwat governors are appointed by the central government. The [Ministry of the Interior](#) appoints governors for all but two provinces - the metropolis of greater Bangkok and the city of Pattaya, where the governor is popularly elected.

In 2010, Bung Kan district of the northeastern province of Nong Khai as Thailand's 77th province comprising eight Nong Khai districts, as proposed by the Ministry of Interior.

Local government system in Thailand

Additionally to these sub-divisions, there are also cities and towns, which take over some of the responsibilities of the districts and communes on the area covered by the municipality.

These all have an elected board and an elected mayor. There are three different levels of municipalities:

1. [thesaban nakhon](#) (city): More than 50,000 citizens
2. [thesaban muuang](#) (town): More than 10,000 citizens - or a provincial capital
3. [thesaban tambon](#) (sub-district municipality): More than 5,000 citizens

Despite its name, a thesaban tambon does not necessarily coincide with a single tambon. In addition to the population numbers the municipalities need to have enough tax revenues for the administration to be able to execute the offices of administrations.

Towns and cities are subdivided into communities (Chumchon), which are equivalent to the villages (Muban) of rural areas.

The structure of local authorities in Thailand consists of one centrally-located urban region (Bangkok), and several classifications of secondary towns and cities, according to their size, population, importance to economic development of the nation, and other socio-economic indicators, as noted below: • City (Tesaban Nakhon) • Town (Tesaban Muang) and • Small Town (Tesaban Tambon)

Local government system in Thailand is slightly complex. Basically, there are 7,853 in total (as of August 2008) and five different types of local governments as lists:

1. Bangkok Metropolitan Administration (BMA)
2. Pattaya City
3. Tesaban (Municipality), which is also divided into 3 classes: as mentioned above
4. Changwat Administration Organization (CAO) or Or-Bor-Jor
5. Tambon Administration Organization (TA) or Or-bor-Tor as locally named, which is also categorized based on the annual income into 3 classes: small, medium and large size.

BMA: Despite being classified as a local government, BMA is regarded and treated as a province. In fact, BMA is the biggest local government in Thailand. It has enormous budget each year with numerous personnel and resources. This makes BMA a self sufficient when it comes to disaster management.

Pattaya City: Pattaya City is a local government responsible for administration of the City of Pattaya, the highly famous tourist destination in the eastern part of the country. But by laws, it is supervised by the governor of Changwat Chonburi.

Tesaban: Tesaban is the oldest form of local government in Thailand. Usually a tesaban is located in the province's populated areas and where high income is generated. As of August 2008, there are 1,619 tesabans nationwide. Tesaban Nakorn and Tesaban Muang are under provincial governor's supervision whereas Tesaban Tambon is supervised by Amphoe Chief Officer.

CAO: Another form of local government is Changwat Administration Organization (CAO). CAO is responsible for social and economical development activities of the provincial areas outside the municipalities within the province. In the past, changwat governors by their positions served as the CAO president. But now CAO president is from election in 4-year team. According to the laws, CAO is also supervised by the provincial governor.

TAO: The last and smallest form of local government is Tambon Administration Organisation (TAO). TAO mayor is elected directly from the people within the tambon's constituency. TAO plays a major role in the all aspects of development including social, economic, environment, education and so forth. However, unlike other forms of local governments, TAO relies heavily on the annual government budgets. August 2008, there are 6,157 TAO nationwide

3.2 Legal System and Framework

The Disaster Prevention and Mitigation Act 2007

The Disaster Prevention and Mitigation Act 2007 (DPM Act) has replaced the old and outdated 1979 Civil Defense Act and the 1999 Fire Prevention and Suppression Act. Entering into force on 6 November 2007,

It stipulates the Department of Disaster Prevention and Mitigation (DDPM) as the core government department in handling national disaster management work. Also it authorizes local governments to take responsibility of disaster management in their respective areas, in line with the Provincial Plan.

The Disaster Prevention and Mitigation Act 2007 (DPM Act) has 4 prominent features, including

- 1) Introducing 3 main policy - making and planning bodies including National, Provincial and Bangkok Metropolitan,
- 2) Having Prime Minister or an designated Deputy Minister as the National Commander,
- 3) Empowering Department of Disaster Prevention and Mitigation (DDPM) as the core government agency in handling national disaster management work, and
- 4) Authorizing local governments to take responsibility of disaster management in their respective areas, in line with the Provincial Plan.

According to the new DPM Act, disaster can be classified into 3 categories namely:

- 1) Man-made and natural disasters;
- 2) Disaster resulted from air raid during wartime; and
- 3) Disaster resulted from sabotage or terrorist attack.

In terms of policy making, there are 3 levels:

- 1) National, which is chaired by the Prime Minister or designated Deputy Minister
- 2) Provincial, which is chaired by Provincial Governor
- 3) Bangkok Metropolitan Administration level, which is chaired by the Bangkok Governor.

Each of three policy - making organs is composed of the committee as follows:

- 1) The National Disaster Prevention and Mitigation Committee (NDPMC)
- 2) The Provincial Disaster Prevention and Mitigation Committee
- 3) The Bangkok Metropolitan Administration Committee

3.3 Structure of Disaster Management

Disaster management system in Thailand has mainly based on Civil Defence Act of 1979 and Fire Prevention and Suppression Act 1999 . After October 3, 2002 Thai government has enacted the public administration reform under the “ Government ministry and department restructuring Act B.E.2545 (2002)

Department of Disaster Prevention and Mitigation (DDPM), has been established as the government agency attached to the Ministry of Interior. DDPM has been entrusted to shoulder the principal burden in prevention, mitigating and recovering disasters and harmful incidents. As the consequence, all the tasks relevant to a disaster and a harmful incident which formerly performed by the defunct of Department Provincial Administration ; Ministry of interior, and by the National Safety Council of Thailand (NSCT); the office of Permanent Secretary for the Prime Minister office. The Prime Minister Office respectively, have been merged and transferred to be under the unified government agency.

- a) National Platform for Disaster Risk Reduction
- b) National Organizations for Disaster Risk Reduction
- c) Local Organizations for Disaster Risk Reduction

a) National Platform for Disaster Risk Reduction

National Disaster Prevention and Mitigation Committee acronymically called (NDPMC) is the main policy making body.

Members of the committee come from various Ministries relevant to disaster management, i.e. Ministry of Interior, Ministry of Defense, Ministry of Agriculture and Cooperatives, Ministry of Transportation and Communications, Ministry of National Resources and Environment, Ministry of Information, Communication and Technology, Ministry of Public Health, Ministry of Finance, and so on. The Prime Minister or designated Deputy Prime Minister is a chairperson, and Director-General of Department of Disaster Prevention and Mitigation (DDPM) is the secretariat of the committee. The Committee has prominent tasks and responsibilities for proposing the policy to formulate the National Disaster Prevention and Mitigation Plan, and effectively integrating the development on disaster prevention and mitigation mechanism among government agencies, local administrations, and other relevant private sectors.

The Provincial Disaster Prevention and Mitigation Committee

The Provincial Governor as the Provincial Director is, according to the Act, responsible for disaster prevention and mitigation in the province area. The responsibilities include appointment of the Provincial Disaster Prevention and Mitigation Committee, which come from representatives from other provincial disaster management agencies. The Secretariat of the provincial committee is the Chief of Disaster Prevention and Mitigation Provincial Office. The main duty of the provincial committee is to formulate the provincial disaster management plan under the guideline

of national plan.

The Bangkok Metropolitan Administration Committee

Just the same as Provincial Director, Bangkok Metropolitan Governor as the Bangkok Director is responsible for disaster prevention and mitigation in Bangkok and to be the person to appoint the Bangkok Metropolitan Committee composing of delegates from government agencies including Bangkok Metropolitan, DDPM, Universities, and public charities and communities in Bangkok. The Committee has powers in drafting the Disaster Prevention and Mitigation Plan for Bangkok which shall be consistence to the National Disaster Prevention and Mitigation Plan, and other handling the disaster management related activities.

b) National Organizations for Disaster Risk Reduction

In 2002, Thailand established the **Department of Disaster Prevention and Mitigation (DDPM)**, as the principal agency for disaster management coordination among all agencies concerned at all levels. As regards disaster risk reduction, DDPM shall conduct activities in coordination with other agencies such as: the Meteorological Department (TMD), Ministry of Information Technology, Royal Irrigation Department (RID), Ministry of Agriculture and Cooperatives, Department of Water Resources, Ministry of Natural Resource and Environment.

National Disaster Warning Center (NDWC)

The National Disaster Warning Center was established under the Order of the Office of the Prime Minister. It is to protect lives and properties of Thai people and foreign visitors by setting up the National Warning Center as soon as possible.

The major task of the National Disaster Warning Center is to detect earthquake and to analyze seismic data to determine the possibility of a Tsunami generation before issuing notification messages to the public and related authorities and rescuers for evacuation of people into safe places. This is to prevent the loss of people's lives and properties as much as possible. From now on, the National Disaster Warning Center will be developed, upgraded of its early warning system and extended its telecommunication networks to be able to cope with multi-hazards disasters apart from Tsunami.

Now, NDWC had transferred to be under of the Ministry of Information and Communication Technology

3. Structure of Disaster Management System

This leadership was guided by the "Civil Defense Act 1979". Due to its outdated features and disadvantages, the Civil Defense Act 1979 was terminated after about 30 years of use. On 6 November 2007, the "Disaster Prevention and Mitigation Act 2007" entered into force, cancelling the old Civil Defense Act 1979. Thailand's disaster management system has been based on the 2007 Act ever since.

Institutional Arrangement

The DPM Act 2007 has the provisions regarding the institutional arrangement as follows:

(1)The National Disaster Prevention and Mitigation Committee (NDPMC)

NDPMC is a policy making body. It is chaired by the Prime Minister. The Committee comprises 34 members, designated from ministries, agencies and organizations related to disaster management.

(2) The Commander in-chief

Minister of Interior is the Commander in-chief by law when it comes to disaster emergency response particularly in large - scale disaster.

(3) The Secretariat of the NDPMC

Director-General of DDPM is by the law the Secretary General of the NDPMC.

(4) The Directors

The Director under the 2007 DPM Act is the Incident Commander when a disaster takes place. There are different levels of directors in the table as following:

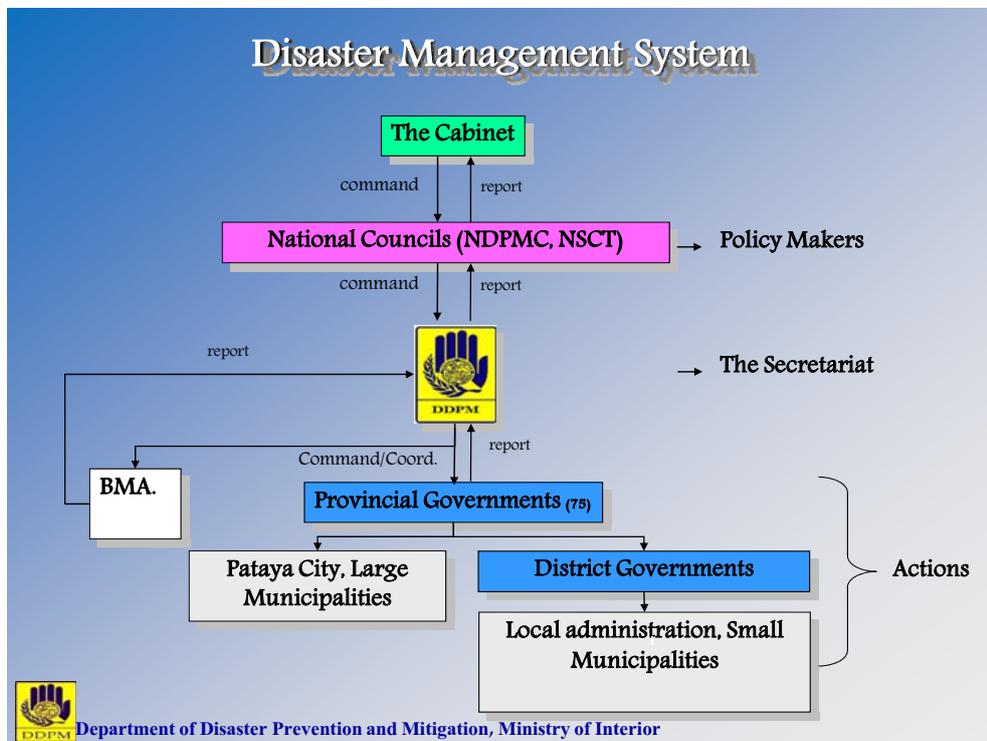
Positions	Type of Directors	Responsibility	Report to
DDPM Director General	Central director	Supervise the implementation of the Disaster prevention and mitigation programs and activities conducted by provincial directors	Commander in chief
Provincial Governor	Provincial director	1. Conduct disaster prevention and mitigation programs and activities 2. Supervise the implementation of the Disaster prevention and mitigation programs and activities conducted by district directors. 3. Serve as the Incident Commander once there is a disaster occurring in the Province	Commander in chief and Central Director
District Chief Officer	District Director	1. Conduct disaster prevention and mitigation programs and activities 2. Supervise the implementation of the Disaster prevention and mitigation programs and activities conducted by local directors. 3. Serve as the Incident Commander once there is a disaster occurring in the district	Provincial director
Mayor of Municipality	Local Director	1. Conduct disaster prevention and mitigation programs and activities 2. Serve as the Incident Commander once there is a disaster occurring in the municipality	Provincial Director or District Director, depending on type of class of the municipality
Mayor of TAO	Local Director	1. Conduct disaster prevention and mitigation programs and activities 2. Serve as the Incident Commander once there is a disaster occurring in the TAO area.	District Director

Coordination and Command Structure

The Interior Minister, as the Chair of the National Civil Defense Committee and as the Commander in-chief of National Civil Defense, played a vital role in the coordination among

various government agencies and other parties concerned in the aftermath of the disaster. A large number of meetings were convened where all parties concerned attending to discuss the issues during the response, rehabilitation and recovery phases.

Under 2007, the coordination and command structure in disaster management system is described in the following flowchart.



Refer to The Disaster Prevention and Mitigation Act 2007 has the provisions regarding Disaster management Policy and Plan as following:

4. Disaster Prevention and Mitigation Plan

Department of Disaster Prevention and Mitigation (DDPM) as the Secretariat of the National Disaster Prevention and Mitigation Committee (NDPMC), has the responsibility to devise the National Disaster Prevention and Mitigation Plan.

This is to be done by conferring with relevant government agencies, local administrations, and private sectors.

Once the National Plan is approved, it will be used as a master plan, upon which the provincial and Bangkok Metropolitan Administration will be based.

The national plan will be in service for the period of 3 years. DDPM is to make sure that the new plan for the next 3 years is ready for use accordingly.

According to the National Disaster Prevention and Mitigation Act 2007, the three - level plan shall have substantial parts as shown in the following table.

National plan	Provincial Plan	BMA Plan
(1) Guide lines, measures and adequate budget to support disaster prevention and mitigation operations systemically and continuously	(1) The setting up of Special Command Center when ever disasters strike, that center shall be constructed and has authorities to command and oversee disaster prevention and mitigation operations and activities	(1) establishment of command center where disaster occurred for construction and authorization for disaster prevention and mitigation operation
(2) Guide lines and methods for providing aids and mitigate the impacts of disasters in both short and long term, together with evacuation procedures of effected people, government services, and other local administrations, supports effected people on their public health, public utilities and communication system	(2) Plan and procedures for local administrations for procuring tools, equipments, materials, hardware and vehicles in disaster prevention and mitigation operations	(2) plan and process to procure materials , tools , equipment, and vehicle for disaster prevention and mitigation
(3) Relevant government agencies and local administrations shall proceed all operations under (1) and (2), and shall seek for availability and mobility of fund	(3) Plan and procedures for local administrations for procuring an early warning system and other equipments to inform people and communities on incoming disasters	(3) plan and process to procure signaling devices or others for notifying the occurrence and expectation of a disaster
(4) Preparedness perspectives on support personnel, equipments and other materials to deploy upon disaster prevention and mitigation operations, and capacity building of those personnel and other people shall be included	(4) Operation plan for disaster prevention and mitigation at local administrations	(4) Bangkok Disaster Prevention and Mitigation Action Operation Plan
(5) Guide line on fixing, recovery and restoration to community right after disaster	(5) Cooperation plan to other relevant public charities.	(5) Coordination Plan with Public Charity Organizations in Bangkok

Department of Disaster Prevention and Mitigation, as the Secretariat of the National Disaster Prevention and Mitigation Committee, has the responsibility to revise the National Disaster Prevention and Mitigation Plan.

The national master plan will be in service for the period of 3 years. DDPM is to make sure that the new plan for the next 3 years is ready for use accordingly.

National Master Plan for Disaster Prevention and Mitigation

comprises 3 parts:

Part I : Disaster Prevention and Mitigation Principle : comprises 9 chapters, including

- (1) Disaster Situation and Management System
- (2) Policy, Vision, Objectives, and Goals
- (3) Strategies, Work Plan and Countermeasures
- (4) Disaster prevention and Mitigation
- (5) Disaster Preparedness
- (6) Management during disaster emergency
- (7) Post Disaster Management
- (8) Roles of relevant agencies
- (9) Implementation

Part II: Standard Operating Procedures for Disasters. This part comprises 14 chapters:

- (10) Flood and Landslide
- (11) Tropical Cyclone
- (12) Urban Fire
- (13) Chemicals and hazardous materials
- (14) Transportation – related accidents
- (15) Drought
- (16) Cold Snap
- (17) Haze and wild Fire
- (18) Earthquake and collapse Building
- (19) Tsunami
- (20) Human epidemic
- (21) Plant epidemic
- (22) Animal epidemic
- (23) Cyber terrorism

Part III : Disaster Prevention and Mitigation in the Aspect of National Security Issues

comprise 5 chapters.

- (24) Principle of National security
- (25) Prevention and Suppression of sabotage
- (26) Prevention and Mitigation of Disaster caused by Mines
- (27) Prevention and Mitigation of Disaster caused by Air Raid
- (28) Prevention and Suppression of Riot and Violent Protest

Civil Defense for Security (Rear-Area Protection) Component:

This component comprises 6 chapters:

- (1) Civil Defence for Security
- (2) Disaster Prevention and Mitigation during War-Time (Rear-Area Protection)
- (3) Sabotage Prevention and Suppression
- (4) Prevention and Mitigation of Disaster Resulted from Landmine and Torpedo
- (5) Air-Raid Disaster Prevention and Mitigation
- (6) Civil Unrest Prevention and Suppression

DDPM has listed 29 disaster threats in the National Master Plan for Disaster Prevention and Mitigation. This is to be done by conferring with relevant government agencies, local

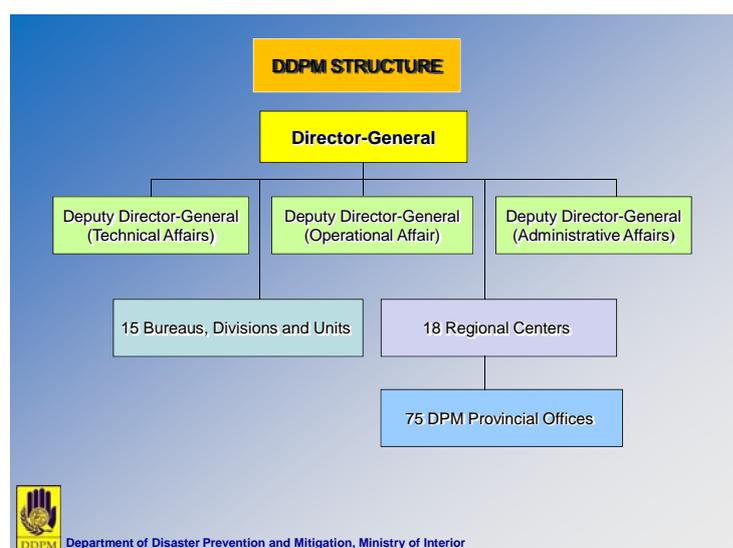
administrations, and private sectors. Once the National Plan is approved, it will be used as a master plan, upon which the provincial and Bangkok Metropolitan Administration will be based.

Department of Disaster Prevention and Mitigation

Department of Disaster Prevention and Mitigation (DDPM), according to the Bureaucrat Reform Act 2002, has been formed by different organizations responsible for disaster prevention and mitigation as follows:

- (1) Civil Defence Division of Department of Provincial Administration;
- (2) Department of Accelerated Rural Development;
- (3) Department of Social Welfare, Department of Community Development; and
- (4) Office of National Safety Council

According to Article 11 of Disaster Prevention and Mitigation Act B.E.2550, DDPM is mandated to be central government agency under the umbrella of Ministry of Interior to undertake the work on disaster prevention and mitigation at a national level. Aside its Head Office in Bangkok, DDPM also has 18 Regional Operation Centers and 75 Provincial Offices across the country. In 2004, Disaster Prevention and Mitigation Academy (DPMA) has been established and 6 campus in Prachinburi, Songkhla, Chiang Mai, Khon Kaen, Phuket, Phitsanulok which is currently conducting training for its own staffs, some government stakeholders and private organization.



In 2010, DDPM had 4,746 staffs. Among this number, were 2,118 civil servants and the rest were 1,828 permanent employees and 800 temporary staffs. There is only a very little change in the number of personnel of DDPM in the year 2010.

DDPM's responsibility :

1. Materializing disaster and civil emergency prevention and warning Systems and creating preparedness in all areas.
2. Directing and implementing disaster and civil emergency mitigation activity systematically, rapidly, equitably and thoroughly.
3. Procurement of materials, equipments, and vehicles, indispensable for disaster prevention, mitigation, suppression and for relief operation.

4.Rehabilitation of damaged public utilities, physical and mental recuperation of disaster victim, and restoration of livelihood. All these activities are carried out on thorough, equitable and rapid basis, and be in harmony with the needs of the victims.

5.Mainstreaming and collaborating disaster prevention and mitigation system, programme, the implementation evaluation with other national and international agencies.

Disaster Management in Department of Disaster Prevention and Mitigation(DDPM) and main activities comprises 3 phases as follow;

1.Preparedness Phase : DDPM has supported the provinces to carry out preparedness related activities as follow;

- (1) Formulating disaster prevention plan.
- (2) Training the officials and Civil Defence Volunteer.
- (3) Educating the general public.
- (4) Procuring equipments, vehicles and other amenities and safety temporary shelters.
- (5) Conducting annual drills and exercise in different levels.

2. Prevention and Mitigation Phase : In the event of disaster or the potential disaster, DDPM will implement the following activities.

(1) Early warning : After receiving the information of potential disaster from Department of Meteorological and Department of Mineral Resources, DDPM will immediately relay to the risk province to furtherly warn the people of the hazard or evacuate the people.

(2) Directing Unit : The National Committee will set up "Operation Center" to manage disaster

(3) Providing relief operation to the affected people thoroughly and rapidly.

(4) Coordinating: In the event of large-scale disaster , DDPM will coordinate with all agencies concerned to mobilize relief efforts to affected areas.

(5)Telecommunication : The Director of National Committee is authorized to utilize all telecommunication facilities in the affected areas. DDPM will coordinate with telecommunication concerned agencies to provide the substitute facilities in case the telecommunication system in the affected area broke down.

(6) Public Relations : At national level, DDPM is responsible for disseminating the disaster related information to the public continuously to protect the life and property of the citizens. Moreover to alert the possibility of disaster just before a strong tremor is expected to strike as "a warning".

3. Recovery Phase : DDPM is responsible for

(1) Providing relief to affected people : Provincial/District/Local authorities assess the damages and losses and enlist the affected persons. DDPM will carry out to pay cash compensation the victims.

(2) Clean-up: DDPM will coordinate with all agencies concerned to mobilize the equipments to conduct clean-up activities.

(3) Long-term Rehabilitation : DDPM is responsible for coordinating with all agencies concerned to collect all relevant information on long-term rehabilitation projects and further submit for cabinet's approval.

5. Budget size on Disaster Management

Since its establishment in late 2002, the annual budget of DDPM has been increasing, from 34 Millions USD in 2003 to 83 Millions USD in the year 2010 Fiscal year (see the table below).

Budget of DDPM Fiscal Year 2003-2010

Year	THB	USD
2003	1,066,412,900	34
2004	1,312,578,500	42
2005	1,685,362,700	55
2006	2,437,850,700	79
2007	1,948,805,800	63
2008	2,184,972,800	71
2009	2,315,783,900	75
2010	2,541,163,000	83

Source : DDPM (As of 24 February : 1 USD = 30.50 THB)

6. Progress of Implementation of Hyogo Framework for Action

The progress on implementation of Hyogo Framework for action (HFA) **2005 – 2015** : Building the resilience of Nations and Communities to Disasters. To achieve the goal of HFA is “sustainable reduction of disaster losses, in lives and in social, economic and environmental assets.” In adopting the Hyogo Framework, Thai government; DDPM committed to five priorities for action; sets out the required actions – collectively known as “ disaster risk reduction” – measures that be continuously implemented in order to achieve resilience to future hazards.

Recently Activities of DDPM related to Disaster Risk Education

(1) Ensure that DRR is a national and local priority with a strong institutional basis for implementation by collaboration between government agencies the private sector and civil society organizations in the risk area.

After the Indian Tsunami struck Thailand's 6 southern provinces in 2004, the country had revealed its disaster management system to the international community for the first time. DDPM has identified many lessons concerning the Tsunami and recovery of the affected provinces and communities. The need to reduce the risks of disasters, safety culture and traditional knowledge are offered as a contribution to the ongoing process of learning how nations, communities and individuals can become better prepared for the reduction or risk natural hazards.

(2) Identity, assess and monitor disaster risks and enhance early warning. Enhancing disaster risk information, early warning system, effective risk communication, and public education for DRR

Early Warning System in Thailand :

For warnings of earthquakes and Tsunamis, the National Disaster Warning Center (NDWC) receives information from Meteorological Department and various agencies through their seismic stations located in Thailand such as Royal Thai Navy, the Electricity Generating Authority of Thailand (EGAT) and the Royal Irrigation Department. The National Disaster Warning Center also receives information on seal level change from the Hydrographic Department of the Royal Thai Navy. In addition the National Disaster Warning Center gets information from global seismic networks such as the Pacific Tsunami Warning Center (PTWC), Hawaii, U.S.A., Japan Meteorological Agency (JMA), Japan and from nearby countries such as Indonesia and Malaysia.

Telecommunication systems include telephone, facsimile and electronic mail. This is to issue

notification messages within 5-10 minutes to VIPs, rescuers and related agencies involves such as fire extinguishing stations, hospitals, schools and police stations.

The information is then analyzed by experts from Meteorological Department and Department of Geological Survey and Earthquake before decision can be made to issue warning message in according to levels of severity as determined by the Standard Operating Procedures (SOP) Manual.

To inform the policy makers and rescuers through the SMS system and mass media

Through television.

◆To do transmissions by the Television Channel 5 (the Army Television Station) as it is the main authorized television station for dissemination of warning messages to the public on nation-wide basis by linking networks to broadcast via satellite communications.

◆To announce a warning on the Television Pool of Thailand through 42 communication systems of the Mass Communication Organization of Thailand, 64 radio stations network of the Public Relations Department and through 216 radio stations of the CAT Telecom Public Company Limited and to link with SMS system about 20 million mobile phones to disseminate warning information.

The relation between the early warning system and the rural villages on risk area by DDPM supported.

The early warning system will also linked with the rural village through loud speakers to provide alerting signal simultaneously. Until now, Royal Thai Government set up the "National Disaster Warning Centre" and constructed completely 74 towers in 6 tsunami affected provinces along the Andaman Coast. The west phase, 48 more of towers will be constructed in the North, the East and along the eastern coast of Gulf of Thailand and 144 more towers will be constructed in various vulnerable areas such as in the land slide prone areas in the North and Northeastern parts of the country.

However, the flood and mudslide/landslide are the severity of natural disaster in Thailand. Therefore DDPM has initiated "the Flashflood and Mudslide Warning Program" to enhance capacity of the local. In risk assessment and early warning. Under this program DDPM has collaborated with Department of Provincial Administration, Department of Local Administration, The Meteorological Department, National Park Wildlife and Plant Conservation Department, and National Disaster Warning Centre to design "Mr. Disaster Warning" training course.

Since in August 2006, DDPM in cooperation with the earlier mentioned government agencies, had launched this training course in flood and mudslide prone villagers of 51 provinces (from total 76 provinces) nationwide. The total number of 16,944 "Mr. Disaster Warning"(as of October 2010) have been designated and tasked as *the "village – based disaster warning volunteers in their respective villages"*.



(3) "Use knowledge, innovation and education to build a culture of safety and resilience at all levels."

DDPM has been well aware of these disadvantages, particularly their vulnerability and difficulty

of accessibility. Thus, the Office has attempted to reduce the risk and losses of lives and properties of the villagers. Furthermore, our office has realized that without the villagers' awareness and their intervention, in this attempt will lead to unsustainable achievements. As the consequence, the community-based activities have been implemented as in the training course on "Community Based Disaster Risk Management; CBDRM" within their villages.

Thailand has realized that it is essential to improve public safety for every sectors of the people, particularly those who are at risk, is a greatly programme of understanding of threats posed by disasters of various types. Due to CBDRM approach is to reduce vulnerabilities and to strengthen people capacity to cope with the disaster risk they face, therefore to create the awareness and to implement the culture of safety for the people thought this approach.

(4) Reduce the underlying risk factors

Resilience to disasters built investing in simple, well - known measures to reduce risk and vulnerability, such as applying relevant building standards or protecting ecosystems in the risk area. Countermeasures against unsafe buildings and the lack or non-enforcement of building codes.

(5) Strengthen disaster preparedness for effective response at all levels.

Disaster preparedness for an effective response such as the development and regular testing of contingency plans and practical disaster preparedness drills in a community level.

To Strengthen national and local capacities for vulnerability & risk reduction, disaster mitigation, response, and recovery. DDPM has realized the urgent need to be prepared and ready to act by this approach, to set up efficient and skillful search and rescue team at provincial, district and local levels.

In this regard, DDPM has launched One Tambon One-Search and Rescue Team (OTOS) project, which contains ; at the provincial level, the training of provincial SAR teams were completed and have been assigned to be SAR instructors ; at district level, district SAR team have been trained to become instructors as well ; at Tambon level (Thailand's administrative unit in between district and village), it is expected there will be Tambon Search and Rescue Team SAR team in every Tambon (7,255 in number) nation-wide at the end of 2008.



Emergency Response Team Project (ERT)

Emergency Response Team or ERT has been developing by DDPM to response for each type of large-scale hazards or incidents. Basically, ERT was set up 20 teams, 2 teams embedded in DDPM, Bangkok Office, and the other 18 teams in each Regional Center of DDPM. Each ERT will consist 10 members, including one (1) team leader, three (3) for planning, and six (6) for operation. Team leader will be the chief officer to coordinate with Provincial Director and officers of the Ad-Hoc Directing Center in case of disaster occurring.



Development of Civil Defence Volunteer Network Programme

The main objective of this program is to increase the number of community-based Civil Defence Volunteer whose function is to holistically assist the government official's operation of all disaster. Currently, there are approximately 1 million Civil Defence Volunteers that had been trained and registered nation-wide. These Civil Defence Volunteers are based in their community and are on stand-by to be summoned all time.



Practical disaster preparedness drills in a community

Provincial evacuation plan and drill : Apart from formulating Provincial Civil Defense Plan, all provincial in Thailand (76 provinces) have formulated "Provincial Evacuation Plan" which is corresponding to types of threatening disaster within the provinces. Besides, each province is obliged to conduct evacuation drill at least twice a year.

The Evacuation Drills : Building of People's Preparedness:

A disaster drill is an exercise in which people simulate the circumstances of a disaster so that they have an opportunity to practice their responses. Disaster drills can range from different kind of disaster for often taken as in using extinguisher for fire drills in schools but to multi-day exercises which may span across entire communities, including detailed simulations and a chance to work with the same equipment which would be utilized in a disaster. Such drills are used to identify weak points in a disaster response plan, and to get people familiar with the steps they need to take so that their response in a disaster will be automatic.

Disasters are unpredictable, and this can make them difficult when it comes to preparation. Sometimes communities get advance warning, as in the case of some disasters caused by

severe weather, while in other cases, disaster can strike in an instant in the form of an earthquake or landslide or flashflood or fire. If people do not practice their responses, they will

usually not be prepared when disaster does happen; while a disaster drill may not anticipate every potential scenario, it gives people an idea of how to behave during a disaster.

On a basic level, drills can include responses by individuals to protect themselves, such as learning how to shelter in place, understanding what to do in an evacuation, and organizing meetup points so that people can find each other after a disaster. For emergency services and other first responders, disaster drills handle topics like what to do when communications are cut off, how to deal with lack of access to equipment, tools, and even basic services like water and power, and how to handle evacuations. A disaster drill also provides a chance to practice for events such as mass casualties which can occur during a disaster.

Regular disaster drills are often required for public like local government offices and schools. During the disaster drill, people are expected to practice things like evacuating the building and assisting each other so that they will know what to do when a real alarm sounds. People may also organize disaster drills for their families so that household members will know what to do in an emergency.

Community-based disaster drills such as whole-city drills provide a chance to practice the full spectrum of disaster response. These drills can include actors and civilian volunteers who play roles of victims, looters, and other people who may be encountered during a disaster, and extensive planning may go into such drills. A disaster drill on this scale should be done once or twice a year.

Our past experience on evacuation drills

Since March 2005, the cabinet mandated the Secretariat Office to formulate master plan for evacuation and to conduct evacuation drills in 6 provinces affected by the 26 December Indian Ocean Tsunami. DDPM has promptly responded to the policy by formulating the Tsunami Disaster Evacuation Drill Master Plan along with a preparation for disaster evacuation drills.

The Ministry of Interior (MOI) has issued a request for 16 provincial governments along the Gulf of Thailand coast to formulate the tsunami disaster evacuation plan based on the DDPM's Tsunami Disaster Evacuation Drill Master Plan. The MOI also ordered the 16 government governors to conduct drills for the plan testing. Besides, the ministry has suggested the provincial governments to mandate the districts and local governments under control to formulate the local evacuation plan and to conduct evacuation drills.

During April – June 2005, tsunami evacuation drills had been exercised in nearly all tsunami-affected provinces. Phuket was the first province in the country to conduct the tsunami escape drill on 29 April 2005 with almost 3,000 participants from all sectors. Ranong, one of the tsunami-affected province is to perform a tsunami evacuation drill in late July 2005.

It should be noted that all provinces in the country are demanded to formulate disaster plans and to conduct drills as the top priority on a regular basis. Lessons and experience are being drawn from the drills for future improvement, which is centrally initiated by DDPM.

8. Counterpart of ADRRC

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