



1. Introduction

Thailand is situated in the Southeast Asian mainland and covering an area of 513,115 sq.km, the latitude 6 - 21 North and longitude 98 - 105 East. Thailand has maximum dimension of about 2,500 km. North to south and 1,250 km, east to west, with a coastline of approximately 1,840 km. on the Gulf of Thailand and 861 km. along the Indian Ocean. Thailand is governed by a constitutional monarchy. The country is administratively divided into 76 provinces and subdivided into districts, sub-districts (or tambons) and villages. Bangkok is the capital. Province is the local administration, the provincial governor is appointed by the central government, excluding Bangkok, the governor is elected. The population is over 60 million, most of them live in the urban areas, Bangkok is the largest city in the country.

In the topography, Thailand is geographically divided into four natural regions: the North, the Central or the Chao Phraya River Basin, the Northeast or the Korat Plateau and the South or the Southern Peninsula. The northern region is mountainous area prone to flood earthquake, landslides, the northeast region is arid area on the Korat Plateau, frequently faces sudden flood during rainy season, severe draught and cold during hot and cold season. The Central regions, the fertile area, but often inundated during rainy season. The Southern region is hilly to mountainous and several offshore islands. The severe disasters in this regions are occasional floods, tropical storms, landslides and forest fires. The climate, Thailand is a warm and rather humid tropical country. The monsoon or rainy season starts from about May to September and a relatively dry season for the remainder of the year. Temperatures are highest in March and April and lowest in December and January.

2. Current Disaster Information

In general, disaster is divided into 2 categories: natural disaster and man-made disaster. Whenever disaster occurred, it will loss people's lives and properties. According to geography and topography, Thailand is not considered as disaster prone country. There are not hazardous natural disaster as volcanic eruption, tsunami, earthquake. However, The natural disaster, floods, droughts, storm, landslide and forest fires, frequently occurs in the country which caused the national catastrophies. In 2000 A.D. inundated in Hard Yai District, Songkla Province, the year after 2001 A.D. flood and landslide in Prae and Petchaboon Province, resulted in large number of fatalities loss properties, and economy. Due to economic and social development, Thailand develop itself to industrial country, the society and environment was changed. The officer buildings, factories, roads and etc were constructed in the city and suburb, especially in Bangkok and large city such as Chiangmai, Chiangrai,Chonburi. Percentage of people in the rural area move to work in the city is higher. The risk of man-made disasters, the industrial accident, chemical explosion, fired, road accident are increased.

Statistical data of disasters and damages in Thailand during 2000 - 2002

Year	Types of Disaster	Frequency	Property Damage (Million Baht)	Injures	Deaths
2000	Flood	62 provinces	10,032.94	-	120
	Storm	960	271.48	81	9
	Drought	53 provinces	1,044.14	-	-
	Earthquake	-	-	-	-
	Fire	1,814	722.59	91	46
	Road Accident	73,737	1,242.20	53,111	11,493
	Chemical Hazards	6	na	57	2
2001	Flood	60 provinces	3,666.28	-	244
	Storm	1,061	501.01	-	6
	Drought	51 provinces	71,962.97	-	-
	Earthquake	4	-	-	-
	Fire	1,498	1,529.28	-	-
	Road Accident	77,616	1,240.80	53,960	11,652
	Chemical Hazards	20	na	160	32
2002	Flood	72 provinces	13,385.31	-	216
	Storm	594	213.37	11	18
	Drought	68 provinces	330.77	-	-
	Earthquake	12	-	-	-
	Fire	1,135	805.81	150	24
	Road Accident	88,390	15,605	62,054	13,398
	Chemical Hazards	24	40.50	-	-

3. Disaster Management System in Thailand

According to the Civil Defence Act, 1979 AD disasters are classified into 3 categories namely:

1. Disasters resulting from nature and human being or, in other words, natural disaster and man-made disasters.
2. Disaster from air raid during wartime
3. Disaster from sabotage or terrorist attack

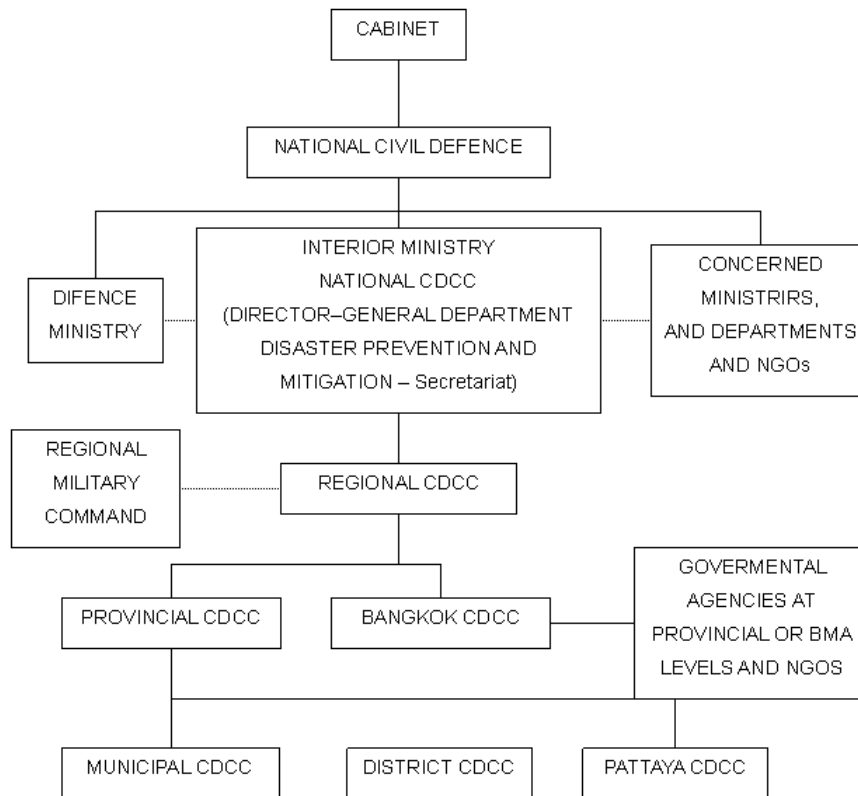
3.1 Management System

Basic Disaster Management System in Thailand is the Civil Defence Act of 1979, and the Civil Defence Plan 2002. The Nation Civil Defence Committee is the main policy making body, before October 2002, the Civil Defence Division, under the Department of Local Administration; Ministry of Interior is in charge of committee secretariat. After 2 October 2002, Thai government declared the Bureaucratic Reform Act 2000, Department of Disaster Prevention and Mitigation, Ministry of Interior was established to takes responsibility on disaster in the country and to be the secretariat of the Nation Civil Defence Committee.

At present, the Civil Defence Secretariat still relies mainly on manual methodology in collecting information and data for disaster prevention and preparedness activities. The means of communication between Civil Defence Secretariat and other national, provincial and local agencies are by trunk radio network, telephone and fax. Each morning the officials of Civil Defence Secretariat who are on night-duty will collect information and data from the Department of Meteorology and the daily reports from each provincial governor of 75 provinces. However, the Civil Defence Secretariat is now embarking on the Computerized. Weather Monitoring Project, which is yet to be approved by the Cabinet. According to this project, the

information network of Civil Defence Secretariat will be connected to information network of the National Census Bureau of DOLA, the information network of Communications Division, Office of the Permanent Secretary of Interior and the website of private sector. Each Regional Disaster Prevention and Mitigation Command Center (at present, there are 12 regional Disaster Prevention and Mitigation Command Centers which are based at 12 provinces of the northern, north-eastern, southern and central regions of Thailand such as Pathumthani, Suphaanburi, Prajeenbuti, Praachuabkirikan, Nakhon Ratchasima, Khonkaen, Ubon Ratchathani, Kampangphet, Pitsanulok, Lampang, Suratthani and songkhla) will be allotted with the annual budget to purchase internet hours from private website.

Legal Structure of Disaster Management according to The Civil Defence Act 1979



The above Organizational Structure of Civil Defence, Civil Defence system in Thailand comprises 3 levels as follows:

National level

At this level, it is the responsibility of the national Civil Defence Committee to coordinate all activities relevant to civil defence and disaster management. The committee is chaired by the Minister of Interior and the membership comprises representatives from all of national government agencies concerning with disaster management activities such as the Permanent Secretary to Ministry of Defence, Permanent Secretary to Ministry of Agriculture and Cooperatives, Permanent Secretary to Ministry of Public Health, Permanent Secretary to Ministry of Transportation and Communication, Director of Budget Bureau, Secretary to the National Security Council, Governor of Bangkok Metropolitan Administration, Chief of Royal Thai Police, Director-General of Social Development and Welfare, Director-General of Department of Meteorology and other designated individuals, as members of the committee. The Director-General of Department of Disaster Prevention and Mitigation is designated as member and secretary to the committee. As a consequence, the Department of Disaster Prevention and Mitigation is designated as Secretariat of National Civil Defence. The National Civil Defence Committee performs all functions relevant to management of disaster at national level, such as formulation of Civil Defence Master Plan, evaluation of the implementation of the above-mentioned plan by an audit mission, organizing annual or periodical training courses on civil defence and disaster management for government officials at all levels, issuing regulations on the payment of remuneration, compensation and other expenditures relevant to civil defence and disaster management activities carried out by all agencies concerned.

Regional level

At regional level, 12 Regional Disaster Prevention and Mitigation Centers are established to render technical assistance and auxiliary services to local Civil Defence Committees. Each Regional Disaster Prevention and Mitigation Center is Head of a Director who is the immediate subordinate to Director - General of Department of Disaster Prevention and Mitigation which means that he has to report directly to the Director - General. Although designated to carry out their tasks in the regions but the Director of Regional Disaster Prevention and Mitigation Center as well as of his officials and employees are not subject to authority of provincial governors of the areas, because they are government officials belonging to national administration.

Local level

The main actors who really cope with disasters are local Civil Defence committee at provincial, district and local levels.

At provincial level

The Provincial Civil Defence Committee is chaired by the governor of the province. Membership of the committee comprised representatives from various government agencies concerned. Most of all of the representatives of each provincial government agencies are chief of the agency concerned with disaster management activities of the province. The Vice-Governors and Deputy-Governor are vice-chairman whereas the Provincial Civil Defence Officer, an official belonging to Department of Local Administration, Ministry of Interior, is designated as Secretary to the Provincial Civil Defence Committee.

At District level

The District Chief Officer, in his capacity as chief administrator of the district chairs the District Civil Defence Committee. Membership of the committee comprises Heads of government agencies in the district whereas an assistant district Chief Officer (usually the one in charge of special affairs) is designated as secretary to the committee.

At local level

The Local Civil Defence Committee is the mechanism of local governments in urban areas to cope with disasters. There are several forms of local governments in Thailand both in urban and rural areas. But the local governments which are delegated by the national government to be in charge of disaster management or local

government in urban areas. While disaster management in the vicinity of rural local governments is carried out by the District Civil Defence Committee of the areas instead.

The urban local governments comprises the following:

1. Bangkok Metropolitan Administration (BMA)
2. Municipalities, which are categorized according to revenue, collected, the size of their population and the availability of infrastructure.
3. The City of Pattaya.

These local governments have their own disaster management mechanism. All of the above-mentioned Local Civil Defence Committee is subject to the authority of the Provincial governor.

In Bangkok

The Governor of BMA is chairman of Bangkok Civil Defence Committee while its membership comprises Directors of bureaus and division of BMA. The Clerk of BMA (chief executive of BMA) is the Secretary to Bangkok Civil Defence Committee.

In Municipal areas

Each municipality is responsible for civil defence and disaster management. The disaster response mechanism is the Municipal Civil Defence Committee, which is chaired by the Mayor. The membership of this committee comprises Directors of Bureaus and Division of the municipal office. The Town Clerk (regular official of municipality) is designated as Secretary to Municipal Civil Defence Committee.

These mechanisms are directly responsible for carrying out disaster relief activities during time of emergency and taking precautionary measures or mitigation measures before the occurrence of disasters.

The Civil Defence Committee of all levels as mentioned above are responsible for civil defence and disaster management during peace time while in wartime or in the state of emergency as a result of terrorist attack or sabotage, the military command will be in charge as line agency responsible for directing all activities concerned with anti-terrorist attack.

The organization of mechanism to cope with disasters or hazards during the situation designated as state of emergency is different from the mechanism during peacetime.

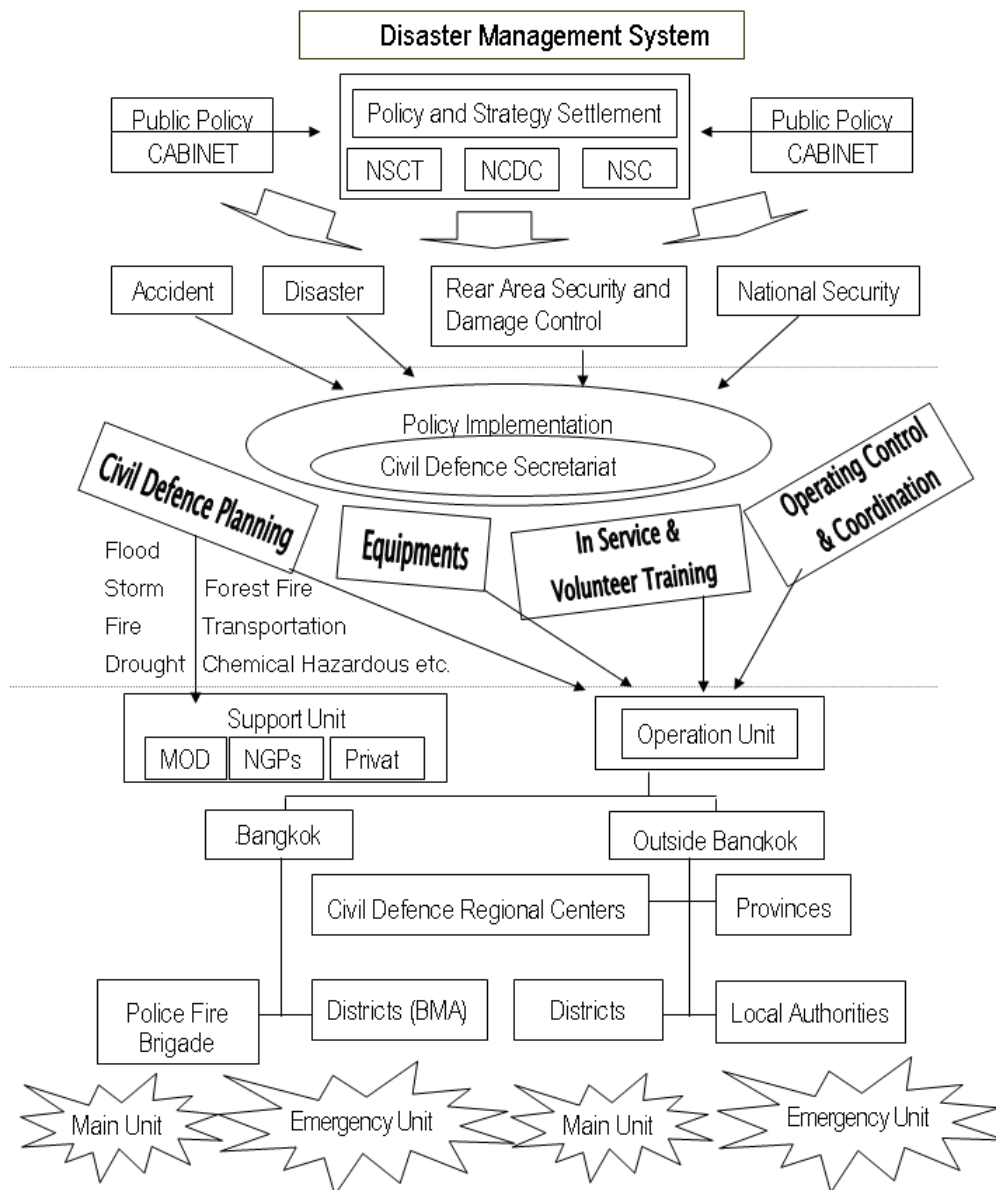
In wartime situation, the Civil Defence Secretariat (CDS) plays supportive role while the military takes on leading role as commander of the special task force chaired by the Prime Minister himself. The principal actors in wartime situation are such as the National Security Council and the Ministry of Defence.

In state of emergency or wartime, the Civil Defence Secretariat (CDS) plays supportive role while the military takes on leading role as commander of the special task force chaired by the Prime Minister himself. The principal actors in wartime situation are such as the National Security Council and the Ministry of Defence.

The Civil Defence Secretariat is the main actor in peacetime only. Therefore, it is directly responsible for all types of disasters both natural and man-made.

3.2 Organization

In Thailand, according to the **Civil Defence Act, 1979** disaster management covers both natural and man-made disasters. The organization structure and responsibilities are systematically developed as follows:



The natural disaster damage life and properties of people moreover the man-made disaster will be hazardous to the country especially road, traffic accidents, chemical explosion, industries accident etc. Therefore, in 1982 the National Safety Council of Thailand (NSCT) was appointed and the Office of NSCT, Prime Minister's Office was secretarial office until Bureaucratic Reform Act in October 2003, it was transferred into Department of Disaster Prevention and Mitigation.

Functions of The National Safety Council of Thailand (NSCT)

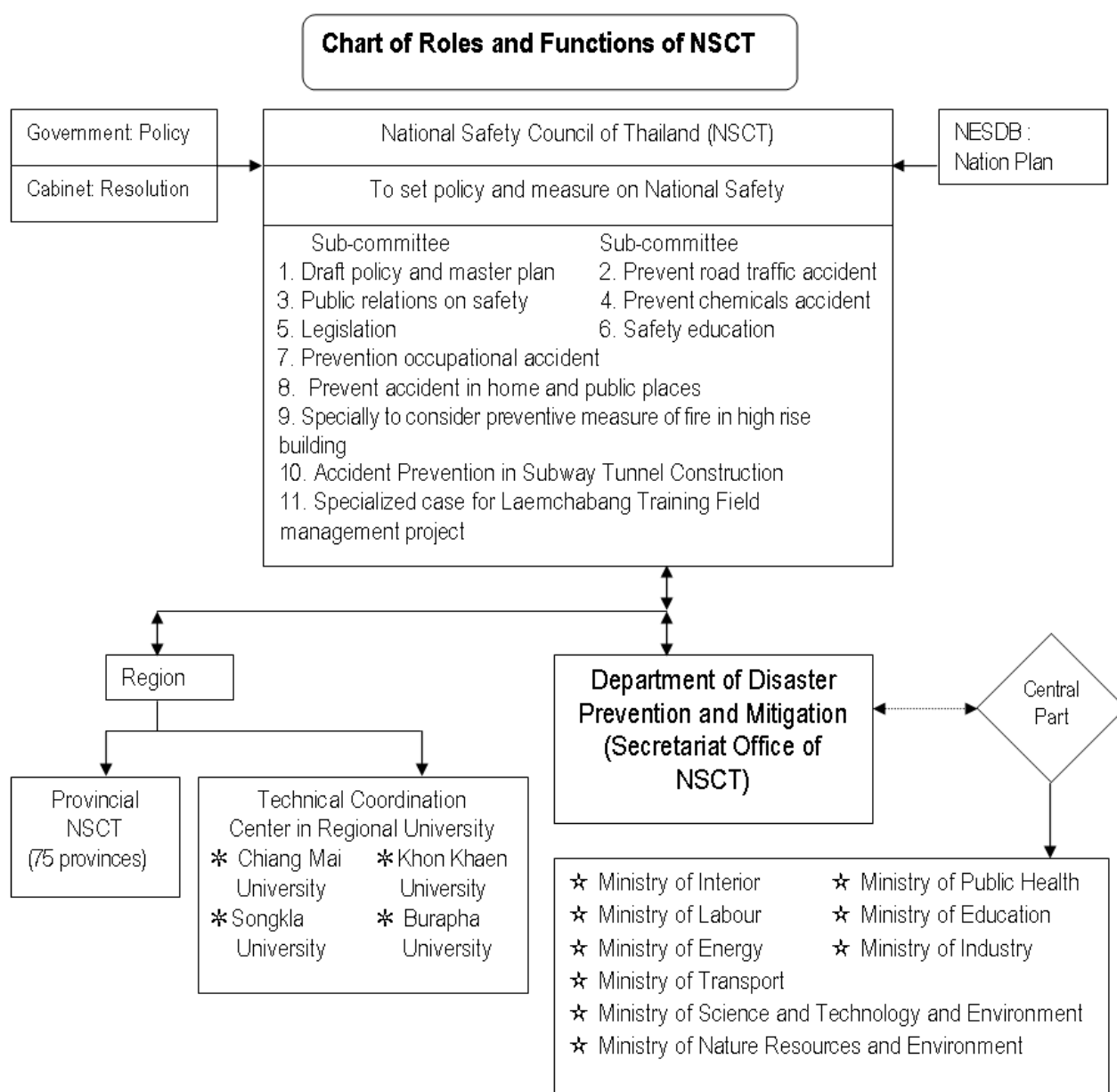
The NSCT is entrusted with the following powers and duties:

1. To propose the policy and major plan to National Safety for the Cabinet approval
 2. To propose the guidelines for implementation and coordination of the approved policy and major plan by the Government Agencies concerned
 3. To submit recommendations and advice on the operation of the Government Agencies and any other problems related to National Safety to the Prime Minister or the Cabinet
 4. To propose the opinion and remarks to the Prime Minister or the Cabinet on the requirement of new legislation or the revision of the existing law and regulations in relation to the National Safety
 5. To coordinate and seek for assistance from abroad
 6. To support and promote public trainings, meetings or seminars on National Safety
 7. To make public relations on National Safety and other related matters
 8. To follow-up and evaluate the implementation according to the policy and major plan
 9. To perform any other functions related to National Safety or Public Safety as assigned by the Prime Minister or the Cabinet
- The National Safety Council of Thailand (NSCT)

The National Safety Council of Thailand (NSCT) was established by Prime Minister Office's Regulations on National Safety B.E 2546 (2003). The members are as follows:

1. Prime Minister or Deputy Prime Minister
2. Minister of Interior
3. Permanent Secretary to the Prime Minister's Office
4. Permanent Secretary to the Ministry of Defence
5. Permanent Secretary to the Ministry of Transportation
6. Permanent Secretary to the Ministry of Information and Communication Technology
7. Permanent Secretary to the Ministry of Interior
8. Permanent Secretary to the Ministry of Labor
9. Permanent Secretary to the Ministry of Education
10. Permanent Secretary to the Ministry of Public Health

11. Director of Bureau of the Budget
12. Secretary General to the Office of the Juridical Council
13. Secretary General to the Office of the National Economic and Social Development Board
14. Secretary General to the National Research Council of Thailand
15. Commissioner General to Royal Thai Police
16. Director General to the Marine Department
17. Director General to the Department of Land Transport
18. Director General to the Department of Civil Aviation
19. Director General to the Department of Provincial Administration
20. Director General to the Pollution Control Department
21. Director General to the Public Relations Department
22. Director General to the Department of Highways
23. Director General to the Department of Rural Roads
24. Director General to the Department of Public Works and Town and Country Planning
25. Director General to the Department of Industrial Works
26. Director General to the Department of Local Administration
27. Director General to the Department of Labor Protection and Welfare
28. Director General to the Meteorological Department
29. Bangkok Governor
30. The President of the Volunteer for Public Relief
31. The President of the Rajprachanukraw Foundation (under Royal Patronage)
32. No more than four proficient persons appointed by the Cabinet as committee members
33. Director General to the Department of Disaster Prevention and Mitigation as the committee member and secretary
34. Two government Officials of Department of Disaster Prevention and Mitigation as the committee member and assistant secretaries



3.3 Authority and Duty of Department of Disaster Prevention and Mitigation under Ministerial Statute 2002

Department of Disaster Prevention and Mitigation is obliged to draft Master Plan, set up measures, promote and support disaster prevention, mitigation and rehabilitation. Disaster Prevention and Mitigation activities as mentioned are carried out through establishment of safety policy, prevention and warning system, rehabilitation of disaster devastated area, and the follow-up and evaluation, so as to secure the safety of life and property of the people. Authorities and duties of the Department are as follows;

1. Formulate policy, guideline and set up criteria for disaster management.
2. Study, analyze, research and develop the prevention, warning systems and disaster mitigation.
3. Develop information technology system for disaster prevention, warning and mitigation.
4. Mobilize people's participation in establishing disaster prevention and mitigation.
5. Create people's awareness and preparedness in disaster prevention and mitigation.
6. Among the training and exercise in disaster prevention and mitigation, rehabilitation devastated area and in assisting the victims as stated by law.
7. Promote, support and carry out disaster prevention and mitigation activities, provide assistance to the victims and rehabilitate devastated areas.
8. Direct and coordinate the operation of assisting the victim and rehabilitate devastated.
9. Coordinate the assistance with the organizations both internal and international in disaster prevention relief mitigation and rehabilitation.
10. Perform any other functions as assigned by the Ministry of Interior or the cabinet

VISION : Department of Disaster Prevention and Mitigation, Ministry of Interior, is the principal government agency to carry out the task and responsibility on disaster prevention and mitigation so as to remain in Thailand as the inhabitable and safe country.

STRATEGIES:

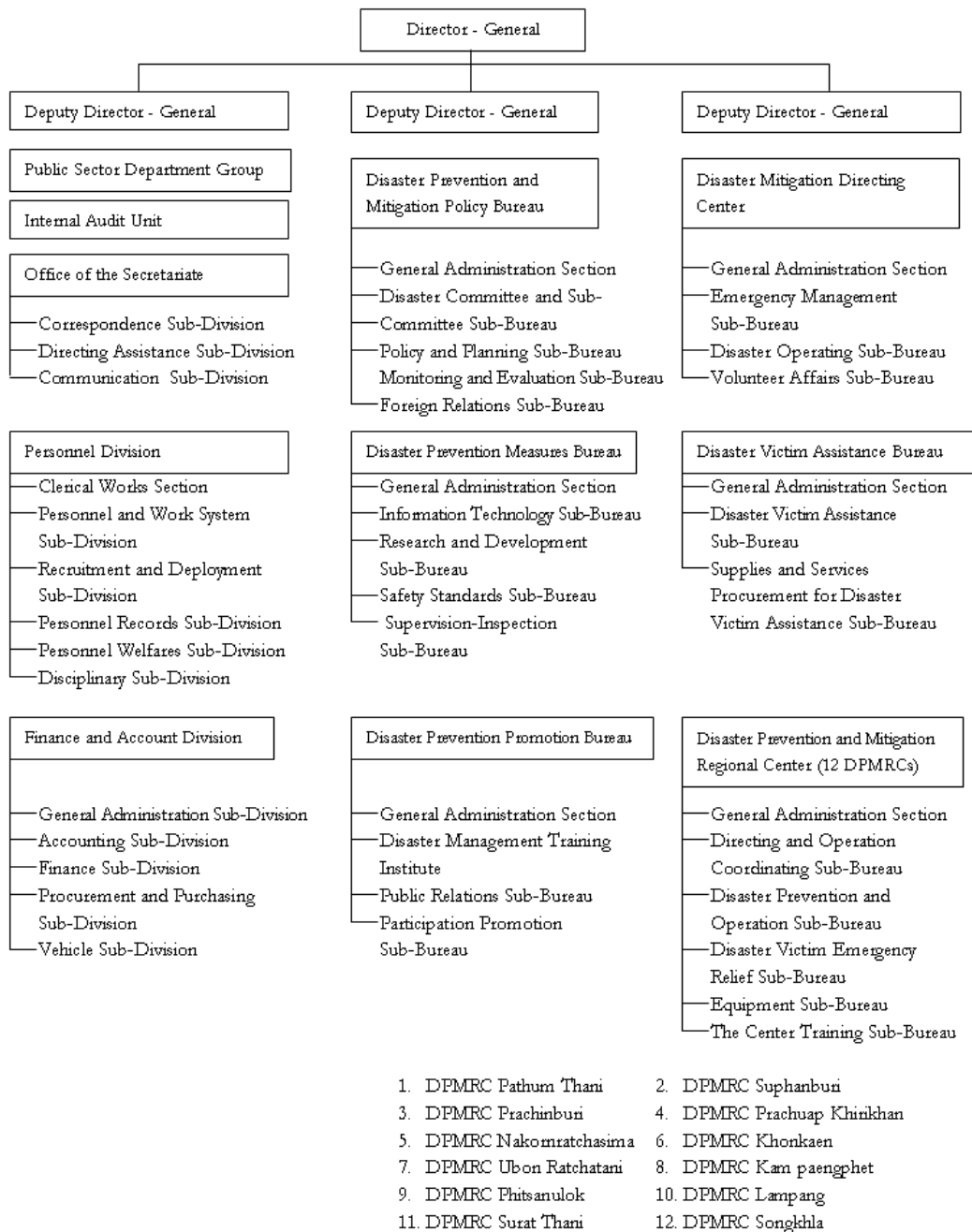
1. Development of disaster and civil emergency prevention and mitigation system which bases (leans) on community participation.
2. Establishment of systematic disaster management and the link-up as the network from national to local level. The use and development of state-of-the-art and appropriate technology will be encouraged.
3. Creation of awareness and understanding on disaster prevention, self-reliable and assisting the others among the people.
4. Development of information technology and knowledge on disasters Thailand encounters.

TARGET: The people will be systematically, rapidly, thoroughly and equitably benefited from the Department's of disaster prevention, rehabilitation and other calamity activities.

MISSION:

1. Establishment of disaster and civil emergency prevention and warning systems and creation of preparedness system in every village of the country.
2. Directing and implementing disaster and civil emergency mitigation activity systematically, rapidly, equitably and thoroughly whenever occurs.
3. Procurement of materials equipment, vehicles, and machines indispensable for disaster prevention, mitigation, suppression and for victim assistance.
4. Rehabilitation of damaged public utilities, physical and mental reinvestigation of the victim, restoration livelihood indispensable and occupations. All these activities and carried out on thorough, equitable and rapid basis, and be in accordance to the needs of the victims.
5. Integration of disaster prevention and mitigation system, the plans, the implementation and follow-up and evaluation with other internal and international organizations.

DDPM Organization Chart



3.4 Disaster Management Plans

So as to be assured that the people will be systematically, immediately, impartially and timely benefited, DDPM has launched various activities in the context of disaster prevention and preparedness. These activities can be delineated as follows;

1. Introduction of Information and Communication Technology (ICT) System for Disaster Management.: This system has been adopted and developed to enhance our disaster management capacity and efficiency in terms of disseminating and receiving disaster related information to and from the public, exchanging and sharing information with our regional operation centers and our provincial offices, and with other government and private agencies concerned.
 - 1.1 Network system

Intranet and Internet systems have been installed to link our regional and provincial offices with the headquarters, and to link with other government and private agencies concerned throughout Ministry of Interior Net.

Establishment of Website (www.disaster.go.th) to disseminate and report disaster related information, to early warn the public of prospected disaster occurrences.

Establishment and utilization of call taker system (1784 emergency line) to facilitate the process of prevention, response and mitigation activities.
 - 1.2 Database System

Owing to this system, we have categorized the database into 9 categories; flood database, storm database, cold spell database, drought database, forest fire database, land fire database, road accident database, work-place database, and chemical and hazardous material database. Categorization as such, aims at developing and adjusting databases of other government agencies concerned to be in accordance with database sever of our Department. As the consequence, our Web-Base Allocation System will enable us to link our Department database with other government agencies concerned. This accessibility to disaster related information will be fruitful to our Department in terms of formulating our implementation plan, the report of project implementation results and project evaluation.

This current fiscal year, our Department had adopted Geographic Information System (GIS) to develop our disaster related information technology system. This adoption will enable us to avail more accurate information of risk areas throughout the country. As the consequence, disaster prevention, mitigation and rehabilitation activities can be launched more effectively and timely. Since the last fiscal year, the following three disaster related information databases have been formulated.

1. Chemical risk area database.
2. Network of agencies concerned and experts database.
3. Flood and mud slide database.

Besides, the GIS applied programs of flood prone areas has been set up which enhance our capability in

- Comparative analyzing inundation situation in each Tambon, District and Province in term of its frequency.
- Searching inundation information such as the water level in specific areas etc.
- Identifying the flood prone areas.
- Identifying inundation coverage areas and evaluating inundation situations.
- Illustrating precipitation situation and the development of inundation in specific areas.
- Assessing the flood related damages.
- Analyzing the flood prevention activities in the flood prone areas.

1.3 Telecommunication System

1.3.1 Department of Disaster Prevention and Mitigation has introduced telecommunication system to support the implementation of disaster prevention, mitigation and rehabilitation activities. In this regard, more telephone lines will be installed in our provincial offices and regional centers.

1.3.2 Twelve million Baht of annual budget has been allotted to procure telecommunication radio equipment and to establish radio network center in our Department. This center will act as coordinating mechanism between public and private or amateur radio network.

Installation of Simple Raingage and Hand-Spin Warning Siren Project. This project will provide the necessary equipment for observing and notification of local flood conditions, forecasts and warning. So as to be well prepared in flood and mudslide disaster preventing and warning, DDPM has mobilized 2003. A.D. fiscal year budget to erect 2,000 raingages in flood risk areas throughout the country. Besides, more budget of 2004 A.D. fiscal year will be mobilized and allocated to procure more raingages and hand-spin siren for warning for erecting in the flood and mudslide vulnerable areas. The cost of raingage is considerably low and very simple to use. The villagers can be instructed to measure, record and read the daily amount of rainfall. Whenever the amount of rainfall exceeds the set normal level, the villager who is in charge of observing will signal out the warning by using the manual siren device or notify the village headman to disseminate the warning through the village news broadcasting tower.

3.5 Disaster Management Training

In order to strengthen disaster preparedness and prevention capacity of people at local level and encourage local level participation as well as to generate the public awareness, DDPM has implemented the following disaster management activities;

1. DDPM staff training: CBDM training course was organized for DDPM staff between 30 April - 4 June 2003, at DDPM Training Institute. About 40 of DDPM staff from our 12 regional operation centers and from headquarters were screened to be sure that those who passed could be trained to be the trainers. After being trained these trainers were well equipped with knowledge better understanding and skill in natural disaster management with the emphasis on risk management and casualty mitigation. These trainers were expected to perform echo training so as to transfer their knowledge to their colleagues and the community.
2. Workshop on Establishment of Community Base Disaster Prevention and Mitigation Human Network. : This workshop attempts to
 - i. Equip the participants with knowledge and understanding of steps and methods of operation of disaster management. And upon their return to their communities, these returnees can become the trainers to carry out the echo training in their own communities.
 - ii. Create the awareness among the public to uplift the safety standard of the community.
 - iii. Generate the shepherd and community human network to carry out the basic disaster management.
 - iv. Enhance the capacity and strengthen the community cooperation with government agency and other private organization networks.

The pilot project of this workshop was carried out in 2 provinces. The first batch was carried out during 17 - 18 August 2003, in Lampang, the northern province. The second batch was organized during 19 - 20 August 2003 in Nakhon Sawan, the lower northern province. The participants were recruited from the core leaders of the village or community such as Village Headman, Sub-District Chief, school teacher, the monk, Civil Defense Volunteer, Public Health Volunteer etc.

This pilot project will be follow-up very closely with expectation to extend the project to cover at least 225 villages or 5 villages in every 75 provinces of the country.

3.6 Details of a Person in Charge of the ADRC's Activities

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4. List of Disaster Related Website in Thailand

Names of Website	Names of Organization
www.disaster.go.th	Department of Disaster Prevention and Mitigation (DPM)
www.moi.go.th	Ministry of Interior
www.adpc.net	Asian Disaster Preparedness Center
www.mot.go.th	The Ministry of Transport
www.thaigov.go.th	Royal Thai Government
www.tmd.go.th	The Meteorological Department
www.rid.go.th	Royal Irrigation Department
www.pcd.go.th	Pollution Control Department (PCD)
www.doa.go.th	Department of Agriculture

www.diw.go.th	Department of Industrial Works
www.police.go.th	Royal Thai Police
www.forest.go.th	Forest Fire Control Division
www.fire.police.go.th	Police Fire Brigade
www.highway.police.go.th	Highway Police
www.bpp.police.go.th	Border Patrol Police Bureau
www.ilo.org/public/english/region/asro/bangkok/asiaosh/country/thailand/fda/j.htm#safe	The Bureau of the National Safety Council of Thailand
www.js100.com	Pacific News Center
www.trauma.or.th	Narenthorn Center
www.bma.go.th	Bangkok Metropolitan Administration
www.trafficbakk.com	Police Radio Casting FM 91.0
www.ruamkatanyu.or.th	Ruamkatanyu foundation
www.yothin8.cjb.net	Volunteer of Ruamkatanyu foundation
www.khonkaen.com/default.asp	Rescue Khonkaen
www.ems.fire2rescue.com	Emerge Emergency Medical Services
pdrv.fire2rescue.com/index.html	Public Disaster Relief Volunteer Association of Thailand

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