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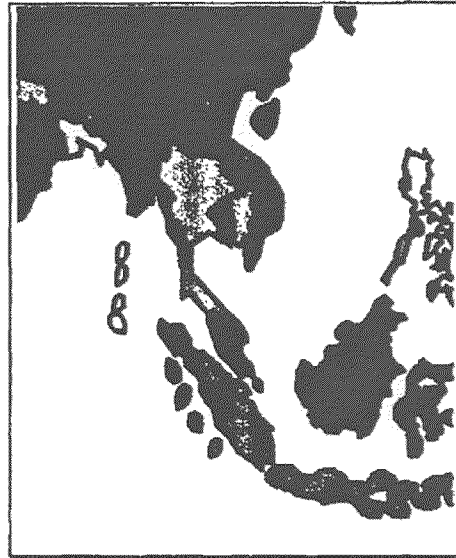
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## Information about Thailand

### 1. Location

Thailand lies between latitude 6 - 12 north, longitude 98-108 east. Which is in a tropical zone in Southeast Asia, covering an area of 514,000 square kilometres with approximately 58 million people in population.



It shares the border with Union of Myanmar on the west and the north, Lao People's Democratic Republic on the north-east, Kingdom of Cambodia on the east, the Gulf of Thailand on the east and the south, Malaysia on the south and the Andaman Sea on the west and the south

The country is geographically divided into 4 majors regions : the mountainous North, the semi-arid plateau of the North-East, the fertile Central Plains and the Southern peninsula

### 2. Climate

Generally speaking, the climate is divided into 3 seasons:

1. The summer season: March-May
2. The rainy season: June-September
3. The cool season: October-February

## **National IDNDR Subcommittee**

**T**hailand subcommittee for the IDNDR was set up on 20 June 1990 by the *National Civil Defence Committee of Thailand* in response to the UN Resolution 42/169. The subcommittee for IDNDR is made up of 21 members from government agencies and NGO's. **The subcommittee is chaired by Deputy Permanent Secretary for Interior and Director-General of the Department of Local Administration is a vice-chairman.** Its other members are as follows:

-Deputy Director-General of the Department of Local Administration for Security Affairs

- Representative of the Ministry of Defence
- Representative of the Ministry of Education
- Representative of the Ministry of Public Health
- Representative of the Ministry of Agriculture and Cooperatives
- Representative of the Ministry of Foreign Affairs
- Representative of the Ministry of University Affairs
- Representative of the Bureau of the Budget
- Representative of the Department of Public Welfare
- Representative of the Meteorological Department
- Representative of the Royal Thai Police Department
- Representative of the Public Work Department

- Representative of the National Research Council of Thailand
- Representative of the Office of Environmental Policy and Planning
- Representative of the Thai Red Cross
- Representative of the National Public Welfare Council
- Representative of Rajaprajanugroh Foundation
- Representative of the Asian Institute of Technology

**The subcommittee has the following responsibilities:**

- To determine the policy and develop measures to achieve disaster prevention and mitigation.
- To implement and cooperate with other nations through the IDNDR programme.
- To give the public education in order to change their perspective from ~~the~~ passive acceptance of disaster consequences to the more awareness of the opportunity for disaster mitigation and the role of individual in self-defence.
- To provide a financial support for the IDNDR programme.
- To establish the working groups to assist the subcommittee on activities concerning the IDNDR programme.

Civil Defence Division, the Department of Local Administration, is the office of the subcommittee and the focal point for IDNDR of Thailand.

## Natural Disasters in Thailand

### 1.Risk Assessment

It is luckily enough for Thailand that has never faced any great natural disaster like several countries in the region. However, there are some natural hazards which have a potential to create a great destruction which are as follows:

Type	Frequency of occurrence	Rute of risk	Risk area
Floods	high	high	entire country,especially in the northern, central and southern region
Typhoon and storm surge	low	moderate	southern region
Strong wind	high	low	entired country
Droughts	high	moderate	entire country,especially in north-eastern and northern region
Earthquakes	low	moderate	northern region
Landslides	low	moderate	southern region
Forest fire	low	moderate	northern region

## **2. Disaster situations in 1990-1994**

### **2.1 Floods**

Year	No. of provinces	No. of deaths	No. of injury	Loss (bath)
1990	58	50	19	6,652,227,121
1991	66	43	26	2,620,918,029
1992	66	16		5,240,583,940
1993	11	47	254	2,181,606,542
1994	74	59	12	6,044,471,067

### **2.2 Strong winds**

Year	Frequency of time	No. of deaths	No. of injury	Loss (bath)
1990	907	126	117	172,023,839
1991	705	43	55	75,850,000
1992	3,125	90	50	193,060,000
1993	NA	NA	NA	NA
1994	1,073	8	46	120,275,946

## 2.3 Droughts

1990	48	253	7,234	1,970,703	536,550
1991	59	479	12,192	1,037,271	1,221,416
1992	70	719	25,766	5,334,471	2,430,663
1993	68	650	24,176	2,040,443	2,533,194
1994	70	688	29,191	17,923,817	2,736,643

## Natural Disaster Reduction

### 1. Disaster Management in Thailand

#### 1.1 Law

In Thailand, disaster management is based on the **Civil Defence Act**, promulgated on March 22, 1979. According to the act, public disaster is a part of civil defence activities. Its definition under this act means disaster from fire, storm, flood and other disasters from natural or man-made which destroy the lives of people and cause damage to the property of the people as well as the public.

#### 1.2 Organization

Its organization structure can be divided into 3 levels as follows:

##### A.-National level

The Minister of Interior is the Authority of National-Civil Defence for the whole country. Organizations at this level consists of the following organization:

##### 1. The National Civil Defence Committee (NCDC)

NCDC is chaired by the Minister of Interior with the Permanent Secretary for Interior as the vice-chairman. There are also representatives from various Ministries concerned and Director-General of the Department of Local Administration (DOLA) as the secretary of committee.

NCDC considers civil defence policy, makes an approval on the master plan of civil defence, determines methods of inspection, follow up evaluation, training and financial management.



## **2.Civil Defence Secretariat (CDS)**

DOLA is acting as the office of CDS and the Director-General of DOLA is its Secretary-General. Civil Defence Division (CDD) which is one among 15 divisions under DOLA, is responsible for CDS.

CDS is responsible for the following duties: studies, researches, analyses and disseminates technical information, reviews the master plan and provide the training, coordination in intra-organization operation.

## **3.Civil Defence Division (CDD)**

As indicated by the Civil Defence Act, CDD is responsible for civil defence affairs in the name of CDS, including an administration and preparedness in state of emergency or war.

### **B.-Regional level**

The Regional Director-Civil Defence is appointed by the National Director-Civil Defence (NCDC) having authorities in the region as defined by NCDC.

### **C.-Local level**

There are 5 types of civil defence director in this level :

#### **1.Provincial Civil Defence Director**

The governor is the Provincial Director-Civil Defence having authorities in the whole area in his province.

#### **2.Bangkok Metropolitan Administration (BMA) Civil Defence Director**

BMA's Governor is the Bangkok Metropolitan Civil Defence Director for BMA having authorities only in the area of Bangkok.

### **3.District Civil Defence Director**

District Chief Officer is, by position, the District Civil Defence Director having authorities only in his district area.

### **4..Municipality Civil Defence Director**

A Mayor is the Municipal Civil Defence Director having authorities in his municipal area.

### **5.The Pattaya City Civil Defence Director**

The Pattaya City Manager is Civil Defence Director having authorities only in Pattaya City's area.

## **2. Activities and Measurements in Natural Disaster Reduction**

Since 1994 , at the time of mid-decade of IDNDR, Thailand has proceeded many activities and measurements in the natural disaster reduction as follows :

### **2.1 Activities in Disaster Prevention and Mitigation**

#### **A. Incorporation policy and programme in disaster management in the 8th national Economic and Social Development Plan (1997-2001)**

The office of National Economic and Social Development Board (NESDB), is responsible for making the national development plan, has studied and reviewed the impact of disasters in Thailand on society and on the country development. The Office of NESDB makes a conclusion of study and proposes to determine a policy and programme in disaster management into the 8th National Economic and Social Development Plan (1997-2001).

In this policy, 3 types of disasters will be focused in the development plan.

1.Natural disaster (flood ,strong wind, drought and earthquake)

2.Industrial Disaster

### **3.Communication Accident**

For the implementation of this policy, the office of NSEDB has proceeded in sub-activities as follows :

1. provide a seminar on “National policy in disaster management during the period of the 8th national development plan ” between 13-14 February 1995

- 2.make a study report “Concept in disaster management in the 8th national development plan ”

- 3.set up a working group for developing and improving the disaster management system in the 8th national development plan

Such activities have been going on.

### **B.Study and research in natural disaster-reduction**

- 1.The office of National Economic and Social Development Board (NESDB), technically supported by UNDP, is proceeding in the Disaster management in the Southern Thailand Project. The project has 3 objectives which as follows:

- To produce risk mapping in order to provide an indication of areas in southern Thailand that are particularly vulnerable to flood and landslides hazards and to assess vulnerable elements that may be susceptible to their impact.

- To conduct risk assessment on flood and landslide disasters in the provinces in the south of Thailand.

- To design programmes to achieve a reduction of risk of future flood and landslide disasters.

The project has started in September 1995 and will be completed within 20 months.

2. The office of National Economic and Social Development Board (NESDB), supported by the UNDP and Asian Disaster Preparedness Center, Asian Institute of Technology (ADPC,AIT), studied and made a report “Strengthening

Disaster Management Strategies in Thailand” which providing recommendations for the strengthening of management strategies and enhance ability to manage hazards, accidents and disasters. This activity was completed in 1994.

3. Forestry Research Center (Faculty of Forestry Kasetsart University), and the office of Environment Policy and Planning (Ministry of Science, technology and environment) were completed the “risk assessment in flood and natural disaster in the southern basin” project in 1994 and a study report was publicized.

4. Civil Defence Division, Department of Local Administration made a study in “the present status of civil defence plan in the provincial level” to finding problem and provide recommendations for the improvement of processes and contents of planning. The study report was publicized in January 1995.

### **C. Development of disaster-reduction technology**

#### **1. Activities in Meteorology**

Meteorological Department, Ministry of Transport and communications conducts many activities as follows:

##### **a. Development of weather radars network**

1. These following newly installed weather radars have been operated:

- Ubon Ratchathani (North-eastern) Doppler C-Band (May 1993).
- Sakon Nakhon (North-eastern) Doppler C-Band (July 1993).
- Chiang Rai (Northern) Doppler C-Band (November 1993).
- Khon Kaen (North-eastern) Doppler S-Band (August 1993)
- Surat Thani (Southern) Doppler S-Band (June 1993).

2. S-and X-Band Doppler weather radars will be installed at Hua Hin and the Meteorological Department respectively. (1995)

3. Four X-Band Doppler weather radars for Narathiwat, Trang, Ranong, Mae Hong Son and also a mobile X-Band Doppler weather radar at the Head office are newly purchased in 1995.

4. By the year 1997, data from 14 weather radar stations were planned to be linked via the telecommunication satellite "THAICOM" to the center of radar network located at the Head office, and via versa.

**b. Improvement meteorological satellite receiving system.**

1. Four new very high resolution NOAA-AVHRR and GMS-SVSSR satellite receiving systems (GSC-METPRO) were purchased and hereunder are their status.

-One was established at Chiang Mai- Regional Meteorological Center (RMC) in April 1993 and other two sets at Songkhla and Phuket - RMCs were installed in July 1993.

-In June 1994 at Ubon Ratchathani-RMC, the latest one was established with satisfactory operated.

2. The National Data Center (NDC) was established in August 1993 at the main office to retrieve all data from NOAA and GMS satellites which have been routinely received at the four RMCs as mention in 2.1. A linkage work station is also available at Aeronautical Meteorology Division, Bangkok International Airport. This center has been completely connected with the four RMCs since June 1994 to exchange the satellite products and GTS datas.

3. The existing satellite receiving system (GSC-METPAK) at the head office is being planned to be upgraded its hardware and software as well as the capability on retrieval data and products of the NDC by the year 1996.

**c. Installation of three additional sets of Automatic Weather Observation System (AWOS)**

1. Three sets of AWOS for Ubon Ratchathani, Udon Thani and Lampang were purchased to be installed by the end of 1995.

2. Two sets of AWOSs for Sakon Nakhon and Nan are planned to be installed by the year 1996.

**d. Installation of one additional set of Wind Shear Alert System (WSAS)**

1. WSAS at Chiang Mai International Airport is now in operation.

2. A set of WSAS was purchased at Hat Yai International Airport and completely installed in mid December 1994.

**e. Development of Meteorological Telecommunication System**

1. A project on newly installing message switching system was expected to be implemented by April 1995. The accomplishment of this project will enable us to upgrade the speed of various circuits such as Bangkok-Tokyo, Bangkok-Hanoi, Bangkok-Jeddah, Bangkok-Rangoon etc, as well as to establish the new Bangkok-Beijing and Bangkok-Singapore GTS medium speed circuits.

2. Two GTS point to point to circuit of low speed telegraph linked between RTH Bangkok-NMC Vientiane and RTH Bangkok-NMC Phnom Penh will be newly established. The implementation is under the consideration of both Lao PDR and Cambodia.

3. A project on newly installing National Meteorological Telecommunication Network via domestic communication satellite "THAICOM" has been already accomplished and come into operation since January 1995. The accomplishment of this project will enable to gain a more efficiency in collecting data from meteorological stations.

## **2.Activities in Flood Forecasting**

### **a. Flood Modelling Programme in Thailand**

The Department of Local Administration (DOLA), Ministry of Interior, supported by Danish Hydraulic Institute (DHI), started the project of Flood Modelling in Thailand from 1 August 1993. In this project DOLA in association with Asean Institute of Technology (AIT), The Electricity Generation Authority of Thailand, Department of Public Work, Royal Irrigation Department, Meteorological Department and Department of Energy Development and Promotion, send a group of trainees to study and apply the calibrated model for the focus area. Since the start of project, the 5 calibrated river basin models were applied, including Uthaphao river basin and Tathapao river basin in southern region, Chi-Mun river basin and Nam Songkhram river basin in north-eastern region and Nan river basin in northern region.

### **b.Establishment of 5 additional Hydrometeorological stations**

From 1994-1996, the Royal Irrigation Department has established the 5 hydrometeorological stations as follows:

- Chawang District, Nakhon Si Thammarat Province
- Phrasaeng District, Surat Thani Province
- Kamalasai District, Kalasin Province
- Sadao District, Songkhla Province
- Sa Kaeo District, Sa Kaeo Province

## **2.2 Activities in Disaster Preparedness**

### **A.Training and Seminar**

1. Civil Defence Secretariat (CDS),cooperate with the office of NESDB, UNDP and ADPC , arranged a seminar in the topic of “Disaster Management Workshop” from 20-23 June 1994.

2.Besides the regular training for personnel in emergency response, DOLA, supported by Sweden, sent a group of fire chief in 18 municipalities and 2 staffs in civil defence division to study and to be trained in rescue work in Sweden during 23 October-5 November 1995

### **B.Increasing awareness**

Civil Defence Secretariat (CDS) has appointed related agencies to arrange such activities as follows:

- To disseminate the knowledge of natural disaster reduction and environment to vulnerable group such as women and children in cities and remote areas by radio broadcasting, television,pamphlets and other booklets.
- To design disaster reduction programme in primary schools.
- To perform inhabitants training in disaster and environment.

### **C.Establishment regional civil defence headquarters**

In order to strengthen an efficiency in disaster management, Civil Defence Secretariat (CDS) established 4 new regional civil defence headquarters as following:

- Songkhla headquarter is responsible for the lower southern region.
- Surat Thani headquarter is responsible for the upper southern region.
- Chiang Mai headquarter is responsible for the northern region.
- Khon kaen headquarter is responsible for the north-eastern region



#### **D. Disaster Exercise**

Department of Local Administration (DOLA), which acts as the office of Civil Defence Secretariat, has provided disaster exercises in 20-25 rotated provinces every year. In 1995, DOLA has conducted exercise only for the natural disaster in 24 provinces as follows:

- Earthquake exercise in Chaing Rai Province
- Flood exercise in Kanchanaburi and Ubon Ratchathani Province
- Fire exercise in 19 Provinces
- Mass accident in Amnat Charoen Province
- Evacuation in Mae Hong Son Province

### **2.3 Activities in Disaster Recovery**

#### **A..Review Regulation**

In March 1995, the Ministry of Finance, commented by relevant government agencies, improved and declared the new rule for disaster reliefs in case of emergency . The concept of this new rule is to decentralize a decision making authority and to expand the ceiling of emergency budget to the government agencies in the affected areas .

## B.Relief

Hazards	time	affected	relief
Flood	July-December 1994	<ul style="list-style-type: none"> <li>● provinces: 74</li> <li>● districts: 626</li> <li>● families: 675,036</li> <li>● people: 2,563,780</li> <li>● deaths: 59</li> <li>● injured: 12</li> <li>● costs: 6,044,471,067 baht</li> </ul>	<p>By provinces: 731,298,183 baht</p> <p>By DOLA approximatly. 848 million baht</p>
Drought	January-May 1995	<ul style="list-style-type: none"> <li>● provinces: 70</li> <li>● districts: 688</li> </ul>	<p>By provinces :supply 2,489,308,330 litres of water. :268,208,548 baht.</p> <p>By DOLA approximately 700 million baht.</p>
Flood	July-updated to 24 November 1995	<ul style="list-style-type: none"> <li>● provinces: 73</li> <li>● districts: 661</li> <li>● families: 1,429,373</li> <li>● people: 5,299,606</li> <li>● deaths: 421</li> <li>● costs: 9,505,507,713 baht</li> </ul>	<p>By provinces :1,105 million baht</p> <p>By DOLA -approximately 708 million baht.</p>

Source : DOLA

## **International Cooperation**

### **1. Participation in International Conferences on the Disaster Reduction**

It is considered that conference about disaster in Pacific and Indian Ocean region would be useful for civil defence missions such as policy formulation and direction of natural disaster reduction. Royal Thai Government (RTG) designated representatives from related agencies participated in many international conferences as follows:

1.The Asean Committee on Social Development held in Bangkok, Thailand from 10-13 January 1995

2.The twenty-second session of the Panel on Tropical Cyclones held in Colombo, Sri Lanka from 21-27 March 1995.

3.The ASEAN Youth Aid Workshop on Disaster Preparedness held in Manila, Philippines from 4-9 August 1995

4.The twenty-eighth session of the Typhoon Committee held in Kuala Lumpur, Malaysia from 5-11 December 1995

5.The ninth Meeting of the ASEAN Experts Group on Disaster Management will be held in Manila, Philippines in the early 1996.

### **2.Cooperation with Danish Hydraulic Institute**

The Department of Local Administration,(DOLA) Ministry of Interior, supported by Danish Hydraulic Institute (DHI), has conducted the project of Flood Modeling in Thailand since 1 August 1993. The details have already been shown in chapter 4.

### **3.Cooperation with Sweden**

The Department of Local Administration (DOLA), Ministry of Interior, was supported by The Swedish Rescue Service Agency and the Swedish International Development Agency of Sweden in a training course for rescue services.

### **4.Cooperation with the People's Republic of China**

The Meteorological Department and State Seismological Bureau of the People's Republic of China, signed a Memorandum of Understanding (MOU) on seismic cooperation on 15 April 1994 in Beijing.

The two countries wish to strengthen further existing mutual relations, facilitating cooperation on seismological sciences under the Protocol for Sino-Thailand Sciences and technology Cooperation between Thailand and China; cooperation in this area includes the exchange of seismologists, engineers, geologists and other specialists and also covers visits of delegations or teams of specialists to the specific establishments and institutions of the other parties.