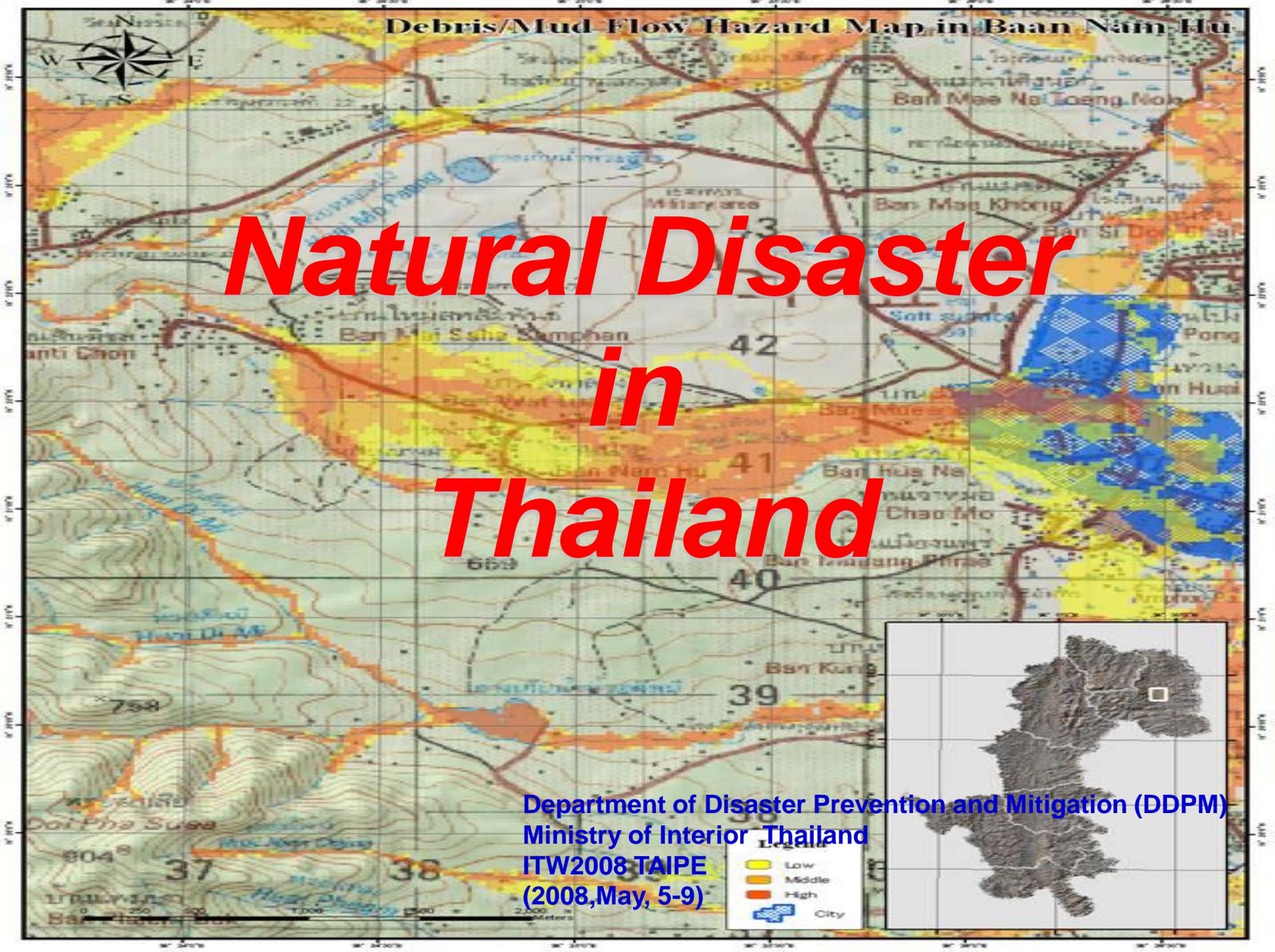
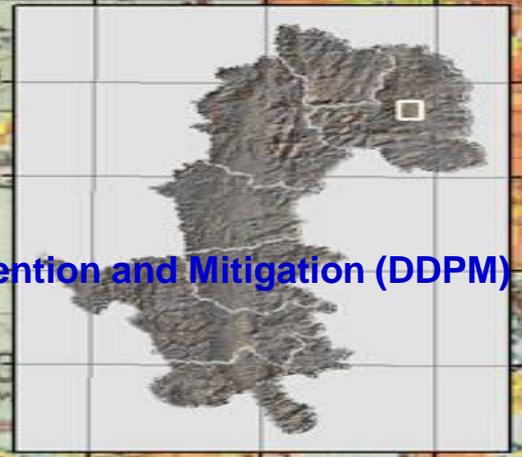


Debris/Mud Flow Hazard Map in Baan Nam Hu

Natural Disaster in Thailand

Department of Disaster Prevention and Mitigation (DDPM)
Ministry of Interior Thailand
ITW2008 TAIPE
(2008, May, 5-9)



The Outline

- 1. About Thailand**
- 2. Disasters in Thailand**
- 3. Disaster Management System**
- 4. Work on Disaster Reduction**
- 5. International Cooperation**



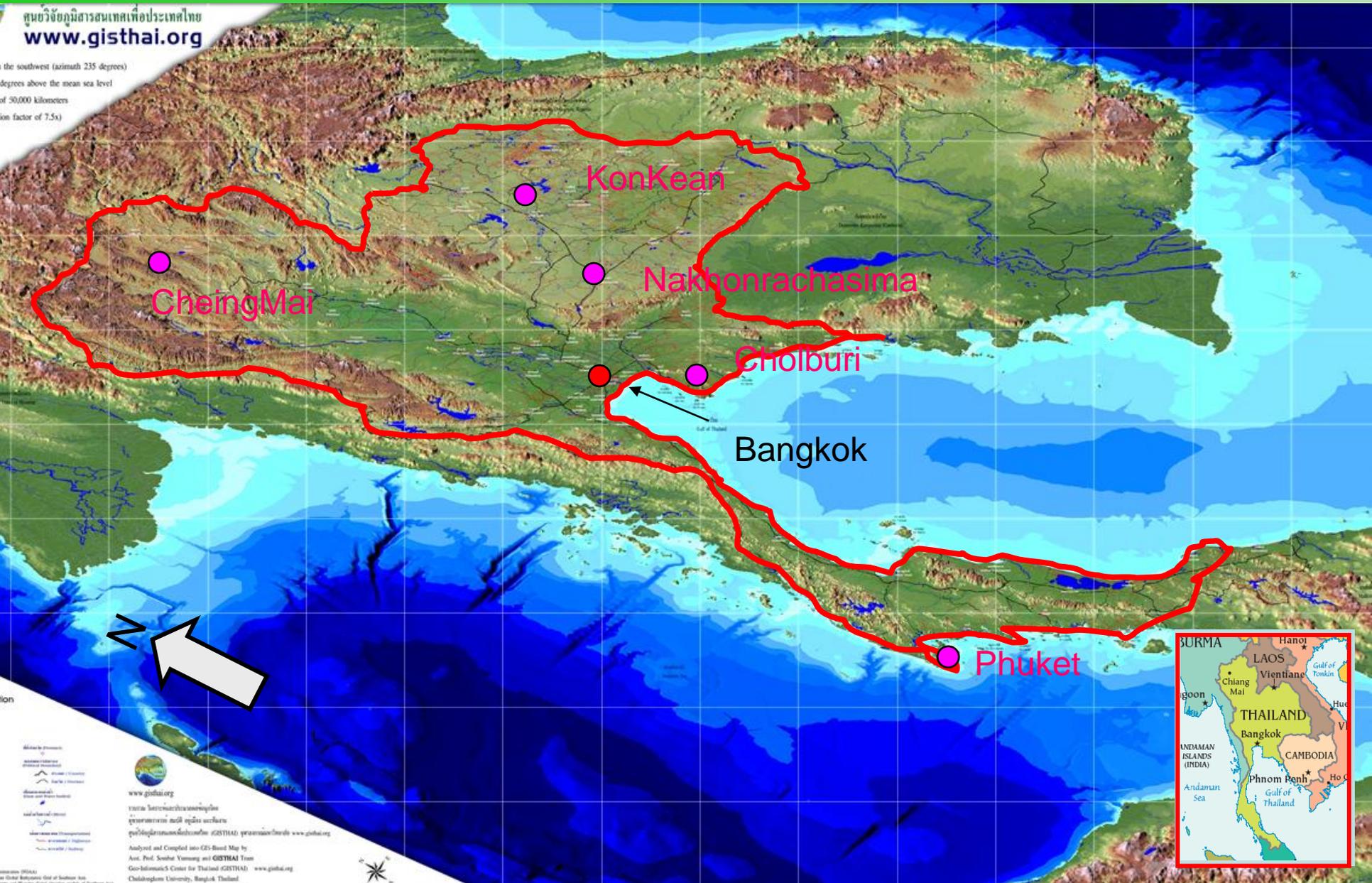
1. ABOUT THAILAND

Thailand



Thailand (SIAM) is located in southeast Asia, bordering four countries and a sea (>1000 Km. coast line). The size of the country (513,115 km²) is similar to Spain. In 2006, Thailand had 63 millions inhabitants with around 10 millions living in Bangkok and sub-urban areas. Thailand is the world's largest rice exporter (7 millions tons/yr).

THE GEOGRAPHY



THE REGION



ศูนย์วิจัยภูมิสารสนเทศเพื่อประเทศไทย
www.gisthai.org

the southwest (azimuth 235 degrees)
degrees above the mean sea level
of 50,000 kilometers
(scale factor of 7.5x)

NORTHERN

NORTH-EASTERN

CENTRAL

WESTERN

EASTERN

SOUTHERN

Bangkok



www.gisthai.org

วิเคราะห์และประมวลผลข้อมูล
ทางภูมิศาสตร์ด้วยระบบสารสนเทศ
เพื่อใช้ในการตัดสินใจ (GIS/THAI) ประมวลผลโดย www.gisthai.org

Analysed and Compiled into GIS-Based Map by
Asst. Prof. Sushat Yomwong and GIS/THAI Team
Geo-Information Center for Thailand (GIS/THAI) www.gisthai.org
Chulalongkorn University, Bangkok Thailand

THE NORTHERN REGION



MYANMAR

สาธารณรัฐสังคมนิยมแห่งประเทศไทย
Socialist Republic of Union of Myanmar



csnngt.com

THE NORTHERN REGION



MYANMAR

LAO PDR

CHIANG MAI

Doi Inthanon

Phumipol Dam

NAKORN SAWAN

สาธารณรัฐสังคมนิยมแห่งประเทศไทย
Socialist Republic of Union of Myanmar



csmnqt.com

THE NORTH-EASTERN REGION



THE NORTH-EASTERN REGION



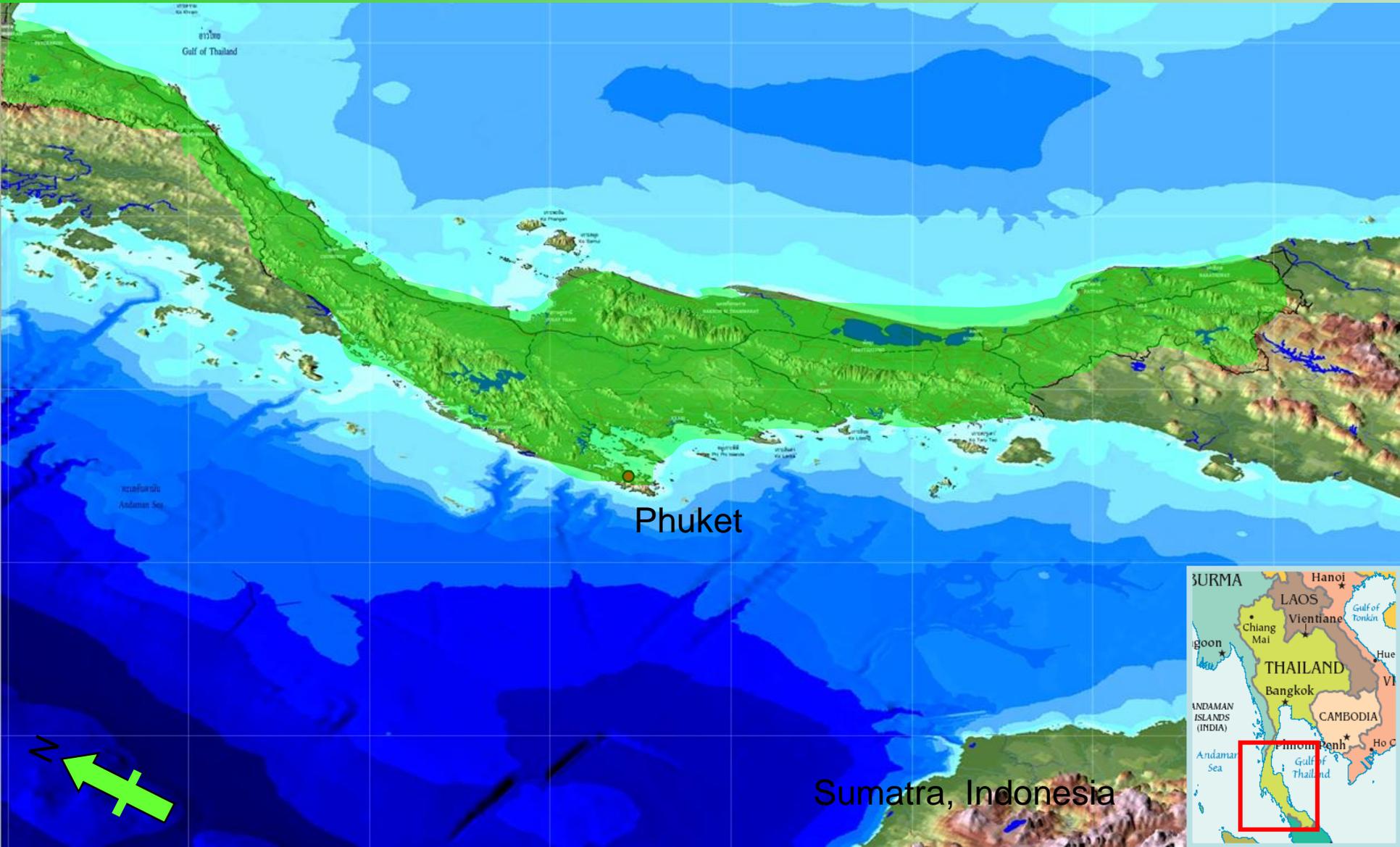
THE CENTRAL REGION



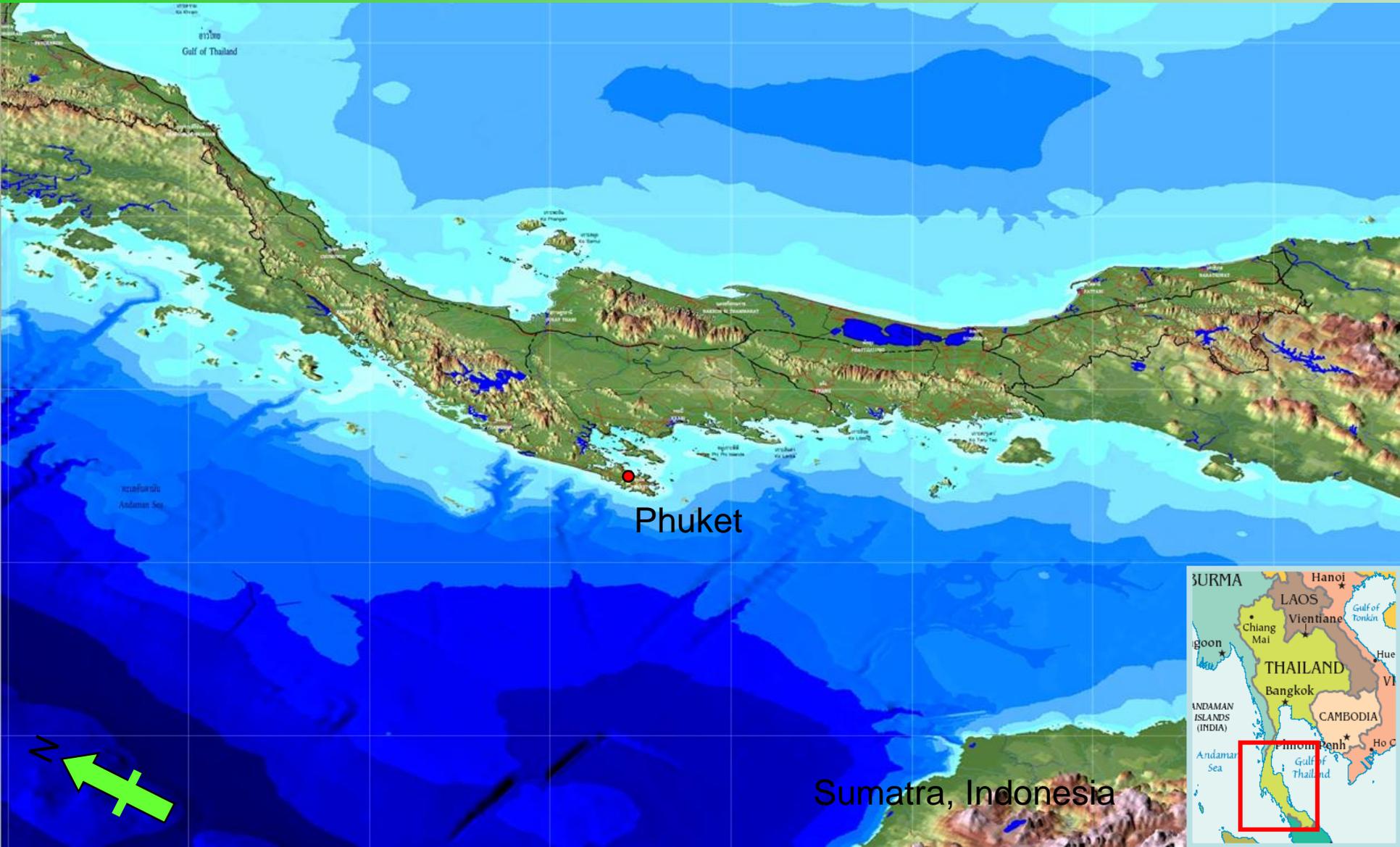
THE CENTRAL REGION



THE SOUTHERN REGION



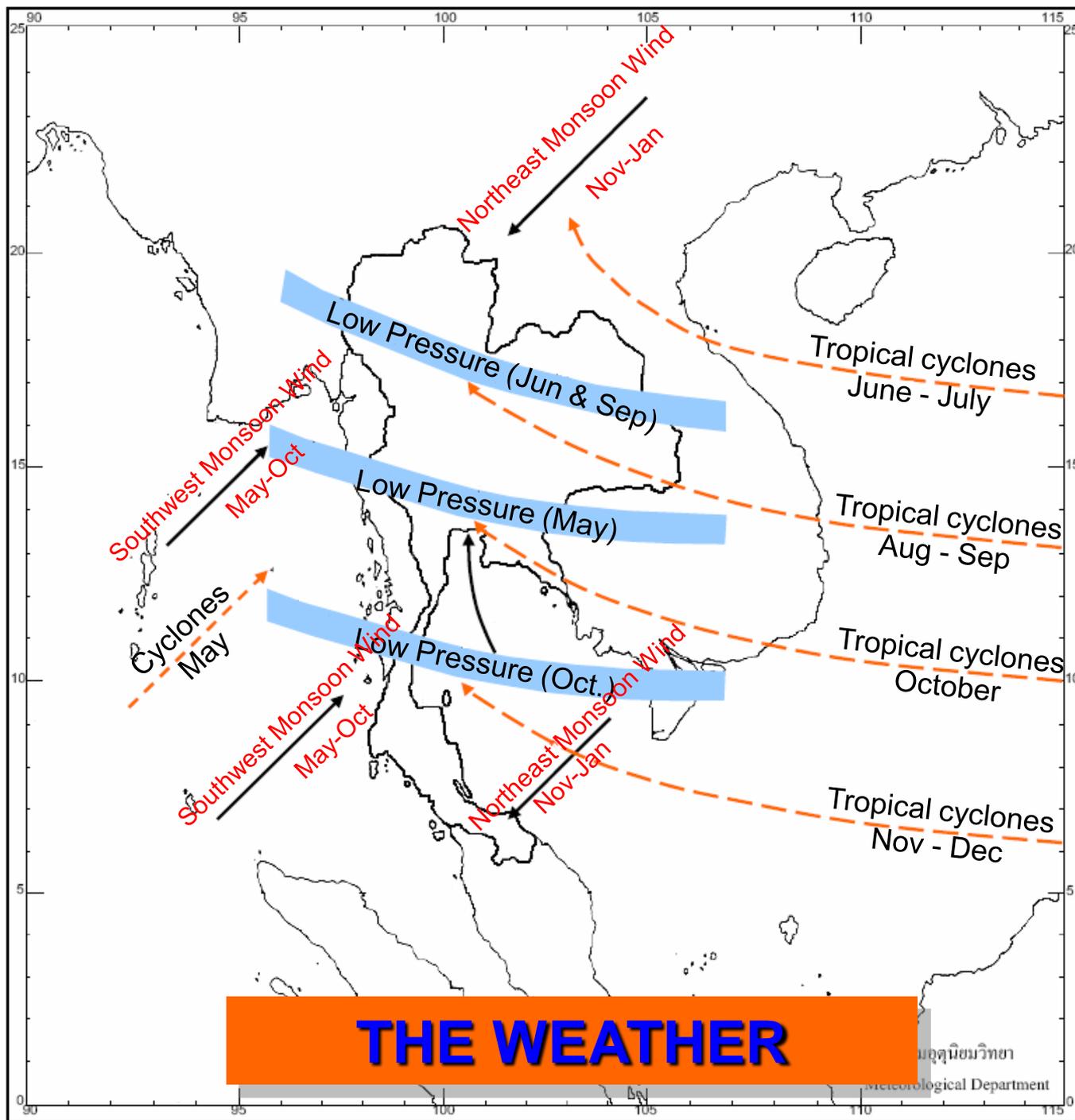
THE SOUTHERN REGION



Phuket

Sumatra, Indonesia



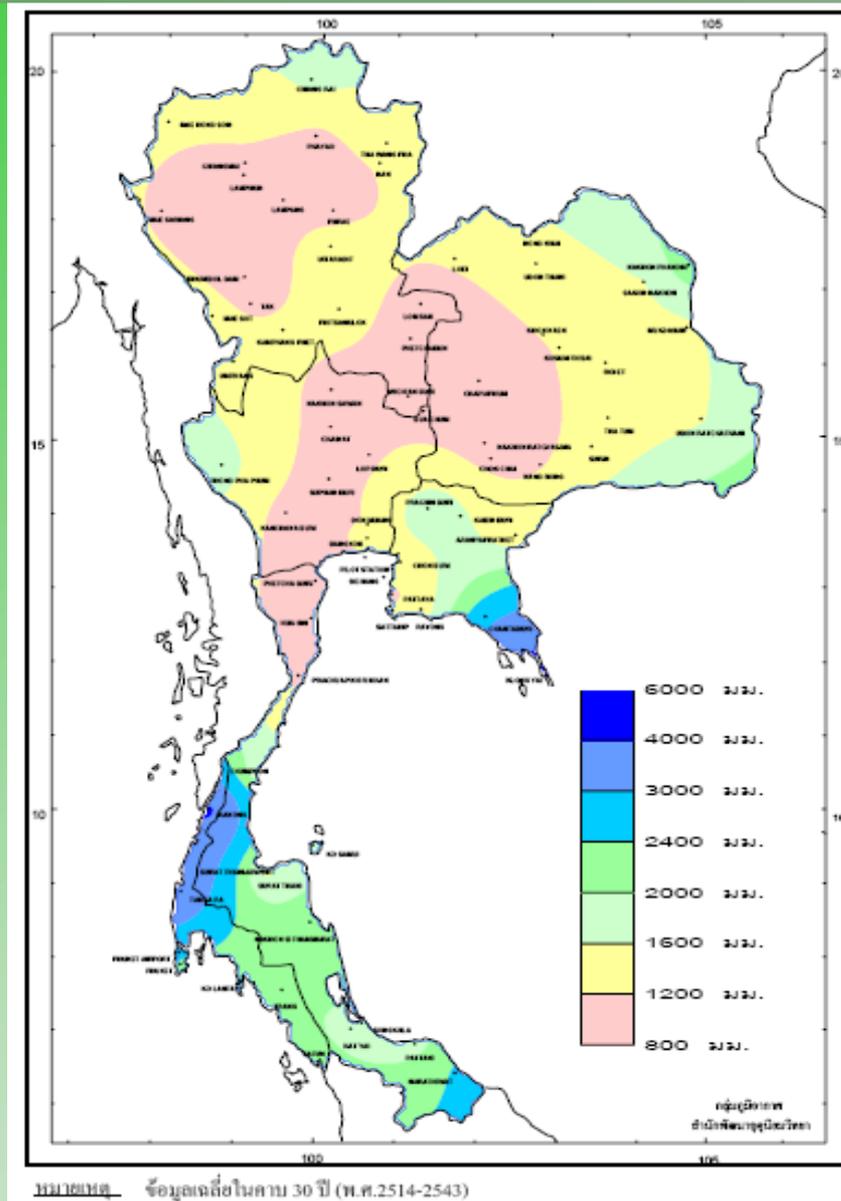


Average Season Rainfalls

Season Region	Winter (Dec-Feb)	Summer (Mar-May)	Rainy (June-Nov)	Annual Precipt.(mm.)	No. of Da ys
Northern	105.5	182.5	952.1	1240.1	123
North-Eastern	71.9	214.2	1085.8	1371.9	117
Central	124.4	187.1	903.3	1214.8	113
Eastern	187.9	250.9	1417.6	1856.4	131
South (west)					

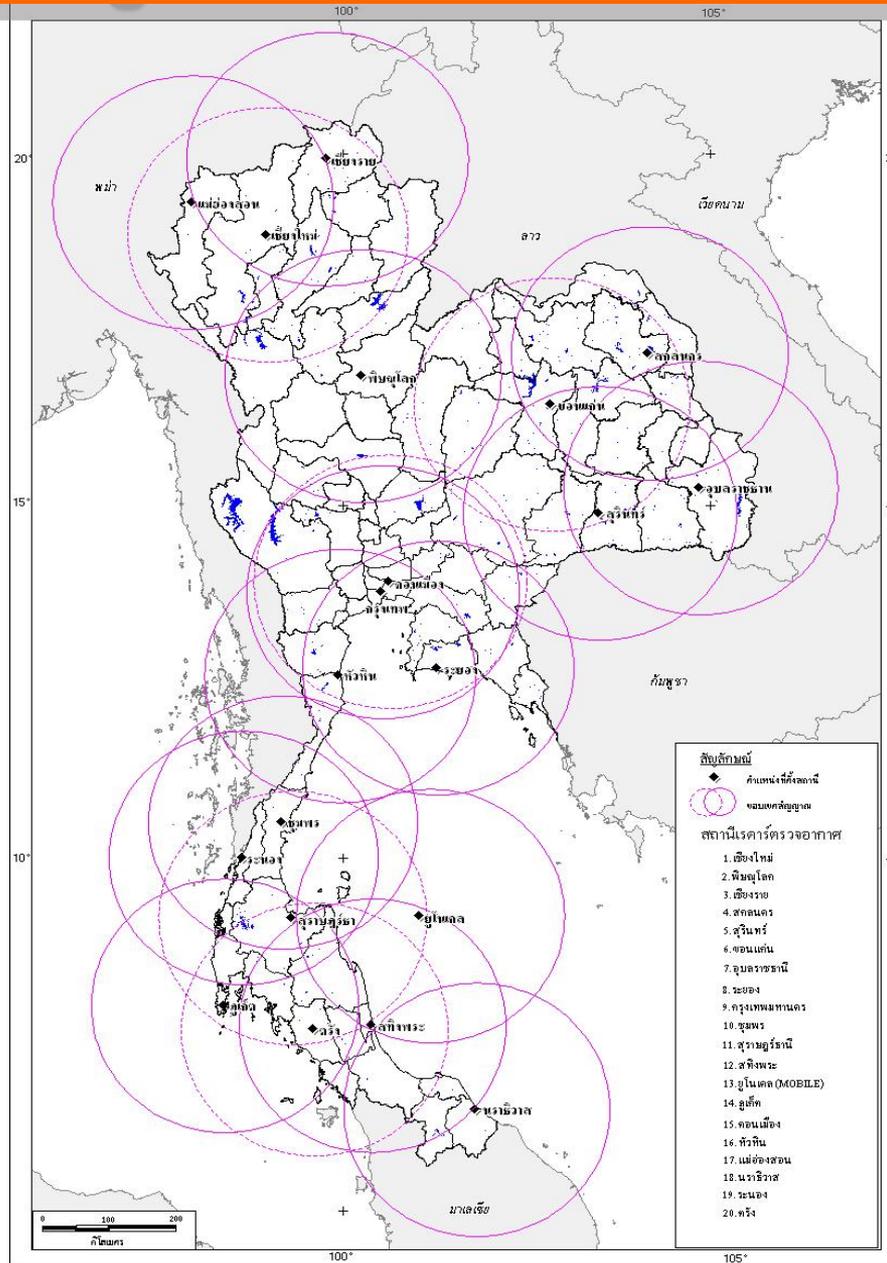
AVERAGE ANNUAL RAIN FALLS 1971-2000

Max. 4000 mm.
Min. >800 mm.



Meteorological RADAR station network

20 radar station for Observing Weather Data



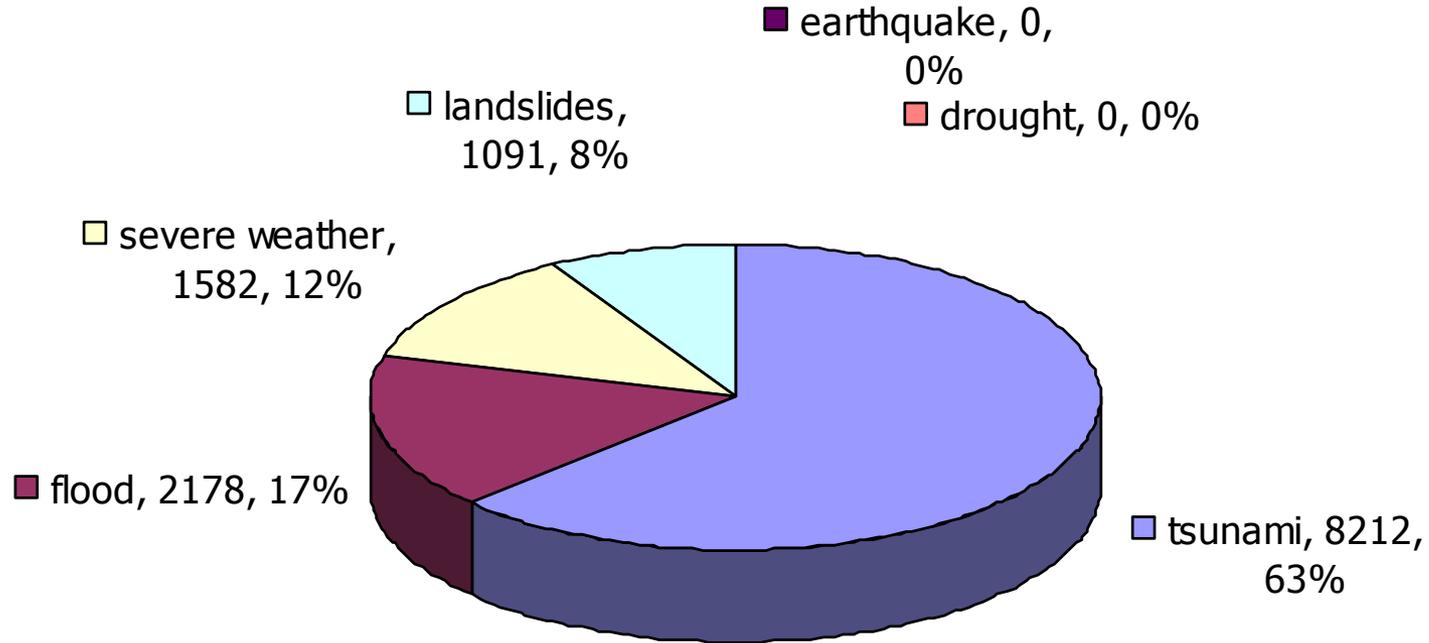
An aerial satellite photograph of a mountainous region in Thailand. The terrain is rugged with green vegetation and brownish soil. A river valley runs through the center, with a town or village situated in the valley. The text "Natural DISASTERS IN THAILAND" is overlaid in large, bold, orange letters with a white outline. There are several yellow circles and lines on the left side of the image, possibly indicating specific locations or features.

Natural DISASTERS IN THAILAND

NATURAL DISASTERS SITUATIONS IN THAILAND

Disaster	Severity	Vulnerability	Management	Risk
Flood	High	Medium	Medium	High
Landslide & Mud Flow	High	Medium	Poor	High
Windstorm	Medium	Medium	Medium	Medium
Drought	Medium	Medium	Medium	Medium
Earthquake	Low	Low	Poor	Medium
Tsunami	High	Medium	Medium	Medium

Deaths caused by types of disasters

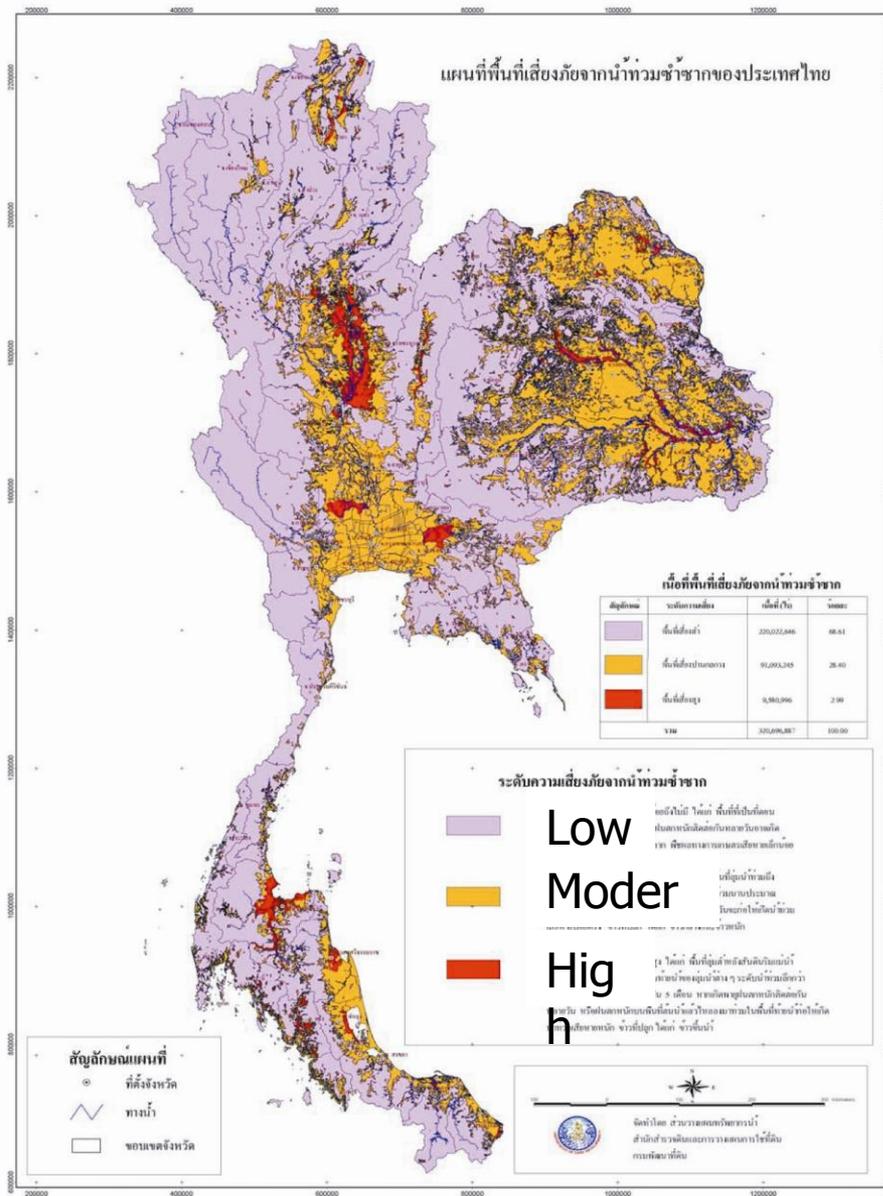


Total Death Toll = 13,063

Flood & Flash flood



FLOOD PRONE AREA MAP

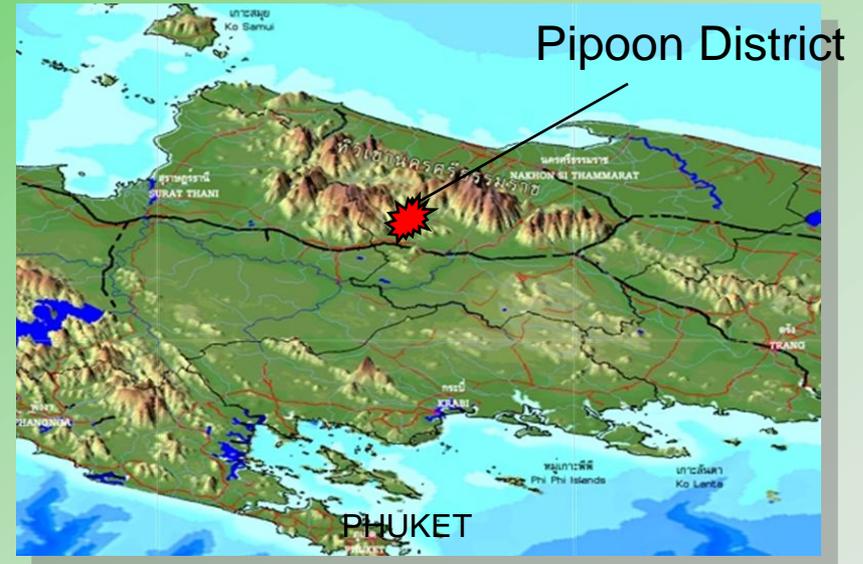


Land slide & Mud flow



PIPOON Landslide & Mud Flow

22 November 1988

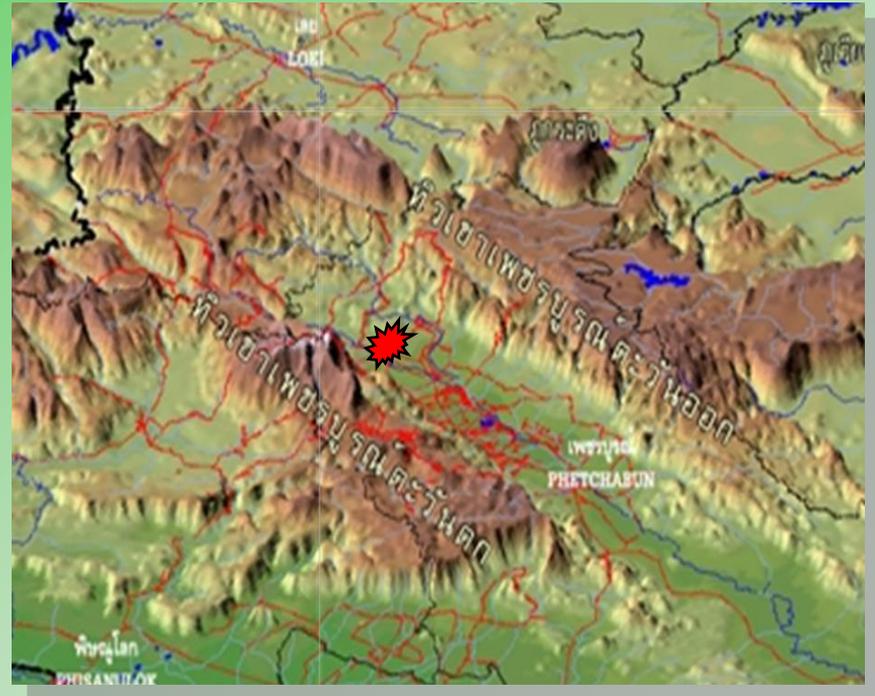


Pipoon Landslide disaster was caused by a week long heavy rain. It occurred On 22 November 1988 at Kratoon Sub-District, Pipoon District, Nakorn Si Thammarat province. This event killed **769** local residents



NAMHO Land Slide & Mud Flow

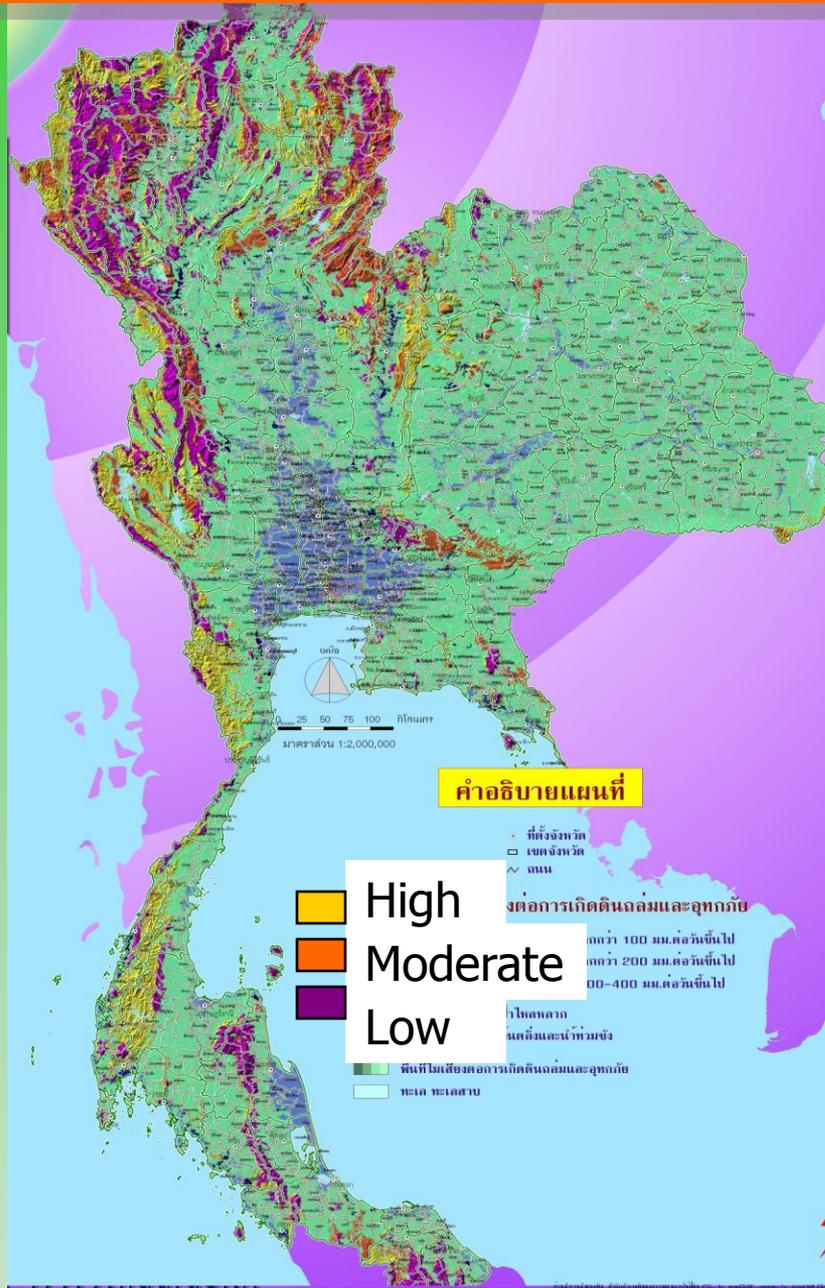
10 August 2001



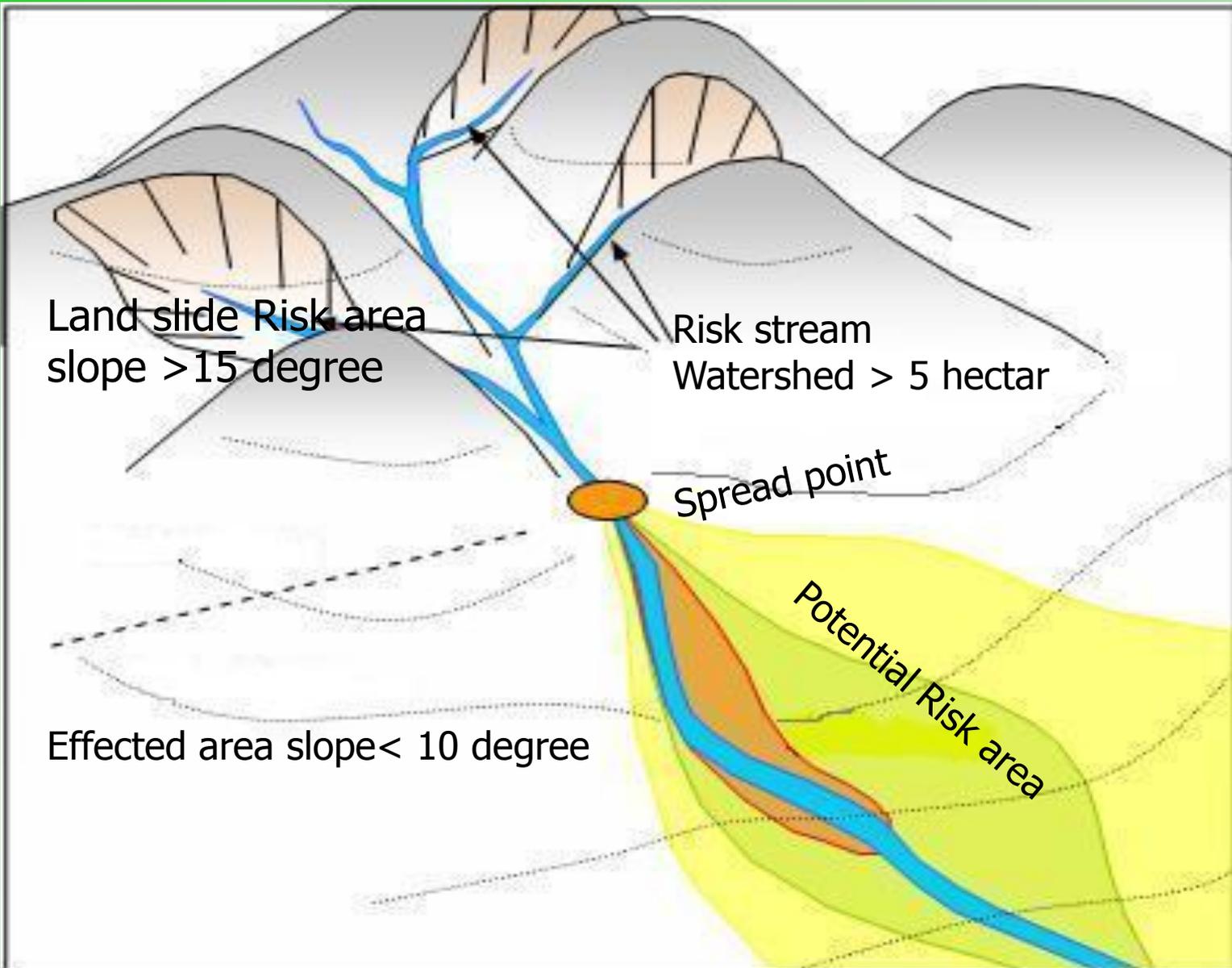
Worst landslide disaster since 1988.
More than **131** people perished.
Two villages were completely destroyed.



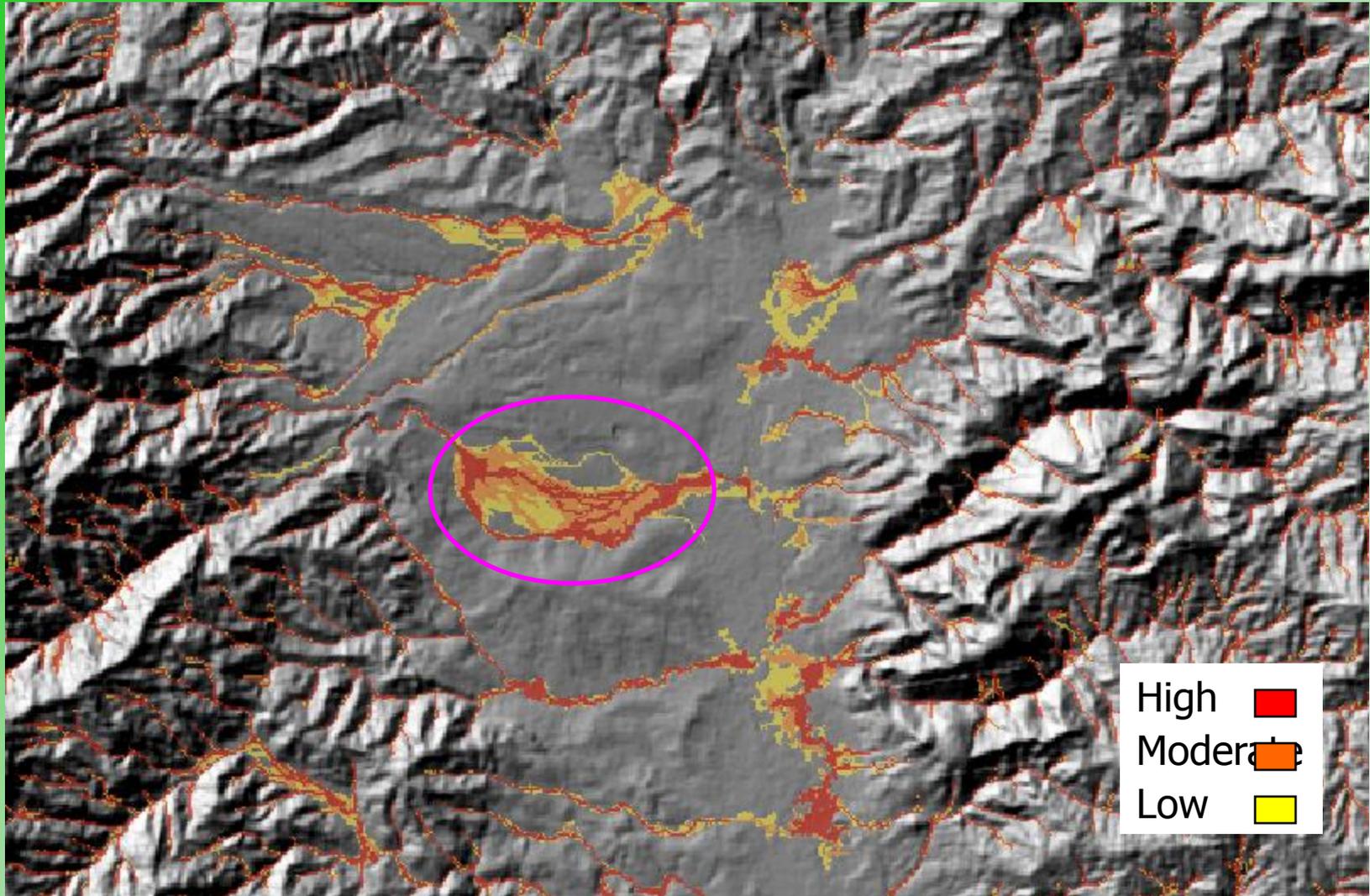
Land Slide Hazard Map



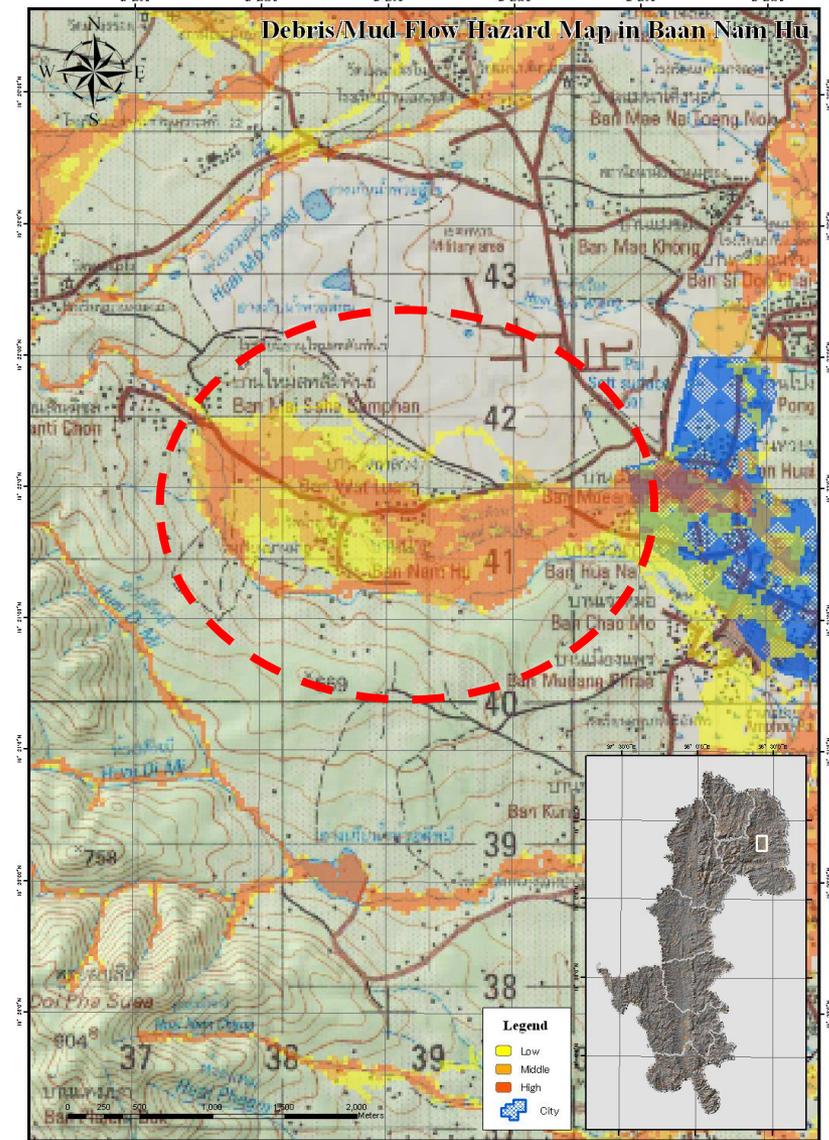
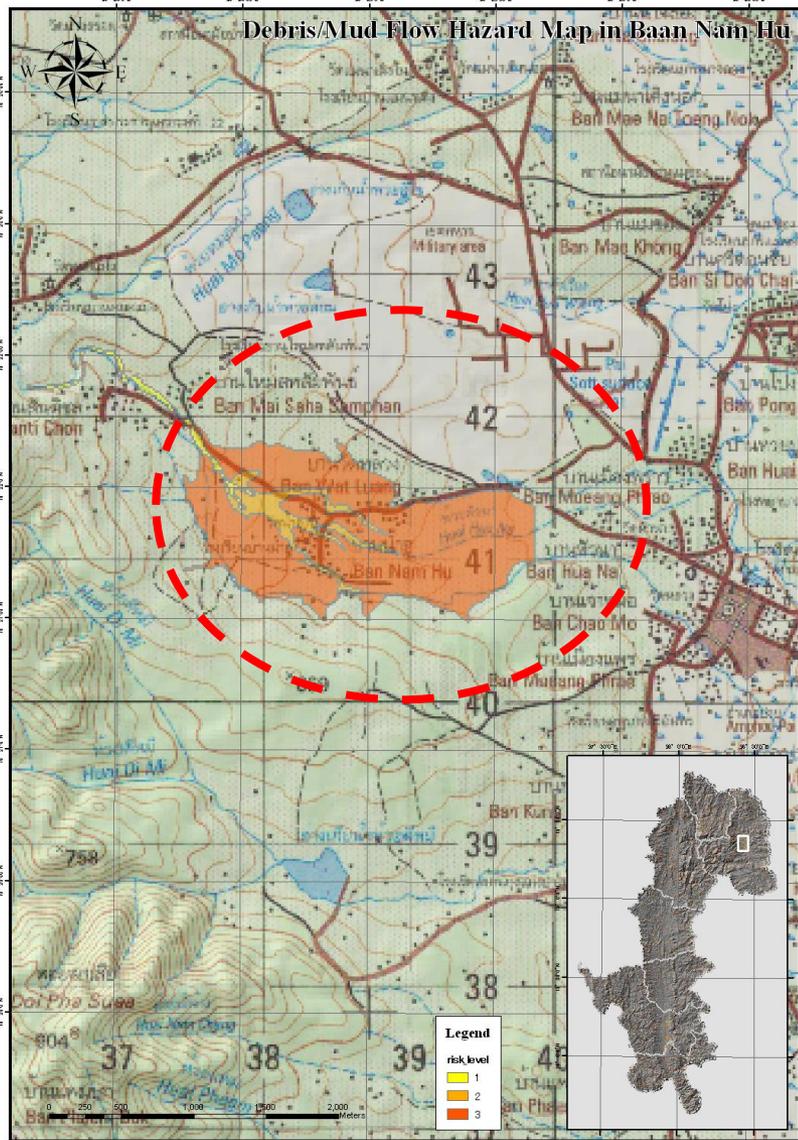
GIS Analysis Concept Idea of Mud flow Potential Risk



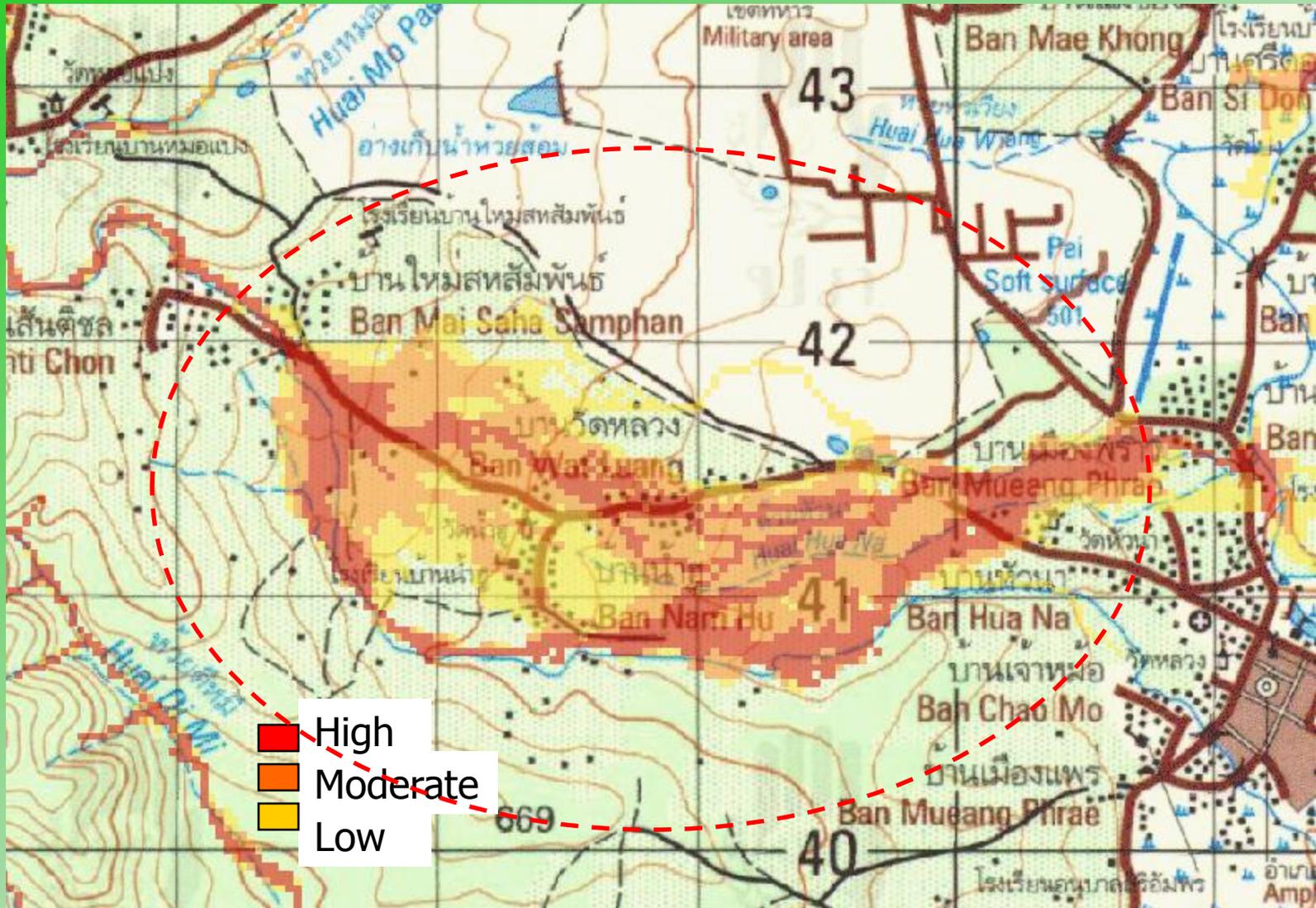
Potential Risk Analysis of Mud flow



Debris/Mud Flow Hazard Map in MaeHongSon Province



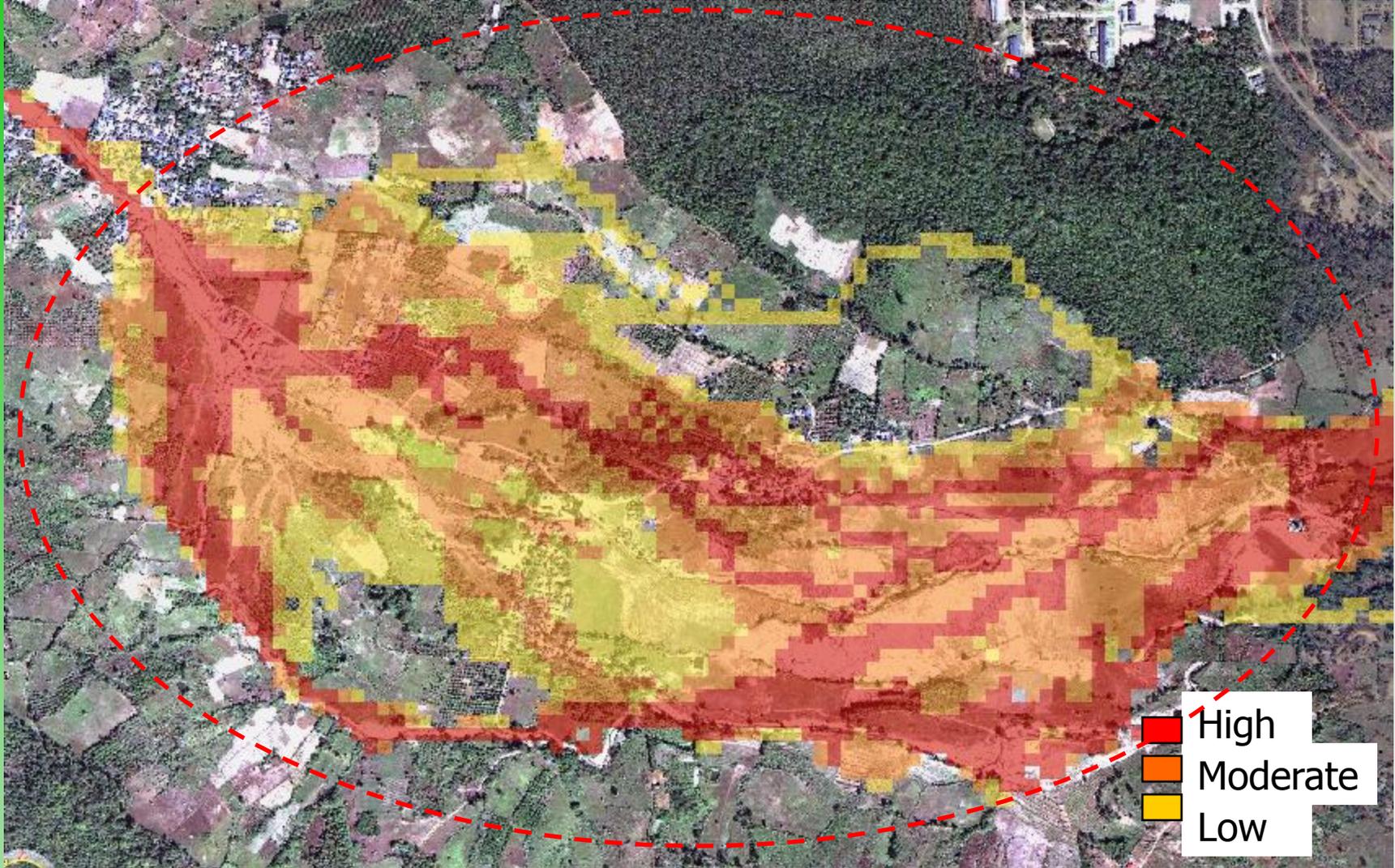
BAN NAM HOO Mud flow Potential Hazard Map



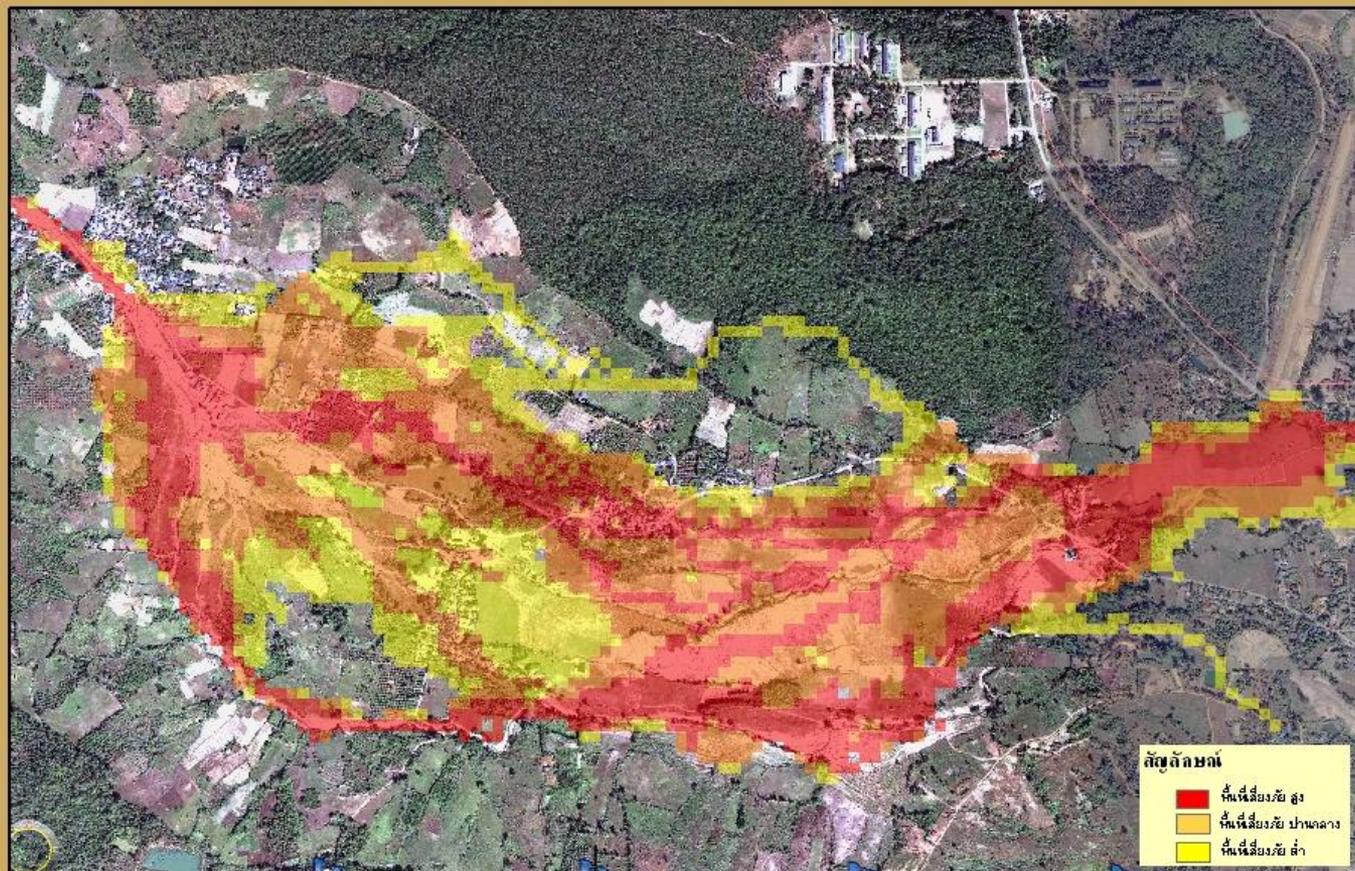
BAN NAM HOO HRS. DATA



Community Mud flow Hazard Map



Community Mud flow Hazard Map



สัญลักษณ์

- พื้นที่เสี่ยงภัย สูง
- พื้นที่เสี่ยงภัย ปานกลาง
- พื้นที่เสี่ยงภัย ต่ำ



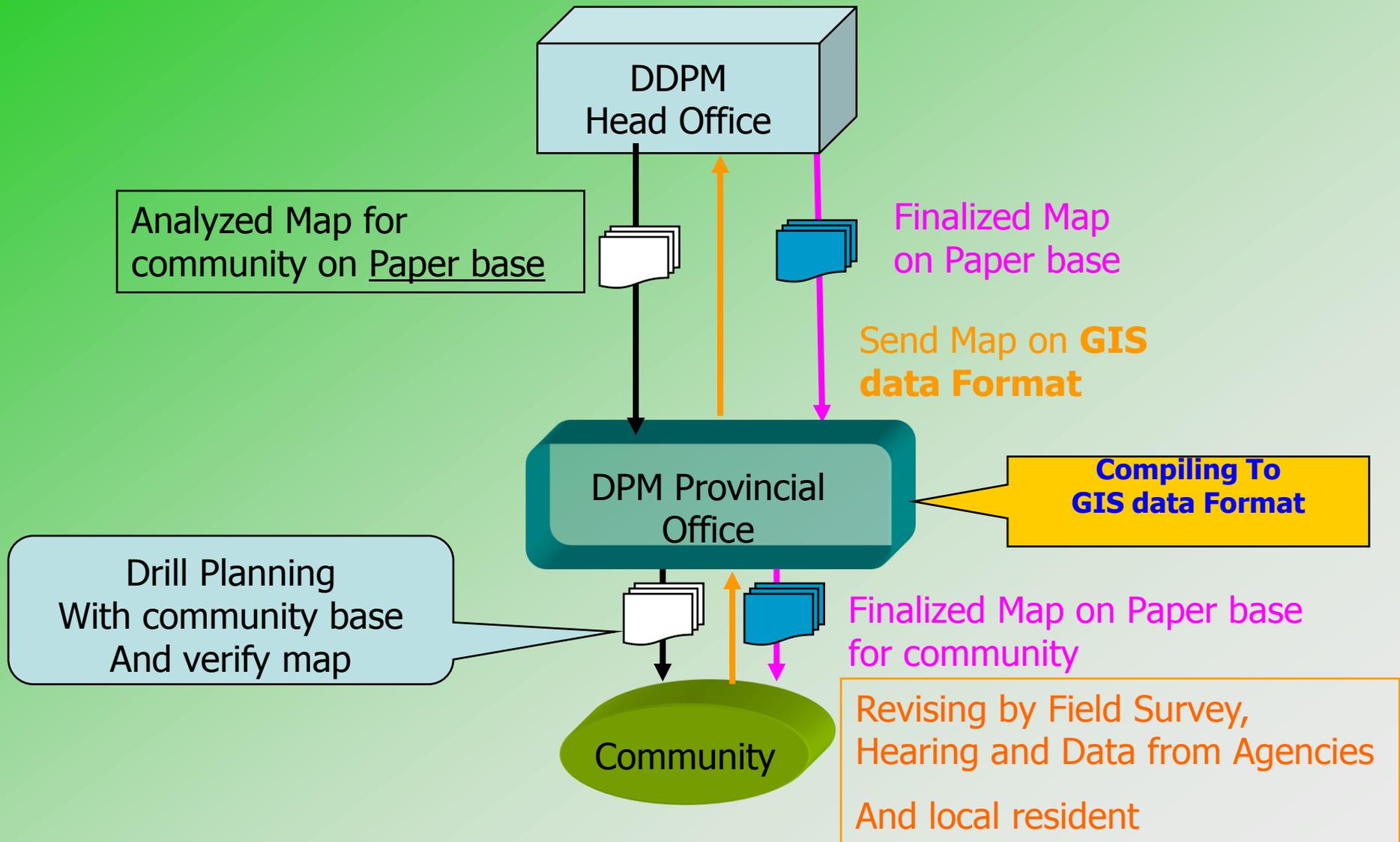
แผนที่เส้นทางอพยพหนีภัย น้ำป่าไหลหลาก โคลนถล่ม
แผนที่เส้นทางอพยพ บ้านน้ำอู (ลุ่มน้ำวัง)
พื้นที่.....ต.ป่าสัก อ.แม่ฮ่องสอน
แผนที่ สืบเนื่องครั้งที่ มธ.99-99-9999-1

สัญลักษณ์

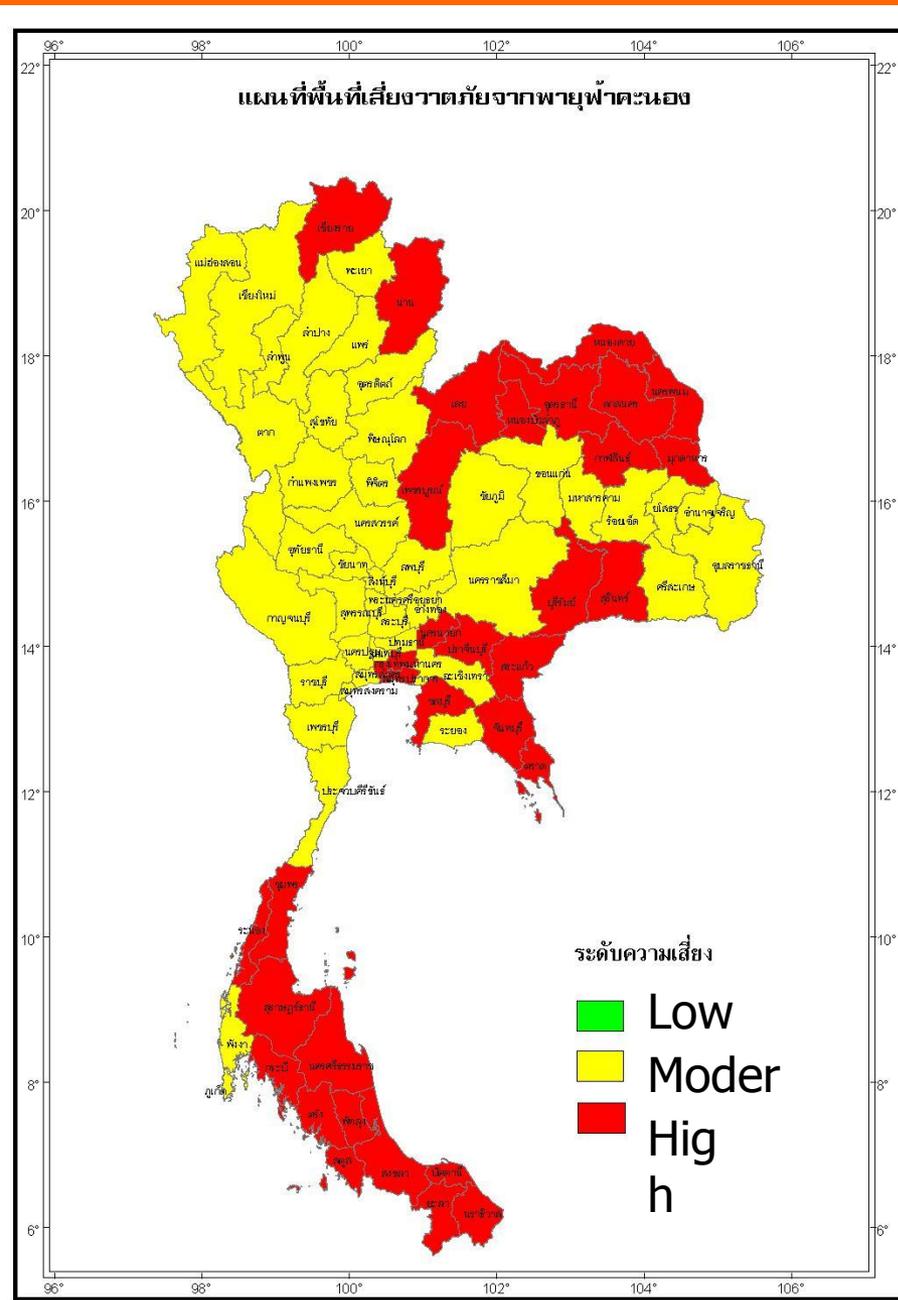
- เส้นทางอพยพ
- สถานที่ตั้งศูนย์อพยพ
- จุดพักพิง



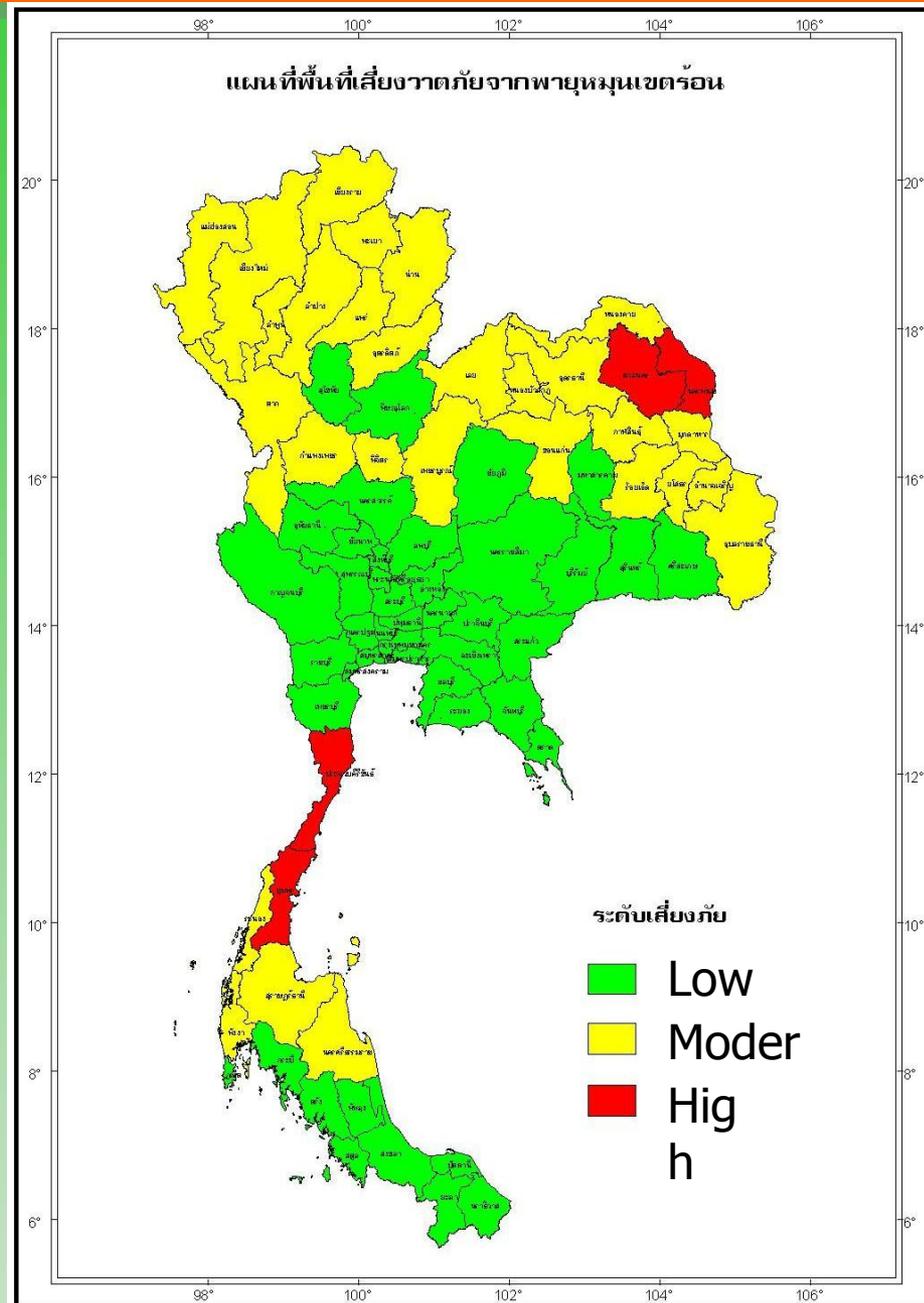
Structural Flow for Communities Hazard Map



Map of Windstorm-Prone Areas due to Thunderstorm



Map of Windstorm-Prone Areas due to Tropical Cyclones



Tropical Storm Harriet 25 October 1962



Tropical Storm **Harriet** was the most disastrous disaster in Thailand after the Indian Tsunami. It killed almost **1000** people and destroyed almost everything along the path.

Typhoon GAY

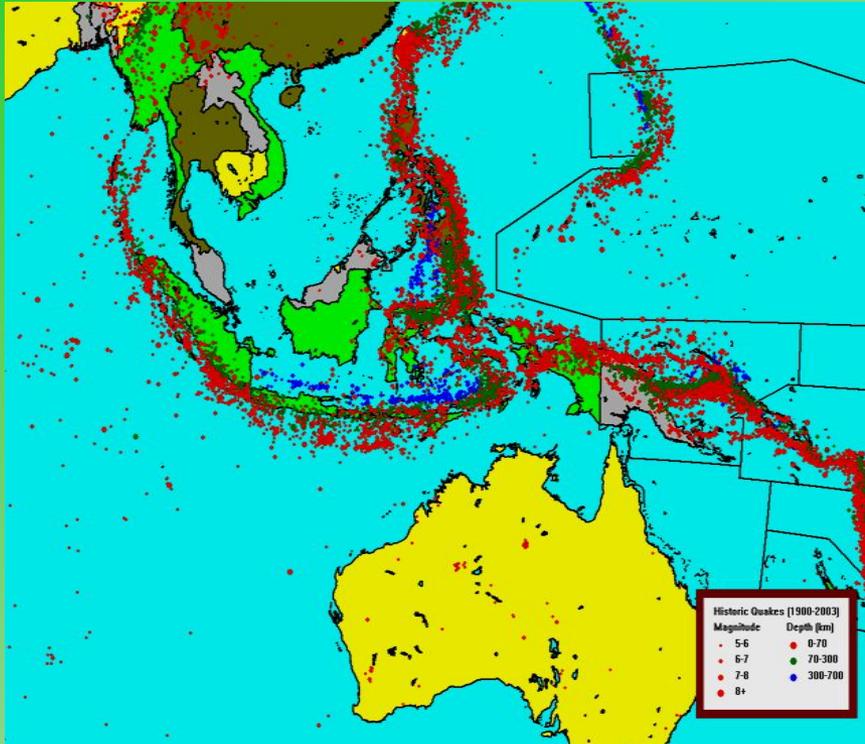
4 November 1989



The only typhoon ever hit Thailand. The speed was estimated at 120 km/hour. More than 25000 people were affected and **654** were perished. About 809 boats and ships were sunk. This disaster brought the total loss and damage at 1.2 billion THB (333M USD)

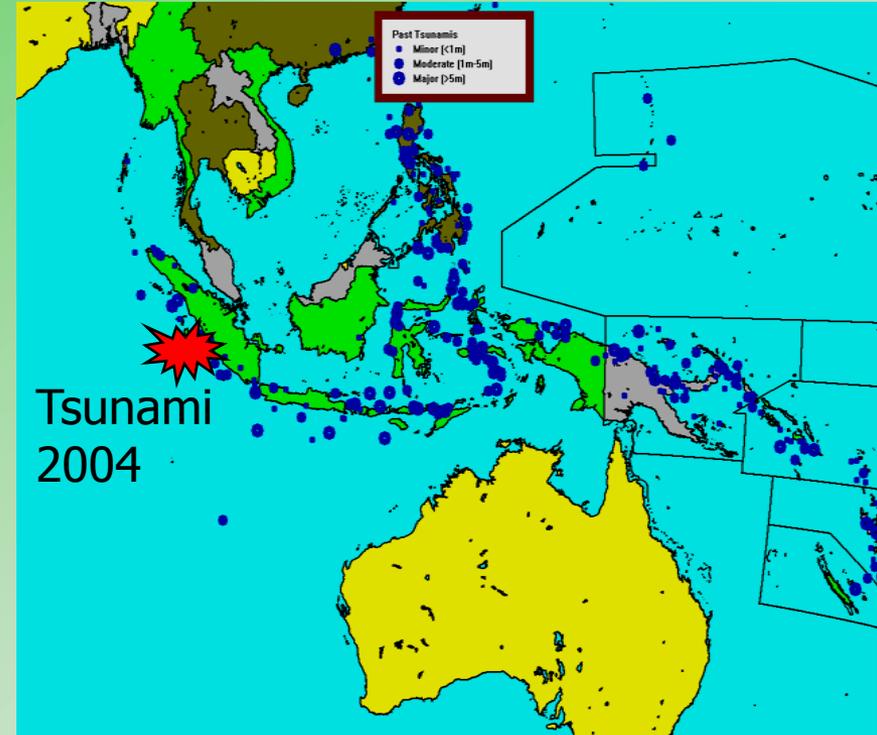


Ring of fire



Earthquake

The most severe 7.6 Rct. in 1935
<10 times & <6.00 Rct. since 1935



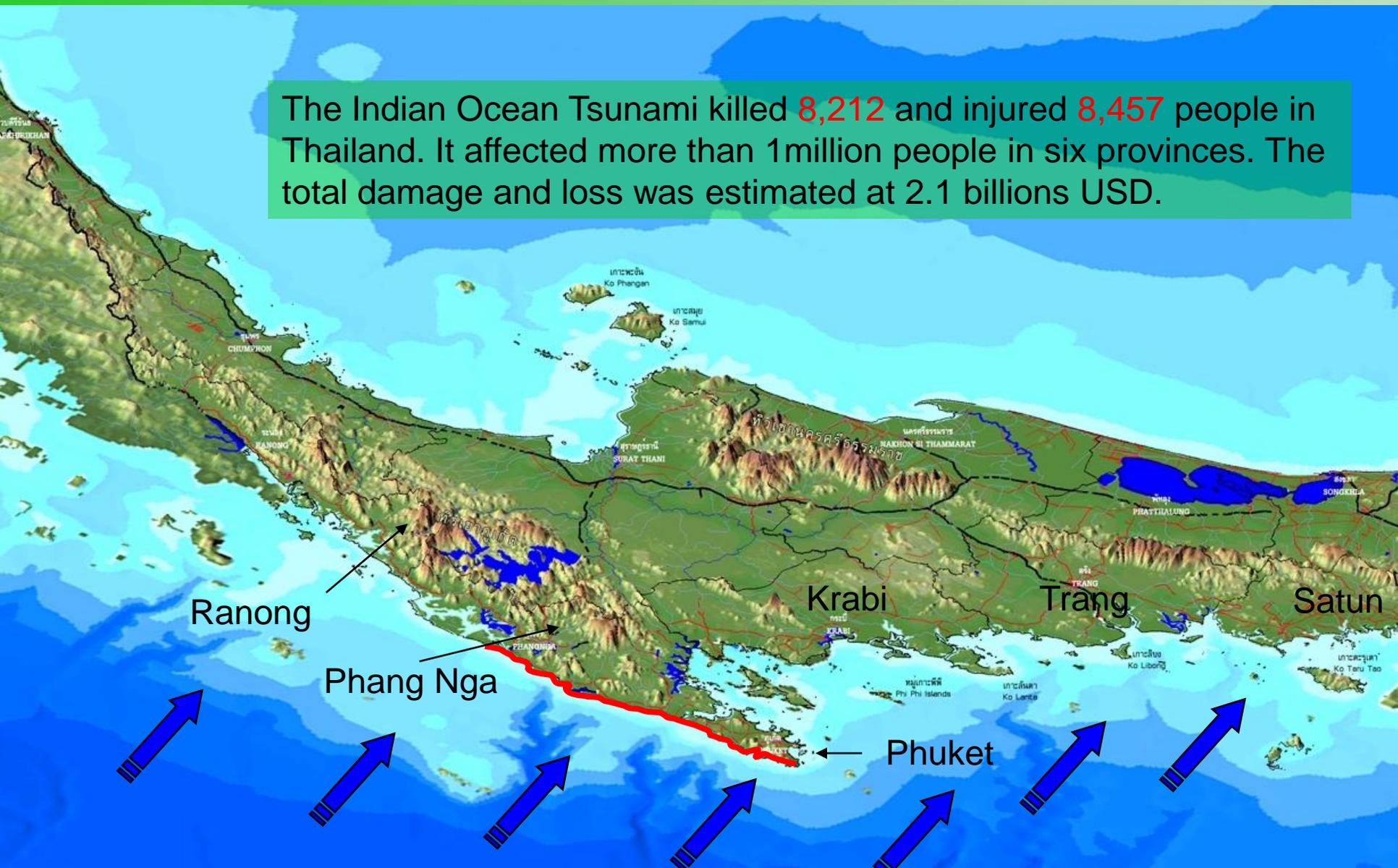
Tsunami Earthquake

No have record in the past,
untill Indian Ocean Tsunami
2004

The Indian Ocean Tsunami

9 a.m. December 26th 2004

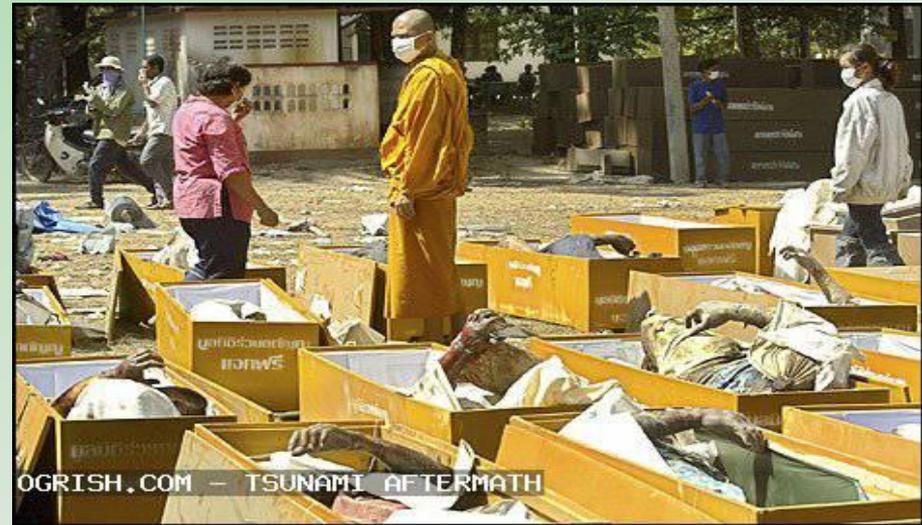
The Indian Ocean Tsunami killed **8,212** and injured **8,457** people in Thailand. It affected more than 1 million people in six provinces. The total damage and loss was estimated at 2.1 billions USD.



The Indian Ocean Tsunami Disaster in pictures



The Indian Ocean Tsunami Disaster in pictures



A photograph of a pond with several pink lotus flowers in various stages of bloom. The flowers are surrounded by large, round, green lily pads. The scene is brightly lit, suggesting a sunny day. The text '3.DISASTER MANAGEMENT SYSTEM' is overlaid in the center of the image.

3.DISASTER MANAGEMENT SYSTEM

Overview of Disaster Management System

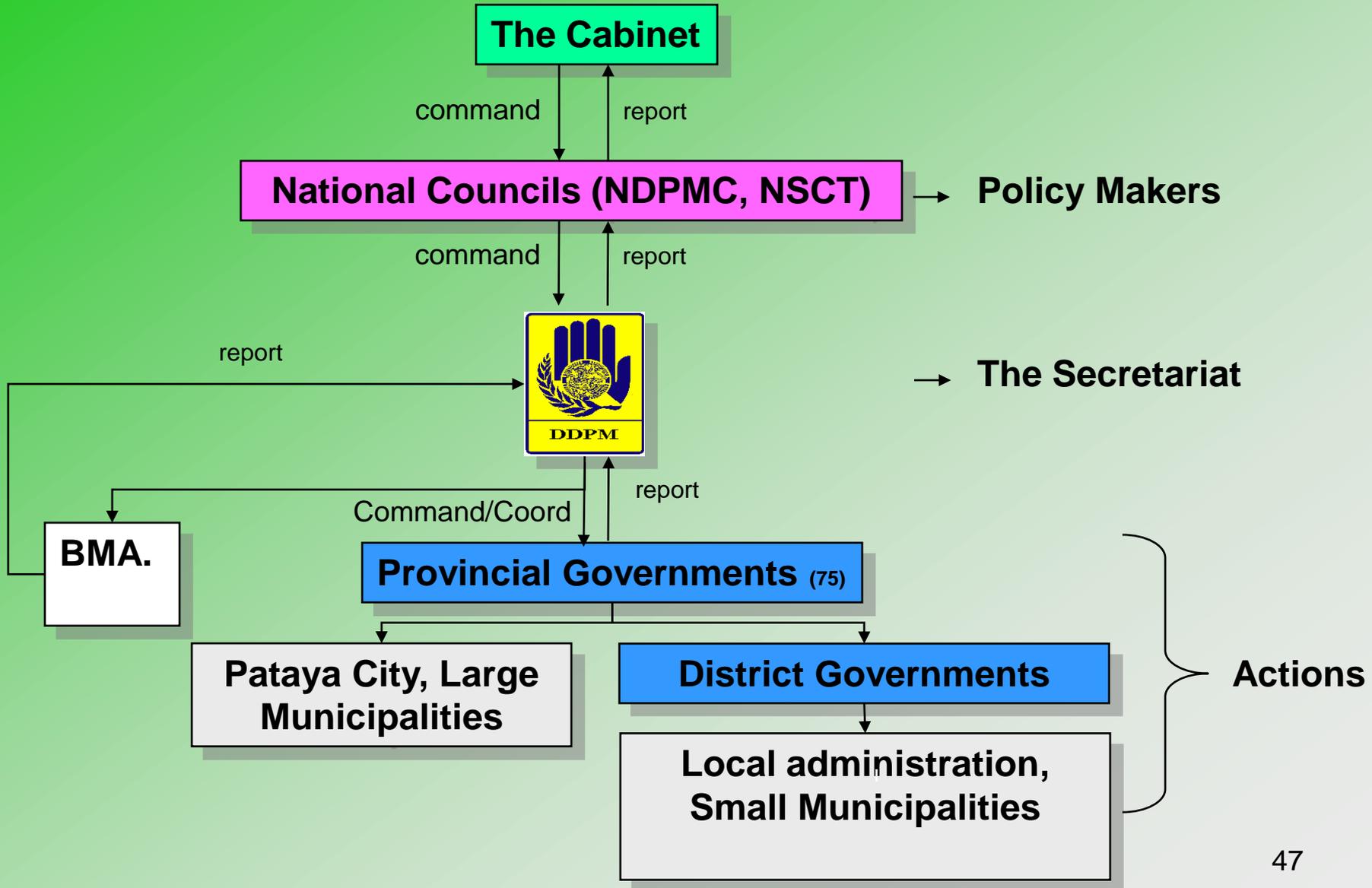
- Two policy-making bodies **(a) National Disaster Prevention and Mitigation Committee (NDPMC)** **(b) National Safety Council of Thailand (NSCT)**
- All disaster management activities are directed and controlled by the Directors at three levels: **(a) National (b) Provincial and (c) Local**
- Disaster management practices are undertaken through the protocol stated in the **Basic Plan for National Civil Defence**

NDPMC

National Disaster Prevention and Mitigation Committee

- Instituted by the Civil Defense Act 2007
- NDPMC is a policy maker for management
- NDPMC is chaired by Prime Minister or designated Deputy Prime Minister and DDPM DG is the Secretary
- Work of NDPMC is supported by DDPM and various sub-committee

THAILAND DISASTER MANAGEMENT SYSTEM



NSCT

National Safety Council of Thailand

- NSCT is a policy maker body in **technological disaster management**
- NSCT is chaired by **Prime Minister** or designated Deputy Prime Minister
- NSCE comprises 34 members from a wide range of sectors

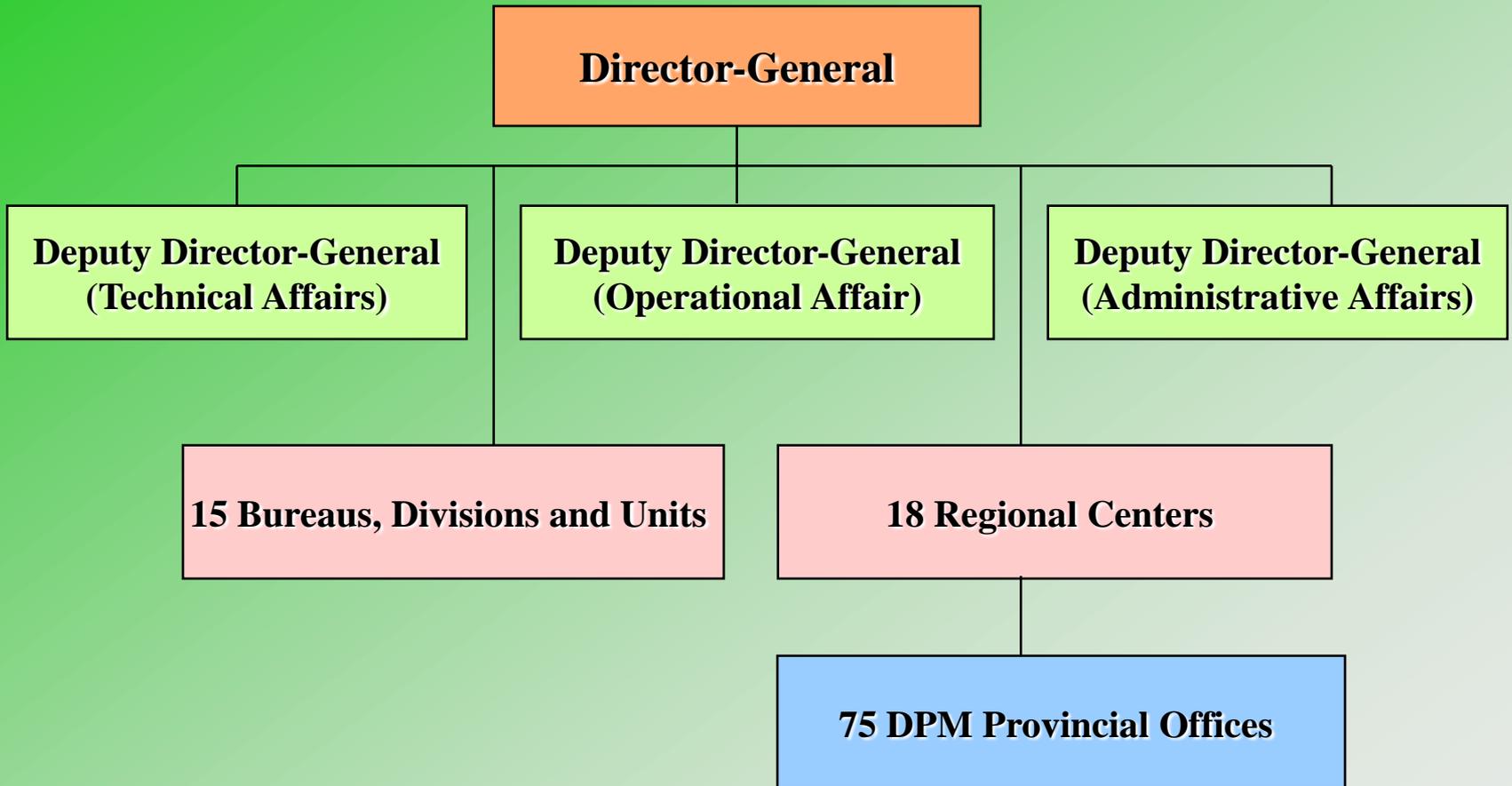


Department of Disaster Prevention and Mitigation (DDPM)

- Established in 2002, under MOI
- Performs the Secretariat Tasks for NDPMC and NSCT
- Has over 4,000 Staffs, with branch offices across the country



DDPM ORGANIZATION STRUCTURE



DDPM MISSIONS

1. **Establish prevention, warning and preparedness systems** covering all at-risk areas for encountering of disaster and civil defense threats.
2. **Direct and take actions in disaster prevention and mitigation** rapidly, systematically, equitably and thoroughly.
3. **Procure and support** of materials, equipment, tools, vehicles and machines needed for disaster prevention, mitigation, suppression and victim assistance.
4. **Rehabilitate** and/or reinvigorate damaged public utilities, physical and psychological impacts of disaster victims and restore livelihoods and occupations **of disaster victims**
5. **Integrate disaster prevention and mitigation systems** in terms of programs, implementation and monitoring in collaboration with national and international organizations.
6. **Develop the strength in management system** under the present government policy on the Good Governance principle
7. **Promote and create awareness** of the people as well as stakeholders to engage in disaster prevention and mitigation process.

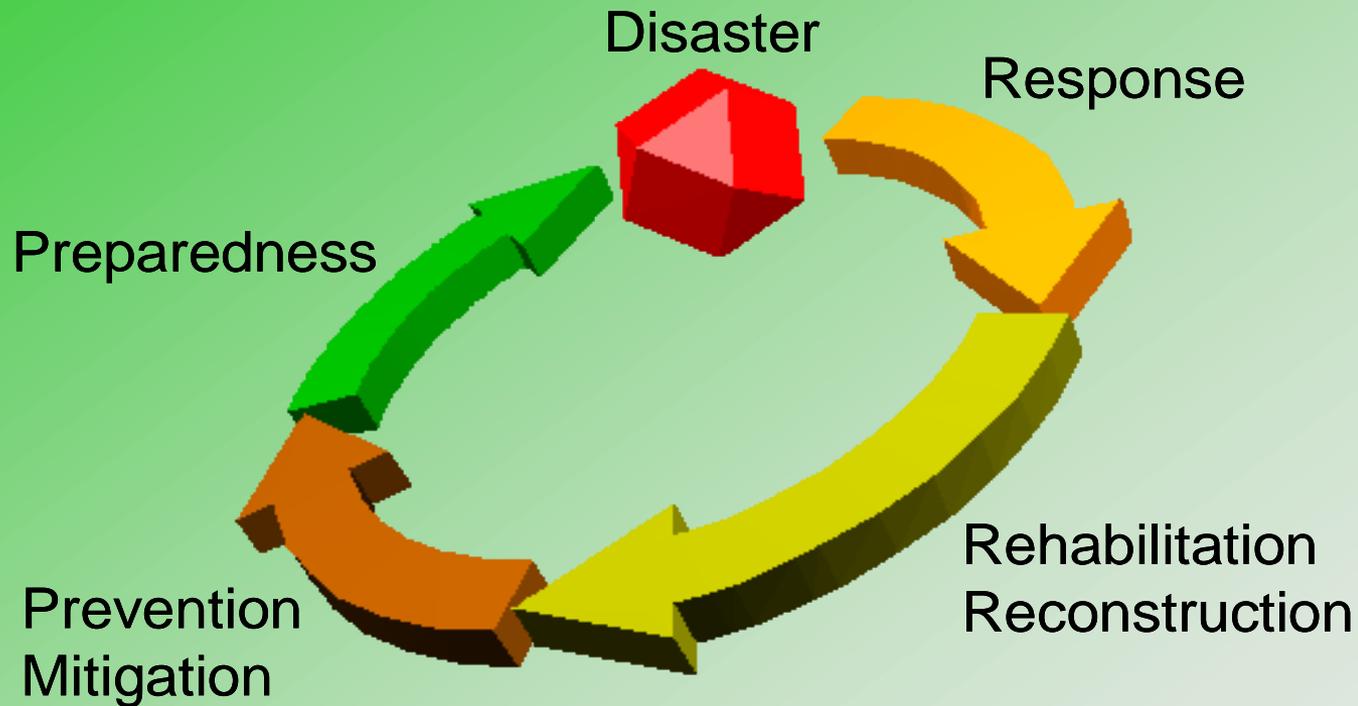
e of current National Civil Defense Plan

1. Cycle of disaster management system and current situation
2. Objectives and scope of the Basic Plan
3. The setup of civil defense directing center
4. Preparation for disasters
5. Actions during the time of disaster
6. Civil defense coordination
7. Rehabilitation and recovery
8. Communication
9. evacuation of people and public premises



4. DISASTER REDUCTION WORKS

Disaster Risk Management Cycle



THE RESPONSE

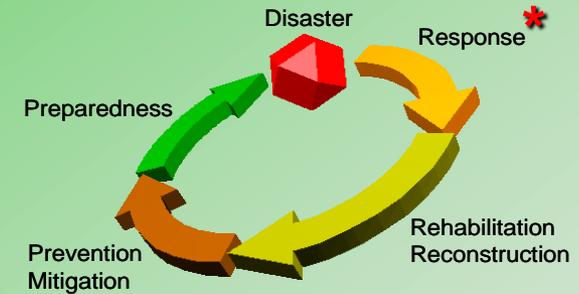
□ Principle

When a disaster occurs, the disaster emergency department of local government acts first (by following the disaster emergency plan), with support from local volunteers such as Civil Defense Volunteers (CDVs) etc. Response crews from neighboring local governments, district government, provincial governments, Armed forces etc. are mobilized in case of a large scale disaster.

□ Roles of DDPM

DDPM:

- (1) provides training for the first responders for governments official at all levels
- (2) makes sure that all provincial and local government have the disaster emergency plan
- (3) supports the search and rescue operation with its own personnel
- (4) serves as the coordination center in a large-magnitude disaster. DDPM has 24/7 disaster emergency operation center in all provinces.



RECONSTRUCTION & REHABILITATION

❑ Disaster Emergency Relief Fund

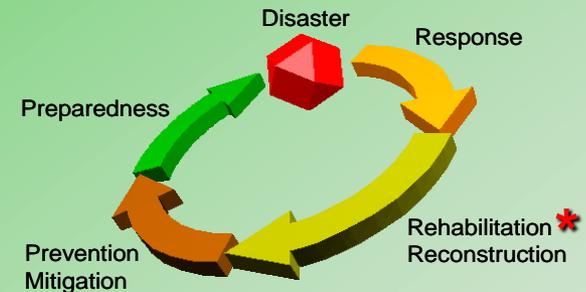
In any case of disaster, the government pay some amount of money to the victims through the **Disaster Emergency Relief Fund**. The fund is available at DDPM provincial office in every province.

❑ The Central Government Emergency Fund

To rebuild public utilities and infrastructure, the government can use the money from the **Central Government Emergency Fund**.

❑ Local government Fund

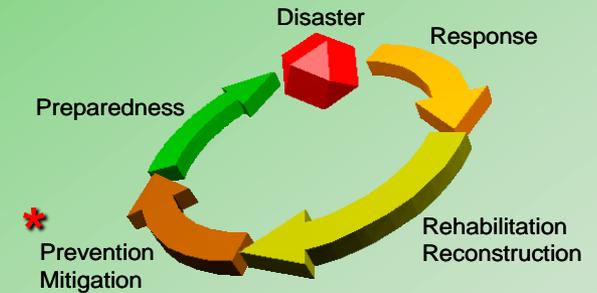
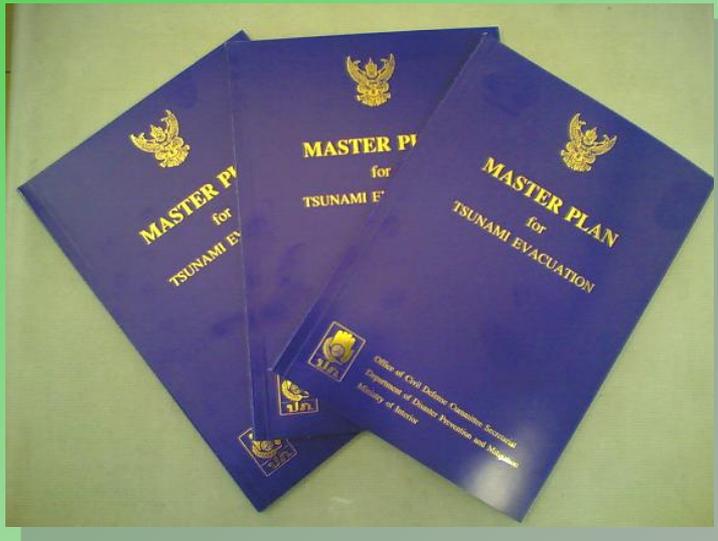
Encouraged by DDPM, local governments nowadays tend to established an emergency fund for assistance their residents in case of a disaster.



PREVENTION and MITIGATION

□ To prevent and Mitigate Disaster

- Established Master plan for
- Flood Windstorm & Mudflow,
- Tsunami,
- Earthquake & Collapse building etc.



-Installation of Early warning instrument



PREPAREDNESS

Equipment practice



Official training



Hazard Map



Search & Rescue training



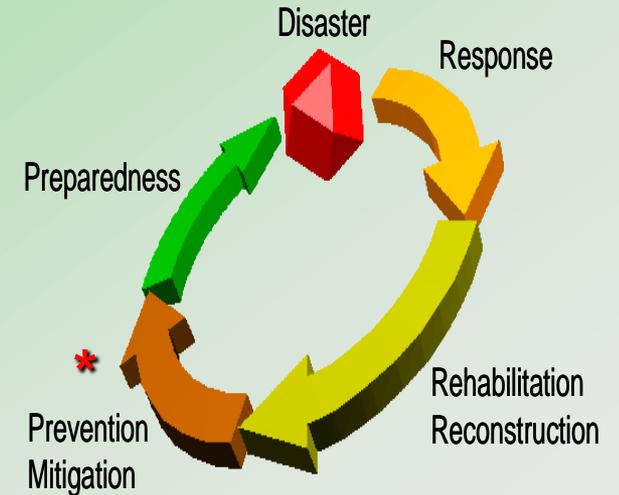
Drill



Children Education



Civil Defense Volunteer Training



Tsunami Memorial

Khao-Lak Lamru National Park, Phangnga Province, Thailand.

MOUNTAINS OF REMEMBRANCE

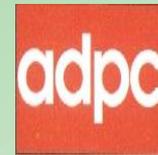




5. INTERNATIONAL COOPERATION

Thailand and International Disaster Reduction Cooperation

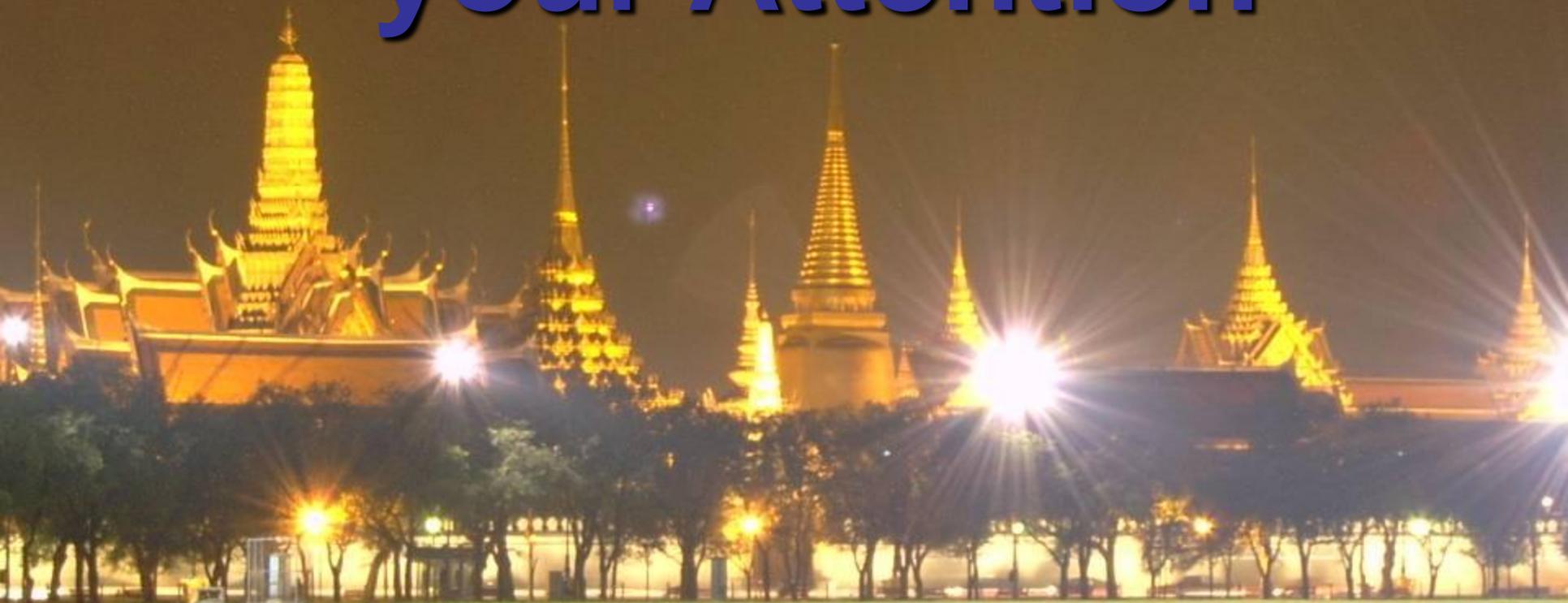
- ❑ Thailand is one of the founder and is a member of ASEAN and we have a good cooperation in disaster management.
- ❑ Thailand has been a member of ADRC since 2004.
- ❑ Thailand has been a member of Typhoon Committee since 1968.
- ❑ Thailand partners with a number of international organizations and agencies in disaster reduction programs and activities such as ADPC, GTZ, UNDP and JICA.
- ❑ Other cooperation: ARF, ASEAN DIALOGUE PARTNERS etc.



FINAL WORDS

- ❑ Thailand has many disasters and most of them are related to **“too much water and too less water”**
- ❑ Disaster Management in Thailand is mainly managed by Ministry of Interior with the cooperation from other agencies and Ministries.
- ❑ Thailand is still working to improve the readiness of the disaster management officials and the communities. In doing so, Thailand has been working with many international organizations and agencies.
- ❑ All together, the country has more than 50,000 villages at risk. Therefore, it is a huge task to make the country 100 percent safe from disasters.
- ❑ Despite less in frequency, earthquake and tsunami are also the threat for Thailand.

**Thank You for
your Attention**



Sawatdee