



ROYAL IRRIGATION DEPARTMENT (RID)  
MINISTRY OF AGRICULTURAL AND COOPERATIVES

**AWCI**

# **THAILAND IMPLEMENTATION PLAN FOR AWCI PHASE 2**

**Thada Sukhapunnaphan**

**25 -27 November 2013, Tokyo Japan**

- Researching and Modelling for sustainable disaster management

The project area :

**Ping River Basin,**  
Northern region  
Thailand.

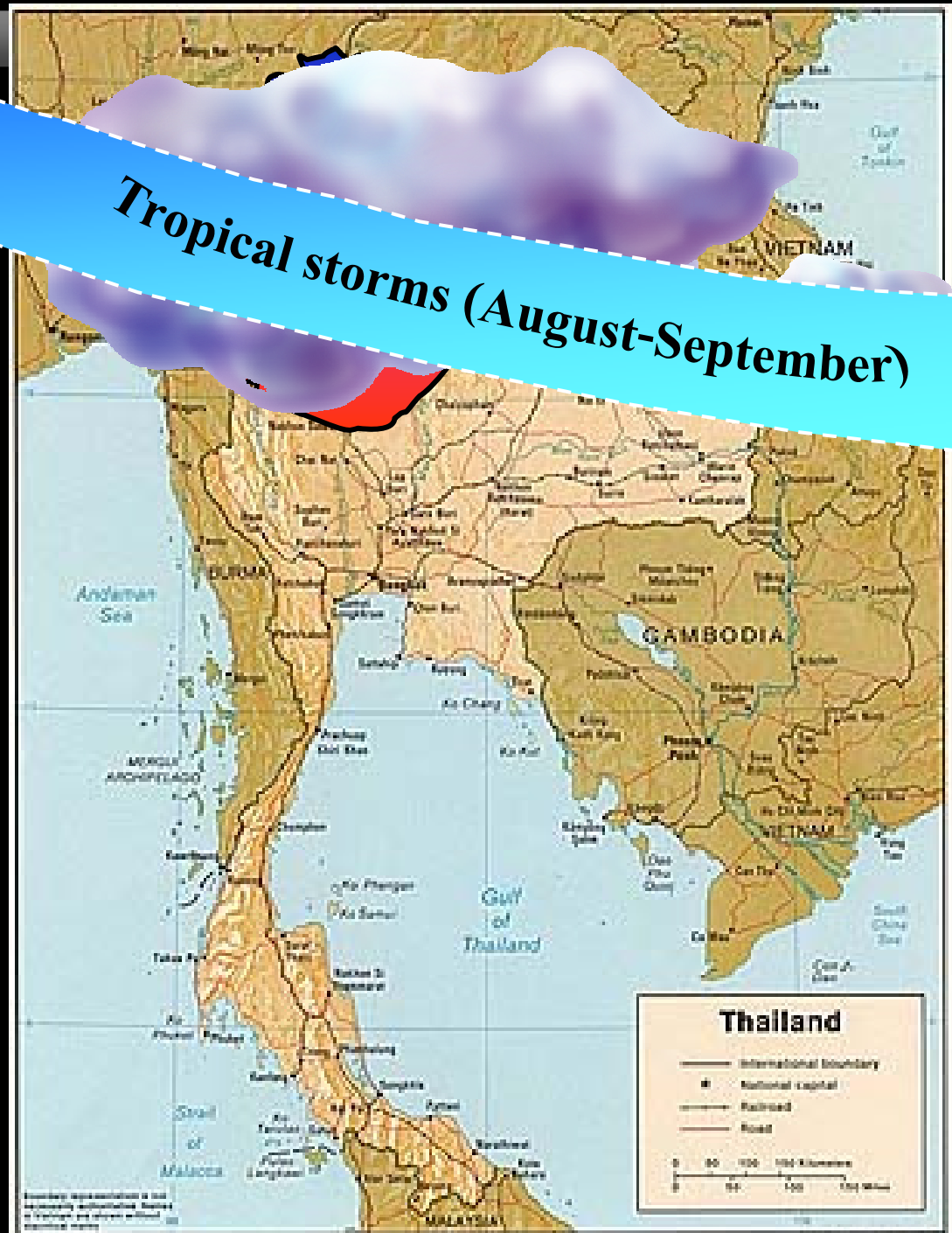


## 1. Introduction

Main factors of flood in Northern Thailand.

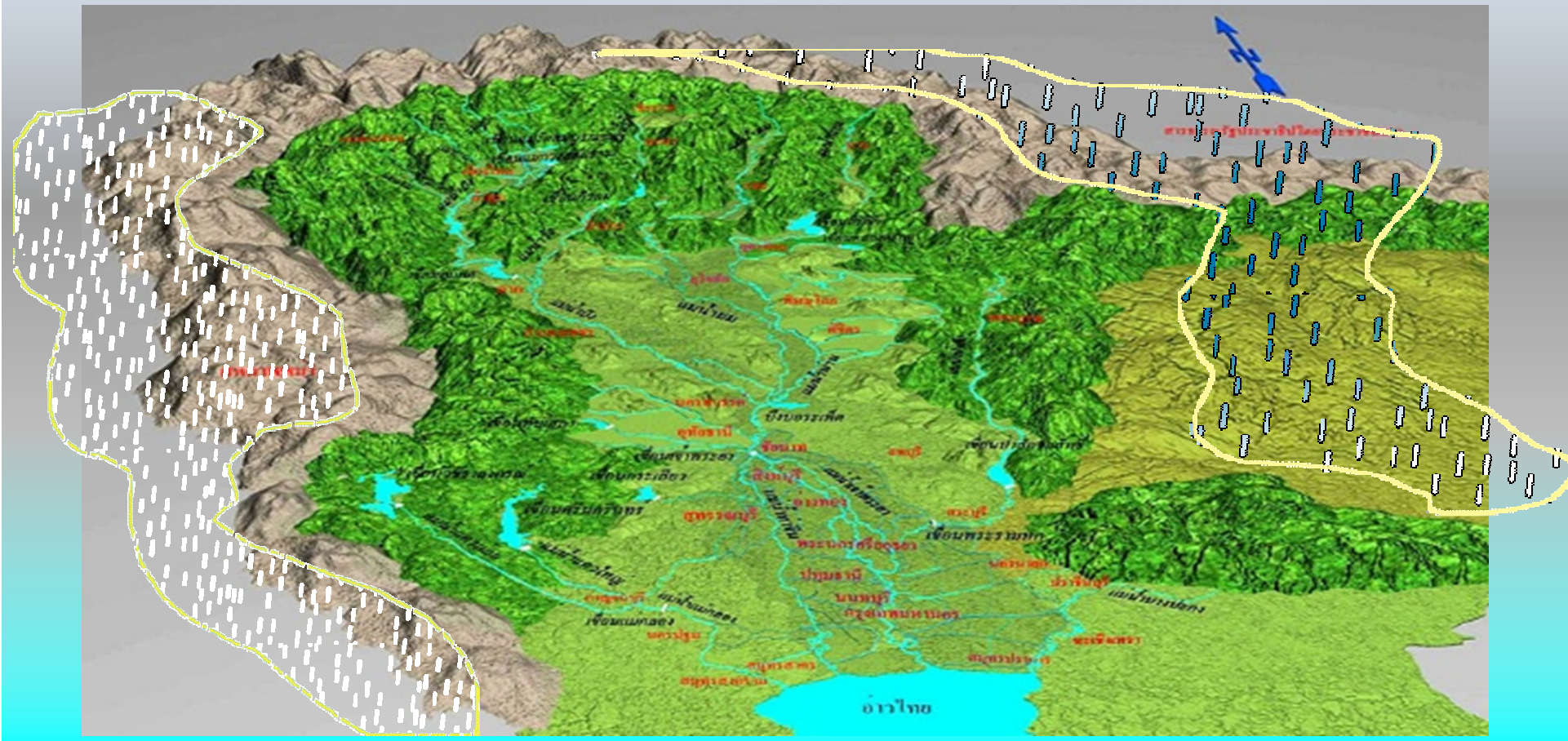
Flash flood and overbank flow inundation trend to occur mostly in the wet season from May to October

Brings heavy rain by southwest monsoon from Indian Ocean, tropical storm from South China Sea, low pressure trough or frontal encounter of different pressure air masses.



MAY- OCT

JUNE-OCT



# RECENT SIGNS OF WATER-RELATED DISASTERS



## Types of Floods in Northern Thailand

# Flash flood and debris flow



# Causes and factors of flood and debris flow



# Causes and factors of flood and debris flow

## NATURAL FACTORS

HEAVY RAIN

TOPOGRAPHIC  
CHARACTERISTICS

SOIL EROSION

## HUMAN FACTORS

LAND USE CHANGE

DEFORESTATION

SINGLE CROPS

INFRASTRUCTURE  
CONSTRUCTIONS

VULNERABLE AREA  
SETTLEMENT



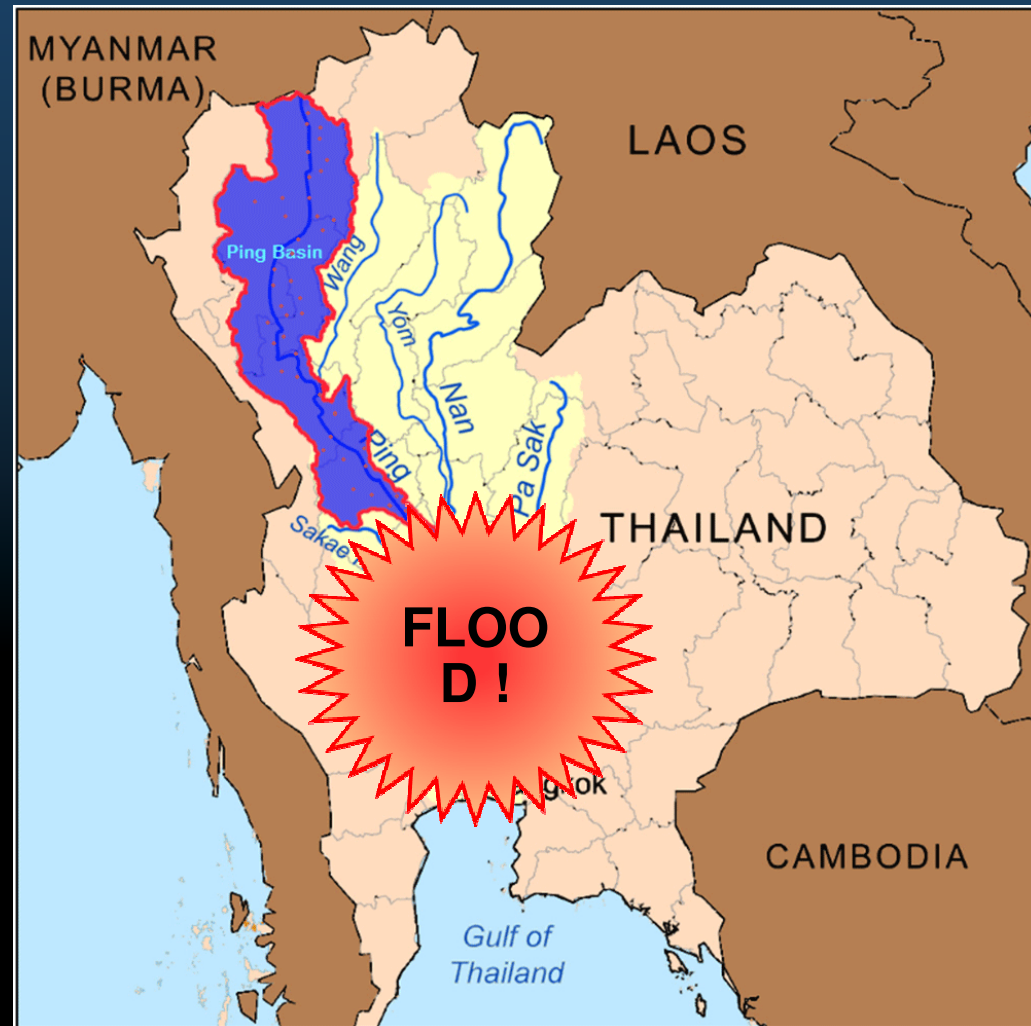
## Why Ping River Basin ? :

- Ping River is one of the main upstream basins of Chao Phraya River

So it is one of the main source of flooding in central region..

- High potential area for meteo-hydrological research and demonstration model of upstream flood and landslide disasters management project.
- Available installed resources by RID\* rain gauges and runoff monitoring network coverage over the basin.

\*RID : Royal Irrigation Department



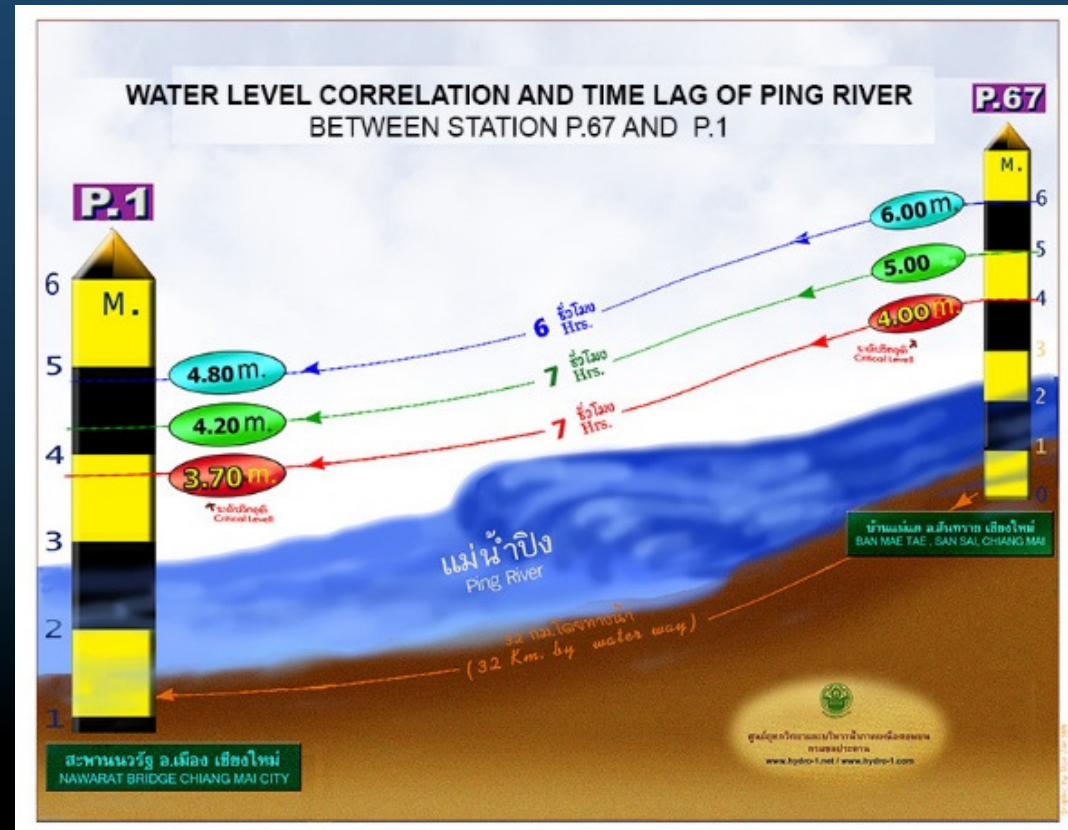
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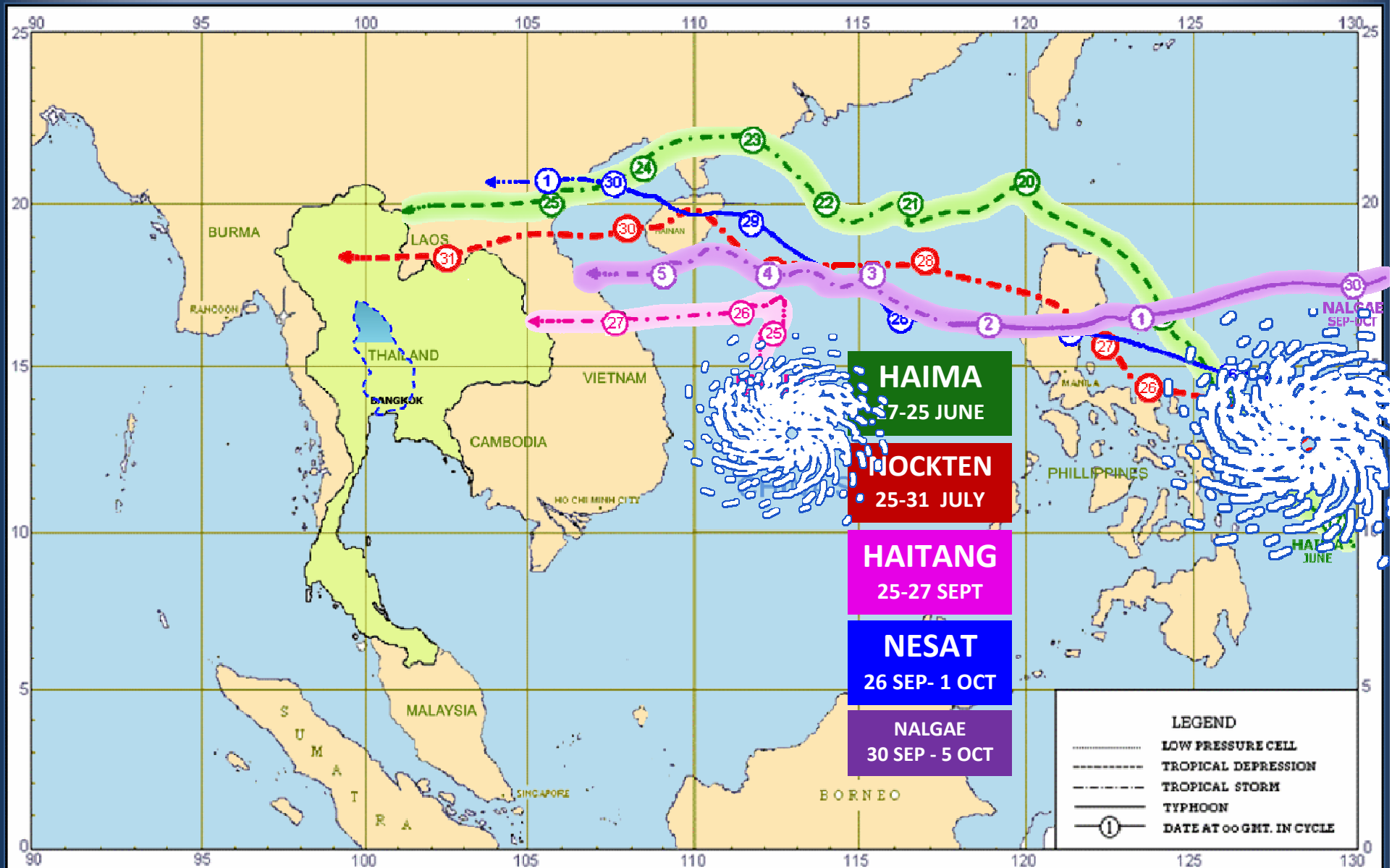
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Flood monitoring system with water levels correlation between 2 station in GAME-T research and the first phase of GEOSS research

# TROPICAL STORMS AFFECTED THAILAND 2011



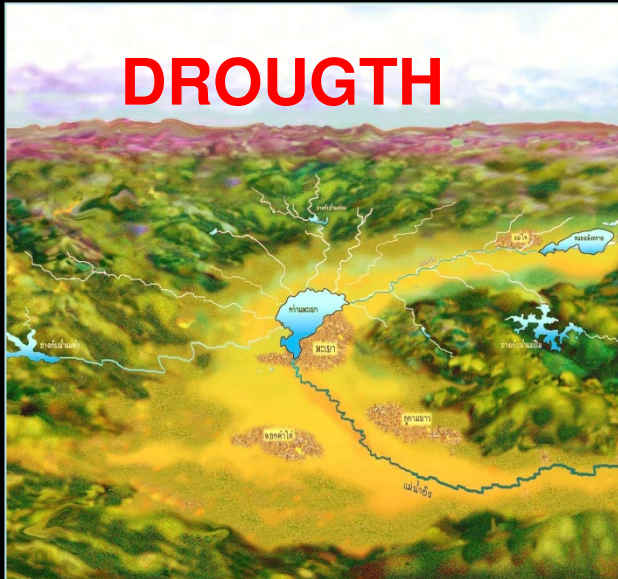
**Water Management  
By Early Warning and Dam Operation**





# WATER MANAGEMENT

**RISK!!** For

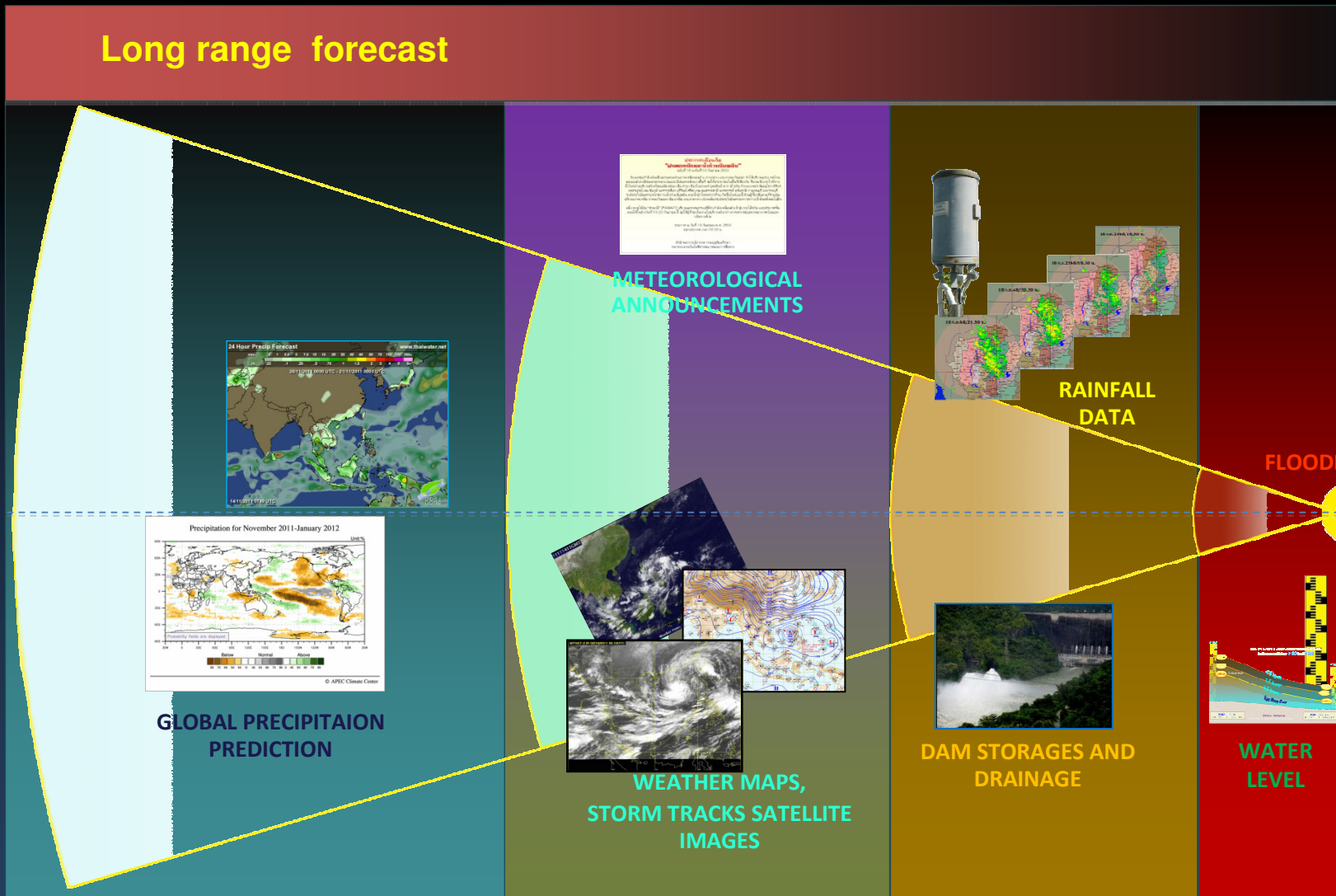


**NEED.....**

**LONG TERM PREDICTION**

# EXTENDED RANGES OF EARLY WARNING IN ADVANCE WITH OUTSOURCE INFORMATION

## Long range forecast



# 1. ISSUES AND NEED :



- Natural disasters caused by climate change



- The lack of capability :  
Climate change assessment and adaptation at river basin scale / regional scale.



## 2. IMPLEMENTATION PROPOSAL :

The research project of Ping Basin as  
“Flood and Landslide Disaster Management System  
with Public Participation Model”

### Activity 1 : Method -

1. Rainfall and runoff analysis / assess by satellite images model.
2. Rainfall and runoff study / apply with available models.
3. Rainfall distribution study / analyse by satellite images

## 2. IMPLEMENTATION PROPOSAL :

“Flood and Landslide Disaster Management System  
with Public Participation Model”

### Activity 2 : Method –

1. Developing real-time upstream flood and landslide possibility estimating model.
2. Testing and adjusting the model for another basins application.

### Activity 3 : Method -

1. Workshop on warning communication and dissemination procedure for local people.
2. Technology and geoinformatic system workshop and training for public sector.

## 3. AVAILABLE RESOURCES / CAPABILITY :

1. Automatic observation stations
2. Previous collected data of the basin by RID and involved authorities.
3. Satellite data from THEOS and other that support by GISTDA



## OUTPUTS:

1. Flood and landslide predicting model for local area
2. Efficient early warning system
3. Promote and data publication on website

Thank you for your attention

