



**Asia-Pacific  
Economic Cooperation**

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**2017/SOM3/EPWG/017**

Agenda Item: 7.2.1

## **Priorities and Building Up the National Center for Disaster Management**

Purpose: Information  
Submitted by: Viet Nam



**12<sup>th</sup> Emergency Preparedness Working Group  
Meeting  
Ho Chi Minh City, Viet Nam  
21-22 August 2017**

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT  
VIETNAM DISASTER MANAGEMENT AUTHORITY



**VIETNAM DISASTER MANAGEMENT  
AUTHORITY, PRIORITY ORIENTATION  
AND BUILDING THE NATIONAL  
CENTER FOR DISASTER MANAGEMENT**

**HCMC, August 2017**



# **I. CONTENT**

**I. OVERVIEW OF NATURAL DISASTER IN VIETNAM**

**II. ORGANIZATIONAL STRUCTURE OF VIETNAM  
DISASTER MANAGEMENT**

**III. PRIORITY ORIENTATIONS**

**IV. INFORMATION SUPPORT SYSTEM FOR DECISION  
MAKING**

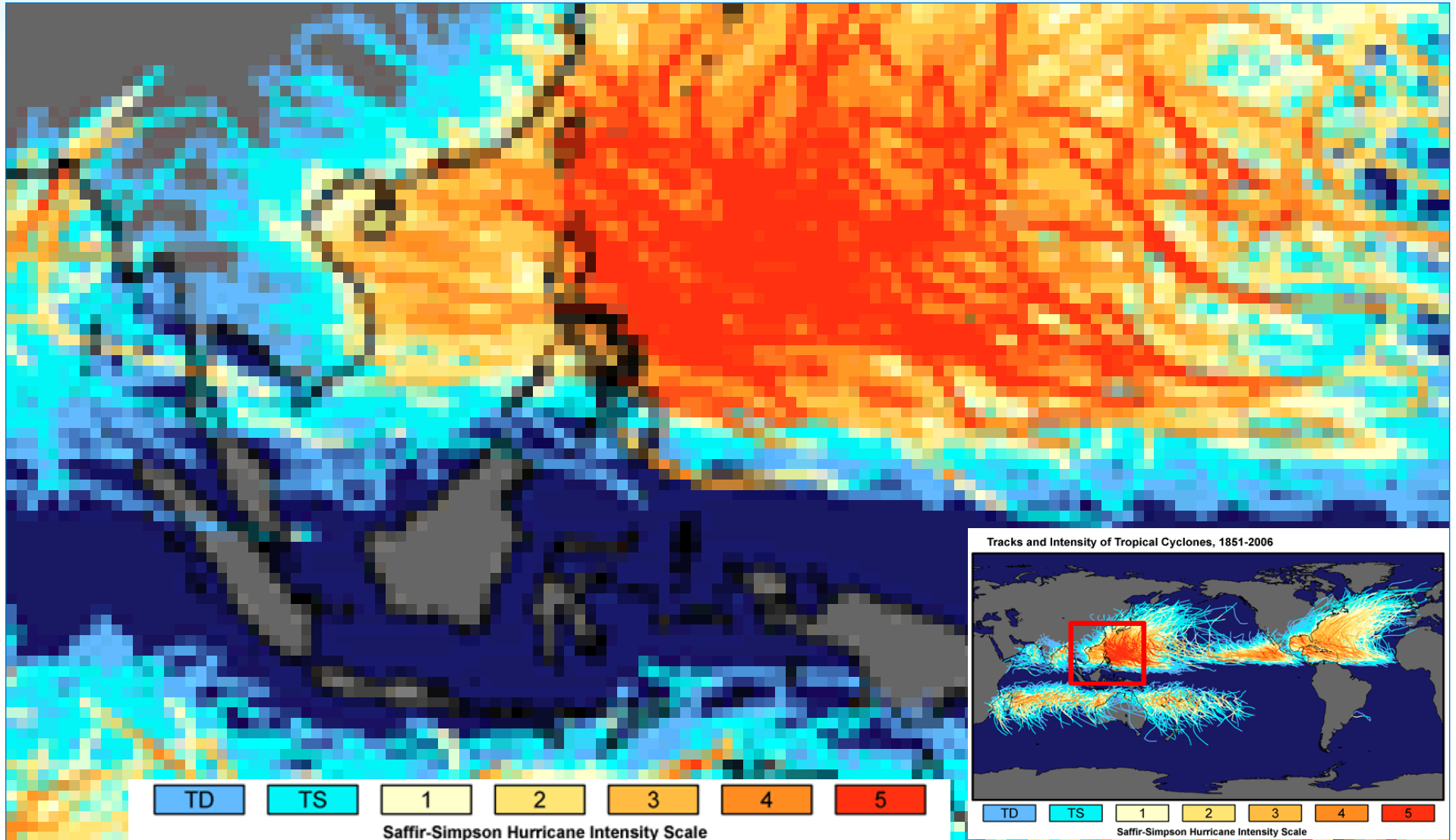
**V. NATIONAL OPERATIONAL CENTER FOR DISASTER  
MANAGEMENT**



# I. OVERVIEW OF NATURAL DISASTER IN VIETNAM

## 1. Geographical location

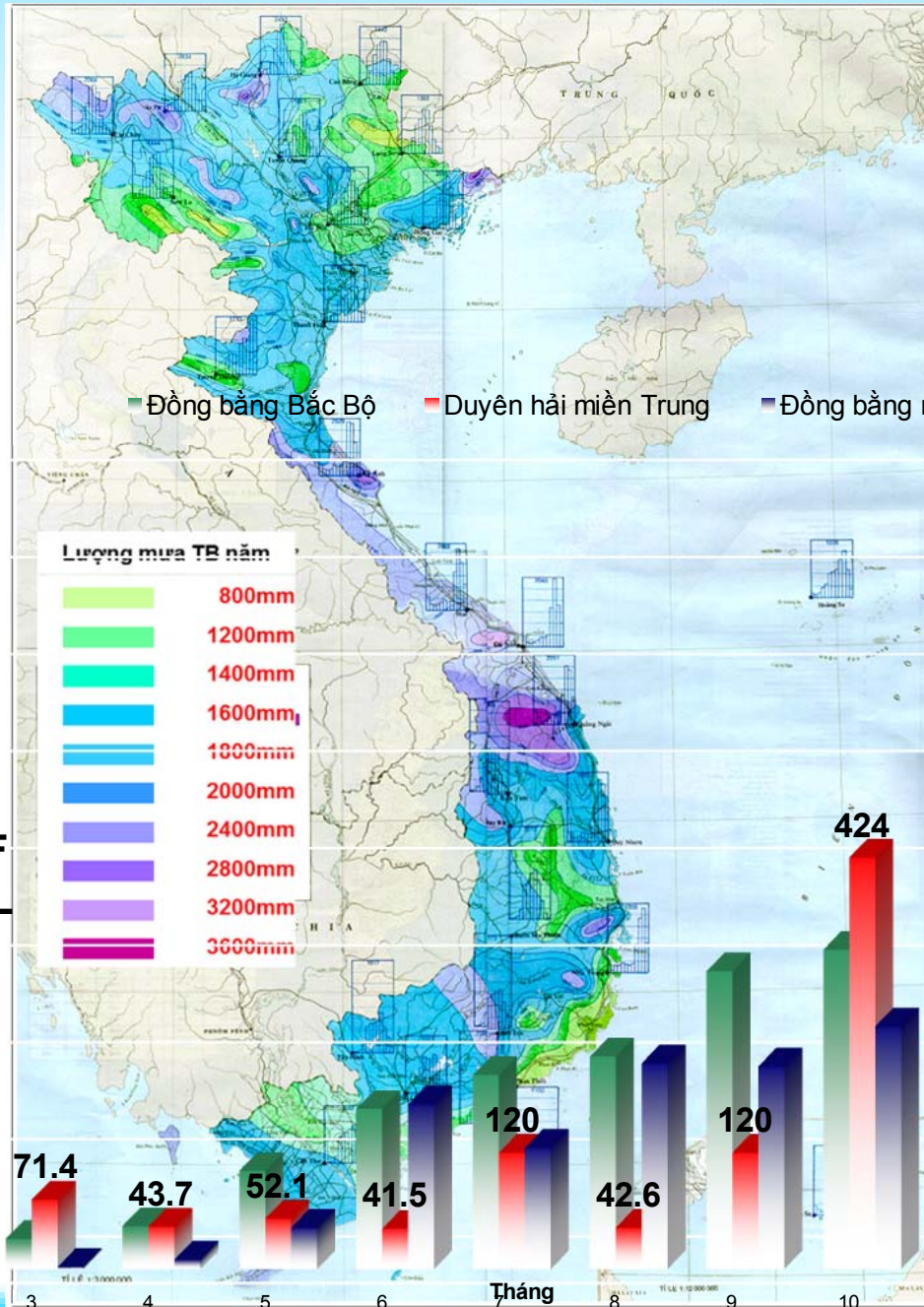
### Path and intensity of the storms (1951-2006)





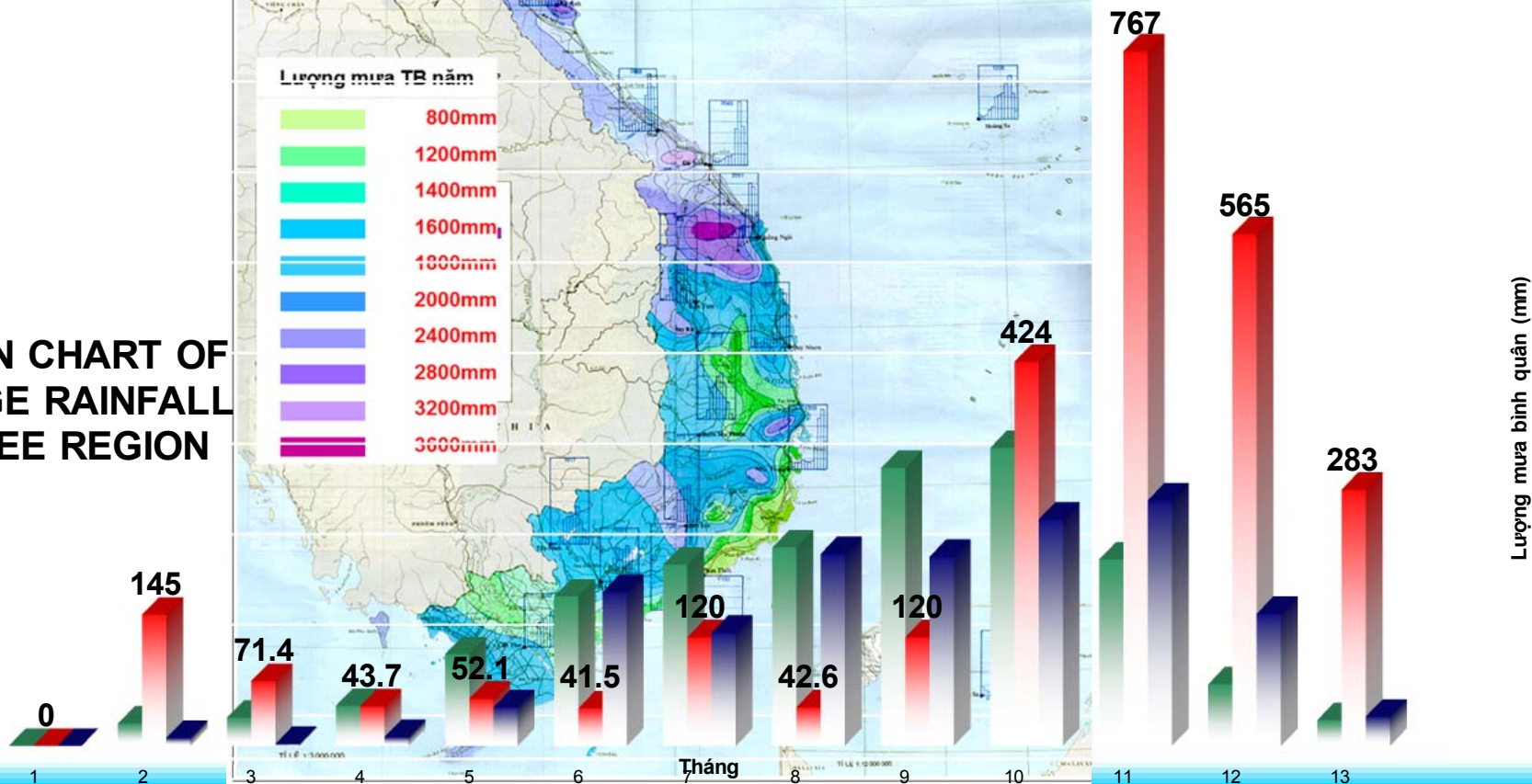
# I. OVERVIEW OF NATURAL DISASTER IN VIETNAM

## 1. Geographical location



### MAP OF AVERAGE RAINFALL

### COLUMN CHART OF AVERAGE RAINFALL IN THREE REGION



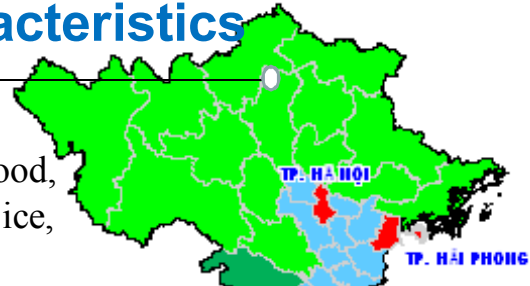


# NATURAL DISASTER MAP IN VIETNAM

## 2. Topographic characteristics



**Typical natural disaster:** FlashFlood, landslide, damaging cold, rime ice, heavy rain.



### REGION 2

**NORTHERN DELTA** (9 PROVINCES),  
**AND NORTH CENTRAL** (3 PROVINCES)

**Typical natural disaster:** Flood, tropical depression, storm, inundation, drought, salinization, damaging cold, heavy rain.

### REGION 3

**NORTH CENTRAL MOUNTAIN** (3 PROVINCES)

**CENTRAL** (4 PROVINCES)  
**Typical natural disaster:** Heat wave, flash flood, landslide, damaging cold .

### REGION 4

**DUYÊN HẢI MIỀN TRUNG** (10 PROVINCES)

**Typical natural disaster:** Flood, inundation, tropical depression, storm to super storm, drought, salinization, river and coastal landslide, heavy storm.

### REGION 6

**CENTRAL HIGHLANDS**(5 PROVINCES)  
**SOUTH CENTRAL MOUNTAIN** (6 PROVINCES)

**SOUTHEAST** (6 PROVINCES)  
**Typical natural disaster:** Heat wave, drought, flood, flashflood, landslide, inundation

### REGION 5

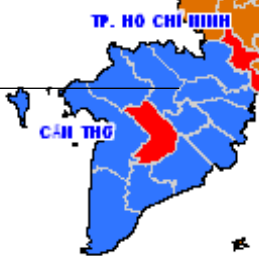
**LARGER URBAN ZONE**  
(05 DIRECT-CONTROLLED MUNICIPALITY + 14 PROVINCIAL CITY CLASS 1\*)

**Typical natural disaster:** Ngập úng do mưa lũ lớn và triều cường, bão lớn và dông lốc

### REGION 7

**MEKONG RIVER DELTA**(12 PROVINCES)

**Typical natural disaster:** Tropical depression, storm, flood, inundation, tide, drought, salinization, river & coastal landslide, thunderstorm.



### REGION 8

**SEA COASTAL PROVINCES FROM QUANG NINH TO KIEN GIANG; HOANG SA AND TRUONG SA ISLAND**

\*14 Provincial City Class 1 (2016): Biên Hòa (Đồng Nai); B.Ma Thuột (Đắk Lắk); Đà Lạt (Lâm Đồng); Hạ Long (Quảng Ninh); Huế (Thừa Thiên-Huế); Mỹ Tho (Tiền Giang); Nam Định (Nam Định); Nha Trang (Khánh Hòa); Quy Nhơn (Bình Định); Thái Nguyên (Thái Nguyên); Thanh Hóa (Thanh Hóa); Việt Trì (Phú Thọ); Vinh (Nghệ An); Vũng Tàu (Bà Rịa)



# NATURAL DISASTER MAP IN VIETNAM

## 2. Topographic characteristics

### REGION 1

Flashflood 3/10/2000 (LaiChau 39 dead, 18 injured); Landslide, flashflood 28/9/2006 (Van Chan, Yen Bai, 50 dead and missing), Landslide, flashflood after storm no. 4 in Lao Cai, Yen Bai 2008 (120 dead and missing), flashflood 5/9/2013 In LaoCai (11 dead, 16 injured), Landslide, flashflood 5/8/2017 in Lao Cai (10 dead and missing)  
Damaging cold, rime ice from 22-28/01/2016 in 27 provinces from the North to NgheAn (Lost 37.292ha rice and 4.082 ha crop; 36.678 cattle, 60.239 poultry and 2766 other animals were dead, total estimated damage > 1533 billions vnd

### REGION 3

Flashflood 20/9/2002 (HaTinh 53 dead, 111 injured); Flashflood 9/2011 (ThanhHoa 6 dead); flashflood after storm no. 4 in Quy Chau, Nghe An 14/9/2017 (12 dead and missing)

### REGION 6

From late 2015 to early 2016: severe drought in DakLak, GiaLai, KonTum, NinhThuan, BinhThuan (15.000 ha damaged, 28000 ha rice and 140.000 ha old tree were lost); total estimated damage > 8130 billions vnd.

### REGION 7

Flood and inundation in 2000 (565 dead, 276 injured, 9.457 house destroyed, > 62000 household must relocate, 263.077 ha rice was damaged, total estimated damage > 4.626 billions vnd; Flood on 10/2011 (89 dead, 176.000 houses flooded, 27.000 ha of rice flooded, total estimated damage > 4.400 billions vnd; salinization in 2015: 342.254 household lack of running water; 215.445 ha of rice damaged, total estimated damage > 7.500 billions vnd;

### REGION 2

Record Flood 8/1945 (79 dykes broken, 160.000 ha land for production inundated); Flood 8/1971 (16 dykes broken, 600 dead and missing people); Storm no. 7 Damrey 2005 (68 dead & missing, 4.746 houses destroyed, total estimated damage > 3.500 billions vnd); Storm no. 10 2016 (5 dead, >34,000 houses flooded, >200000ha of rice flooded, total estimated damage > 7.200 billions vnd; Record inundation in Thai Binh 09/2003 (30.000 ha of rice)

### REGION 4

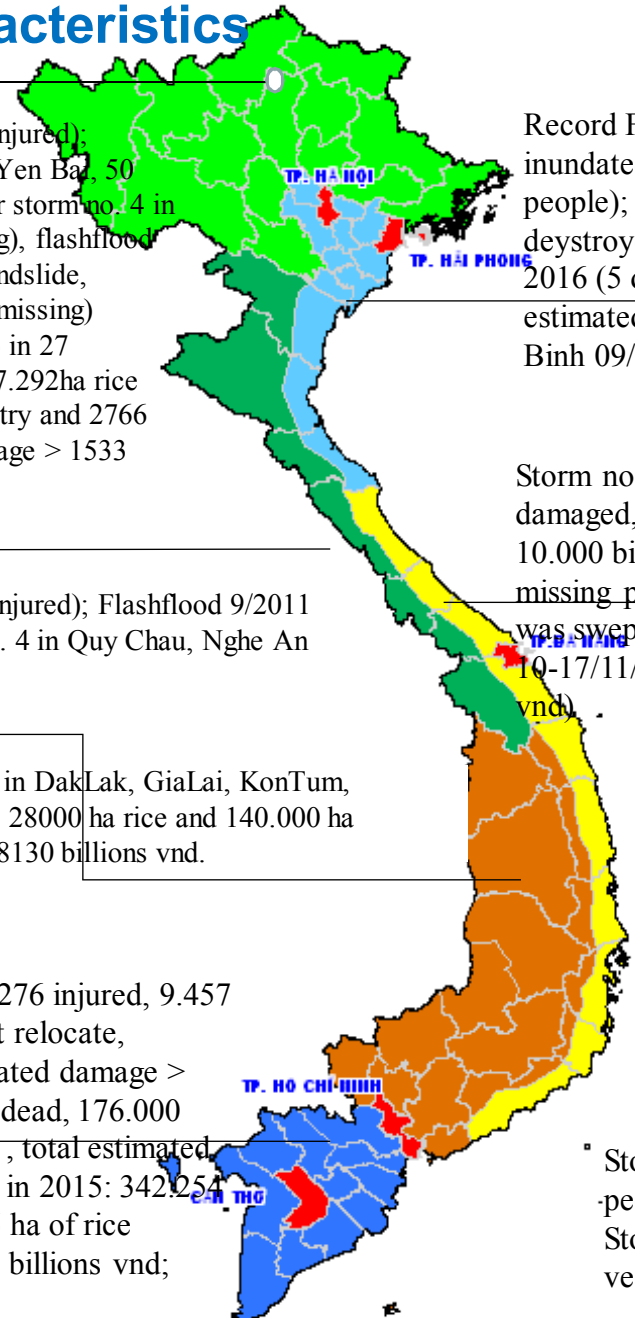
Storm no. 6 Xangsane 2006 (76 dead and missing, 35000 houses damaged, 1000 vessels damaged, total estimated damage > 10.000 billions vnd); Flood 1/11-6/12/1999 (715 dead and missing people, 1 million houses flooded and thousand of house was swept, total estimated damage > 5.000 billions vnd); Flood 10-17/11/2010 (143 dead, total estimated damage > 11.00 billions vnd).

### REGION 5

Heavy rain, historical inundation 30/10-3/11 2008 in Hanoi (22 dead, total estimated damage > 3.000 billions vnd); Storm no. 6 Xangsane in Da Nang (2006).

### REGION 8

Storm no. 5 Linda 11/1997 (3000 dead and missing people, 2897 sunken ship, 1856 vessels damaged); Storm no. 1 Chanchu in 2016 (13 sunken ship, 05 vessel missing, 226 dead and missing people)





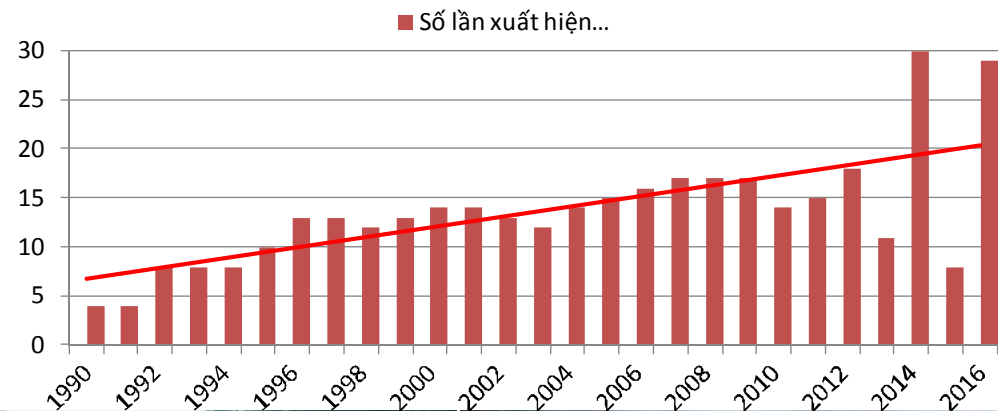
# I. OVERVIEW OF NATURAL DISASTER IN VIETNAM

## 3. Extreme weather

- Strong storms tend to increase
- Unpredictable rain and unusually heavy rain occur more frequently
- Flashflood tends to increase: period 2004-2016 (210 attacks) increased 1,5 times compared to the period 1990-2013 (142 attacks)
- Drought, salinization occurs, heat wave appears with frequency



**Storm level 12 or above in East Sea** Period 2004-2016 (44) increased 1,3 times compared to the period 1990-2003 (35)

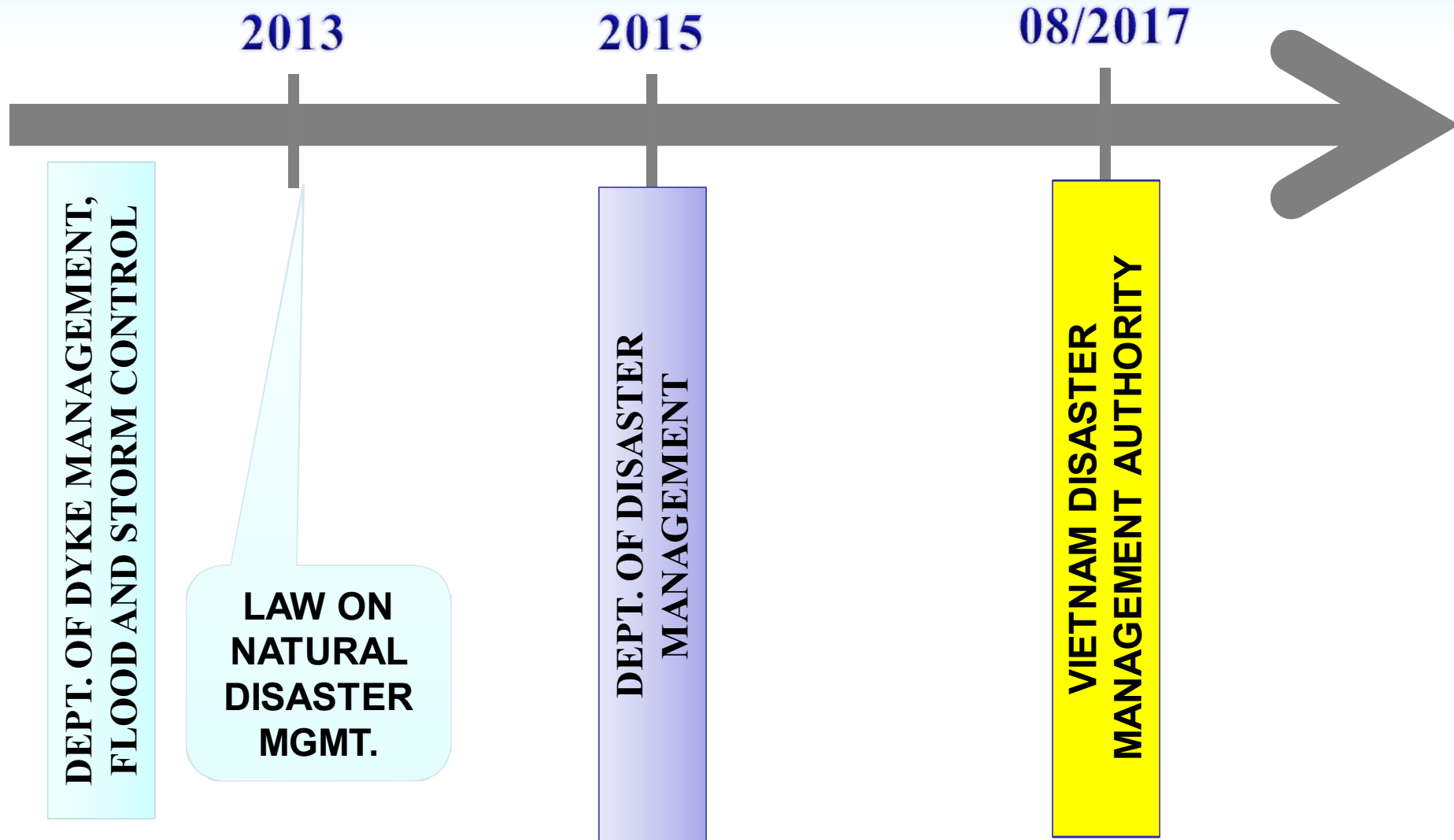






## II. ORGANIZATIONAL STRUCTURE OF VIETNAM DISASTER MANAGEMENT

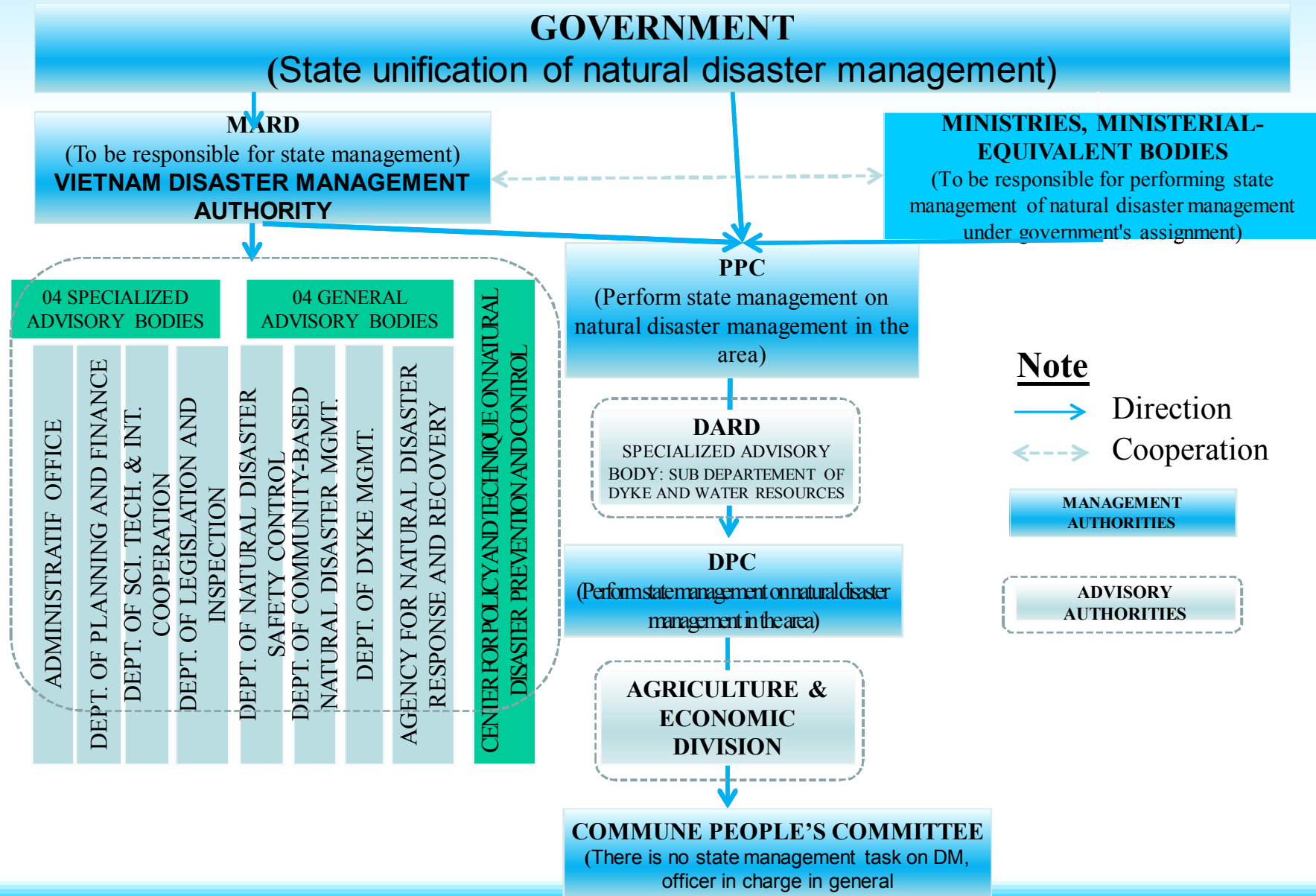
### NATIONAL AGENCY OF NATURAL DISASTER MANAGEMENT (STANDING OFFICE OF THE CENTRAL STEERING COMMITTEE FOR NATURAL DISASTER MANAGEMENT)





## II. ORGANIZATIONAL STRUCTURE OF VIETNAM DISASTER MANAGEMENT

### FLOW CHART ON STATE MANAGEMENT AGENCIES ON NATURAL DISASTER MANAGEMENT





## II. ORGANIZATIONAL STRUCTURE OF VIETNAM DISASTER MANAGEMENT

### MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT



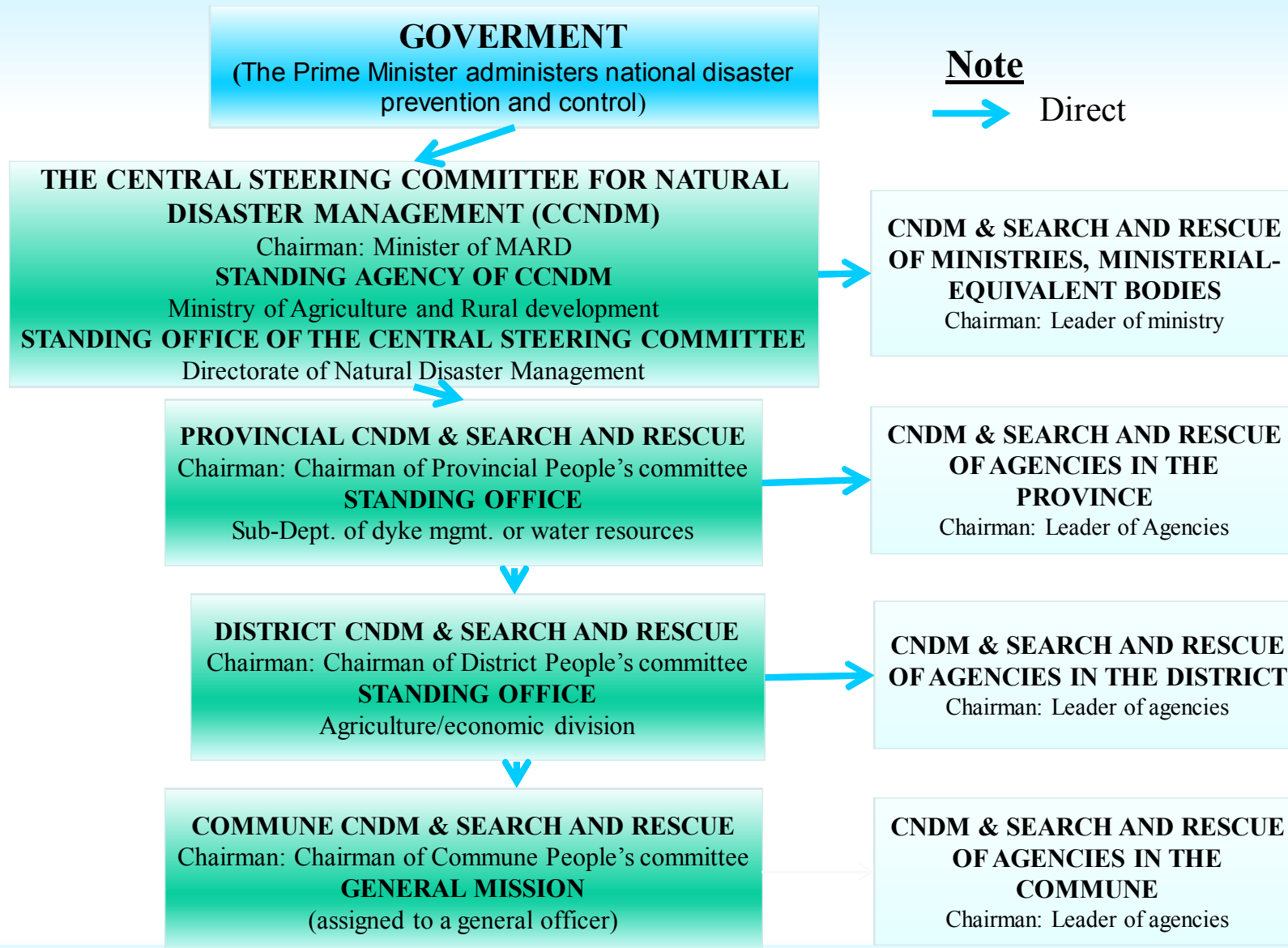
**VIETNAM DISASTER MANAGEMENT AUTHORITY**  
(STANDING OFFICE OF THE CENTRAL COMMITTEE FOR NATURAL DISASTER MANAGEMENT)

- ADMINISTRATIVE OFFICE
- DEPT. OF PLANNING AND FINANCE
- DEPT. OF SCI. TECH. & INT. COOPERATION
- DEPT. OF LEGISLATION AND INSPECTION
- DEPT. OF NATURAL DISASTER SAFETY CONTROL
- DEPT. OF COMMUNITY-BASED NATURAL DISASTER MGMT
- DEPT. OF DYKE MANAGEMENT
- CENTER FOR POLICY AND TECHNIQUE ON NATURAL DISASTER PREVENTION AND CONTROL
- CENTRAL AND HIGHLAND SUB-DEPT. OF NATURAL DISASTER MANAGEMENT
- SOUTHERN SUB-DEPT. OF NATURAL DISASTER MANAGEMENT



## II. ORGANIZATIONAL STRUCTURE OF VIETNAM DISASTER MANAGEMENT

### FLOW CHART ON INTERDISCIPLINARY SYSTEM OF COORDINATING, STEERING AND DIRECTING AGENCIES OF NATURAL DISASTER MANAGEMENT





## II. ORGANIZATIONAL STRUCTURE OF VIETNAM DISASTER MANAGEMENT

### Response according to level of disaster risk

No.	Type of disaster	Level of disaster risk				
		1	2	3	4	5
1	Storm / Tropical depression			X	X	X
2	Cyclone, lightning, hail	X	X			
3	Heavy rain	X	X	X		
4	Heat wave	X	X	X		
5	Drought	X	X	X	X	
6	Damaging cold, rime ice	X	X	X		
7	Fog	X	X	X		
8	Flood, inundation	X	X	X	X	X
9	Flash flood	X	X	X		
10	Landslide due to rain or flood	X	X			
11	Salinization	X	X			
12	Strong winds on the sea	X	X	X		
13	Earthquake	X	X	X	X	X
14	Tsunami			X		X



## II. ORGANIZATIONAL STRUCTURE OF VIETNAM DISASTER MANAGEMENT

### **Responsibility to respond according to the level of disaster risk**

- ❖ Level 1: President of Commune People's Committee, Chairperson of commune steering committee for natural disaster management
- ❖ Level 2: President of Provincial People's Committee, Chairperson of provincial steering committee for natural disaster management
- ❖ Level 3: Chairperson of the center steering committee commands the ministries, provinces to implement the response measures.
- ❖ Level 4: The Prime Minister commands the ministries, provinces to implement the response measures.
- ❖ Level 5: The Prime Minister demand the State President to declare a state of emergency



### III. PRIORITY ORIENTATIONS

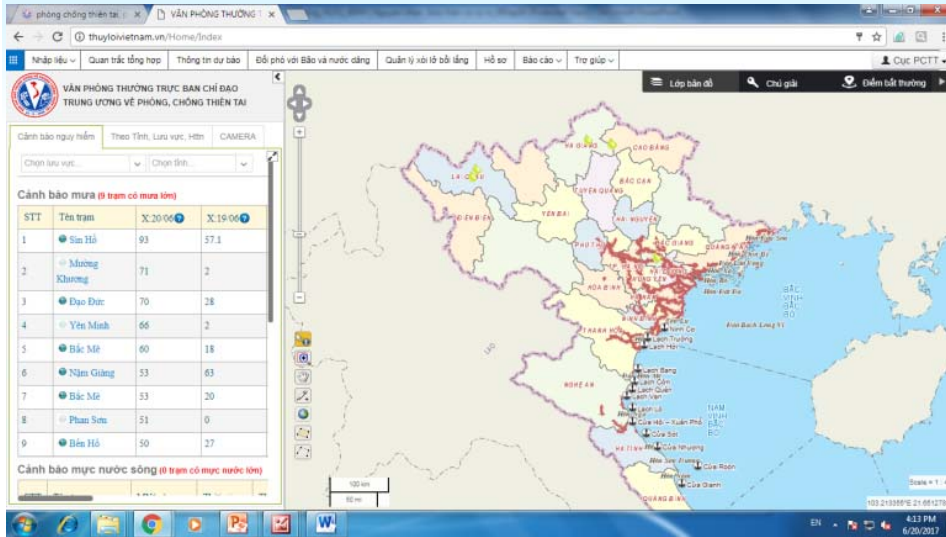
- ❖ To strengthen the organization of the state authorities at different level (province, district, commune); Strengthening the control of natural disaster safety, ensuring the prevention requirements in the process of infrastructure development; control and reduction of disaster risk;
- ❖ To build natural disaster prevention works: observation, multi-disaster warning system, infrastructure for evacuation, dykes, dams, anti-landslide...
- ❖ To actively respond and recovery from natural disaster. To consolidate forces, materials, equipment and facilities for the disaster management
- ❖ To strengthen the community-based disaster management
- ❖ To strengthen the communication on natural disaster prevention;
- ❖ To strengthen research and application of science and technology in natural disaster management;
- ❖ To strengthen international cooperation in natural disaster management;
- ❖ To strengthen different resources in natural disaster prevention;



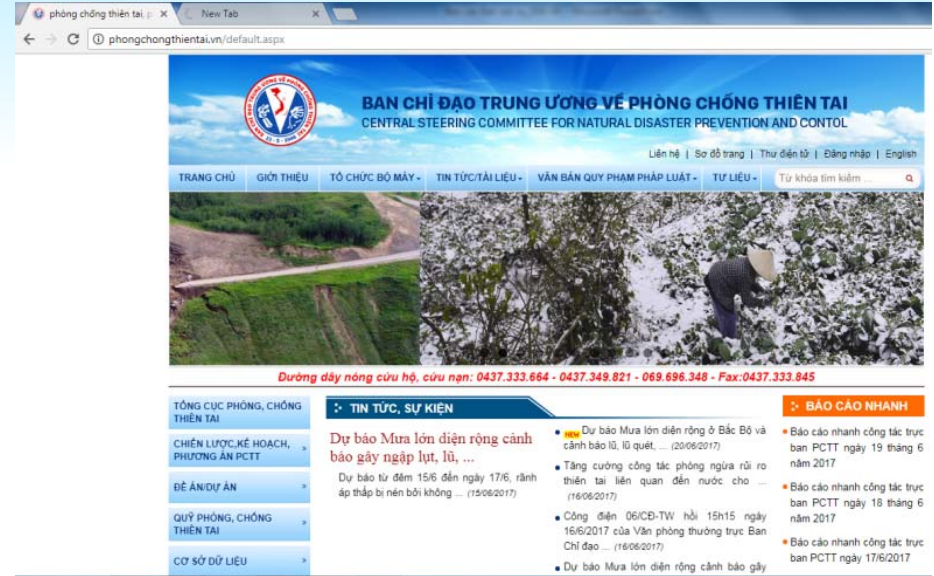
# IV. INFORMATION SUPPORT SYSTEM FOR DECISION MAKING

## 1. Database for disaster preparedness

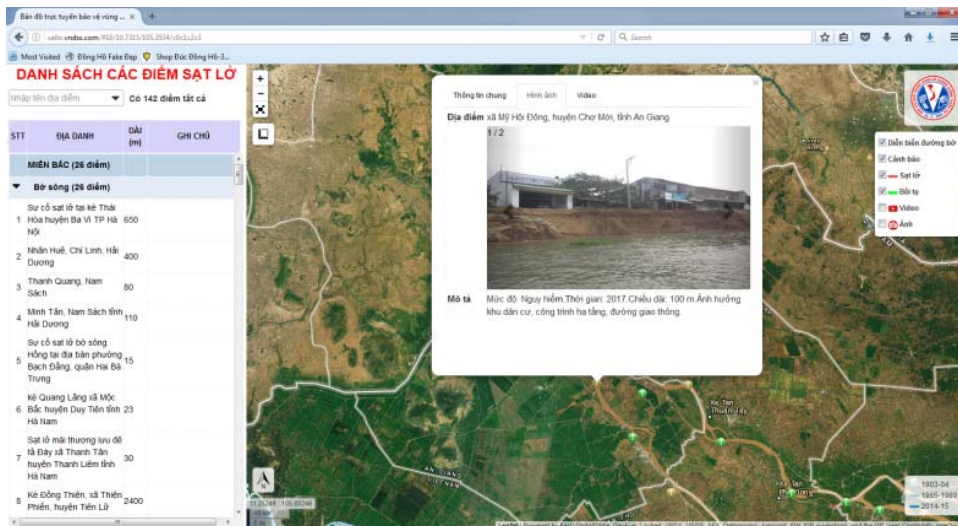
### Database



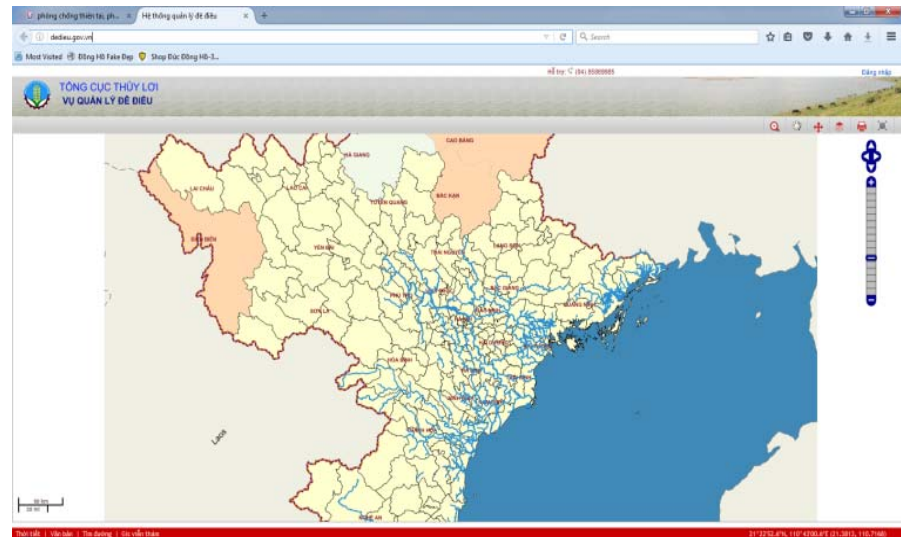
### Website of the center steering committee



### Dyke data



### Landslide data

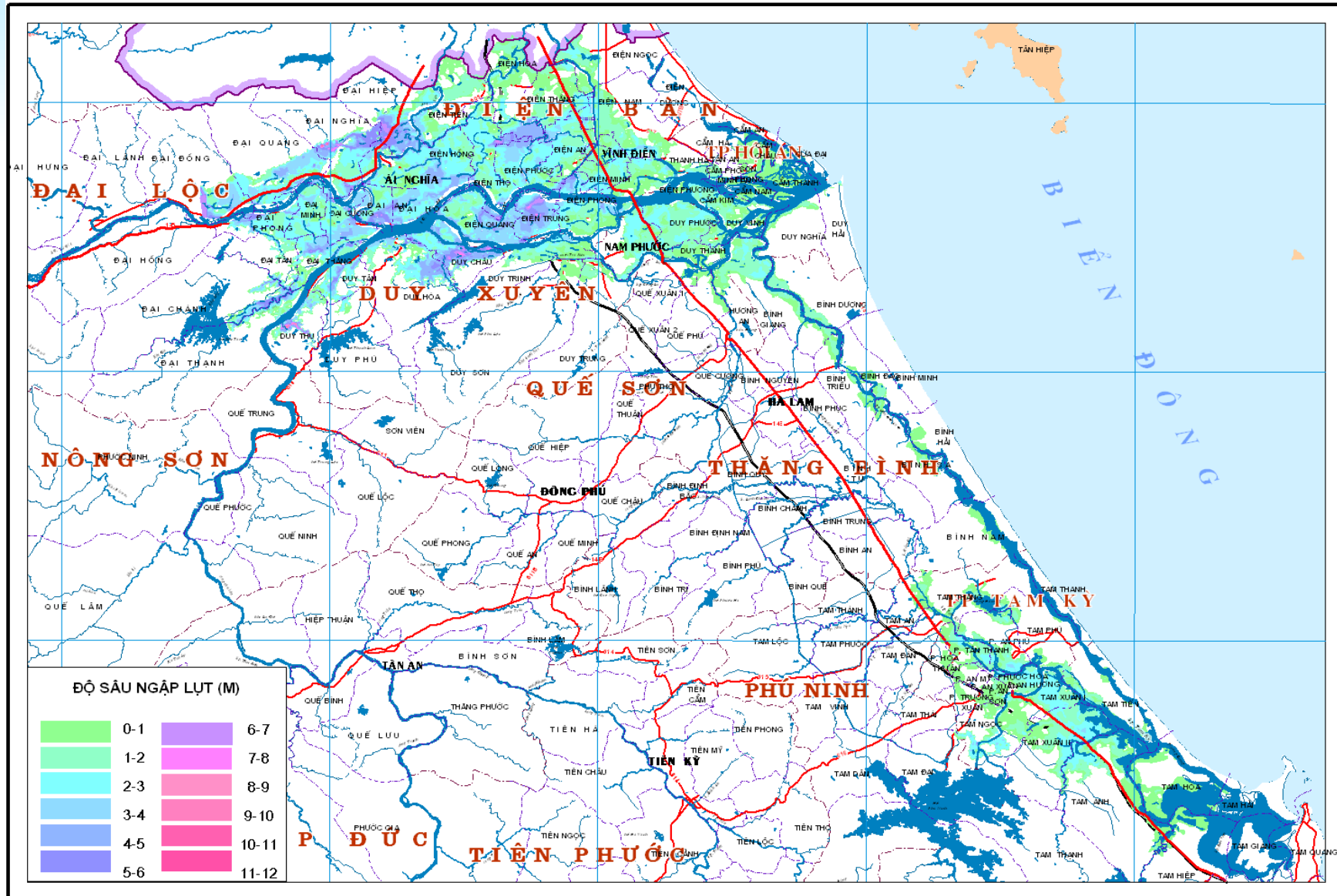






# IV. INFORMATION SUPPORT SYSTEM FOR DECISION MAKING

## 2. Flood map





## IV. INFORMATION SUPPORT SYSTEM FOR DECISION MAKING

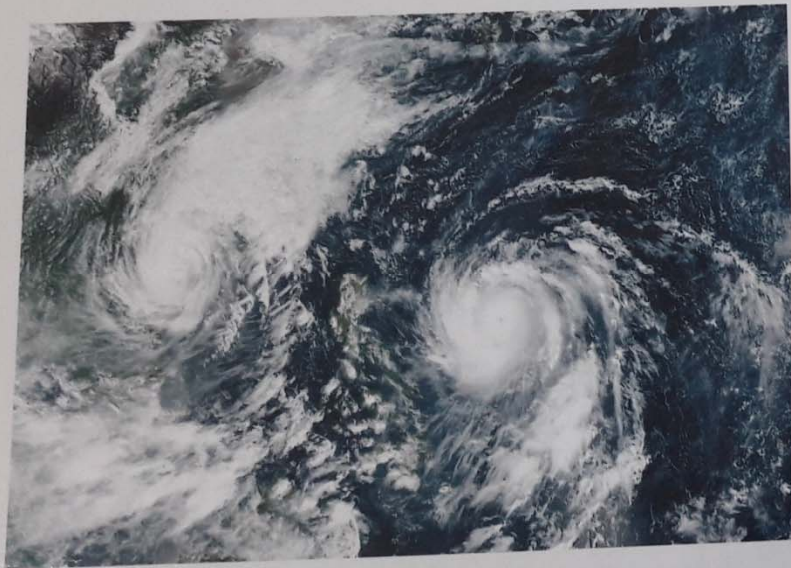
### 3. Storm and super storm response plan



BAN CHỈ ĐẠO TRUNG ƯƠNG  
VỀ PHÒNG CHỐNG THIÊN TAI

TẬP BẢN ĐỒ NGẬP LỤT DO NƯỚC BIỂN DÂNG  
TRONG TÌNH HUỐNG BÃO MẠNH VÀ SIÊU BÃO  
(TƯƠNG ỨNG VỚI CÁC KỊCH BẢN)

**TỈNH QUẢNG NAM**



BAN CHỈ ĐẠO TRUNG ƯƠNG  
VỀ PHÒNG CHỐNG THIÊN TAI

TẬP BẢN ĐỒ NGẬP LỤT DO NƯỚC BIỂN DÂNG  
TRONG TÌNH HUỐNG BÃO MẠNH VÀ SIÊU BÃO  
(TƯƠNG ỨNG VỚI CÁC KỊCH BẢN)

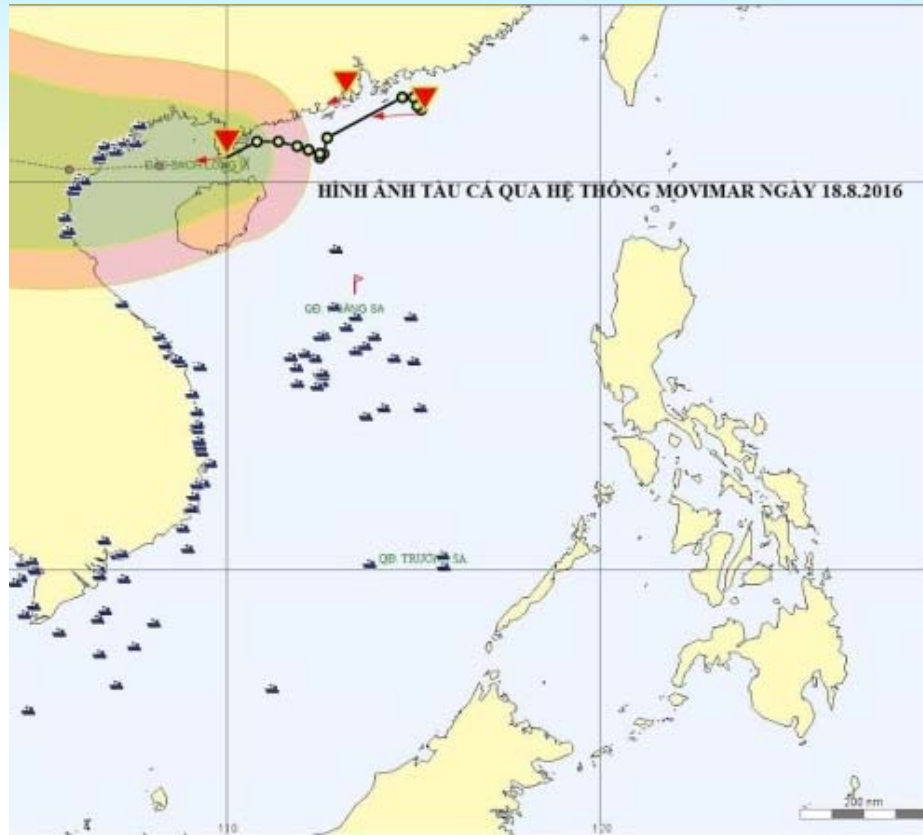
**TỈNH NINH THUẬN**



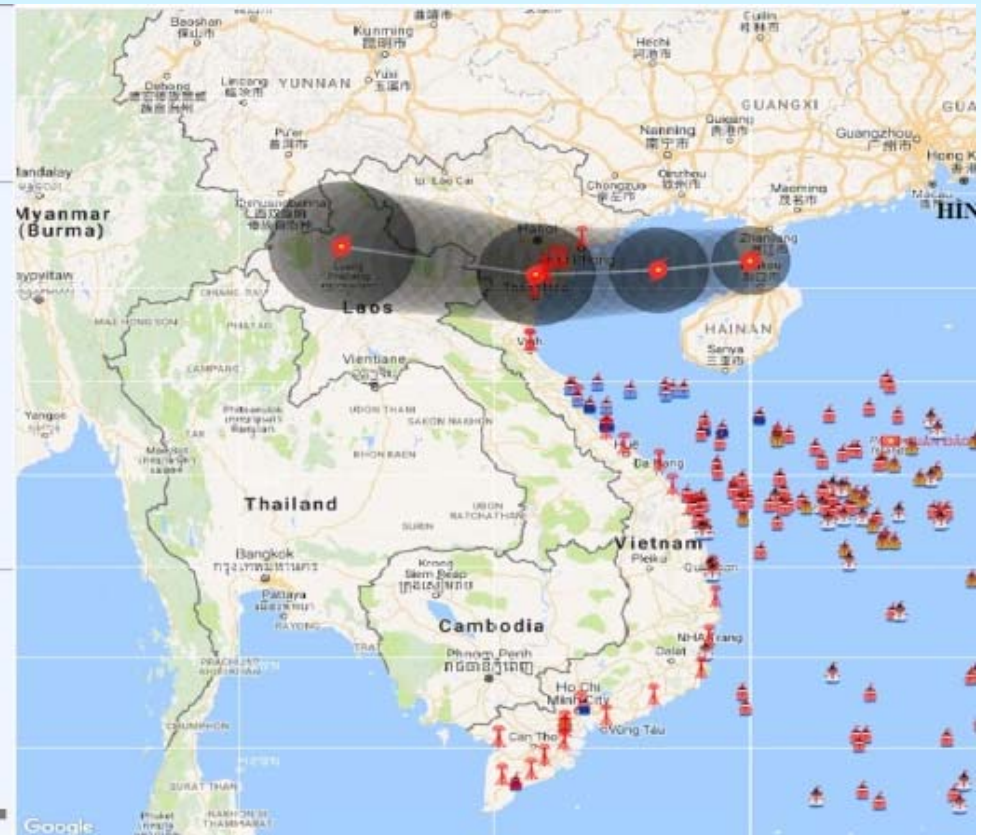


# IV. INFORMATION SUPPORT SYSTEM FOR DECISION MAKING

## 4. Management of fishing vessel information



*Shore station system*



*Moviva System*



## IV. INFORMATION SUPPORT SYSTEM FOR DECISION MAKING

### 5. System of mobile/satellite communication





### 1.Meeting room



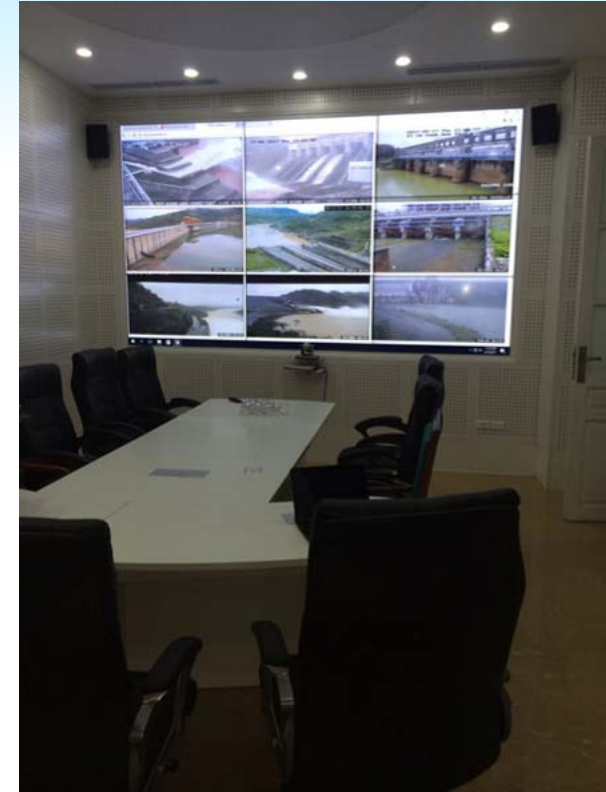
The meeting room is 55m<sup>2</sup> and equipped:

- 1 large screen, size 150inch; 1 television 100inch, 2 television 55inch, 2 projector, map of natural disaster prevention of 3 regions, map of dykes system of red river, Thai Binh river, model of northern flood control system, sounds system, camera and two computers.



## V. NATIONAL OPERATIONAL CENTER FOR DISASTER MANAGEMENT

### 2. Concierge room 24/24h

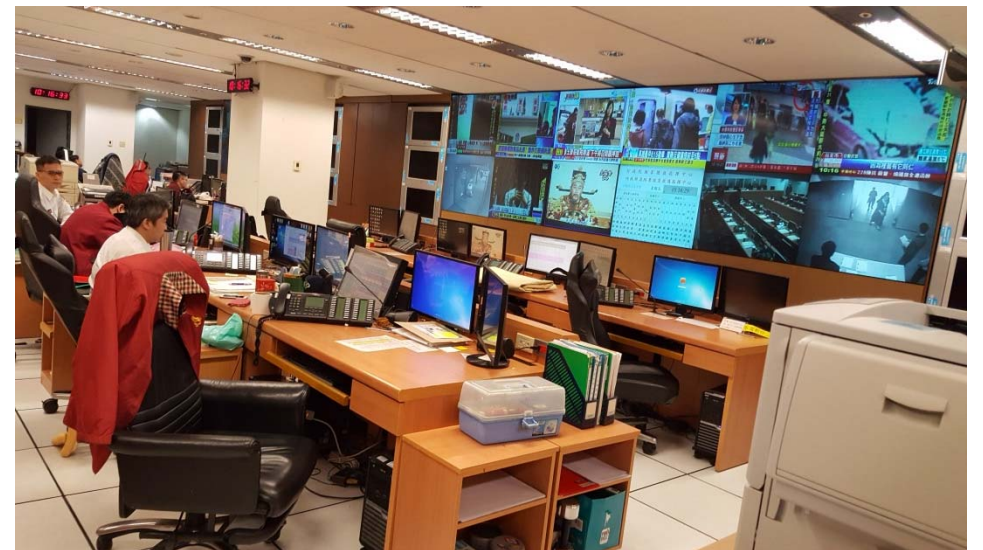


The room is 19m<sup>2</sup>, equipped 02 telephones, 01 mobile, 03 computers, 02 printers, 02 fax machine, 01 television 42 inch; 1 bedroom



# V. NATIONAL OPERATIONAL CENTER FOR DISASTER MANAGEMENT QUARTER

## 3. Headquarter of Chinese Taipei





# V. NATIONAL OPERATIONAL CENTER FOR DISASTER MANAGEMENT

## 3. Headquarter of Mississippi (USA)

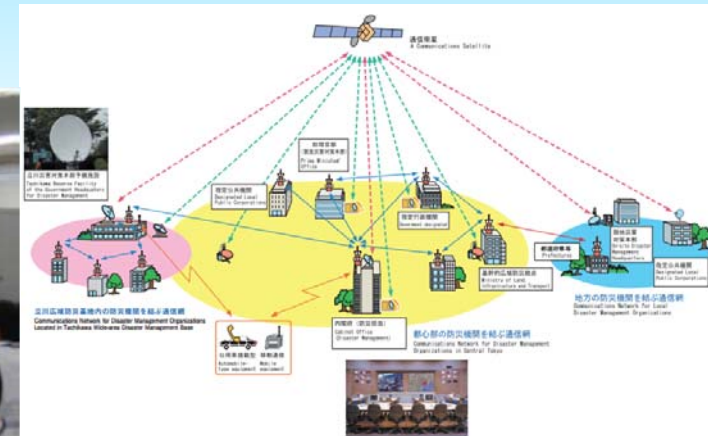






# V. DISASTER MANAGEMENT HEADQUARTER

## 3. Headquarter of Japan





# V. DISASTER MANAGEMENT HEADQUARTER

## 3. Headquarter of China



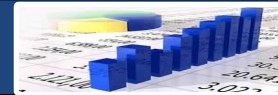
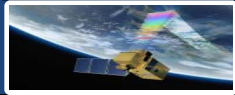


# V. NATIONAL OPERATIONAL CENTER FOR DISASTER MANAGEMENT

## 3. Headquarter of Indonesia



# SUPPORTING SYSTEM FOR DECISION MAKING ON NATURAL DISASTER IN VIETNAM



Remote sensing data/forecasting

Observation data

Surveillance cameras

Data script, modeling

Statistical data

Background information data

**Treatment and correction**

**Forecast calculation**

National center steering committee

Urban area (precipitation, river water level, Camera pictures)

Dykes

Boat information: number, location

Directorate of Fisheries

Reservoir

Dykes (water level, camera pictures)

Urban area

Boat anchorage

Reservoir

Urban Area

Reservoir (Precipitation, water level, Camera pictures)

Damage statistic

Map of natural disaster risk

Storm

Data Center for Natural Disaster Management

- Disaster risk, vulnerability
- Disaster prevention works (resevoir, dykes, anchorage,...)
- Information on natural disaster (forecasting, warning, historical data, background information)
- Disaster prevention plan

**Forecasting and warning**



Website



Messages SMS



Applications on smartphones



Social Network



**THANK YOU FOR YOUR  
ATTENTION!**

**MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT  
VIETNAM DISASTER MANAGEMENT AUTHORITY**

**ADDRESS: NO. 2, NGOC HA STR., BA DINH DIST., HÀ NỘI  
TEL: (84-4) 37338780 FAX: (84-4) 37335702**