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**ASIAN DISASTER REDUCTION CENTER (ADRC)**  
Visiting Researcher Program FY2012B

# Comparative study on Disaster Risk Reduction to build the resilience of Nations

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## Presentation Outline

### **1. OVERVIEW OF DISASTER SITUATION IN THE WORLD, INDONESIA AND JAPAN**

- 1.1 Natural and human-made disasters trend in the world
- 1.2 Overview of disaster situation in Indonesia
- 1.3 Overview of disaster situation in Japan

### **2. DISASTER RISK REDUCTION PARADIGM**

- 2.1 Disaster Risk Reduction - What is it and why do need it?
- 2.2 The importance of building resilient to disasters
- 2.3 Paradigm Shift From Emergency Response To Disaster Risk Reduction



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### 3. DISASTER RISK REDUCTION IN INDONESIA AND JAPAN

#### 3.1 Disaster Risk Reduction in Indonesia

- 3.1.1 Strengthening legislation and institutional capacity
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#### Conclusion and Lesson learning



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# 1.

## OVERVIEW OF DISASTER SITUATION IN THE WORLD, INDONESIA AND JAPAN



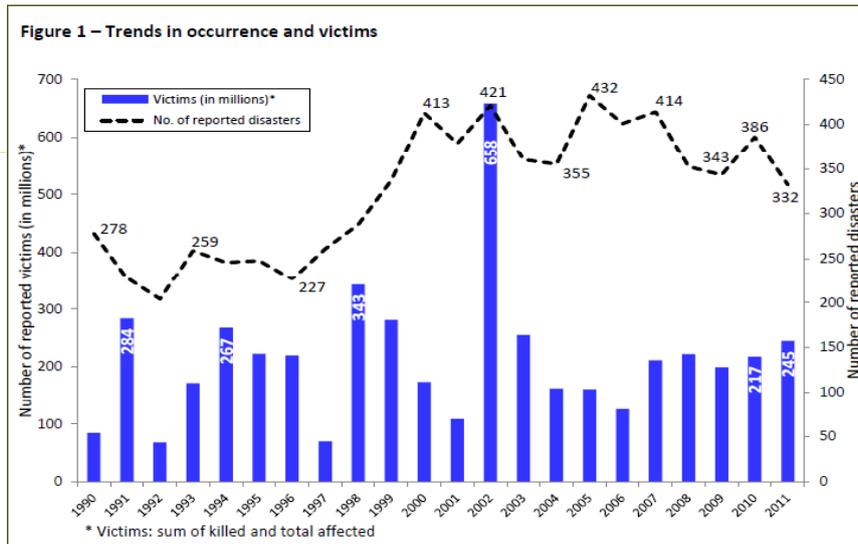
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# Natural and human-made disasters trend in the world

Figure 1 – Trends in occurrence and victims

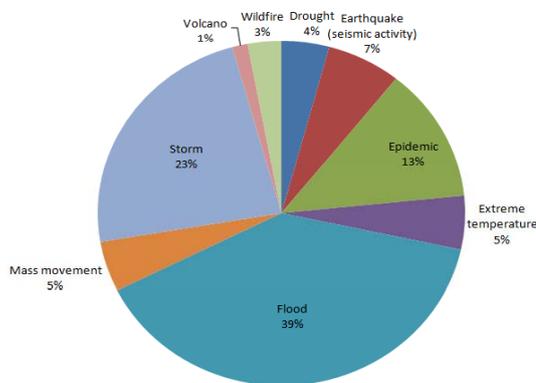


In 2011, 332 natural disasters were registered, less than the average annual disaster frequency observed from 2001 to 2010 (384). However, the human and economic impacts of the disasters in 2011 were massive. Natural disasters killed a total of 30.773 people and caused 244.7 million victims worldwide Economic damages from natural disasters were the highest ever registered, with an estimated US\$ 366.1 billion.

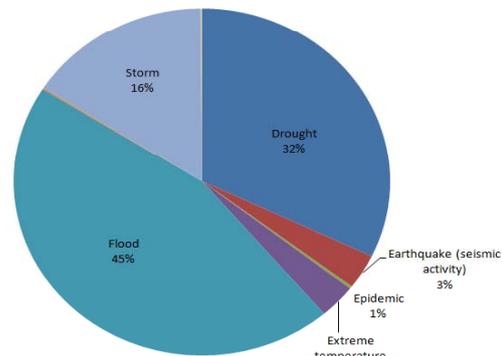


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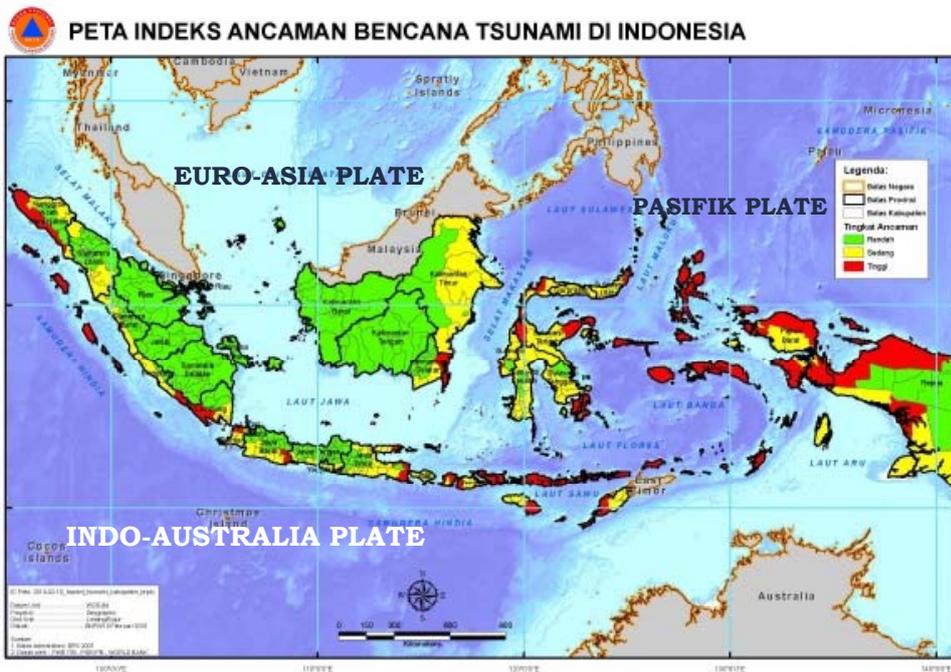


The ratio of natural disaster in the World (2000 - 2011)  
Ratio of Natural disaster related to climate change is high

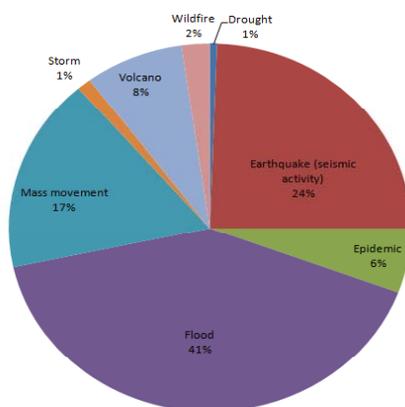


The ratio of affected people by natural disaster in the World (2000 - 2011)  
Ratio of Natural disaster related to climate change is around 90%

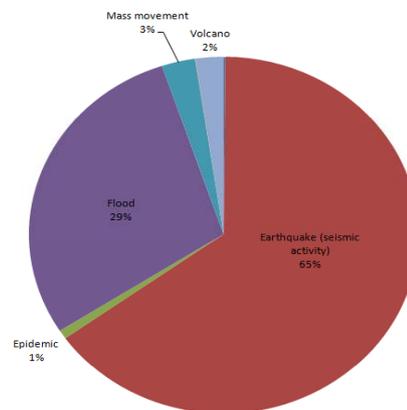
## Overview of disaster situation in Indonesia



## Overview of disaster situation in Indonesia



The Ratio of Natural Disaster (2000 – 2011)



The ratio of affected people by natural disaster (2000 – 2011)

# Disaster situation in indonesia



Flooding on residential Jakarta



Flooding on the center of Jakarta



Landslide on west Bandung, West Java

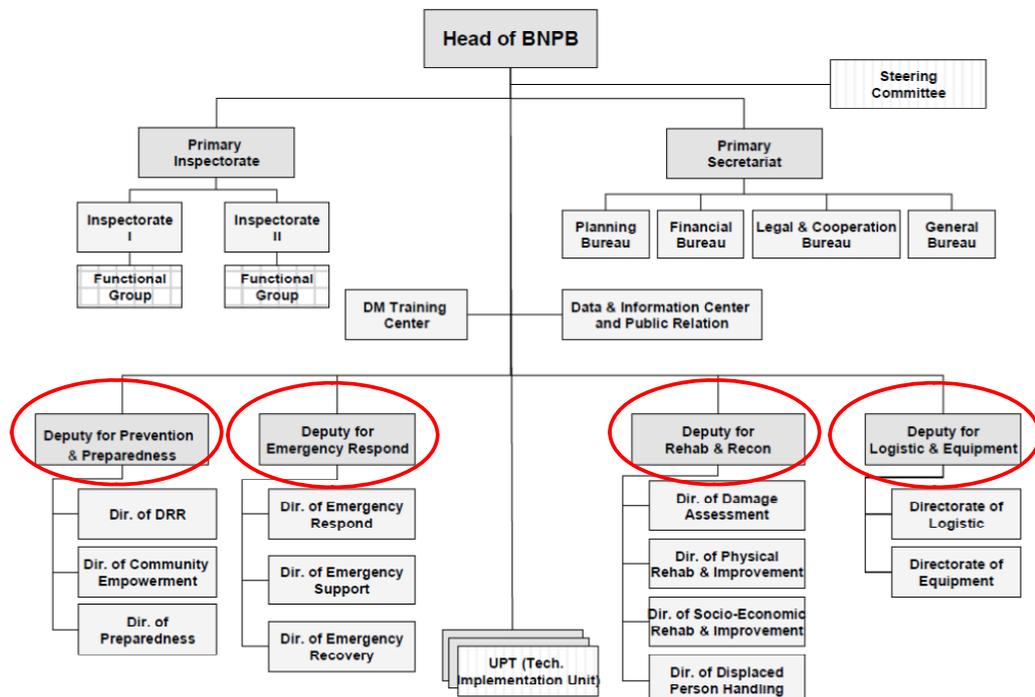


Flood Evacuees

- During January 2013, BNPB recorded 120 disasters occurred in Indonesia.
- Approximately 96 percent of disasters is still dominated by hydro-meteorological disasters such as floods, landslides, cyclones
- To cope with the disaster, BNPB has done a good disaster preparedness and emergency response
- the fund has distributed BNPB ready around Rp 180 billion to various regions in Indonesia affected, for logistical support, equipment, deployment personnel military / police and so on.



## Structure Organization of (BNPB)



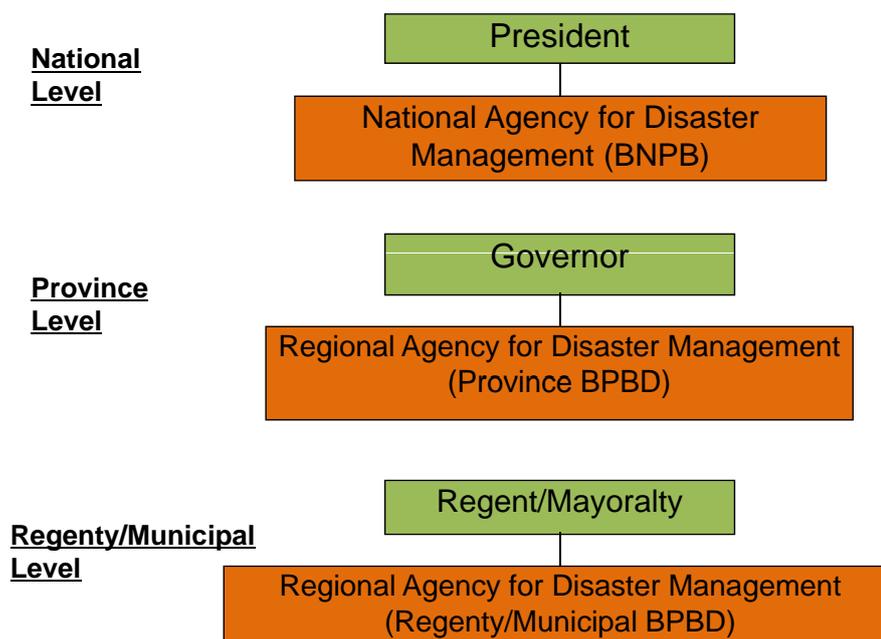
## Disaster Management Framework in Indonesia

Law No. 24/2007 on Disaster Management as the basis to develop National System for Disaster Management in Indonesia, Disaster Management System is “an overall regulating system which include legislation, institutionalization, planning, budgeting and science for disaster management, in order to ensure the implementation of disaster management is well-integrated and coordinated”

### BNPB's duties :

- a. Guidelines & directives : prevention, emergency response, rehabilitation & reconstruction.
- b. Standardisation & the need of DM implementation
- c. Informasi of activities to the public
- d. Report to President once each month & any time
- e. Making use of domestic/int'l assistance
- f. Accountability of budget
- g. Guidelines on BPBD

## Administrative DM System in Indonesia

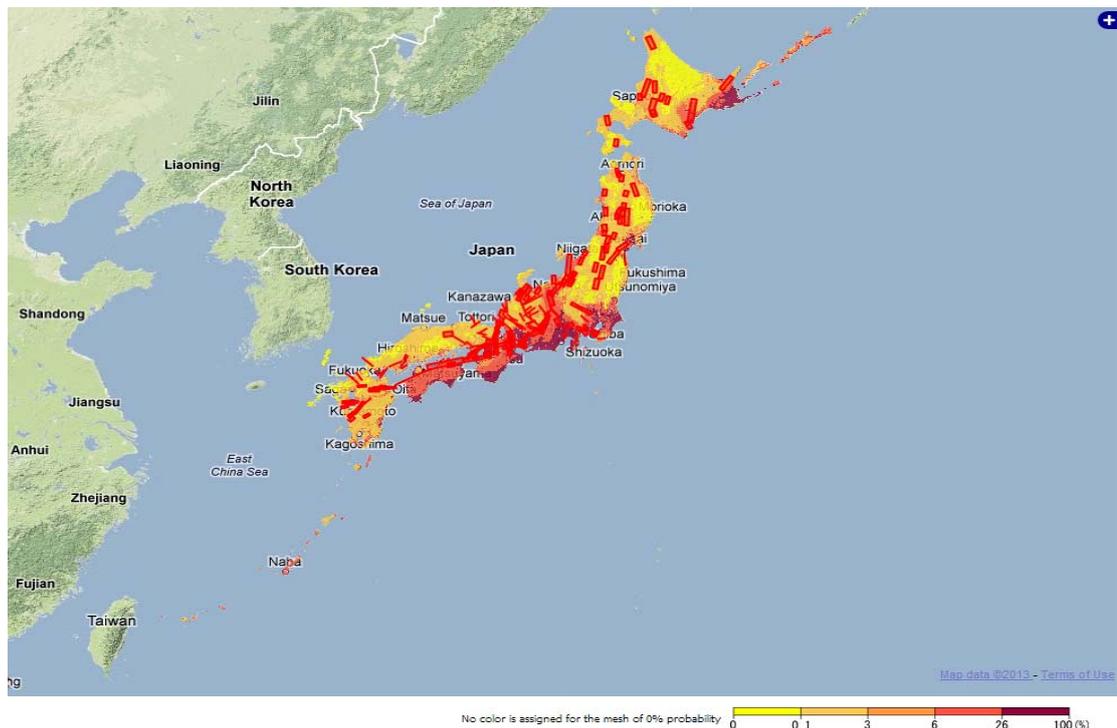


## Disaster Management Plan

The policy and strategy of the National Agency for Disaster Management activities within the next five years (2010-2014) is :

1. Disaster implementation of planned, directed, coordinated, integrated and comprehensive and accountable
2. Increased awareness, ability and preparedness for disasters through the creation of a rapid reaction force of disaster
3. Completion of handling emergency disaster victims in post-disaster areas quickly, accurately and effectively, and coordinated / integrated
4. Completion of recovery of physical infrastructure in the region and non-physical the after disaster of an integrated and comprehensive

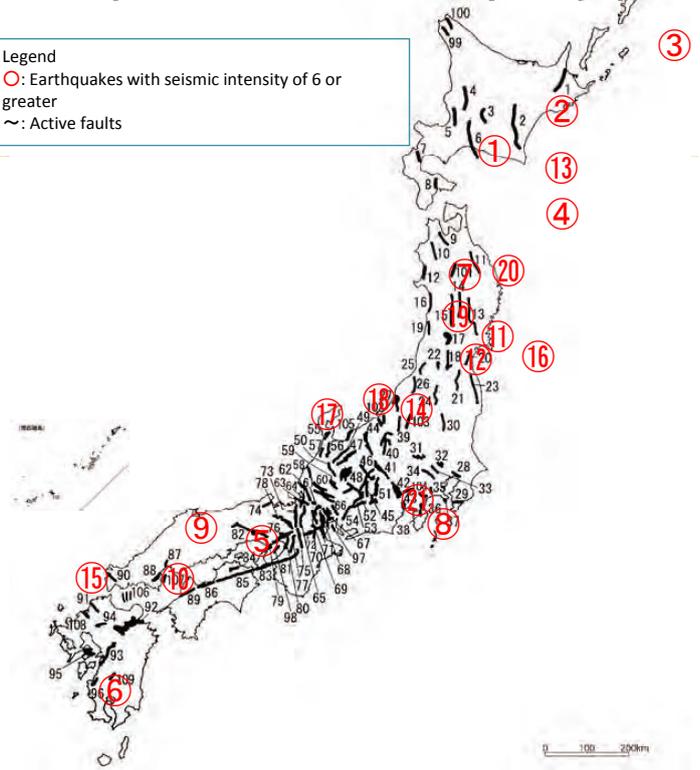
## Overview of disaster situation in Japan



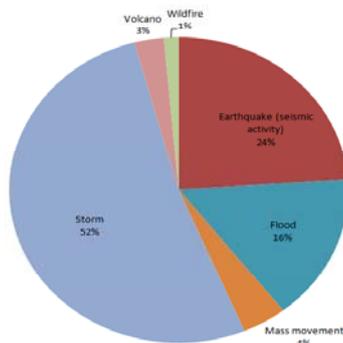
	Date	Earthquakes or Hypocenters
①	1982.3.21	Uruga-oki Earthquake
②	1993.1.15	Kushiro-oki Earthquake
③	1994.10.4	Hkkaido-Toho-oki Earthquake
④	1994.12.28	Sanriku-Haruka-oki Earthquake
⑤	1995.1.17	Great Hanshin-Awaji Earthquake
⑥	1997.5.13	Satsuma region in Kagoshima Prefecture
⑦	1998.9.3	Northern region in Iwate Prefecture
⑧	2000.7.1	Niijima and Kozushima Earthquake
⑨	2000.10.6	Western Tottori Earthquake
⑩	2001.3.24	Geiyo Earthquake
⑪	2003.5.26	Miyagi-ken-oki Earthquake
⑫	2003.7.26	Northern Miyagi Earthquake
⑬	2003.9.26	Tokachi-oki Earthquake
⑭	2004.10.23	Niigata-ken-Chuetsu Earthquake
⑮	2005.3.20	Fukuoka-ken-Seihou-oki Earthquake
⑯	2005.8.16	Miyagi-ken-oki Earthquake
⑰	2007.3.25	Noto-hanto Earthquake, 2007
⑱	2007.7.16	Niigata-Chuetsu-oki Earthquake, 2007
⑲	2008.6.14	Iwate-Miyagi Inland Earthquake, 2008
⑳	2008.7.14	Northern coastal area of Iwate Prefecture
㉑	2009.8.11	Suruga Bay

## Earthquake in the vicinity of Japan

Legend  
 ○: Earthquakes with seismic intensity of 6 or greater  
 ~: Active faults



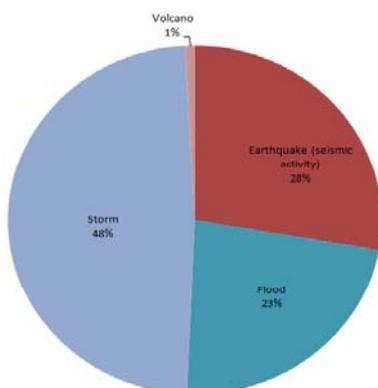
## Overview of disaster situation in japan



The ratio of natural disaster (2000 – 2011)

Japan has wide variety of natural disasters. Also one of the countries affected unpredicted events of natural disaster such as :

- Earthquakes
- Tsunamis
- Volcanic Eruptions
- Typhoons (July – October)
- Heavy Monsoon Rains (May)
- Floods
- Landslides
- Snow Avalanches



The ratio of affected people by natural disaster (2000 – 2011)

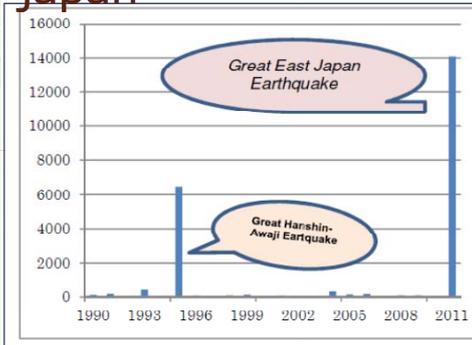


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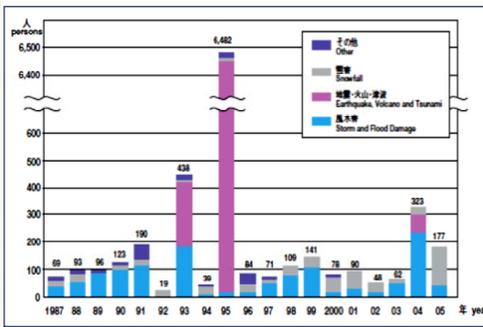
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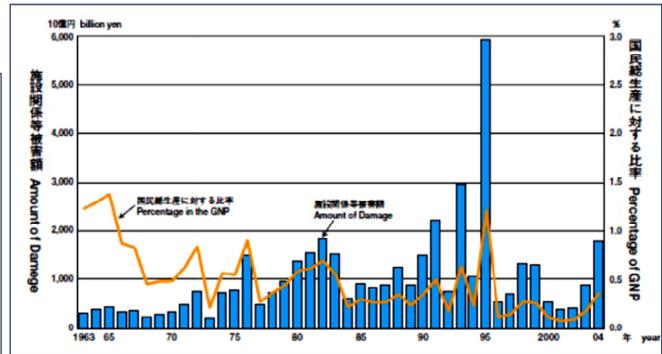
# Overview of disaster situation in Japan



The number of deaths and missing persons in disasters



The number of deaths and missing persons by type of disaster



Amount of damage to facilities due to disasters



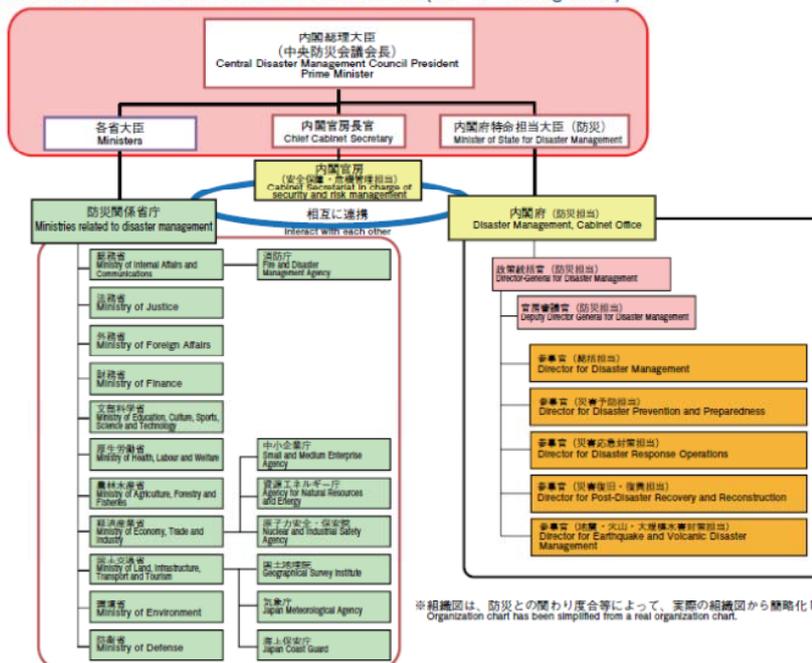
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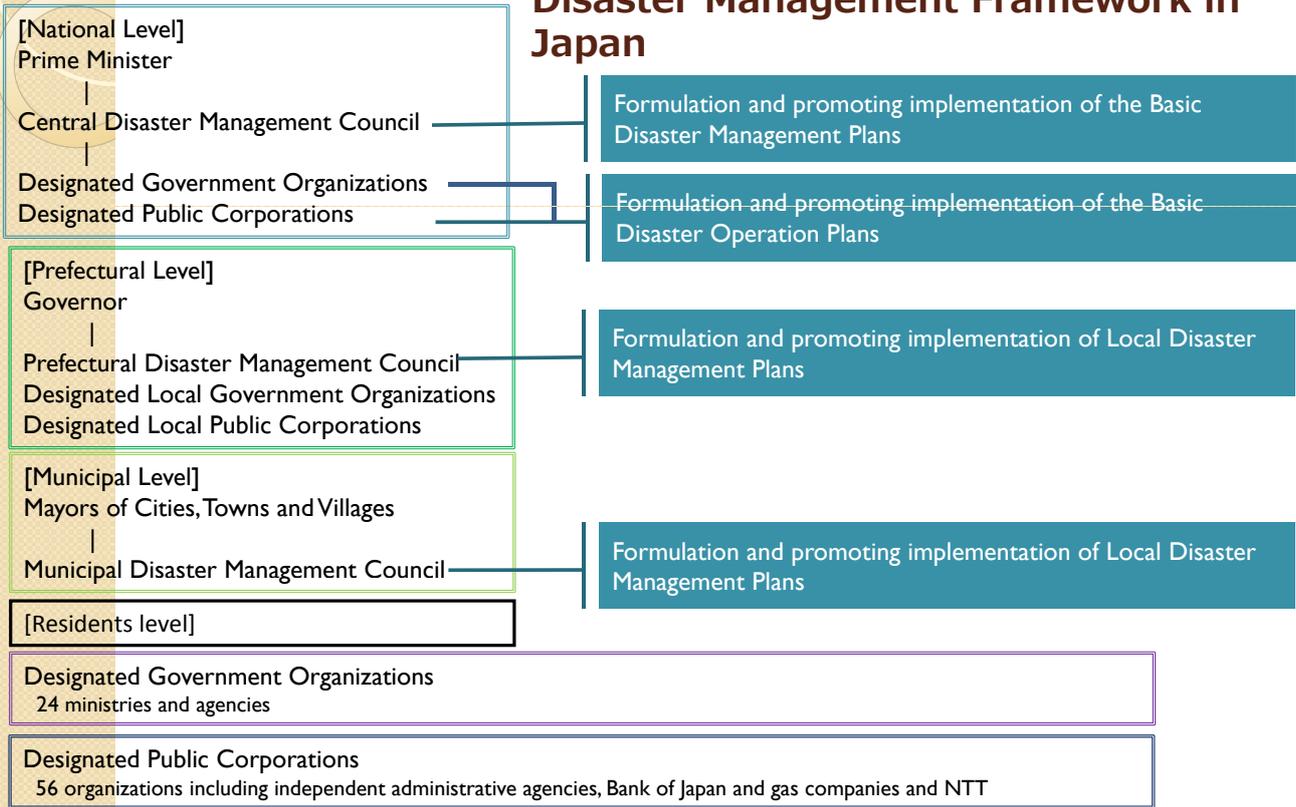
# Structure organization of National Government and Cabinet Office (Disaster Management)

中央省庁及び内閣府 (防災) 組織図  
Organization of National Government and Cabinet Office (Disaster Management)



\*組織図は、防災との関わり度等によって、実際の組織図から簡略化して  
Organization chart has been simplified from a real organization chart.

## Disaster Management Framework in Japan

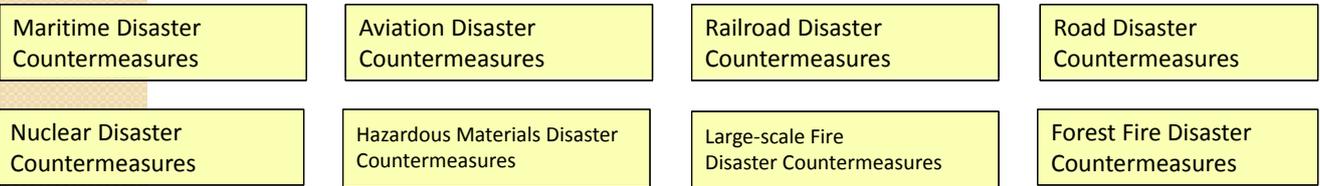


## Disaster Management Plan

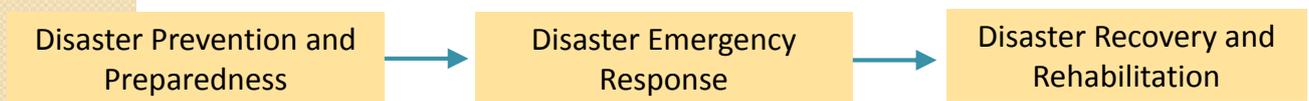
### Natural Disasters



### Accident Disaster



(Addressing all the disaster phases)



(Tangible countermeasures to be taken by each stakeholder)



## 2.

# DISASTER RISK REDUCTION PARADIGM

## Disaster Risk Reduction - What is it ?

Disaster risk reduction (DRR) is a systematic approach to identifying, assessing and reducing the risks of disaster. It aims to reduce socio-economic vulnerabilities to disaster as well as dealing with the environmental and other hazards that trigger them. Its scope is much broader and deeper than conventional emergency management. There is potential for DRR initiatives in just about every sector of development and humanitarian work.

The most commonly cited definition of DRR is one used by UN agencies such as UNISDR and UNDP : "The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development."



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## Disaster Risk Reduction - why do need it ?

Disaster Risk Reduction (DRR) is a program that is very urgent to be done by governments, nongovernmental organizations (NGOs) and the entire community because the majority of people living in areas that have high potential for the occurrence of natural disasters. If the program is not implemented soon, the potential loss of both **property and life will be very large.**



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## The importance of building resilient to disasters

Building disaster resilience is the term we use to describe the process of helping communities and countries to be **better prepared to withstand** and **rapidly recover** from a shock such as an earthquake, Tsunami, Vulcano, drought, flood or cyclone.



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## Why is disaster resilience important ?

Over the coming decades it is expected that both the frequency and intensity of disasters will **continue to increase** as a result of climate change, urban migration, population growth and increased scarcity of natural resources.

This currently, a new paradigm in disaster management, implementation, guided by the results declaration Hyogo Framework for Action (HFA) 2009-2015, namely

- (1) Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation,
- (2) Identify, assess and monitor disaster risks and enhance early warning,
- (3) Use of knowledge, innovation and education to build a culture of safety and resilience at all levels,
- (4) Reduce the risk factors underlying,
- (5) Strengthen disaster preparedness for effective response.



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## Paradigm Shift From Emergency Response To Disaster Risk Reduction

In the midst of the search is comprehensive alternative paradigm, a new approach emerged in seeing the disaster. Paradigm that is the perspective in managing the disaster as a whole began to see threats to cause effects that may occur. This approach is known as the approach to Disaster Risk Reduction (DRR). This approach saw the disaster as part of reasonableness, when elements of vulnerability was met with threats. Disaster was not seen as a rebuke moreover destiny, so do not be seen as a disaster merely a natural phenomenon that impacts forget.

## Paradigm Shift From Emergency Response To Disaster Risk Reduction

Indonesia's emergency response paradigm shift in paradigm towards Disaster Risk Reduction very real stipulated in law no. 24 in 2007. Disaster management focused on aspects of disaster risk reduction, not just emergency response. Disaster risk reduction management is disaster planning system that starts from **prevention, mitigation, preparedness, early warning** and other governments by involving all stakeholders, public and private

### 3.

## DISASTER RISK REDUCTION IN INDONESIA AND JAPAN

## Disaster Risk Reduction in Indonesia

### 1. Strengthening legislation and institutional capacity :

- a. Formulation of rules, regulations and standard operating procedure for Disaster containing PB mechanism, including the division of tasks, responsibilities and resources, as well as coordination
- b. Coordinating planning and policy making and policy implementation at the level of synchronization across ministries / agencies
- c. Establishment and strengthening BPBD and completeness (Command Operational Center, the Regional Rapid Reaction Force)
- d. Strengthening capacities in the region Disaster Management
- e. Regionalization formation Depo Logistics, Training Centre and operational center for the development of infrastructure and resource optimization Disaster

## Regional Logistic Depot (planned in 12 locations)



## Support for Logistics and Equipment for capacity building

### 2009 - 2012

- All 33 provinces received 1 unit of rescue car, 2 units of trails motorcycles, 1 unit of mobile public kitchen, 1 unit of mobile water treatment, 1 unit of mobile command post, 1 unit of multi-function truck, and 1 unit of ambulance;
- Logistics and equipment supports were also provided to 265 BPBDs at district/municipality level



## INA Disaster Relief Training Ground

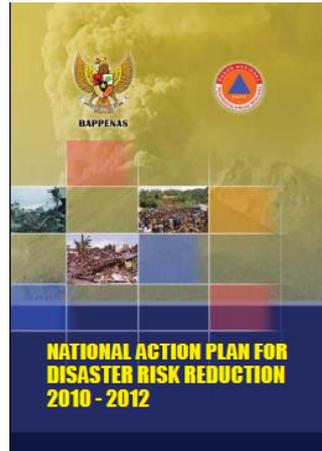
1. INA-DRTG Main office
2. Disaster Management Training Academy and Emergency Operation Center
3. Warehouse
4. Out-door Facilities



## Disaster Risk Reduction in Indonesia

### 2. Disaster Planning

- a. Preparation National Planning Disaster and preparation regional Planning Disaster.
- b. Mainstreaming Disaster plans into development plans



## Disaster Risk Reduction in Indonesia

### 3. Research, education and training

- a. Research and development of science and disaster management technology.
- b. Increased utilization and application of science and technology (through applied research) for Disaster Management, including for early warning
- c. Integrating Disaster knowledge elements in school curriculum
- d. Implementation of disaster preparedness programs in schools
- e. Resource capacity building for disaster education
- f. Public education through the dissemination of information related to disaster

## Integrating Disaster knowledge elements in school curriculum



DRR education for tsunami disaster on Banda Aceh



Disaster Risk Management Based on School Programme



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## Disaster Risk Reduction in Indonesia

### 4. Increased participation and community capacity disaster risk reduction

Development forum for disaster risk reduction (DRR) in the region



Head of BNPB visits to Merapi Radio Community

## Disaster Risk Reduction in Indonesia

### 5. Disaster prevention and mitigation

#### Disaster risk mapping



BNPB provide GIS training to regional BPBD

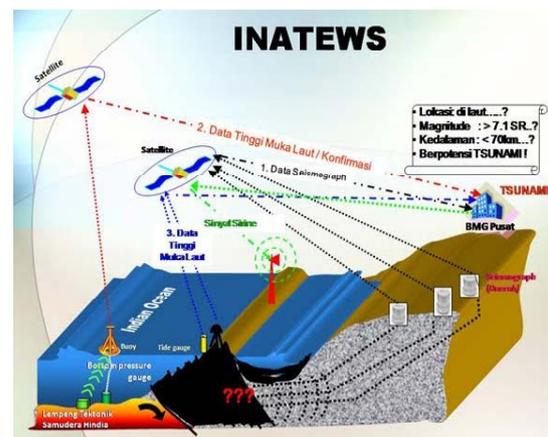
## Disaster Risk Reduction in Indonesia

### 6. Early warning System

#### Development of Early Warning System

There are four elements of early warning, namely,

1. Risk knowledge
2. Technical monitoring and warning service,
3. Communication and dissemination of warnings,
4. Community response capability



INA Tsunami Early Warning System



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## Disaster Risk Reduction in Indonesia

### 7. Preparedness

#### a. Strengthening National Disaster Rapid Response Assistance Eastern and Western region



SATUAN REAKSI CEPAT PENANGGULANGAN BENCANA

**Indonesia Disaster Rapid Response Assistance (SRC PB)**



SATUAN REAKSI CEPAT PENANGGULANGAN BENCANA

**INDRRA Disaster Drill**



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## Disaster Risk Reduction in Indonesia

#### b. International cooperation in improving preparedness

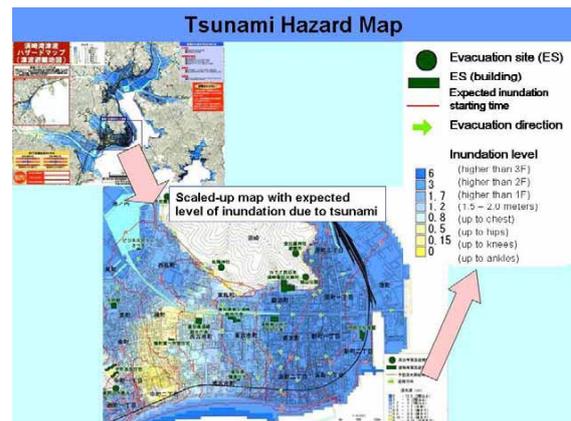


**AMCDRR on Yogyakarta, October 2012**

## Disaster Risk Reduction in Japan

### Disaster risk assessment and information system

The scientific management of the disaster information cannot be separated from the hazard assessment. Leave the hazard assessment, the Government will not be screening the genuineness of the disaster information, the government disaster prevention, disaster relief, disaster reduction decision-making cannot guarantee the accuracy of the science



## Disaster Risk Reduction in Japan

### Disaster information system

Disaster information play important role in the disaster rescue. There is no accurate, timely and comprehensive disaster information, the government disaster control work will not be able to effectively carry out.

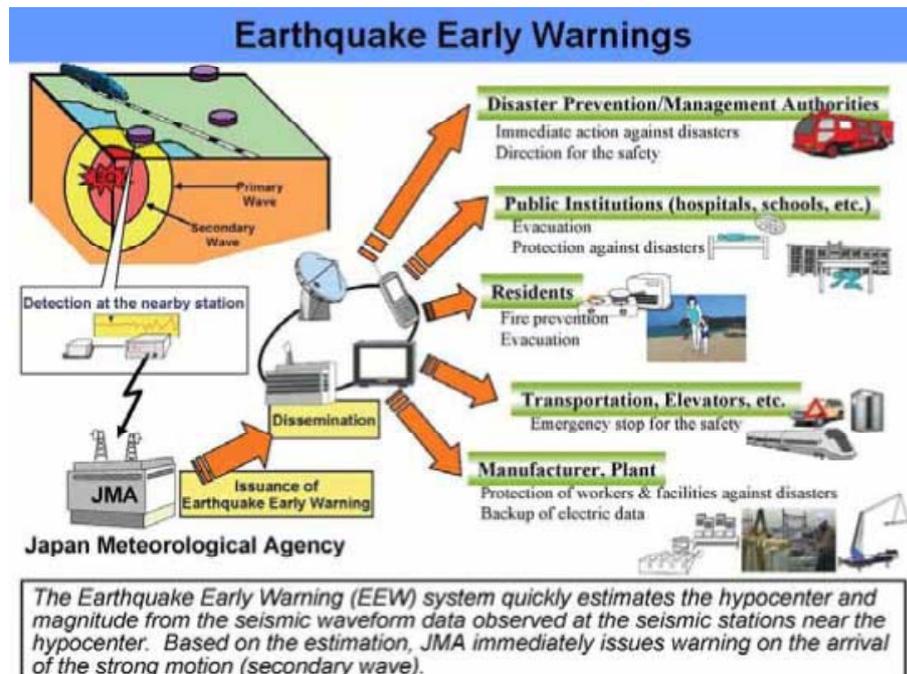
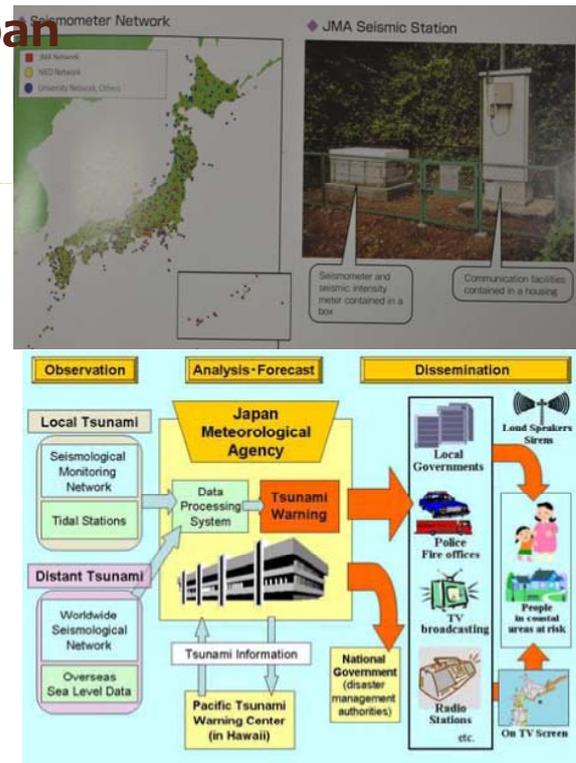
Disasters governance requires the government must build the relevant aspects of information involving emergency incident management information network

# Disaster Risk Reduction in Japan

## 2. Disaster early warning

In Japan, organizations involved in disaster reduction, especially the Japan Meteorological Agency (JMA), use 24-hour systems to carefully monitor various natural phenomena and weather conditions. The JMA has developed a system called the Computer System for Meteorological Services (COSMETS).

It uses a telephone-line-based weather information transmission system to collect observation data and disseminate information, and a super computer system to conduct analyses and make predictions.



## Disaster Risk Reduction in Japan

### 3. Disaster reduction and prevention project

Japan most of the area are built or under construction, disaster prevention base this disaster prevention facilities in peacetime as parks, stadiums, disaster prevention and education base, as well as material reserves base can be immediately converted to refuge in emergency disasters the place can be used as an emergency command center, material deployment center, medical security center has become important disaster preparedness base.



**Miki Earthquake Disaster Memorial Park**

## Disaster Risk Reduction in Japan

### 4. Disaster reduction activity

In order to promote disaster reduction activities, need the cooperation of every citizen, the citizen should understand the importance of disaster reduction, therefore, through a variety of disaster reduction activities, citizens mitigation concerns.

Japan Disaster Prevention Day on September 1, Disaster Prevention Week from August 30 to September 5, the central and local governments are usually a series of activities, such as disaster prevention and exhibitions, disaster prevention seminars and disaster drills race.

## Disaster Risk Reduction in Japan

### 5. Disaster education and research

Japan gave me the most impressive is Japan's disaster prevention education has been deeply integrated into the daily life of the Japanese people. Of course, this because high-frequency earthquakes, typhoons and other disasters, but also shows that the Japanese government and people to the positive attitude towards learning how to respond to natural disasters.

Japan's disaster management work is very important aspect to the lives of ordinary people through a variety of ways to enter into the unusual social life.



## Conclusion and lesson learning

With the enhancement of economic and social development and human activities, the loss of the natural disasters in order to faster growth. At present, Indonesia has made in disaster information management a series of progress, but there are still many shortcomings, especially in the face of the catastrophe of inadequate preparation, Indonesia can learn a lot of experience in Japan

1. Realising a resilient nations and communities face of disaster is certainly a long-term process, synergy between generations and the need to continuously between Governments, communities and businesses
2. In contrast to the paradigm that has been adopted by the government is only looking at the extent of the disaster risk reduction activities of the technical side of disaster



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4. Full use of modern information technology, to build a well-developed information technology support system.
5. Quickly and accurately assess the information system to ensure true and reliable disaster information.
6. Strengthen disaster information publicity, education, drills, training, socialization mechanisms construct disaster information.



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Thank You  
Arigato gozaimasu  
Terima kasih

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