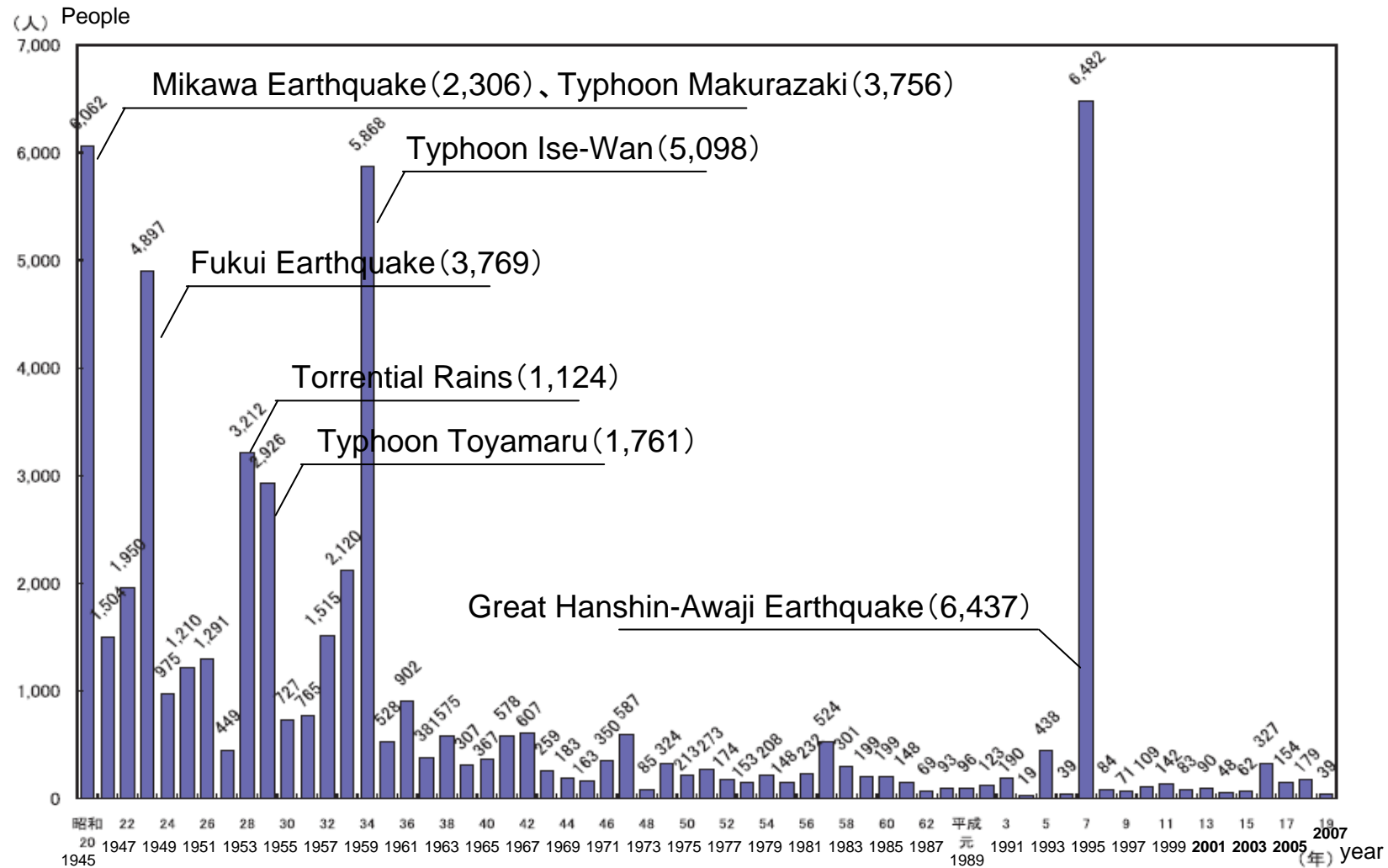


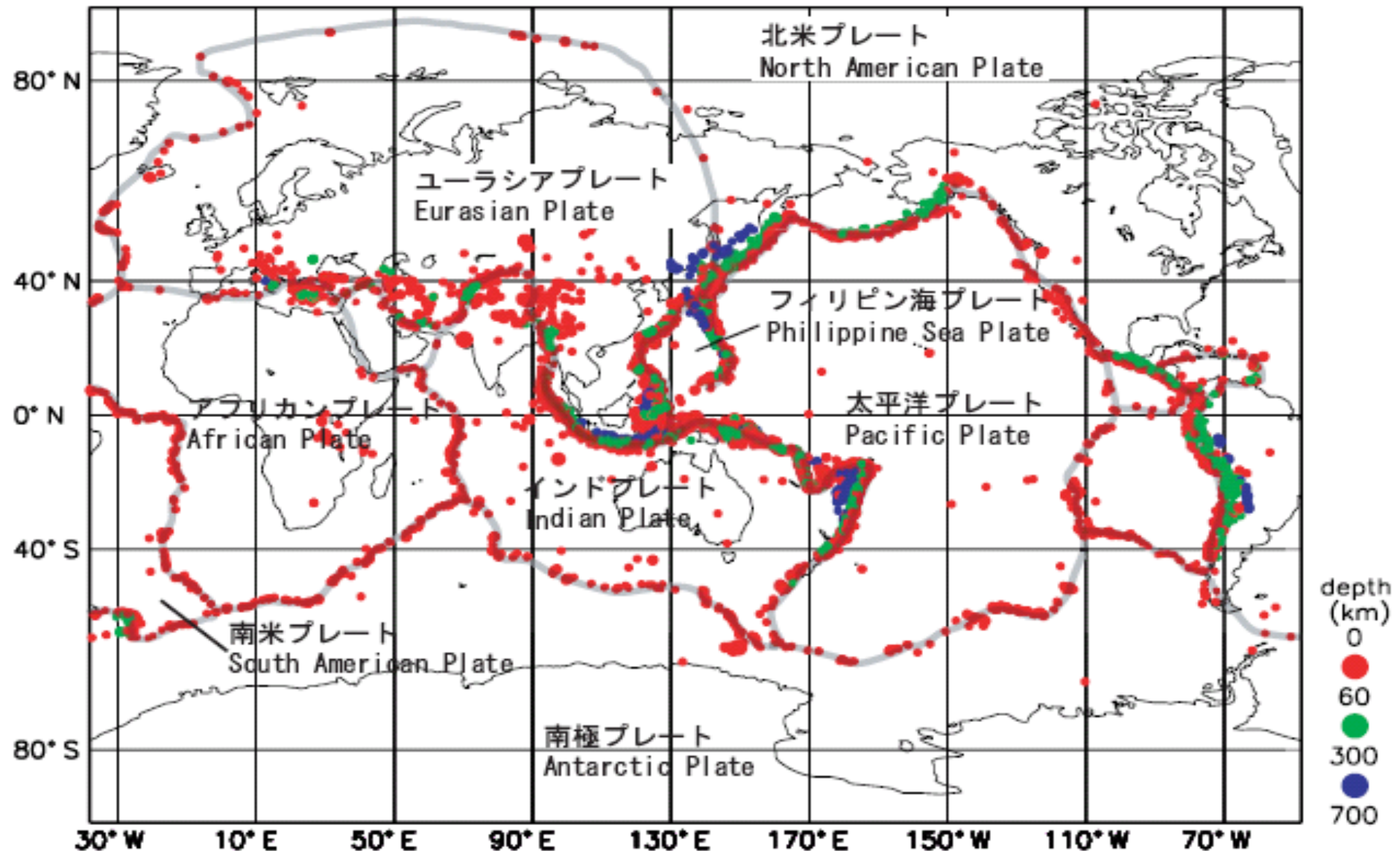
Disaster Management Policy in Japan

**Sep. 17, 2009
Cabinet Office of Japan**

The number of Death and Missing Persons in Natural Disasters



World Geographical Distribution of Hypocenters and Plates



More than 20% of Earthquake with M6 or greater in the world occurred around Japan last 30 years.

Large-scale Earthquake predicted in the future

Tokai Earthquake

The Earthquake with a possibility of being predicted just before it occurs

There is a high possibility of Great earthquake occurring
The Earthquake with a possibility of being predicted just before it occurs

Wide area Earthquake disaster on Western Japan

Tonankai and Nankai Earthquake

It is anticipated that wide area earthquake will occur in the first half of this century.

Chubu area and Kinki area inland Earthquake

It is anticipated that a earthquake devastate old wooden urban district and cultural heritage.

A Giant Tsunami over 20m

Trench-type Earthquake in the Vicinity of the Japan and Chisima Trenches

8 types of Earthquakes like The Miyagi-ken-oki Earthquake with a imminent possibility to occur

Tokyo inland Earthquake

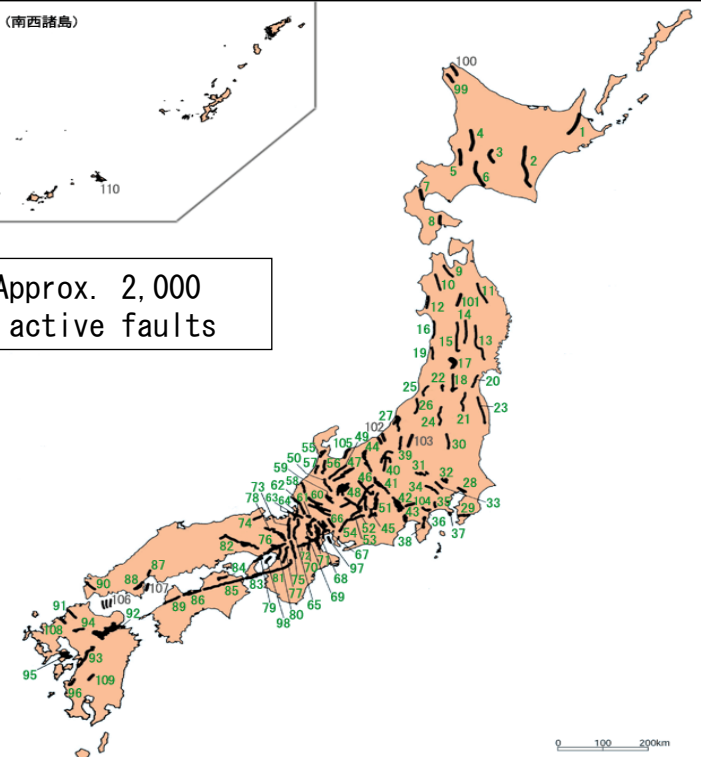
It is an earthquake which is anticipated that it devastate capital function.
An M7 scale earthquake with an imminent possibility

Distribution of active faults in Japan

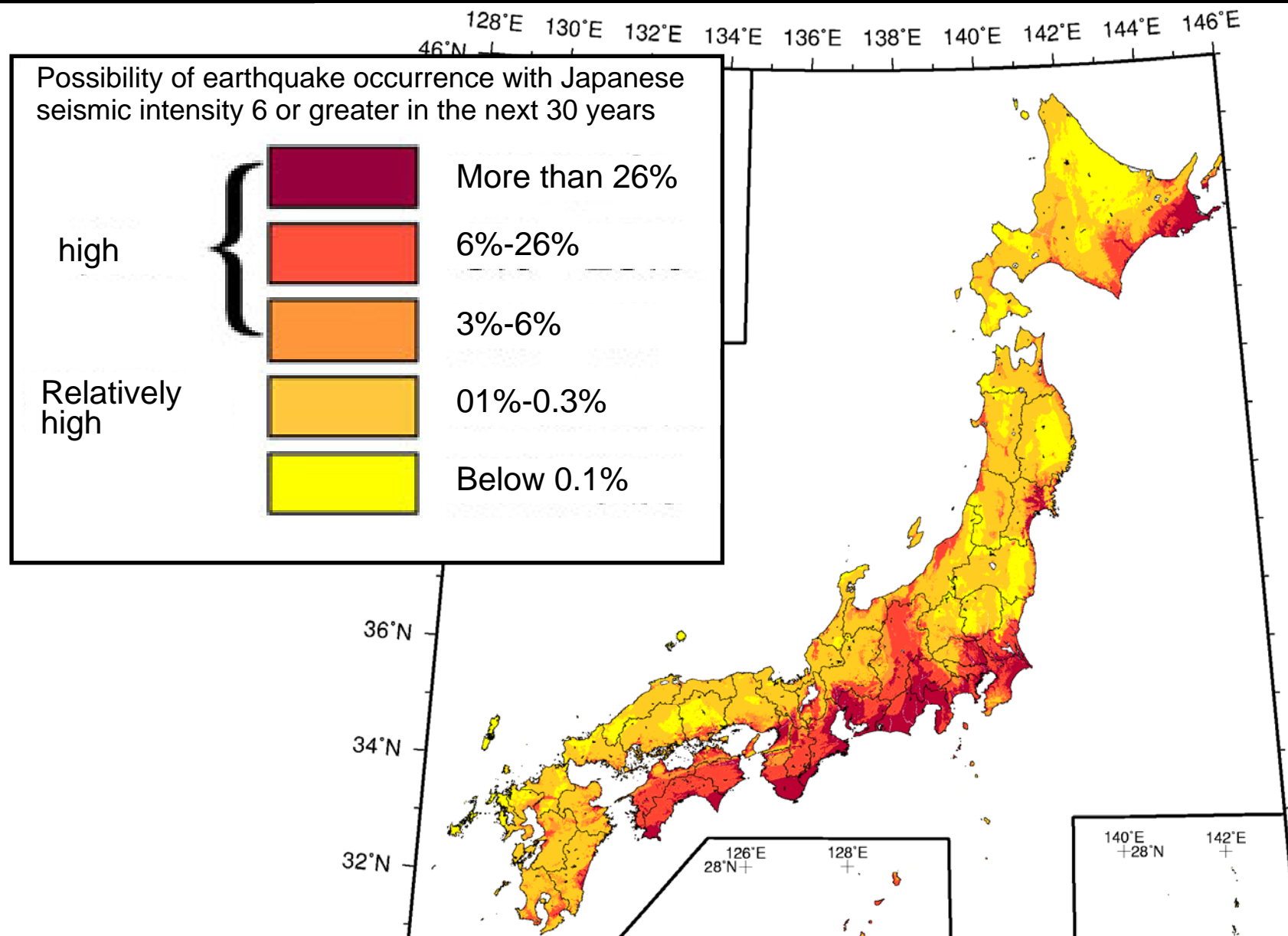
(南西諸島)

There are Approx. 2,000 discovered active faults

The Headquarters for Earthquake research Promotion of Government evaluated main faults. They have made result of evaluation of activity about 104 faults public.



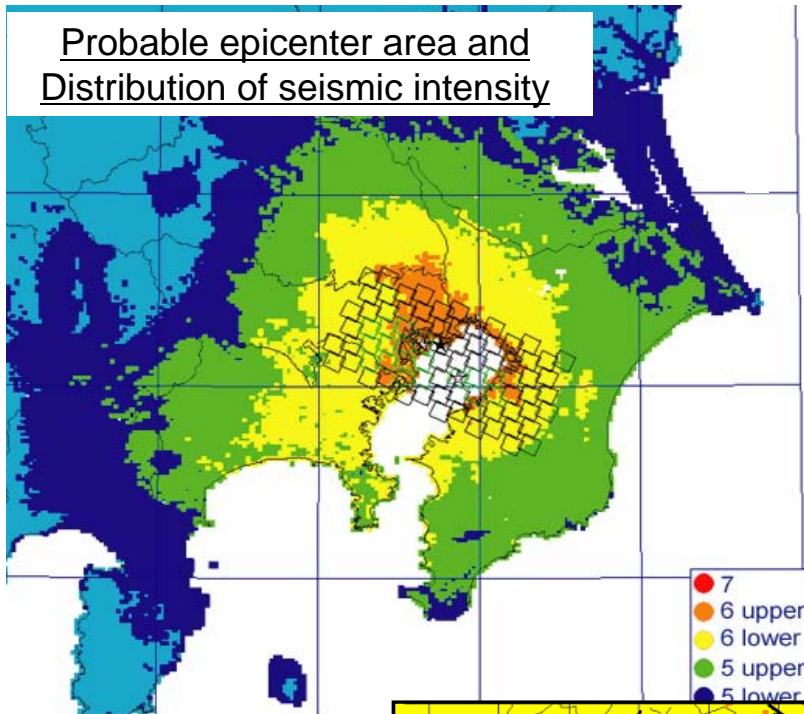
Earthquake activity prediction map



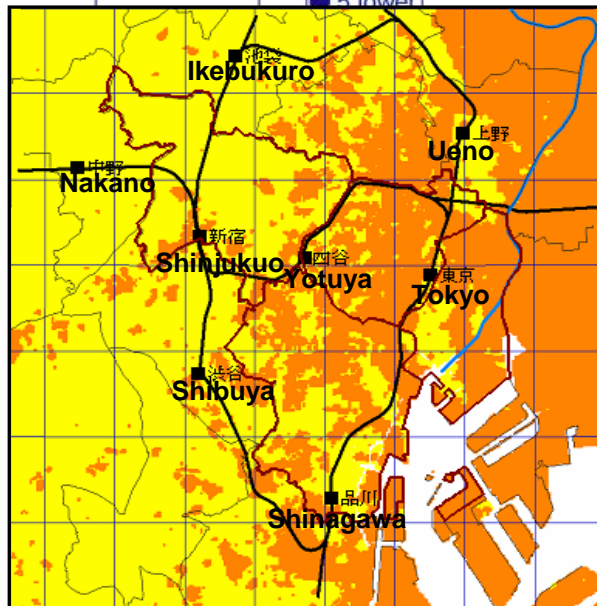
Source: Prepared by Cabinet office based on the data of The Headquarters for Earthquake research Promotion of Government .

Outline of Countermeasure against Tokyo inland Earthquake①

Probable epicenter area and
Distribution of seismic intensity



(Magnified image of
the capital area)



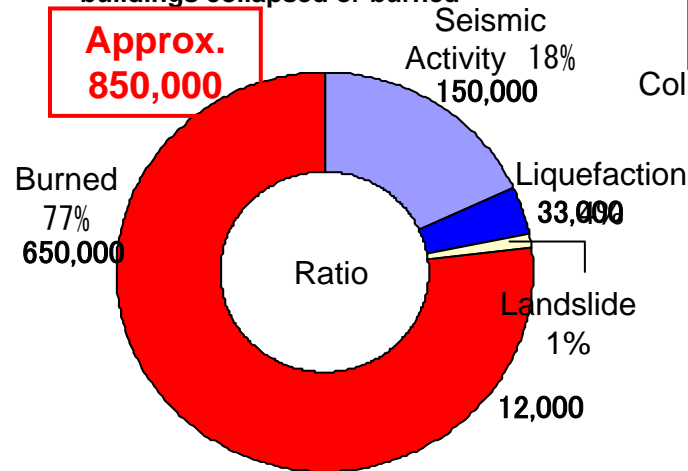
Damage to buildings and people

(Northern part of Tokyo wan Earthquake M7.3) (winter 06:00 p.m. Wind speed 15m/s)

① Number of houses and

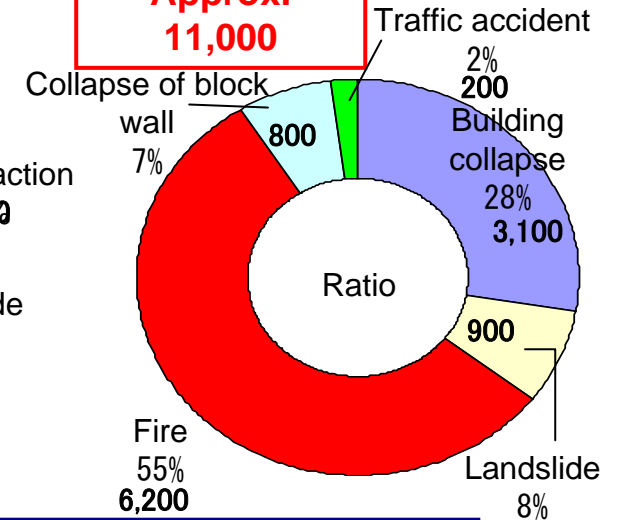
buildings collapsed or burned

**Approx.
850,000**



② Casualties

**Approx.
11,000**



Economic Loss

(Northern part of Tokyo wan Earthquake M7.3)

(winter 06:00 p.m. Wind speed 15m/s)

The amount of loss Approx. 112trillion yen

Direct damage 66.6 trillion yen

- Damage to Buildings 55.2trillion yen
- Damage to the other property and infrastructure 11.4 trillion yen

Indirect damage 45.2 trillion yen

- Reduce production 39 trillion yen
- opportunity loss and time loss by traffic disruption 6.2 trillion yen

Outline of Countermeasure against Tokyo inland Earthquake ②

Policy Framework for Tokyo Inland Earthquake

Secure the continuity of the capital functions

- Countermeasure and goals keeping **3days after disaster occurrence** in mind

Countermeasure to reduce massive damage ~Forming City ~

Planned and prompt precaution

Establishment of wide-area disaster reduction system

Measure of recovery and rehabilitation

Countermeasure against the foreseeable massive number of evacuees and people stranded without a means of returning home

Enforcement of disaster reduction by region and company

All the society work on

Development of citizen movement

(Public-help efforts, self-help efforts and mutual-help efforts)

Guidelines for Tokyo Inland Earthquake Emergency Response Activity

Activity system of Government

- Establishment of Emergency disaster management headquarter and Emergency on-site disaster management headquarter

Activity for securing the continuity of the capital central functions

- Keeping functions of the capital central agency

Specified roles of each ministry

Main emergency response activities

- Search, rescue, medical operation, fire fighting and emergency transportation

Tokyo Inland Earthquake Disaster strategy

To **halve the death toll** and to **reduce economic loss by 40%** in 10 years. (~2016)

Casualties Approx. 11,000 → 5,600

Earthquake-proofing of houses and buildings :

Quake-proof ratio 75%→90%

Fix household furniture : Fixation ratio Approx. 30%→60%

Improve densely populated urban area :

Fire-proofing ratio over 40%

Improve initial fire extinguish ratio :

community ratio with voluntary disaster management organization 72.5%→96%

Measures for steep terrain of landslide risk area :

No. of house safe from landslides in steep terrain increase by approx. 30%

Economic loss Approx. 112trillion yen → 70trillion yen

Recovery cost reduction measures :

- Quake-proof houses and buildings ratio 75%→90%
- Anti-seismic reinforcement of direct control road facilities: mostly completed
- improve quake-proof quays: Approx. 55%→70%

Business continuity of companies :

Ratio of companies with business continuity plans
Large company : mostly all Medium-sized company over 50%

Measures for restoring transportation networks quickly

- Quake-proof ratio 75%→90%
- Anti-seismic reinforcement of emergency transportation road facilities: mostly completed
- improve quake-proof quays: Approx. 55%→70%

Goal and Sate of Earthquake-proofing

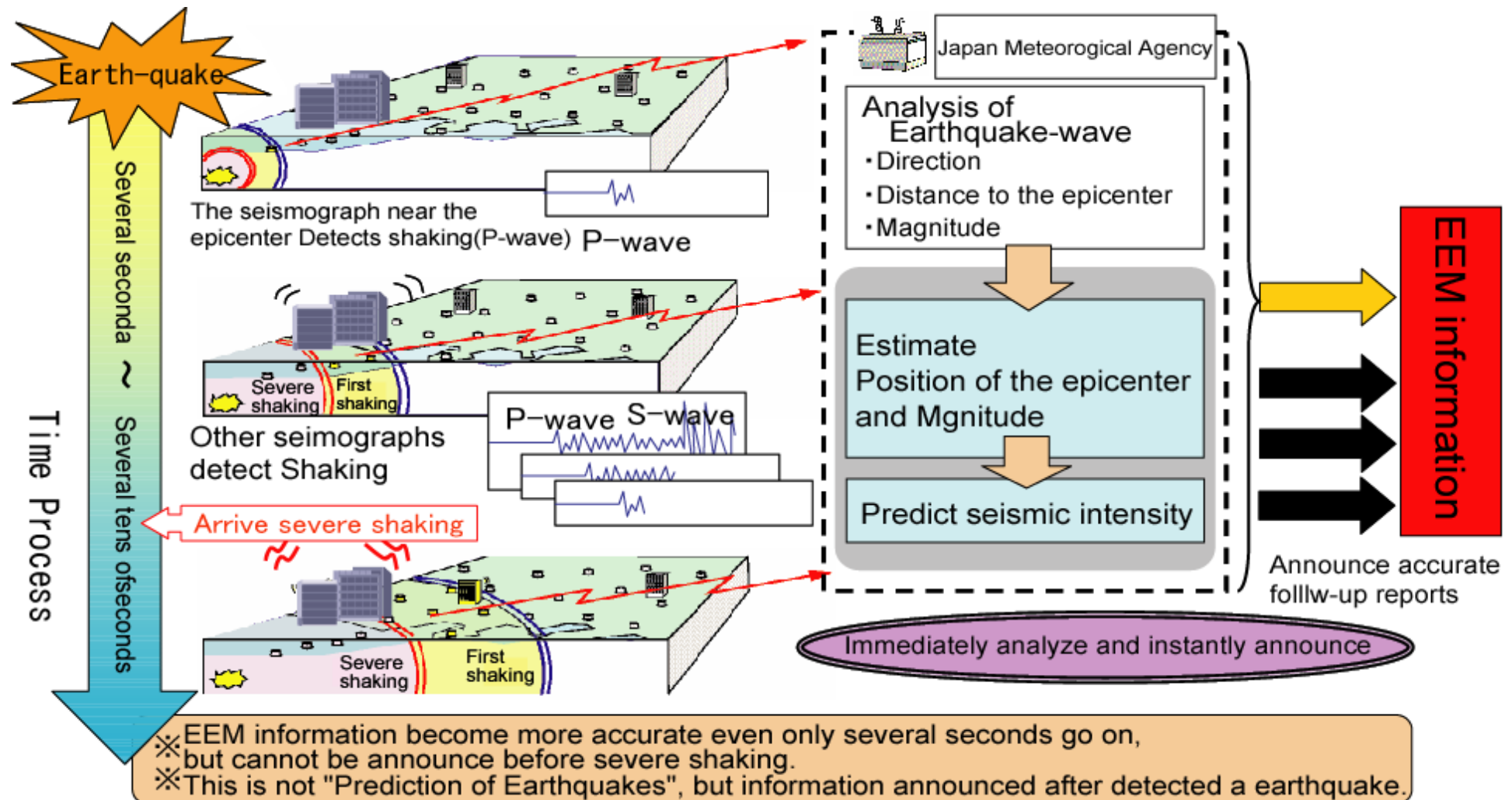
Main target	State	Goal
School (Public junior high school)	62.3% (April 2008)	Earthquake proofing 10,000 buildings with high possibility to collapse by 2011
Hospital (Hub hospital in disasters and Emergency medical center)	58.6% (May 2008)	Earthquake-proofing 50% of institutions which have not earthquake-proofed yet (By 2010)
Houses and Buildings	79% (March 2008)	90% (By 2015)

※Except these, setting goals and progressing in earthquake-proofing about water works and drainage.

Earthquake Early Warning (EEW) Information

What is Earthquake Early Warning Information?

- EEW information announces the automatically estimated hypocenter, magnitude and seismic intensity quickly between several seconds to several tens of seconds before the start of severe shaking (S-wave) with detecting P-wave near the epicenter.
- If EEW information conclude the earthquake seismic intensity 5 over, it announce the names of area severe shaking (seismic intensity 4 over) come before severe shaking arrive (to citizenry).
- In areas near the epicenter, EEW can't sometimes announce before severe shaking arrive.



Progress of International Cooperation in Disaster Reduction

Natural disasters in the world

December 2004

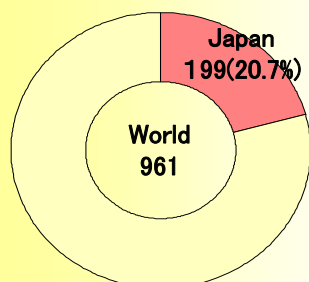
Sumatra large-scale earthquake・the Indian Ocean Tsunami 230,000
(Casualties and Missing)

May 2008

China Shisen Great Earthquake Approx. 90,000

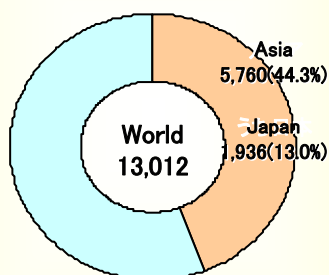
Myanmar Cyclone Nargis Approx. 130,000
(Casualties and Missing)

Number of earthquakes
M6 over



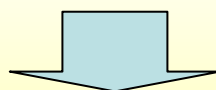
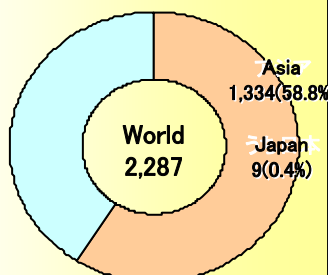
注) Japan Meteorological Agency
United States Geological Survey (USGS)

Amount of loss
(100million dollars)



注) University of Belgium investigation center (CRED)
1977-2006

Casualties
(thousand)



Reduction of damage in disaster is a big issue in international society.

Japan has large stocks of knowledge and technique . We promote International Cooperation in Disaster Reduction with these.

Efforts of Japan

- 1994 First UN World Conference on Disaster Reduction in Yokohama
(Hanshin-Awaji Great Earthquake; January 1995)
- 1998 Establishment of Asian Disaster Reduction Center in Kobe
- 2000 International Strategy for Disaster Reduction (ISDR) started. (Resolved UN General Assembly in 1999)
(Sumatra large-scale earthquake・the Indian Ocean Tsunami; December 2004)
- 2005 Second UN World Conference on Disaster Reduction in Kobe
“Hyogo Framework for Action2005-2015” was adopted
- 2009 Japan-China-ROK ministerial meeting on disaster management in Kobe (schedule)

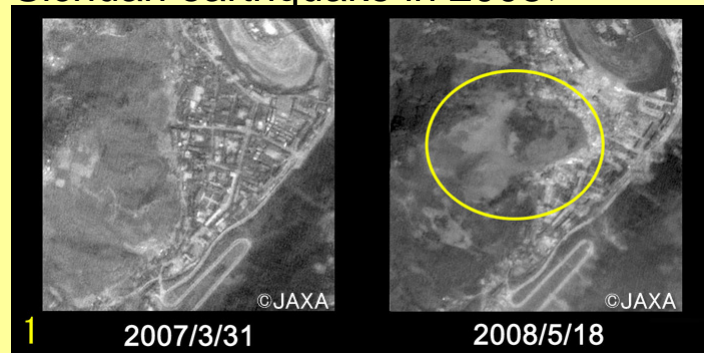
Hyogo Framework for Action 2005-2015

- Framework for disaster management in international society for 10 years (2005~2015)
- This request to Ensure that disaster reduction is a national and local priority with a strong institutional basis for implementation.
- Hyogo Framework for Action is adopted in The United Nations World Conference on Disaster Reduction in January 2005 held in Kobe City, Hyogo prefecture. Japan lead arguments in this conference

Utilization of Satellite technology for disaster manegemant

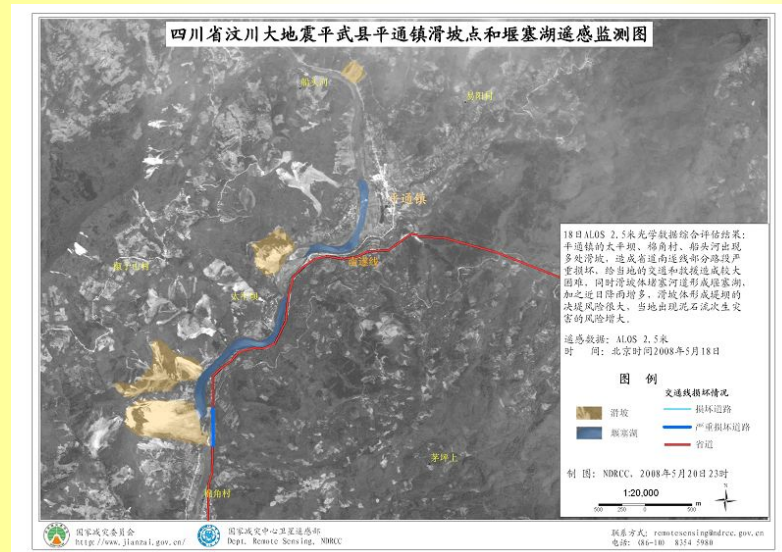
Observation just after natural disasters

< Observation of the affected area by
Sichuan earthquake in 2008 >



<Before>

<After>



Chinese government made a map for disaster recovery based on the satellite images produced by foreign countries.

Utilization for disaster preparedness



It is becoming clear that climate change affects in cold region. For example, IPCC fourth report pointed that the expansion of glacial lakes is common, ground in the region is becoming unstable and the number of avalanche is glowing.

Especially in Himalayan region (Bhutan, Nepal), these are big challenge now.



OMaking of Hazard map utilizing satellite images

- ① Making hazard map will help the government action on disaster management promptly .
- ② Utilizing hazard map will help the citizen as well as the government prepare against natural disasters.

La ringrazio per la Sua cortese attenzione !
ご清聴ありがとうございました。

