



**Final presentation by  
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*Comparative Study on  
Disaster risk Management  
cycle in Japan and Nepal,  
presented on Asian disaster  
reduction center, Kobe ,  
Japan*

*03-December 2009*



**Disaster Risk Reduction village , Hat- Kobe, Hyogo**

# Outlines

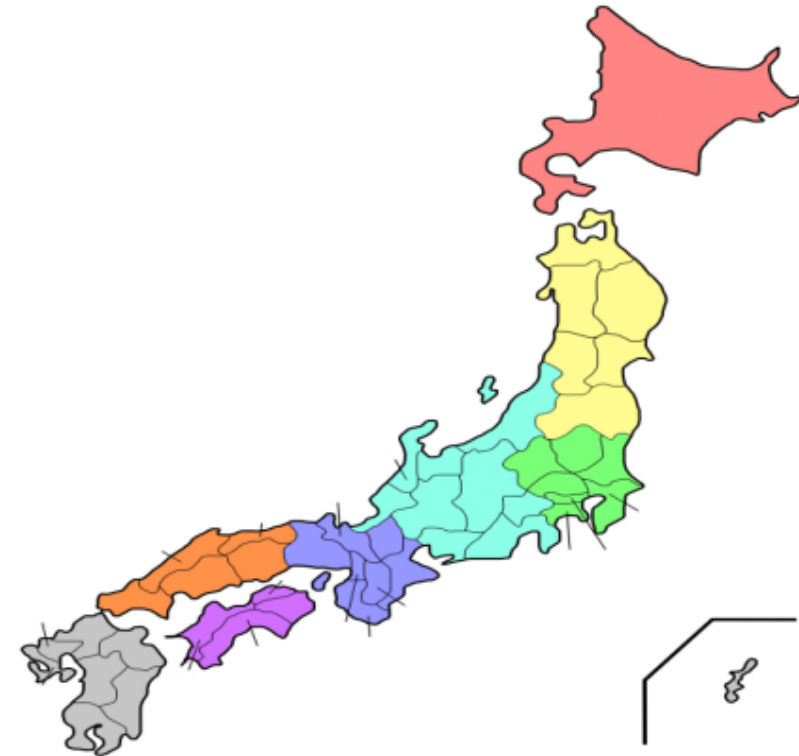
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- I Major Natural Disaster in Nepal**
- II Nepal Disaster Management System**
- III Disaster risk management cycle in Nepal**
- IV Knowledge and experienced Gained from Japan**
- V Major natural Hazards in Japan**
- VI Japan Disaster Management System**
- VII Disaster risk management cycle in Japan**
- VIII Study and field Visit of Japan**
- IX Welcome to Nepal**

Heartily welcome from Himalayan countries



Administrative division, national (map , flag, logo, flower, bird) of Nepal and flag, map of Japan



# Glimpses of Nepal



# Major Natural Disasters in Nepal

- ❖ Floods
- ❖ Landslides
- ❖ Earthquake
- ❖ Fire
- ❖ Droughts
- ❖ Glacier lake outburst flood

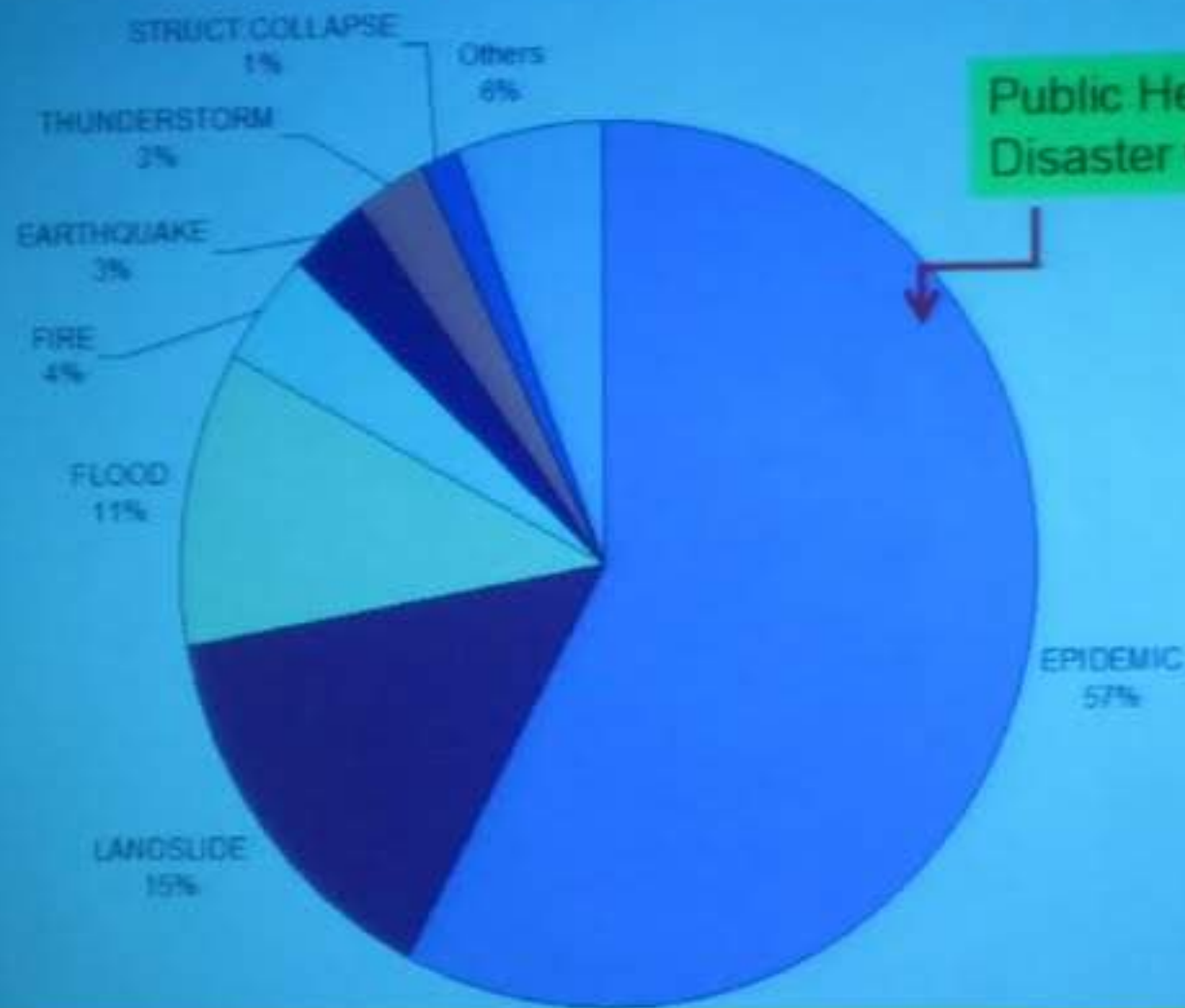
- ❖ Windstorms
- ❖ Hailstone
- ❖ Thunderbolt
- ❖ Avalanches
- ❖ Epidemics
- ❖ Swine flu, Bird flu,



## Year wise disaster scenario loss of lives by major types of disasters in Nepal (2001-2007)

year	Flood & landslide	Earth-quake	Thunder-bolt	fire	Hails-tone	Wind-storm	epidemic	avalanche	total
2001	173	0	23	53	1	3	141	-	394
2002	196	1	39	26	1	1	154	-	418
2003	441	0	3	14	0	3	0	-	461
2004	232	0	42	16	0	20	-	-	310
2005	131	0	10	10	0	0	41	-	192
2006	141	0	17	28	1	0	34	-	221
2007	216	0	35	34	18	1	9	9	322

# Deaths by Events (1971-2007)



Public Health Concern Or  
Disaster Concern?

Total Number of Deaths by disasters (1971-2007): 27,256



# landslides



# Flood



# Fire and Drought



# Earthquake and Glacier lake out burst flood

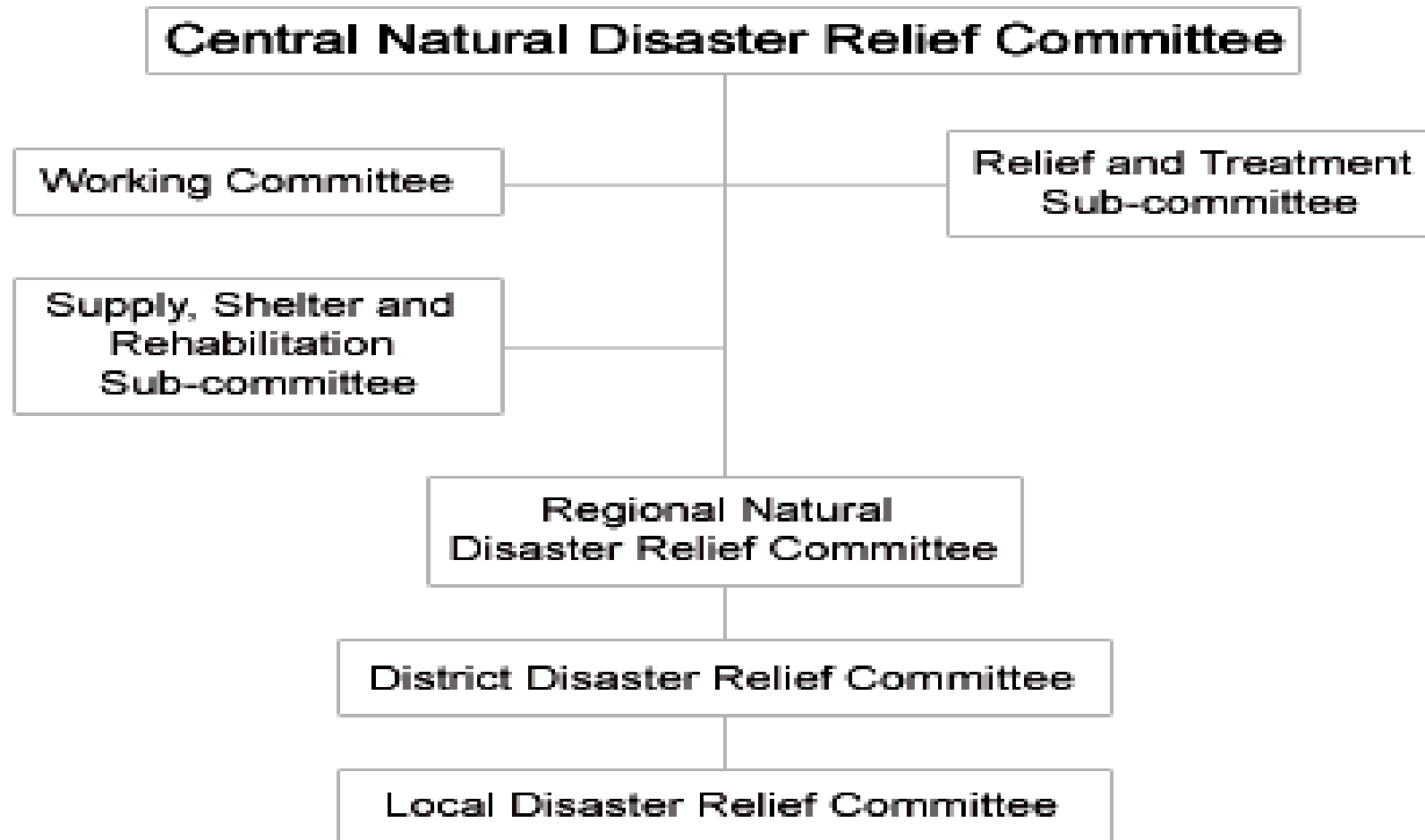


# Disaster Management System in Nepal

- **Natural calamity relief act 1982**
- **Soil and water conservation act 1982**
- **Local self governance act 1999**
- Three year interim plan 2007-2010
- Environmental protection act 1996
- National Building code 1994,
- National action plan 1996,
- Hyogo framework for action 2005-2015
- Relief standard 2008,
- National strategy for disaster risk management 2009
- Water induced disaster policy 2005
- National shelter policies 1996
- National water plan 2005

# Disaster response framework in Nepal

- Structure, according to national calamity act 1982



# Disaster risk management cycle in Nepal

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## I) Response and relief

- Central natural disaster relief committee
- District natural disaster relief committee
- Local natural disaster relief committee
- Nepal police, Nepal army, Armed police force, Nepal red cross
- Search and Rescue activities
- Establishment of relief coordinating center
- Assignment of institutions/ persons in charge
- Providing relief goods to the victims
- Temporary shelter, clean drinking water, and first aid kit for victims.
- Volunteer center

# Flood Response and relief



Photo: Nepali Times

Emergency Rescue



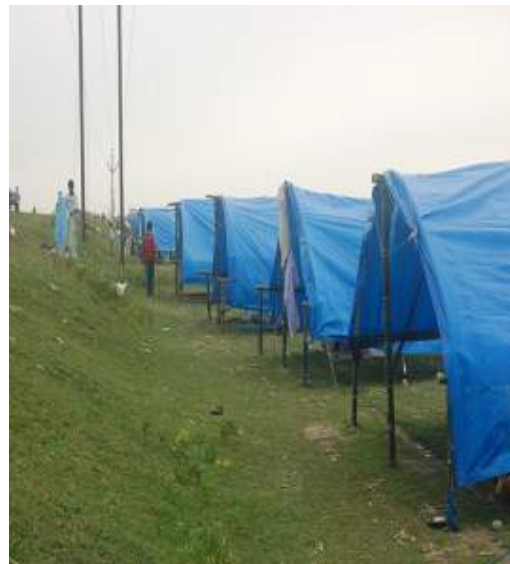
Supply of relief good



Supply of Clean drinking water



First aid kit



Emergency shelter for victims



2008 © Mercantile Communications Pvt. Ltd.

Search and rescue



## ii)Relief to recovery and Rehabilitation, reconstruction

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I)Provision of compensation relief fund:-

a)Cash for food update rs.1000 per family member to household,

b)Return package update:- Rs, 50,000 per family.

c)Compensation package for building, land and crops,2 kattha of land for landless people

ii)Health service in return areas, and free health camps, child protection, wash facilities for school toilets, and water points.

iii)Food security and road construction:- food for work ,community fish ponds, rural road construction, Hume pipe and culvert maintenance, check dam construction and deep land filling, community based water supply system through hand pumps, community based pump set boring for irrigation----- continued

- iv) Health and nutrition:- fresh milk for infants.
- v) Education:- construction of building and madarsa, admission campaign, improve play ground, wash facility and fencing ,free school dress and books ,copy, launch ,cash and cooking oil for school children.
- vi) Agriculture and livestock:- free distribution of mung seed(lentil) ,vegetable , rice and paddy, jute seed, promote yam cultivation, providing fish kit , commercial banana farming, goat procurement fund, land use planning, watermelon, ginger farming, livestock health camps, The procurement of container, refry, semen and other essential materials for artificial insemination of buffalo and cow.
- vii) Livelihood programs:- formed entrepreneur groups, comprising vegetable farming, shuttering, Rickshaw, Saloon, cream separation, brass band etc in return areas. The skill-based training – carpentry, toilet ring, farming training(pumpkin) , masonry and bamboo basket making, boutique training, steel fabrication training.
- viii) Shelter management:- provide Shelter items consists of bamboo, cement, roofing sheets, wood and cement poles, tiles and other items based on the needs of the affected families .

# Rehabilitation and reconstruction of (sand)land use like pond, fishery, ginger, banana, and water melon farming



### iii) Mitigation and prevention

- small scale bioengineering mitigation techniques
- structural engineering work like spur construction.
- low-cost bamboo work, sand-filled cement sacks and community plantation along riverbanks.
- Community boats have become a means for safe evacuation during flood
- provisions for community shelters have effectively saved lives during periods of inundation.
- The construction of evacuation routes has helped people reach these shelters
- Raising hand pumps has ensured a source of safe drinking water and reduced the risk of epidemics

# Community flood Mitigation work



*community managed bioengineering work*



spur construction



*Plantation control soil erosion at river bank*



raised hand pump for safe drinking water



mitigation on embankment made out by Using bamboo construction



**Community shelter**



community making evacuation routes

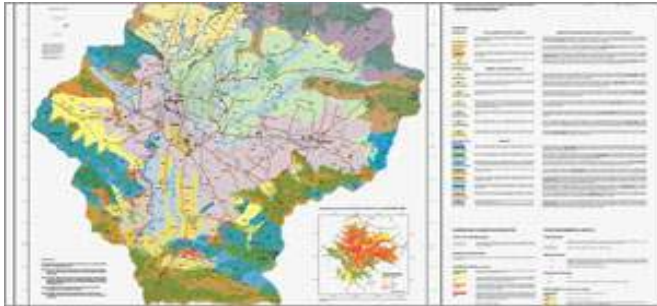


Community managed boats

## iv) Preparedness

- a) Hazard mapping
- b) Stockpiling Food and non food items
- c) Disaster education
- d) Capacity building
- e) Improved early warning system
- f) Emergency drills

# Hazard mapping and disaster education



environmental geological hazard map of Kathmandu



earthquake simulation exercise for students



folk song competition for DRR



Mass observing Street drama touching disaster issue



DRR education through radio program



Observing the wall painting



Observation of IEC material by children

# Community Capacity building



Community meeting



collection of food grains for emergency fund



Training First aid team



community drills for rescue



distribution life jacket for rescue



Community participation for erosion control



consultative meeting for district stakeholder



# Flood Early warning system



Water gauge level



Water gauge reader



community radio broadcasting early warning



Flood early warning towers



disseminating early warning



Ready for evacuation

# Flood Emergency drills



**Women team for drills**



**Drills rescue of women special care**



**Evacuation simulation drills**

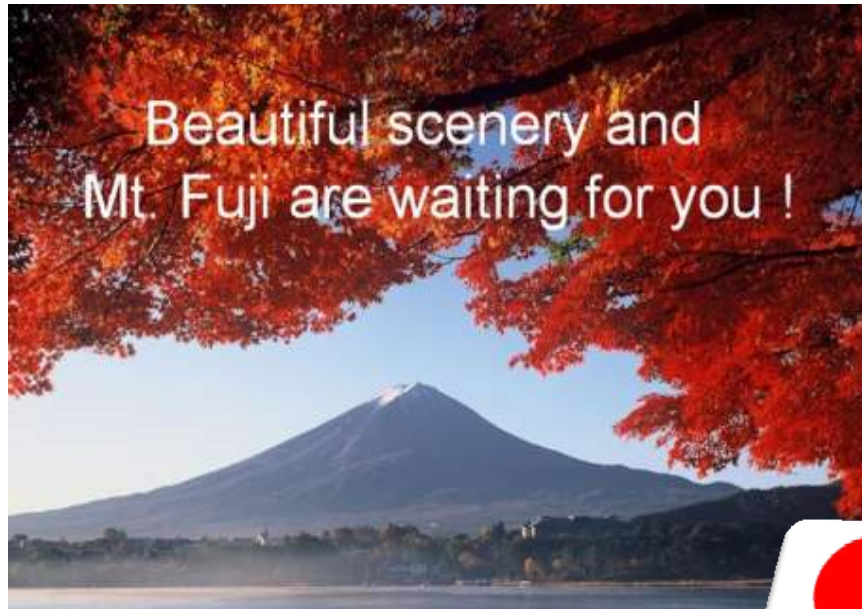


**rescue team drills**

# Knowledge And Experiences Gained Through The Visiting Researcher Program

- **Natural Disasters in Japan**
- **Central Disaster Management Council**
- **Acts Regarding Disasters**
- **Disaster Countermeasures**
- **Disaster Memorial**
- **Disaster risk management cycle :-  
Response,relief,rehabilitation,reconstruction,mitigation,prevention, and preparedness.**

# Major seasons of Japan



# Major natural hazards in Japan



**Earthquakes, Volcanoes,  
Landslides, Tsunami and sea  
tides, Floods, Heavy snow falls,  
storm damage, Tornado,  
Typhoons, Torrential rains**



# Natural Disasters in Japan

Mt. unzen volcano, Kobe earthquake, snow disaster, flood



Manmade disaster nearly 1,50,000 thousand people died in Nagasaki and Hiroshima Atom bombing





Never Want to listen  
of Such a Man made  
Disaster in the world.

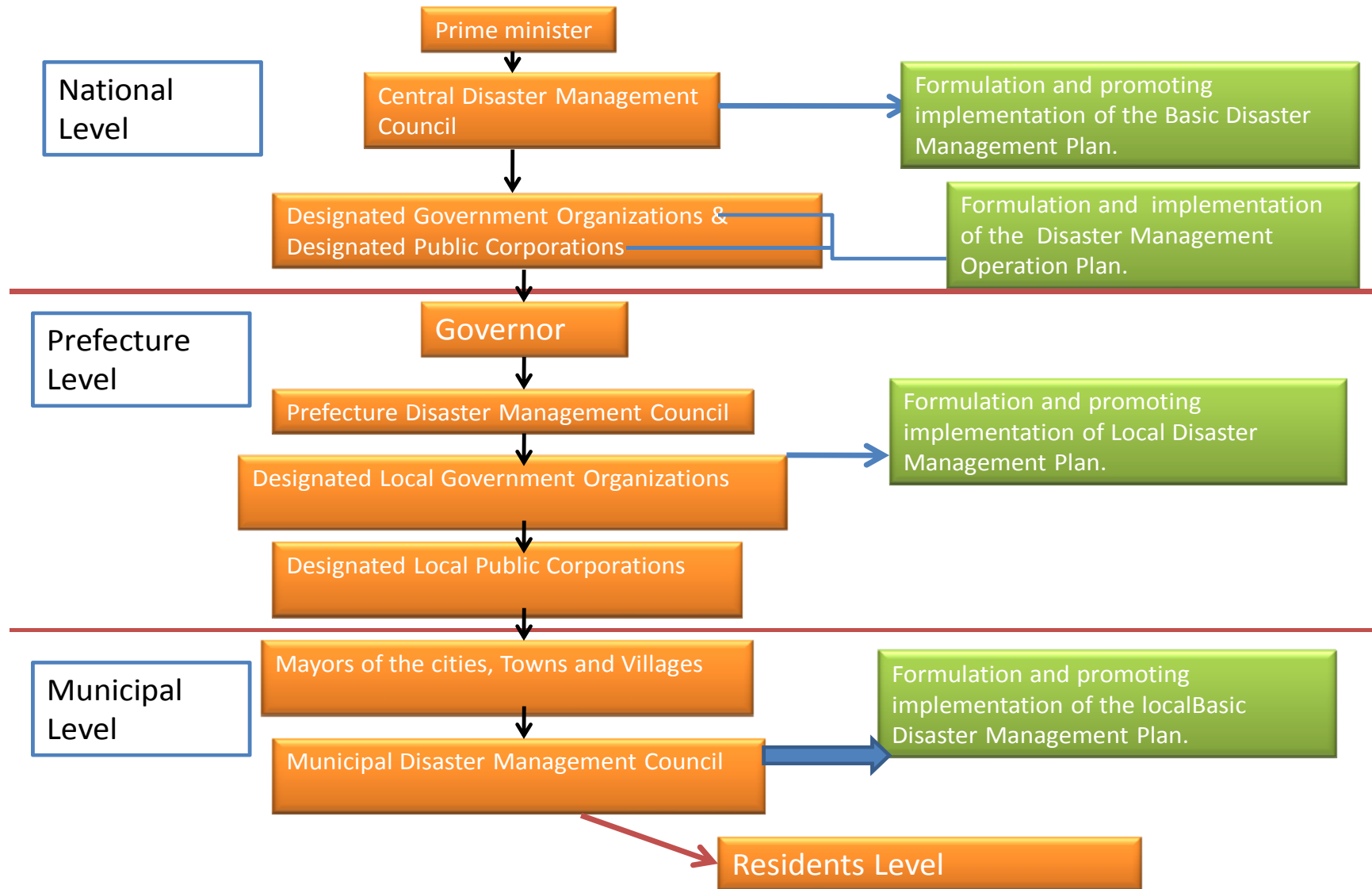


Nagasaki bombing epicenter

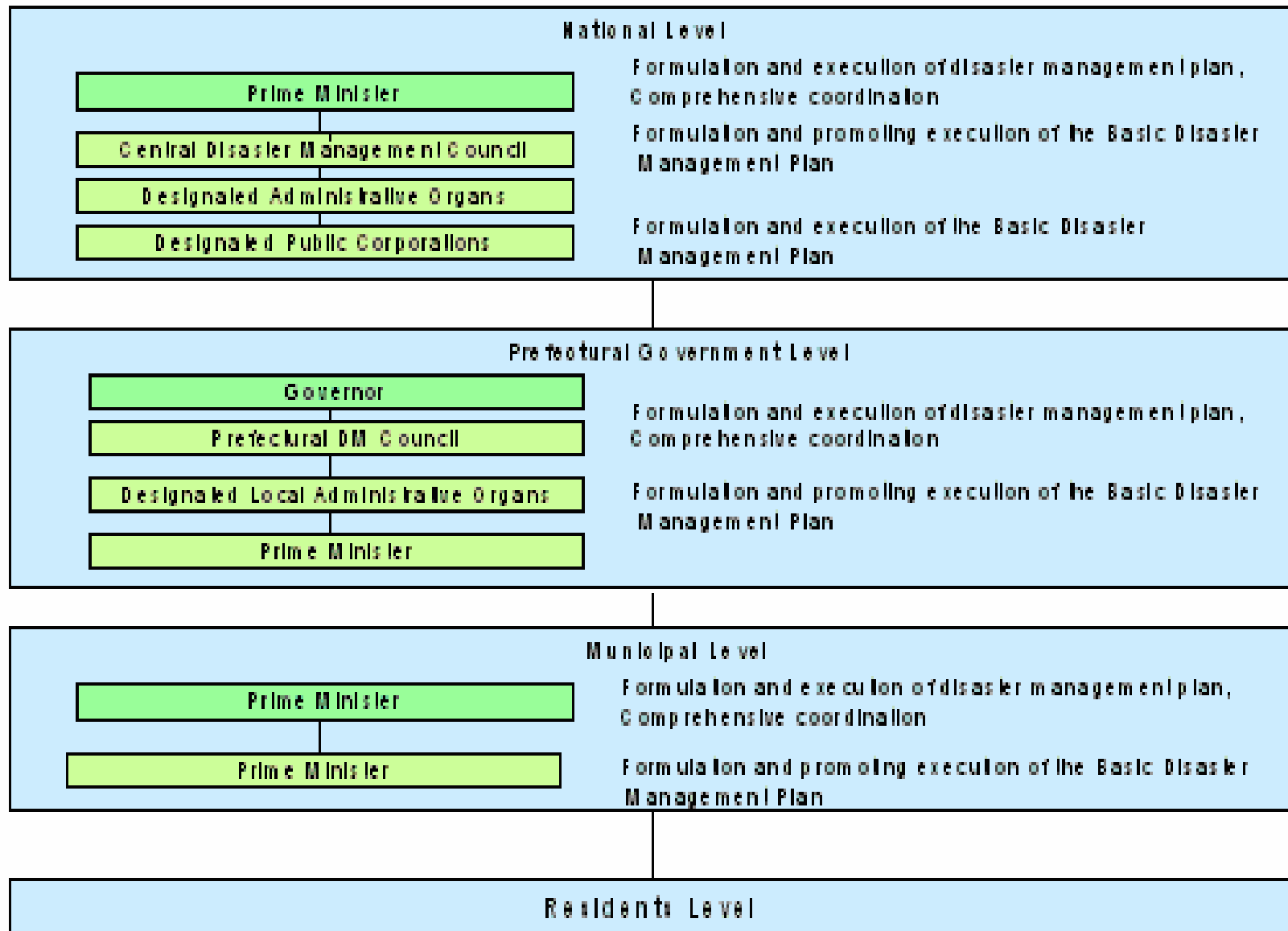




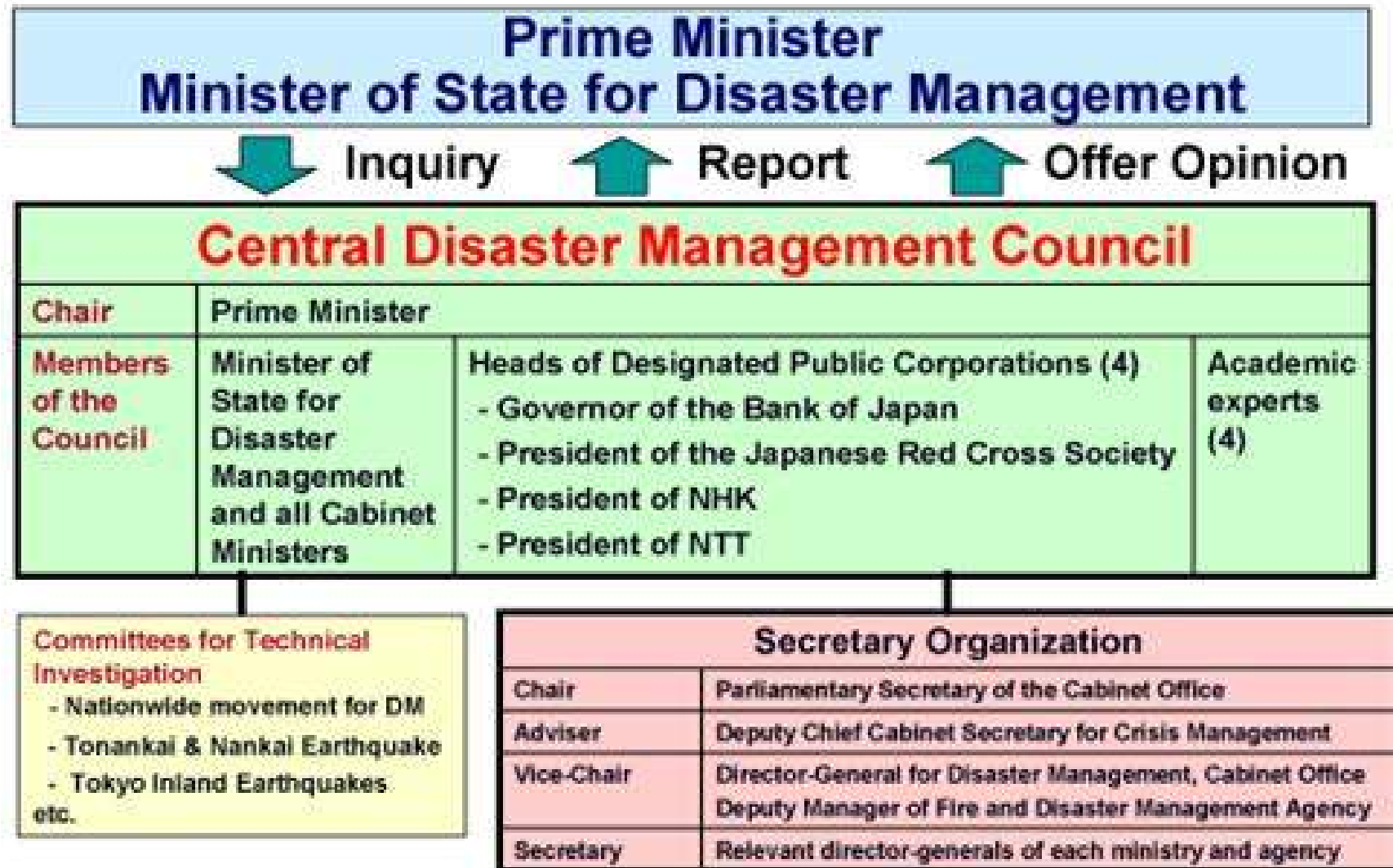
# Disaster Management Administrative System in Japan



# Responsibilities by Administrative Level



## Organization of Central Disaster Management Council



# Legal system in Japan

## **A)Basic Acts:**

- 1. Disaster Countermeasures Basic Act (1961)
- 2. Act on Prevention of Marine Pollution and Maritime Disaster (1970)
- 3. Act on Disaster Prevention in Petroleum Industrial Complexes and other Petroleum Facilities (1975)
- 4. Act on Special Measures for Large-scale Earthquakes (1978)
- 5. Act on Special Measures for Nuclear Disasters (1999)
- 6. Act on Special Measures for Promotion of Tonankai and Nankai Earthquake Disaster Management (2002)
- 7. Act on Special Measures for Promotion of Disaster Management for Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches (2004)

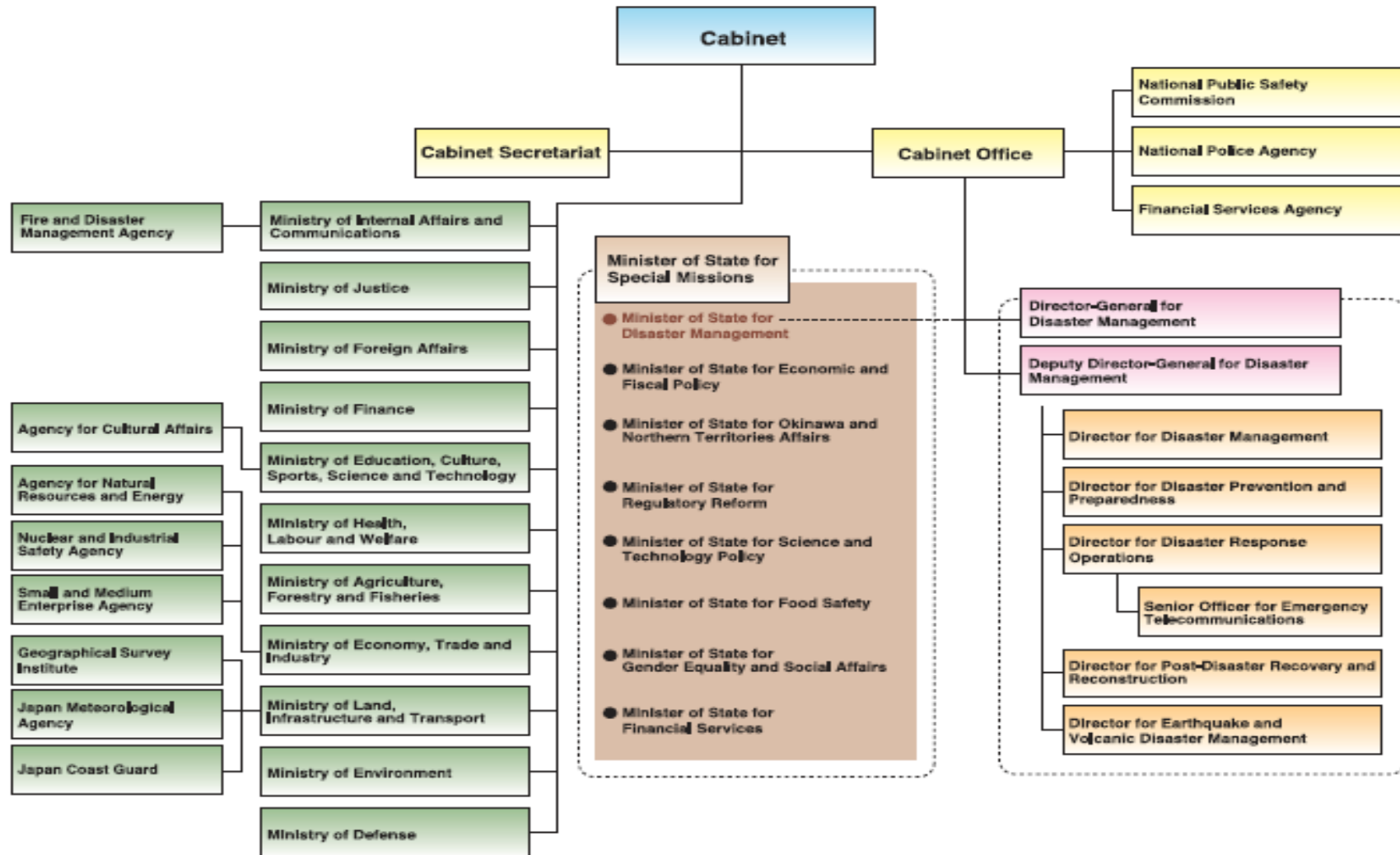
**B)Disaster prevention and preparedness related–(18 acts)**

**C)Disaster emergency response related -3 acts**

**D)Disaster recovery and reconstruction and financial measures-23 acts**

# National organization for disaster risk reduction

## Organization of National Government and Cabinet Office (Disaster Management)



## Local organization for disaster risk reduction

- Prefectural disaster management councils
- Municipal disaster management council
- Fire management department
- National Police Agency
- Business corporations for disaster risk management like (Gas, Telecom, Redcross, NHK, Bank of Japan, Railway)
- Resident or community groups

# Disaster risk management cycle in Japan

## a) Emergency response mechanism in Japan

- Prime minister's office
- Cabinet office
- Dispatch of government investigation team
- Search and rescue team
- Fire management bureau
- National Police Agency
- Japan coast guard
- Japan self defense force
- Emergency Medical team , Japan red cross
- Prefectural government, municipality and city or town government.

# Search and rescue and supply of relief goods





# Lesson learned from Great Hanshin Awaji earthquake for response and relief

- i) Accurate assessment of situation and rapid action saves lives
- ii) Important in emergencies sober actions that consider other victims
- iii) Checking the electricity and gas and other actions of individuals to ensure that fire does not occur help protect the other community.
- iv) Significant result from rescue and fire fighting activities by communities and neighbors
- v) Evacuation sites serves as communities in disaster stricken areas
- vi) Importance of providing assistance suitable to the needs of disaster stricken areas and local communities
- vii) quickly reopening the stores and local business support disaster stricken communities.
- viii) Importance of wide area disaster relief system and medical relief systems
- ix) Importance of quickly assessing state of damaged and performing damage verifications inspection
- x) Importance of coordinated recovery of roads and lifelines.

# Lesson learnt from Great Hanshin eq for response and relief



## b) Rehabilitation and reconstruction phase

- a) Temporary housing
- b) Grant and Medical facilities for victims
- c) Disaster victims livelihood support program:- 1) subsidy by local government to build house, 2) relief loans, 3) compensation and insurance, 4) tax reduction to exemption, 5) tax allocation to local governments, 6) assistance for rehabilitation plan, 7) Support for the livelihood recovery of disaster victims like disaster condolence money, disaster impediment sympathy money, money for support of livelihood recovery of disaster victims and loans such as disaster relief funds and livelihood welfare funds.
- d) Engaged with the cultural activity for disaster sufferers.
- e) recycling the waste products that results from disasters
- f) Voluntary activities among local residents are indispensable to caring for victims and rebuilding their strength for living.
- g) providing emotional support to Post-Traumatic Stress Disorder (PTSD), and conscientious care for those requiring support.
- h) rapid commercial rebuilding initiatives focused on new development
- i) Housing initiatives for reconstruction policy

# Recovery to reconstruction and rehabilitation



## c)Mitigation and prevention

- Minimize the effects of disaster ,implementing building codes and zoning , vulnerability analysis, through public education
- I) Earthquake: - seismic design/retrofitting of vulnerable building/ installation of seismic isolation
- ii) Flood: - construction of dike/ building of dam/ forestation/ construction of flood control basins, reservoirs
- iii) Tsunami, storm (cyclone, typhoon, hurricane):- construction of tide wall/ establishments of forests to protect against storms/tsunami
- IV)Landslide: - construction of erosion control dams/ construction of retaining walls

Mitigation work(retrofitting of school building, flood gate, water pumping, tsunami wall, plantation of trees ,retaining and drainage wall for landslide



# Public education

Disaster education is provided to prepare the Community for all kinds of Disasters in Japan

1. Kinder garden education/ Elementary Education
2. High school Education
3. University Education
4. Community Education
5. International Education
6. Research centers
7. Disaster memorial parks
8. Museum of art
9. Community radio
10. NGOs

# Public education





# Town watching, hazard mapping



## d)preparedness

- preparation of hazards maps, food and material stockpiling, disaster education/ capacity building, emergency drills, evacuation, construction of early warning systems, preparations of emergency kits ,another examples of type of disaster  
Earthquake:- construction and operation of earthquake observation systems.
- Flood: - construction and operation of metrological observation systems.
- Storm: - construction of shelter /construction and operation of meteorological observation systems.
- Landslide: - construction and operation of meteorological observation system

# Digital Hazard mapping, stock piling of foods



# Capacity building, emergency kits



# Disaster Awareness Program

- Nationwide Movement for Disaster Reduction
  - Publication of “Basic Framework for Promoting a Nationwide Movement for Disaster Reduction – Actions with Added Value to Security and Safety”
- Disaster Awareness Campaign:
  - 1<sup>st</sup> Sep - Disaster Reduction Day
  - 30<sup>th</sup> Aug to 5<sup>th</sup> Sep- Disaster Reduction Week
  - 17<sup>th</sup> Jan - Disaster Reduction & Volunteer Day (Hyogo safety day)
  - 15<sup>th</sup> to 21<sup>st</sup> Jan - Disaster Reduction & Volunteer Week
  - Training to volunteer, local organization and residents such as: fighting fires, fighting floods, search and rescue, first aid, and evacuation.
- Disaster Education in School
  - Learning about disaster during childhood
  - Promoted disaster education by Cabinet Office.

# Early warning system in Japan

## Observing, Forecasting and Warning of Disaster Risks

- JMA issues a wide range of forecasts, warnings and advisories regarding volcano, earthquake generated tsunamis and severe weather events such as heavy rain, storm, flood
- 24-hour systems to carefully monitor various natural phenomena and weather conditions
- NHK( national level broadcasting media) forecast the warning through automatic activation of TV & radio wave system.



# Earthquake Disaster Countermeasures

## Observation System

- JMA and other organizations install and maintain seismometers that are used for estimating the location of the epicenter and magnitude of an earthquake as well as for tsunami forecasts, and seismic intensity meters that measure the intensity of ground motion, in numerous places nationwide.
- As soon as an earthquake occurs, JMA analyzes the data from various seismometers and seismic intensity meters.
- Within two minutes, JMA will issue a seismic intensity information report for earthquakes of intensity 3 or greater
- Within five minutes JMA will issue an earthquake information report indicating the epicenter and magnitude of the earthquake and the seismic intensity in the municipalities where strong shaking was observed.

# Emergency drills Sumoto , Miki city, and Hat Kobe

i)Tsunami drills at Sumoto city, ii) Emergency rescue drills, Miki city, iii)Chemical contamination rescue drills Hat Kobe





# Evacuation sign ,route, and Early warning tower



# Study Visit

**By Taking part in JICA training Course of dissemination and establishment of disaster prevention culture for Asian countries, 2009**

- 1. Disaster Renovation institute**
- 2. Ina Mura No Hi ,wakayama**
- 3. Sumoto city ,Awaji island**
- 4. Maiko high school**



5.CBDRM for cultural heritage Golden, and Kiyomizu temple, 6.Kyoto University  
7.Tokoy metropolitan office and Shinjuku down town 8.Honjo life safety  
learning center



**9. Shizuoka earthquake preparedness education center 10. Fujitokoha university  
11. Shizuoka city fire and disaster prevention bureau 12. Unzen restoration office  
Nagasaki**



13.Unzen disaster memorial hall ,Shimabara 14.Nagasaki atomic bomb museum  
15.Earthquake Nojima fault museum,hokudan 16.NHK headquarter Tokyo,



# Study Visit

## By ADRC's Program

1. participation in the JICA forum on climate change and disaster and country report presentation on climate change at JICA, Tokyo
2. Royal palace ,Tokyo
3. Japan meteorological agency
4. Cabinet office ,Tokyo
5. Tokyo metropolitan office
6. Kobe University
7. Disaster Reduction Human renovation Museum
8. Hyogo prefectural emergency management training center ,Miki city
9. Tsunami Surge learning center, Osaka
10. Osaka castle , Osaka
11. Port of Kobe earthquake memorial park, Harbor land
12. Nigawa-Yurino-Cho Landslide museum
13. UNCRD 10'th anniversary symposium at Kobe
14. GIS training,at ADRC

# study visit ADRC program

JMA, Cabinet office, Royal palace, Kobe port earthquake memorial park



Tsunami prevention center, Osaka castle ,Kobe university ,DRI, Nigawa landslide museum, Hyogo prefectural emergency management training center , Miki city





# UNCRD symposium and GIS training



## We can reduce the damages of disaster !!

Build an earthquake –resistant houses.

Make preparations for water.

Fix the furniture not to collapse.

Determine the place to evacuate.

Fix the light not to fall.

Prevent the window pane to broken spread.

Slippers .whistle .flash-light

Self help, mutual help and public help is  
important during disaster.

Strong construction of building save lives and 1995 great Hanshin earthquake could not destroy this building(Nojima fault museum,HoKudan)



## Participation on climate change seminar at JICA, Tokyo



# Sharing the knowledge to next generation



# Gathering/Sharing international knowledge



# Japan, Japanese People and ADRC

- working culture of the country
- mutual help for the other nations
- good behavior and Kindness for the people
- polite , friendly, Caring of the people
- lesson learned and sharing for the younger generation
- Gather and share experience international people together
- Establishment disaster resilience community for the world

# Japanese people Love for hard work (culture)





# Suggestion to ADRC

- Establish the at least one project for one member country.
- Analysis Duplication of program
- Effective coordination between JICA, JAXA, SAARC, ASEAN, ADPC, and UN agency.
- Establish visiting researcher network.
- Provide guidelines for report writing .
- Make clear schedule for visiting researcher program(3,4,5 or 6 months)

# I would like to Thank.....

I would like to thank all of you ADRC staff for providing me homely and friendly environment,

Thanks to

Shahid Husain Malik – Pakistan

Pradeep Kodipilli - Srilanka

Josefina T. Porcil- Philippines



# Thanks.....

Thank you very much to  
OHORI san for your  
sincere guidance,  
coordination and  
support during my  
tenure



I would like to express gratitude to  
Koresawa San

Thank you very much  
Koresawa San for  
inviting me and  
guardianship during my  
stay



Special thanks to Shigeru Itoh ,chairman of ADRC for selection of this program



Sayonara The Peaceful and Helpful nation



Welcome to Nepal

Arigatogojaimasta!!

Thank you very much!!

Dhanyabad !!

wGoafb ..



