



















KEY ACTIONS FOR RISK REDUCTION

- · Know Hazards and Risks
- Monitor
- Warn and Disseminate Information Be Informed

R

• Respond Properly and Timely



EARTHQUAKE A weak to violent shaking of the ground produced by the sudden movement of rocks below the earth's surface. **A**

TYPES OF NATURAL EARTHQUAKES

Tectonic

















Valley Fault System

- East Valley Fault 10 km (M6.2) Municipalities of Rodriguez
- and San Mateo, Rizal West Valley Fault 100 km (M7.2)
- Bulacan ((Doña Remedios Trinidad, Norzagaray and San Jose Del Monte City)
- Rizal (Rodriguez)
 Quezon City, Marikina City, Pasig City, Makati City, Taguig City and
- City, Makati City, Taguig City and Muntinlupa City Laguna (San Pedro City, Biñan City, Sta. Rosa City, Cabuyao City and Calamba City) Cavite (Carmona, General Mariano Alvarez and Silang)





AVOIDING EFFECTS OF GROUND RUPTURE



Avoid construction of structures on top of an active fault

 House or building should be at least 5 meters away from the trace of the fault





GROUND SHAKING EFFECTS





Building Collapse

Falling Objects

















Liquefaction Loos sedir like li stron shaki Sedir rearra more state

- Loose, water-rich sediments behave like liquid during strong ground shaking.
- Sediments are rearranged into a more compact state.



LIQUEFACTION











Tsunami Damage and Effects

- Flooding of coastal areas
- Drowning of people
- Damage to properties
- Erosion of coastline





Туре	Source	Lead time earthquake to tsunami	Warning mechanism
LOCAL	trench or fault in Philippine region, usually less than 200 km from shoreline	2 – 5 minutes to 1 hour	PHIVOLCS and Community-based Must know natural signs such as moderate to intense shakin in coastal area, rapid sea leve drop or rise, unusual sound
DISTANT Regional or Trans- Pacific	trench or fault outside the Philippine region (<i>ex. Japan,</i> <i>Hawaii, Chile</i>)	1 – 24 hours	International Centers and PHIVOLCS ⇒NDRRMC ⇒ Media *Pacific Tsunami Warning Center, NW Pacific Tsunami Information Center)



II. MONITOR, WARN OR DISSEMINATE INFORMATION

- What is the hazardous event? --Earthquake, Tsunami, Landslide
- Where is it?
- When will it affect, when did this occur?
- Scale or intensity of event?

Main source of monitoring informatioin: *Earthquake, Tsunami, Volcanic eruption – DOST-PHIVOLCS





SEA LEVEL MONITORING NETWORK							
Network	Existing	Planned	Starting M and [13] Starting Pl Ands [1] Starting Pl and				
Real-time tide gauges	5 (PTWC, RIMES, GLOSS)	19 (JICA)					
Non Real-time tide gauges	40 (NAMRIA)						
Community tsunami detection and warning	10 (PHIVOLCS)						
Tide gaug		et sensors	Monitoring of March 11, 2011 Japan Tsunami				

Philippine Tsunami Information						
Tsunam i Information	Threat to Philippines	Recommended Action for Affected Areas				
Advisory	Large earthquake occurred but no tsunami threat to coastlines.	No evacuation needed. For information only.				
Advisory SEA LEVEL CHANGE MONITORING	Sea level change will be monitored.	Public is advised to wait for updates.				
Advisory		People advised to stay away from beach.				
MINOR SEA LEVEL DISTURBANCE	Expected waves of less than 1 meter above expected ocean tide.	People with houses very near beach advised to move inland. Boats at sea advised to stay offshore in deep w aters.				
TSUNAMI WARNING	Destructive tsunami expected with w ave heights of more than 1 meter above ocean	Immediate evacuation of coastal communities strongly advised. Boats at sea advised to stay	DOST			



III. RESPOND PROPERLY

• Prior to the event

- Awareness, Education
- Establishment of evacuation procedures, refuge sites, drills
- Plan for efficient and effective response: standard operating procedures, contingency plans
- Evaluation of site and building safety
- Implementation of building code and proper land use (safe location, safe construction)





What to do Before PLANNING AND IMPLEMENTATION OF ACTIONS FOR RISK REDUCTION



•Select "safe" location. Avoid construction on active faults, steep slopes

• Follow proper structural design and engineering practices when constructing houses, buildings, facilities

• Evaluate structural integrity of houses, buildings, facilities

• Retrofit already constructed buildings and facilities if necessary and costeffective



Land Use and Building Codes

Design and Construction



Location



Don't build on top of an active fault and buffer zone of at least5 meters on both sides of the fault trace

















Prepare emergency bags/kits

















After the earthquake

Be prepared for aftershocks. Once the shaking stops, take the fastest and safest way out of the building.

- Get out in an orderly manner. Do not rush.
- Bring the emergency/survival kits
- Watch out for falling objects
- Follow the designated route
- Don't use elevators, use stairs
- · Assist persons who need help



After the earthquake

- · Conduct head count at the evacuation area
- Check yourself and others for injuries
- Check water and electrical lines for damages

Check for spills of chemical, toxic and flammable materials

- Check for fires and control if possible
- · Do not enter damaged buildings
- Leave a message or note if you need to leave your place of residence
- Do not use telephones unless necessary
- Keep updated of instructions and information from battery operated radios

III. RESPOND PROPERLY

During the event

- Monitor forecasts, advisories
- Follow recommended actions ex. Evacuation

· After the event

- Assess the effects
- Assess the needs
- Respond and recover back better fast



SUMMARY

- The **country is exposed to extreme natural events** that can cause loss of lives, properties, and severely impact the economy.
- Appropriate preparedness, mitigation and response activities must be based on **appropriate hazard and impact scenarios**.
- Possible hazards and its effects in localities and the whole region must be imagined to craft and implement appropriate solutions.
- Information and tools are available for communities to be safer. Let us collectively make our communities safer and resilient to disasters. Communicate information accurately and timely.



