

BLUF - Implications for PACOM

- While Philippine authorities are proactive and experienced in disaster response, if a large disaster exceeds local capacity, USG assistance – including DoD assets – will likely be requested or accepted if offered
- DoD assets should be deployed with liaison officers:
 - To explain available capabilities and limitations;
 - To extract relevant information & determine priorities
 - With USAID/OFDA, determine support needed.
- Secondary earthquake effects may include widespread fire and tsunami
- Manila is the Philippines' largest air-sea-land transportation hub and is strategically located near the South China Sea
- The Philippines is one of UN OCHA's five priority countries in Asia highly vulnerable to large-scale natural disasters
- The Philippines is the 2nd longest US treaty ally in Asia

Fast Facts

- Philippine Land Area:** 300,000 sq. km (115,831 sq. mi)
- Philippine Population:** 100 million (80+ ethnic groups)
 - Metro Manila Population:** 12.877 million, as of 2015
 - Metro Manila Population Density:** 20,787 people/sq. km (53,837 people/sq. mi.)

Metropolitan Manila (National Capital Region) headquarters all major government agencies

The Philippines:

- is the 3rd highest disaster risk country in the world, averaging 900 earthquakes and 20 typhoons per year
- borders the Eurasian and Pacific tectonic plates
- 80% of the country is seismically active

The Philippines - Recent Fatal Earthquakes

2013: Bohol Island Earthquake (7.2) - 222 fatalities, 976 people injured and more than 73,000 homes destroyed or seriously damaged

2012: Visayas earthquake off the coast of Negros Oriental (6.9) – more than 100 fatalities

2002: Earthquake struck Central and Southern Mindanao (7.5) - at least 15 fatalities

1990: Luzon Earthquake (7.8) – 1,621 fatalities

1976: Moro Gulf Earthquake (7.9) – 4,800 fatalities and more than 2,100 missing

Scenario: Magnitude 7.2 Earthquake in Manila

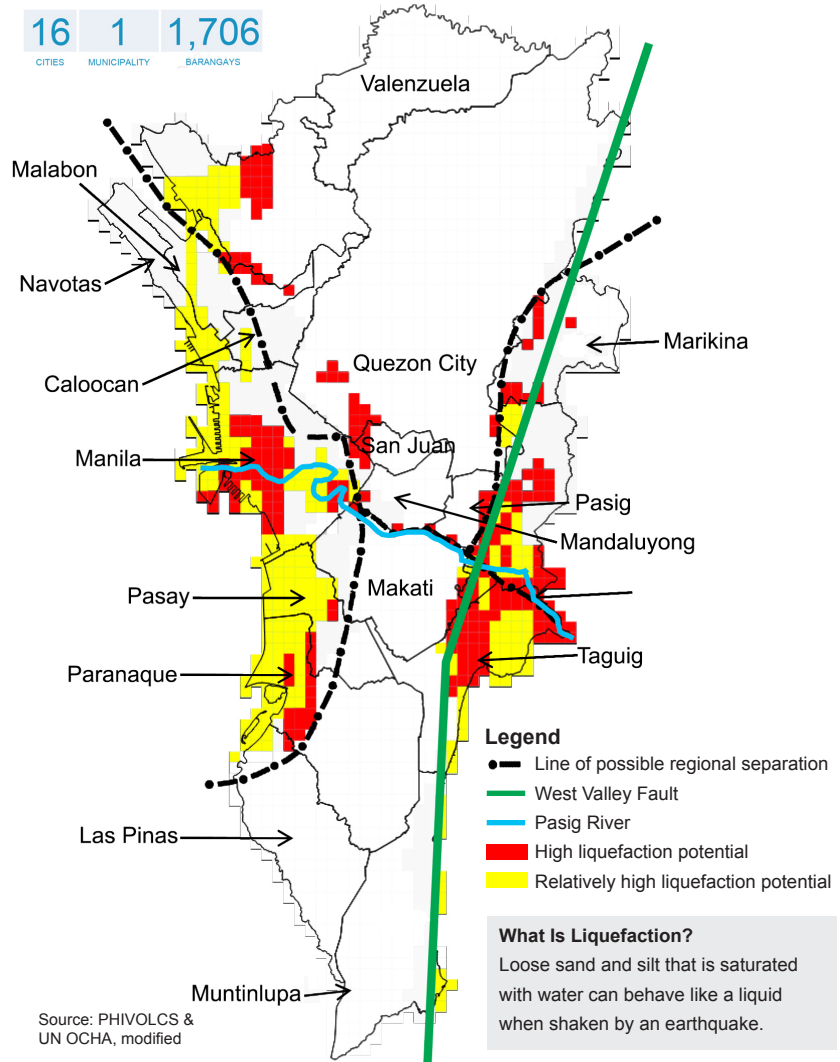
(from the MMEIRS study – see Sources)

Relevance: The West Valley Fault has moved four times in the last 1,400 years, causing strong earthquakes. There has been no rupture since the 17th century. The recurrence interval, or average time span between earthquake occurrences on a fault, is less than 500 years. Therefore, a magnitude 7+ earthquake is anticipated in the approaching active phase.

Impact: Magnitude 7.2 earthquake estimated to cause:

- 34,000 deaths & 114,000 injuries in Metro Manila
 - Fire estimated to cause additional 18,000 deaths
- 2.8 million people displaced
- Damage to 40% of residential buildings
- Separation of Metro Manila into four regions:
 - West: Isolated by fire and building collapse
 - East: All roads running east-west across the fault would be broken. North-south roads near fault line would be difficult to use due to building collapse and rubble.
 - North & South: Separated by building collapse, esp. between Mandaluyong & Makati. Pasig River runs east-west as a natural separation, spanned by 16 bridges.

Metropolitan Manila (National Capital Region)



What Is Liquefaction?

Loose sand and silt that is saturated with water can behave like a liquid when shaken by an earthquake.

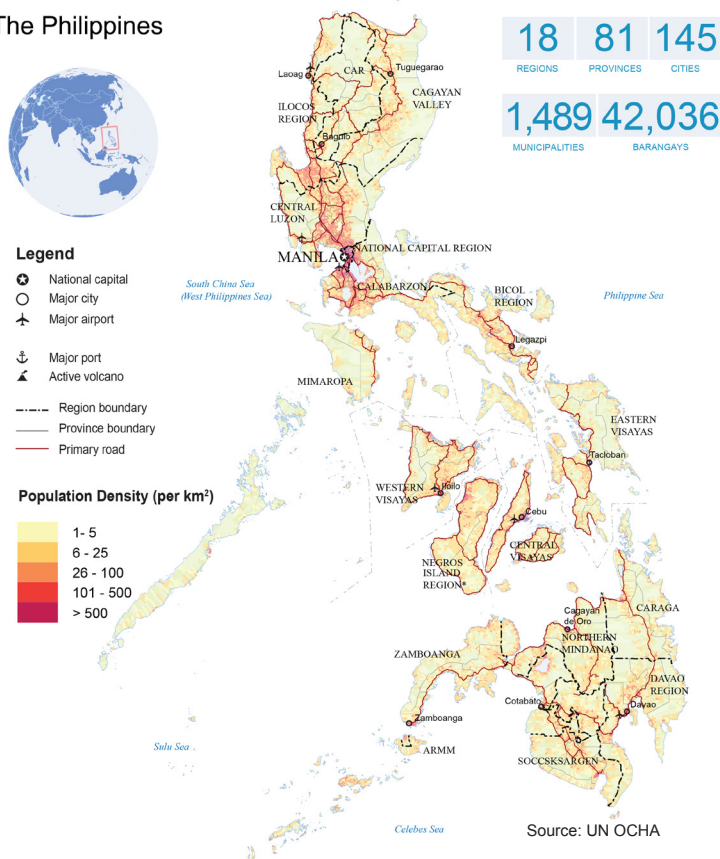
Major Actors in a Disaster Response:

- The National Disaster and Risk Reduction and Management Council (NDRRMC) and subordinate centers, Ministry of National Defense (Armed Forces), National Police
- IOs: United Nations (multiple agencies), International Federation of Red Cross & Red Crescent Societies (IFRC).
- International NGOs: CARE, World Vision, Save the Children
- Host nation NGOs and Philippine Red Cross
- Bilateral donors: USA, UK, European Commission
- Regional organizations: Association of Southeast Asian Nations (ASEAN) – while nascent, ASEAN's Coordinating Center for Humanitarian Assistance (AHA Center) participated in Nepal earthquake relief efforts.
– ASEAN nations are also likely to respond bilaterally to emergencies affecting member states.



Metropolitan Manila (<https://www.flickr.com/photos/boiworx/4049706979/>)

The Philippines



Philippine Disaster Management Structure

- The National Disaster Risk Reduction and Management Council (NDRRMC) – the main DM body – is empowered to make policy, integrate disaster response and mitigation efforts, and supervise the disaster response effort, to include monitoring and evaluation.
– It is chaired by the Minister of National Defense and has representatives from every government agency and department that might be involved in disaster response.
– Its implementing arm is the Office of Civil Defense (OCD).
- The NDRRMC has subordinate region, province, district and city disaster risk reduction and management centers responsible for disaster planning, coordination, response and mitigation efforts within their areas of responsibility.
- The Philippines has a National Disaster Risk Reduction and Management Framework.
– A corresponding national action plan guides preparation and training for dealing with national disasters. Its goal is to build a comprehensive response program throughout the country by 2028.
– The training program is in its early stages, but over 1,100 civilian volunteers have received training in disaster response, risk reduction and management since 2012.

Sources:

- The 2004 Metro Manila Earthquake Impact Reduction Study (MMEIRS) evaluated the seismic hazards and vulnerability of the National Capital Region: http://www.phivolcs.dost.gov.ph/index.php?option=com_content&view=article&id=419:mmeirs&catid=66 Modified MMEIRS maps sourced from 2013
- Asian Development Bank brief: <http://afe-adb.org/sites/default/files/Earthquake%20Risk%20and%20Preparedness%20Presentation%20ADB%20May2013.pdf>
- CFE-DM's Philippines Disaster Management Reference Handbook: https://www.cfe-dmha.org/LinkClick.aspx?fileticket=fmpFiMdOL_g%3d&portalid=0
- OCHA's Humanitarian Civil-Military Coordination in Emergencies: Towards a Predictable Model (pgs. 113-138) https://docs.unocha.org/sites/dms/ROAP/Civil%20Military%20Coordination/images/RCG_05042017_Final_electronic.pdf
- OCHA's Philippines: National Capital Region (NCR) Profile: http://reliefweb.int/sites/reliefweb.int/files/resources/phl-ocha-ncr_profile-a3_final_0.pdf
- Metro Manila Earthquake Contingency Plan, OPLAN Metro Yakal Plus: http://www.pha.org.ph/images/letters/oplan_metro_yakal_plus.pdf
- UN-CMCoord Haiyan AAR: <https://docs.google.com/file/d/0B7ptUi-k6twmd1poY1AzEsyZlk/edit>
- Philippines Statistics Authority: <https://psa.gov.ph>

Recommended References:

- CFE-DM's Advances in Civil-Military Coordination in Catastrophes: How the Philippines Turned Lessons Learned from Super Typhoon Haiyan (Yolanda) Into Best Practices for Disaster Preparedness and Response: <https://www.cfe-dmha.org/LinkClick.aspx?fileticket=QEDCMIMtC4%3d&portalid=0>
- CFE-DM's An Inside Look into USPACOM Response to Super Typhoon Haiyan: https://www.cfe-dmha.org/LinkClick.aspx?fileticket=eF0gtFn5_iQ%3d&portalid=0
- Metro Manila DRRMC assets/capabilities: http://www.mmda.gov.ph/images/pdf/Home/MMDRRMC/Presentation_MMDRRMC.pdf
- NDRRMC: <http://www.ndrrmc.gov.ph/>
- MMDRRMC: <http://www.mmda.gov.ph/mmdrrmc>
- PHIVOLCS: <http://www.phivolcs.dost.gov.ph>



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