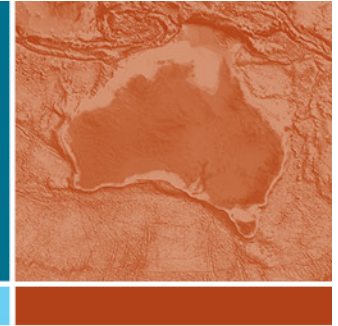




Australian Government
Geoscience Australia



The challenge of risk communication – how risk communication is the key to triggering action: Experiences from the Philippines and PNG

Dr Andrew Jones
on behalf of the
Regional Development
Group and partners



2009 West Sumatra earthquake, post-disaster survey

The role of GA in the region as the Australian Government's technical agency for DRR

- GA partners with the Department of Foreign Affairs and Trade to strengthen the natural hazard modelling capabilities of partner governments in the Asia-Pacific region
- Focus is on capacity development through:
 - *Development of long-term agency-to-agency partnerships*
 - *Implementation of ~3 year projects*
 - *Exchange of staff members (both long and sort-term)*
- Focus on open-source models, tools and software
- Key bilateral projects with Indonesia, the Philippines and PNG
- Key multilateral projects with UNISDR (GAR) and GEM

Natural Hazards in the SE Asian region – e.g. Manila

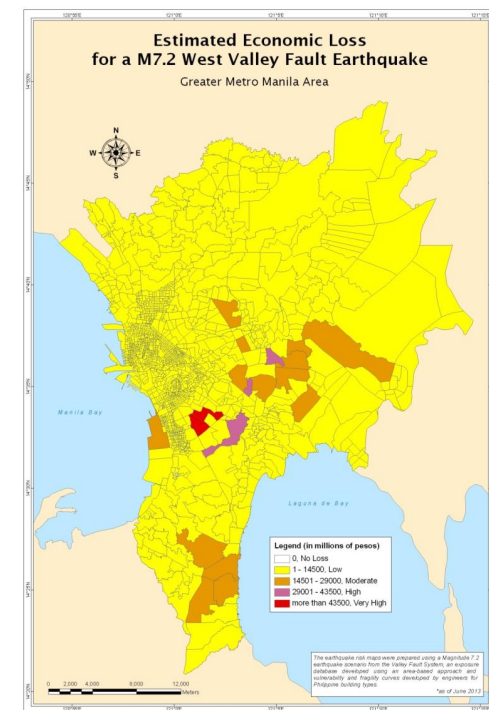
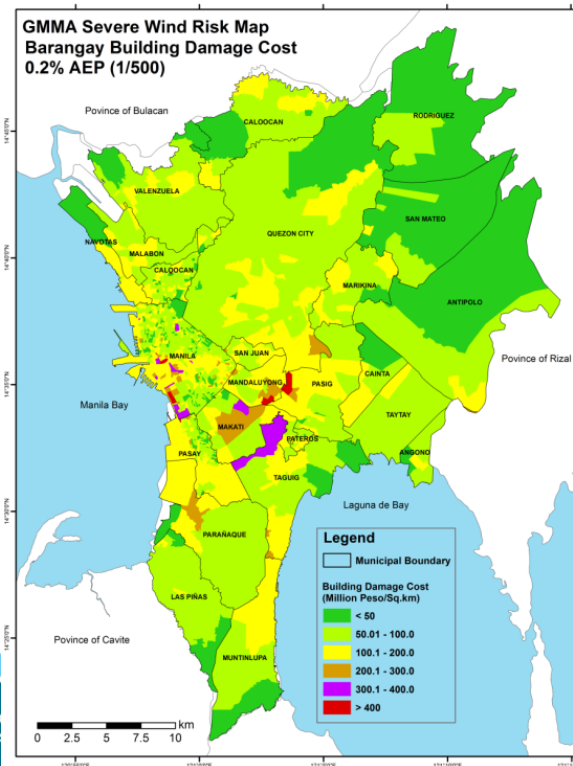
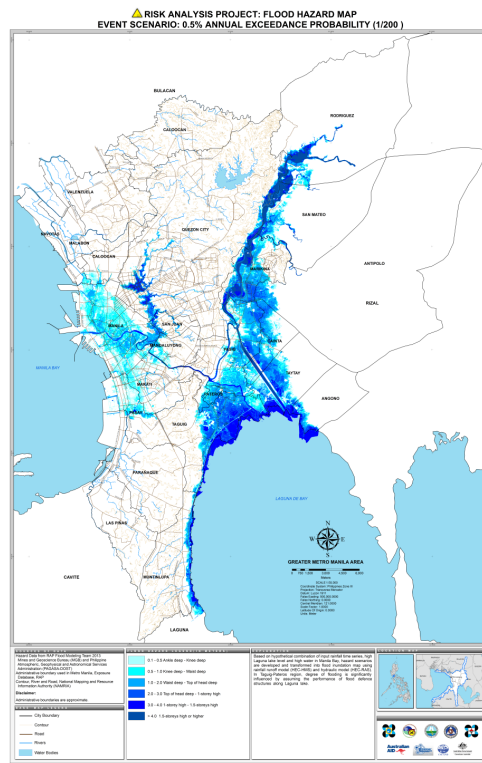


Population of Greater Metro Manila Area: approx. 13,720,000



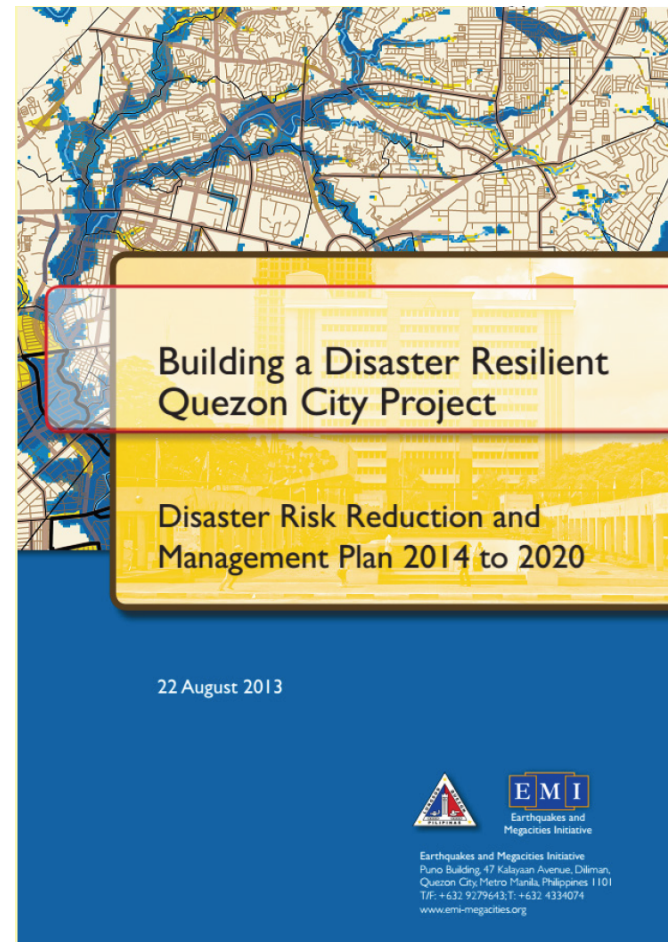
Greater Metro Manila Area Risk Assessment Project (2010-2013)

- Geoscience Australia worked with 10+ Philippine Government agencies plus Greater Metro Manila Area Local Government Units
- The GMMA RAP delivered a quantitative, multi-hazard risk assessment for a megacity, using open source modelling tools
- Assessed the potential impact from flood, cyclone and earthquake in the Greater Metro Manila Area



GMMA RAP: Delivery and use of outputs

- Multi-hazard risk maps were delivered to the Mayors of the Local Government Units in Greater Metro Manila (17/10/13)



- Data and maps are being utilised by private industry in developing DRR and DRM plans for local governments

GMMA RAP: Communication, Information and Education campaign

- With DFAT's support the Government of Philippines is undertaking an IEC campaign
- Delivering disaster risk management messages directly to communities



MGA PANGANIB DULOT NG LINDOL, MALAKAS NA HANGIN AT BAHA

... DI KINAKAILANGAN MAUWI SA KALAMIDAD O DISASTER

HANDA+LIGTAS+PANATAG



CREATING MORE RESILIENT COMMUNITIES NOW

Natural hazards are beyond our control, but this does not mean that we are helpless in the face of disasters. Because the frequency of these natural hazards have steadily risen – and with it, the inevitable damage and destruction – risk analysis has never been more needed than now. With the risk information that can be provided by risk maps, LGUs in GMMA can now determine how high the risks and eventual losses are in their area. This enables

them to create better risk reduction and management plans that ensure that valuable resources will go to the projects that can deliver the most impact in places where they are most needed. For example, enforcing building standards across the community can save the nation millions of pesos and hundreds of lives in earthquake or flood damages.

long-term goals such as strengthening resiliency and promoting better land use. By engaging communities and helping them to understand risk, LGUs will enable their citizens to be more proactive in ensuring their own safety.

Disasters can strike at any time, but with careful planning using reliable data, government, leaders and communities can help curb the growing threat of impacts of these hazards.

It will also lead to the accomplishment of

WHAT THE LOCAL GOVERNMENT CAN DO

- Use risk maps to determine areas in your locality that are vulnerable to earthquakes, tropical cyclone severe winds, and flooding, so as to be guided when making land use, development, and construction decisions.
- Develop and establish sustainable early warning systems, and identify safe and appropriate evacuation and relocation routes and sites.
- Enforce ordinances, regulations, and building codes.
- Implement risk reduction projects such as dredging and de-clogging of waterways, construction of dikes and pumping stations, and structure retrofitting.
- Allot resources to activities involving disaster risk mitigation, such as greening and waste management programs.
- Implement information campaigns to raise public awareness of hazards and risks in your locality.
- Work with government agencies on further ground validation of hazard maps and detail the exposure database to inform land use and contingency planning.

Source: The National Disaster Risk Reduction and Management Plan

WHAT THE COMMUNITY CAN DO

- Know the hazard-prone and risk areas in your community, and be prepared to avoid or adapt to hazardous situations.
- Learn about early warnings in your community, participate in community sessions and emergency drills, know the nearest evacuation centers, and cooperate with your local government by following the DRRM preparedness and response initiatives.
- Comply with regulations and ordinances such as land use and solid waste management.
- Follow hazard resistant construction design and materials in building your house.
- Participate in the discussion about risk maps with your local government and other community members.
- Be responsible for the safety of your families by heeding warnings and preparing your survival kits.

Source: Community-Based Disaster Risk Management for Local Authorities

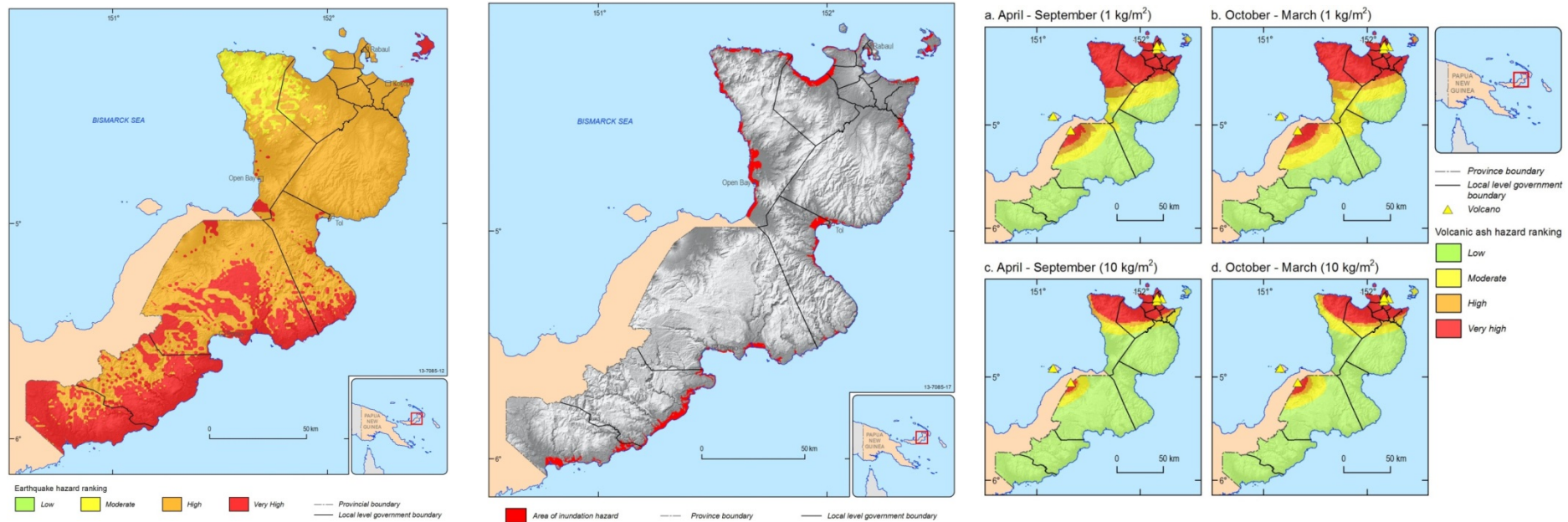
GMMA RAP: Communication, Information and Education campaign

- Developed an animation to communicate scientific concepts to local government officials and communities
- <http://www.youtube.com/watch?v=1W0QCfFQB3w>



Integrating Hazard and Exposure for East New Britain, PNG

- Geoscience Australia worked with PNG Government technical agencies plus the East New Britain Provincial Administration
- The ENB Project assessed the potential impact from earthquake, tsunami and volcanic ash fall in the province



East New Britain Project: Delivery of outputs

- The project team met biannually with a Public Awareness Planning Group that included staff from government agencies and also members of the community
- The hazard maps and a detailed technical report were delivered to the ENB provincial government on 9/8/13



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Integrating Hazard and Exposure for East New Britain

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DMPGM

APPLYING GEOSCIENCE TO AUSTRALIA'S MOST IMPORTANT CHALLENGES

www.ga.gov.au

Scenario modelling with dialogue: Event timeline for a magnitude 9.0 earthquake on the New Britain Trench

Minute 0:00

After hundreds of years of quietly building up strain, the New Britain subduction zone begins to rupture... This initial pulse will feel like any other strong earthquake, a strong jerk that will make it difficult to walk or stand...

Minute 1:00

After the initial pressure wave has passed there is a short lull, then the shear wave will arrive... Anyone walking will find it difficult to stay on their feet... Many un-reinforced concrete and cinderblock buildings will start shaking themselves apart...

Minute 3:00

Fires have started to spread through residential and commercial buildings...

Minute 4:00

Residents in low lying coastal areas need to start to move to high ground... Anyone driving along coastal roads may find themselves stranded; cracked twisted roads become traps, blocked by landslides...

Minute 20:00

Anyone in the coastal parts of Kokopo who has been unable to head for high ground will notice that water has dropped instantaneously...

Minute 30:00

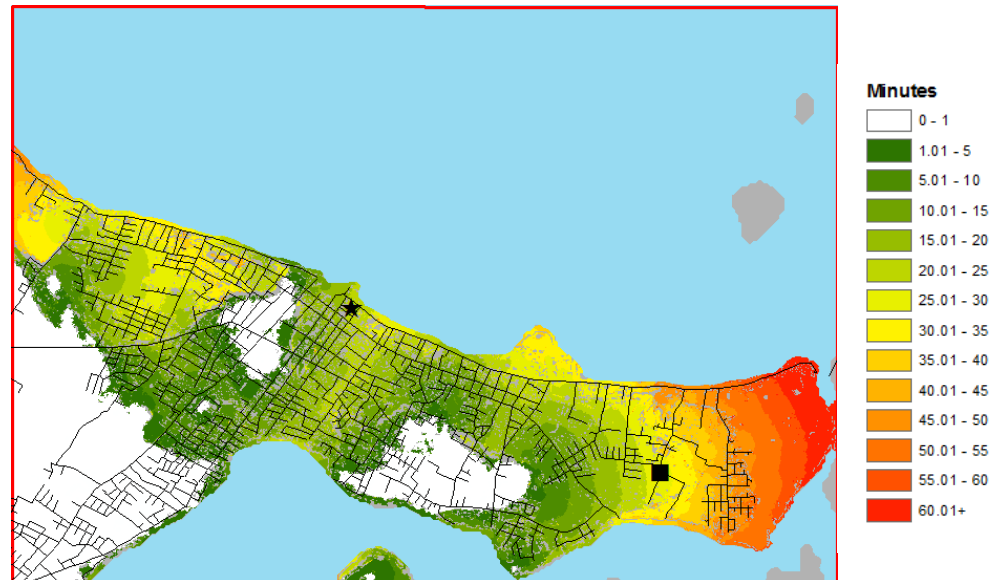
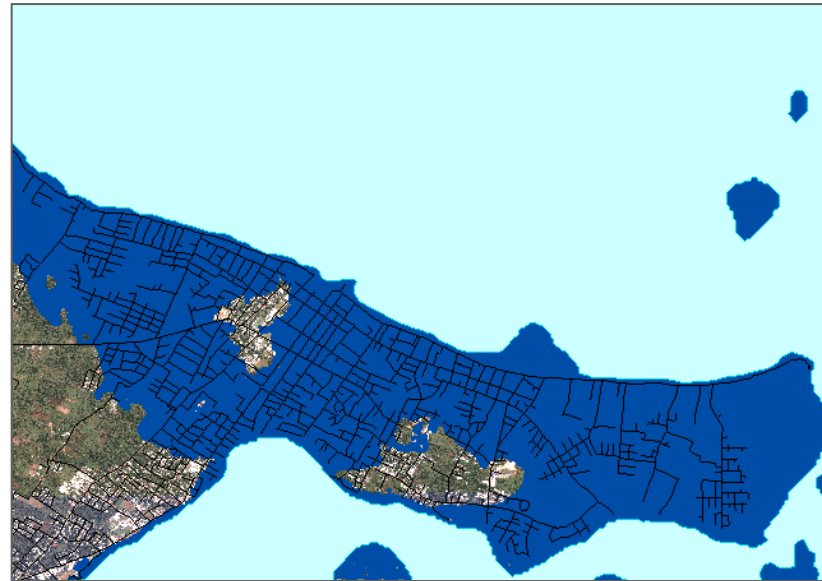
In Rabaul the water has receded and is now rushing back to shore, carrying stranded boats and other debris. The water would quickly reach 10 to 12 metres in depth, inundating the entire township of Rabaul...

Minute 60:00

Residents will be hit by an aftershock earthquake... Several will be above magnitude 7.0 and be able to trigger further building damage

Tsunami impacts for Nuku'alofa, Tonga

- Inundation generated from 8.7 magnitude earthquake
- Arrival time for the tsunami is 20 minutes
- Distance to 'safe' areas for many people is too great



ENB Educational materials



WHAT IS A VOLCANO?

A volcano is a mountain that can explode hot rock, ash and gas. Volcanic eruptions can affect large areas. Most areas where people live in East New Britain are likely to be affected by a volcanic eruption at some time so you and your community should be prepared.

Volcanoes have many hazards. Ash fall, pyroclastic flows, lava flows, landslides and mudflows (lahars) are just a few of the potential hazards.

Volcanic eruptions can cause buildings to collapse, isolate communities, cut off power, destroy food gardens and pollute water supplies. Volcanic eruptions can last for a long time and the ash can make you sick.

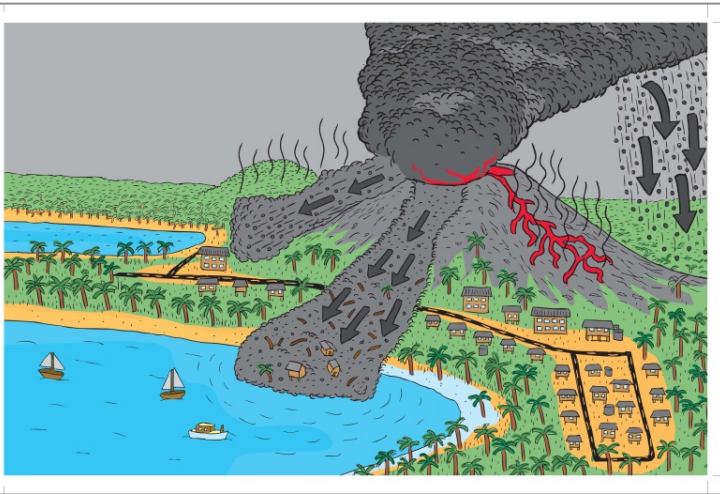
Close to a volcano, there are many more hazards and the hazards are generally worse the closer you are. The area

near the volcano is generally evacuated as there is total destruction. Further away from a volcano, people can learn to live with ash fall.

Volcanic ash is not like fire ash. Volcanic ash is made up of rock. It is heavy when it builds up and can hurt the body or metal if it comes into contact with it. Thick layers of volcanic ash can collapse buildings.

A lahar is a flow made up of volcanic material and water. Lahars can happen at any time, and do not need an eruption to happen.

Pyroclastic flows are fast-moving flows of very hot gas, ash, and rock that travel down the side of a volcano.



WHAT YOU CAN DO BEFORE

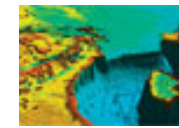
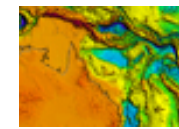
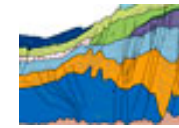
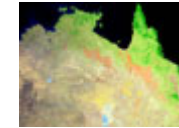
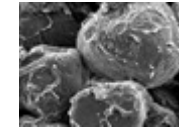
- » Make sure you have a first aid kit, radio and torch with batteries
- » Have and practice a plan for what you will do if there is a volcanic eruption, with designated evacuation safe places
- » If possible, have emergency stocks of food and clean water
- » Buildings in known volcanic zones are more safe if they have steep pitch roofs.



GA assisted with the production of booklets, posters, and an animation to link the science to the community

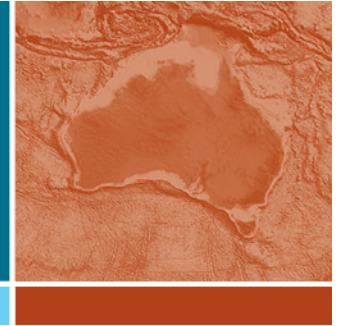
Key Messages

- GA has played a key role in communicating risk through the region by:
 - Translating science into models and tools
 - Translating data into information
 - Translating information into knowledge
- Effectively communicating risk requires an understanding of stakeholder requirements and targeted messages
- Understanding and communicating with stakeholders requires trust, and GA has built this trust through long-term, bilateral partnerships





Australian Government
Geoscience Australia



Thank you

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