

Multi-hazard assessments for building sustainable and resilient communities in the Philippines

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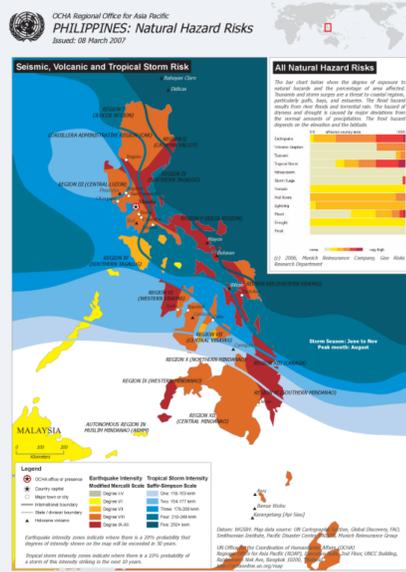


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Introduction

There is a general consensus that natural hazards and climate change will have increasing impacts in the future. That said, the timescales, magnitudes and interactions of these impacts are poorly constrained and this uncertainty limits the effectiveness of strategies for Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA).

Some of the greatest challenges facing these strategies, and their future development, include (1) the need to rigorously assess and quantify the impacts of natural events and climate change in complex multi-hazard environments, and (2) for this knowledge to then be used by decision-makers to devise and implement responsible practical solutions. In addressing these challenges, Non-Governmental Organisations (NGOs) can rank risk and implement meaningful risk reduction programmes.



Hazard map illustrates the Philippines's exposure to seismic, volcanic and tropical storm hazard; Source: <http://www.preventionweb.net/english/professional/maps/v.php?id=4179>

Key point: *The research does not down-play the important threat of climate change but stresses that it must be considered in the context of other hazards and drivers of environmental change.*

Importance of a holistic perspective

Example 1: Importance of including environmental degradation in hazard and climate change assessments: worsening floods in Manila Bay, Philippines (see Rodolfo and Siringan, 2006)



But most government sectors are oblivious to subsidence caused by ground water extraction.

During the last 10 years, people and decision-makers have become aware of sea level rise induced by global warming.

This exemplifies the fact that science is largely being ignored (e.g. Guagua River Project, Rodolfo and Siringan, 2006).

Photo 1: Chest deep floodwater Sunday, Sept. 27, 2009 in suburban Cainta, east of Manila, Philippines <http://www.cbc.ca/canada/toronto/story/2009/09/29/philippines-toronto.html>
Reference: Rodolfo, K. S. and Siringan, F. P., 2006. Global sea-level rise is recognised, but flooding from anthropogenic land subsidence is ignored around northern Manila Bay, Philippines. *Disasters* 30(1), p. 118-139.

Key points:

Perceived link between climate change and disasters made without proper assessments.

Combination of science and local knowledge required in mitigation efforts.

Example 2: Importance of focusing on multiple hazards: September 2009 flooding in Istanbul, Turkey.



Intensification of the seismic hazard mitigation and preparedness programme around the 10th anniversary of the 1999 Duzce earthquake.

September this year saw intense rainfall and flooding which resulted in 31 deaths.

Lack of preparedness despite the fact that flooding is not out of the ordinary; failure to maintain perspective on all hazards.

Photo 2: Partially submerged vehicles are seen after heavy rains in Istanbul September 9, 2009; Source: <http://www.reuters.com/news/pictures/searchpopup?picId=11519254>

Key points:

Mitigation and preparedness programmes must not focus on one hazard at the expense of another.

Multi-hazard assessments can be used to rank threats and inform priority agendas.

Methodology

The methodology is still being developed and will involve a mixture of qualitative (interviews with UK NGOs, partners and local people) and quantitative (scientific hazard assessments) to determine the following:

How do NGOs assess hazards?

How can scientific multi-hazard assessments be used to inform the decision-making?

How can these assessments effectively incorporate local knowledge?

Outputs of Research

- Critique of tools used by NGOs for hazard assessment.
- Development of methods for multi-hazard (including climate change) assessments for utilisation by NGOs and partners.

Challenges

- Strengthening the NGO (CAFOD) and academia (UCL) partnership; interest from the wider NGO community.
- Transforming scientific analysis into a practical output for decision-making.
- Understanding hazards as dynamic processes in space and time.

Key point: *This interdisciplinary project is an example of putting research into practice whilst also building partnerships between NGOs and academic institutions.*