

**Vulnerability and Risk Analysis and Mapping (VRAM) Platform for Health Risk Reduction**

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UNRCC-A, New York  
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World Health Organization

## Outline of the presentation

- **Introduction**
- **Example of application: Philippines**
- **Challenges and opportunities: the important role of the National Mapping Agencies**



## WHO's entry point for risk mapping

Several resolutions such as the one accepted during the 2005 World Health Assembly (WHA 58.1)

*“(4) to formulate, on the basis of risk mapping, national emergency-preparedness plans that give due attention to public health, including health infrastructure, and to the roles of the health sector in crises, in order to improve the effectiveness of responses to crises and of contributions to the recovery of health systems;”*



➔ Opportunity

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## Opportunity for WHO

... to work with countries and capable research institutions to:

- **Identify the vulnerable populations** and their respective locations of risk in countries of the region.
- **Generate awareness** and advocacy for disaster reduction and risk management programs to be established/strengthened in countries
- **Support decision-makers** in allocating the appropriate resources for preparedness and response
- Promote tools which **facilitate coordination** and collaboration of potential partners working on disaster reduction in the region

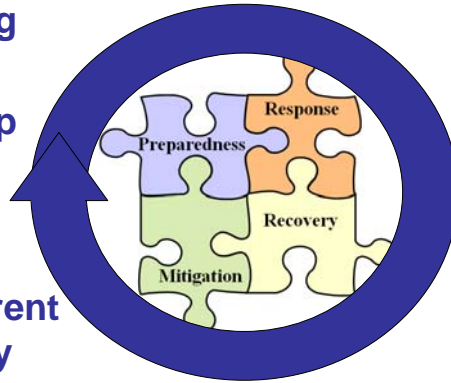
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## Opportunity for geography and GIS

... to be used as a neutral platform for the integration of data coming from different sources to:

- assess, analyze and map vulnerabilities and risks
- ensure the continuity of the decision making process during the different phases of the emergency cycle



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## The Vulnerability and Risk Analysis & Mapping platform (VRAM)

### Objectives

- Support Ministries of Health (MOH) and partners to strengthen their capacity to assess, visualize and analyze health vulnerabilities and risks and incorporate the results of this analysis in disaster risk reduction, emergency preparedness and response plans
- Compile and homogenize baseline data, information and maps to help health authorities and partners to take informed decisions in times of crises



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# The Vulnerability and Risk Analysis & Mapping platform (VRAM)

## Activities

To achieve its objectives, VRAM is building long-term collaborative relationships with government authorities and technically capable research institutions and universities both within targeted countries and internationally in order to:

- **Evaluate countries' capacity** to assess and analyze hazards, vulnerabilities and risks;
- **Support the development of national and local capacity** within ministries of health and other partners to enable countries to implement the VRAM process;
- **Partner with local institutions to conduct and facilitate detailed assessments** of potential hazards, associated health vulnerabilities and emergency preparedness in countries most at risk;
- **Develop, document and share methods, protocols and tools** for the collection, analysis and mapping of health hazards (i.e WHO e-atlas), vulnerability and risk information **taking climate changes into account**;

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# The Vulnerability and Risk Analysis & Mapping platform (VRAM)

## Activities

- integrate data coming from different sources in a way that it **answers countries and WHO's needs and support evidence-based decision-making**;
- **Create and maintain a network of institutions** working in health hazard, vulnerability, capacity and risk analysis and mapping.

- ➡ **Reducing primary data collection to the minimum.**
  - Emphasis on review and use of secondary information
  - Partnership with other institutions (i.e. WFP)
- ➡ **Leveraging and strengthening of already existing capacities/initiatives**
  - i.e. UN-SPIDER
- ➡ **Making sure that the health sector is part of the national risk assessment process**
- ➡ **Long term in countries capacity building**

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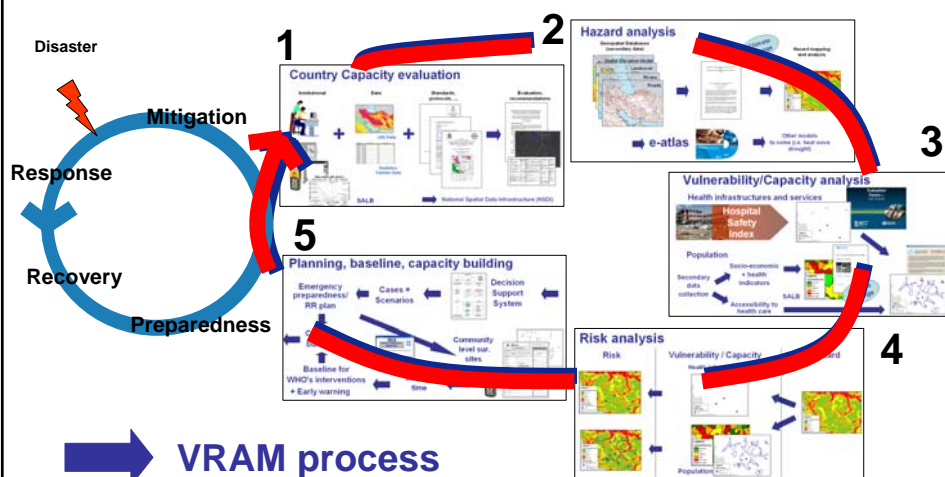


# Conceptual framework behind risk mapping

$$\text{Risk} \propto \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

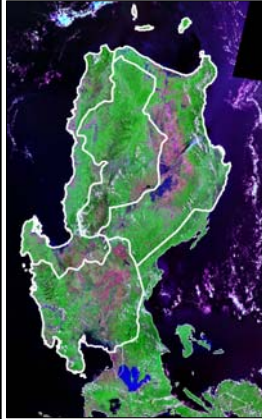
Modified from: Office of the United Nations Disaster Relief Co-ordinator (UNDRO). *Mitigating natural disasters. phenomena, effects and options. A manual for policy makers and planners.* New York, United Nations, 1991.

## How can this be applied ?

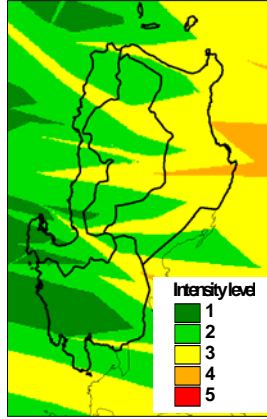


# Example of application: Philippines

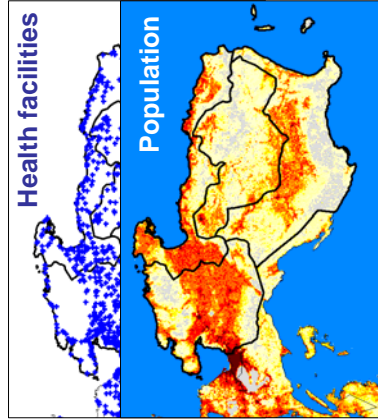
4 Regions



1 hazard: Cyclones



2 elements at risk



11 |

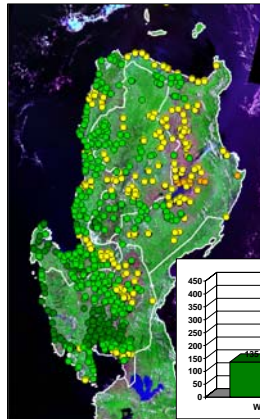
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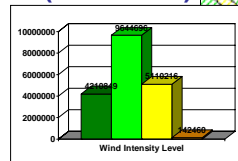
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# Example of application: Philippines

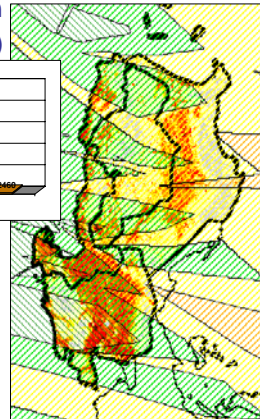
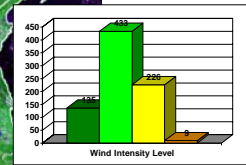
Exposure to cyclones



Population  
(19'108'221)



Health facilities (803)



12 |

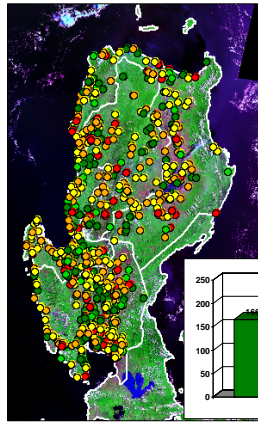
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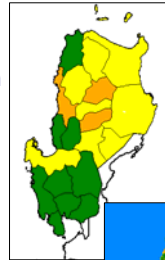
# Example of application: Philippines

## Vulnerability/Capacity



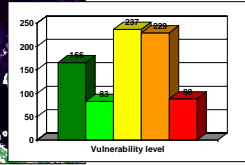
**Under Development**

Population

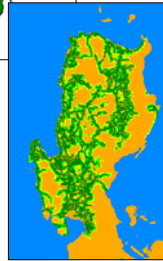


Poverty

Health facilities



Travel time to HF



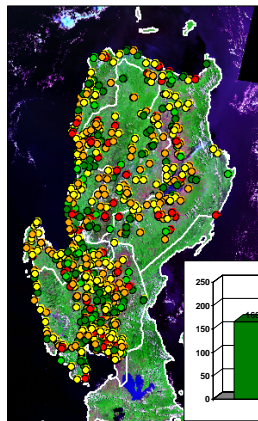
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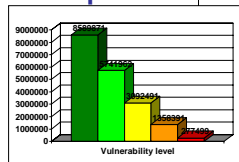
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# Example of application: Philippines

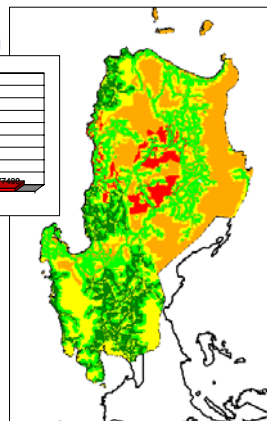
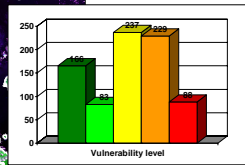
## Vulnerability/Capacity



Population



Health facilities



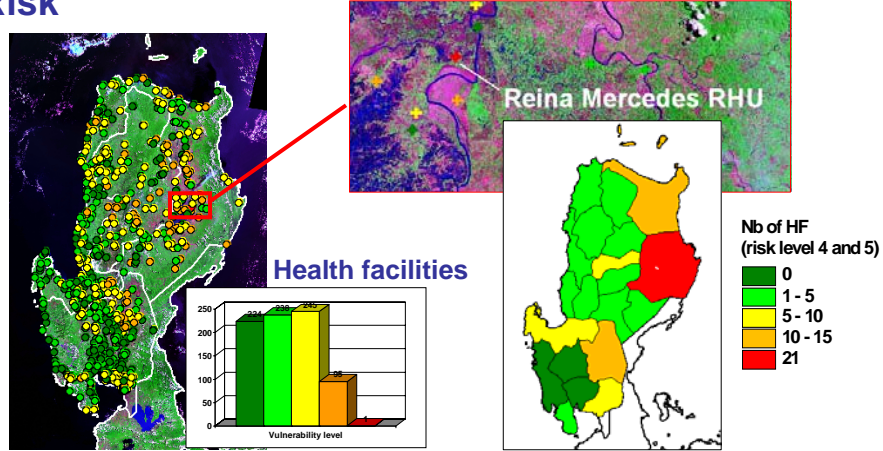
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# Example of application: Philippines

## Risk

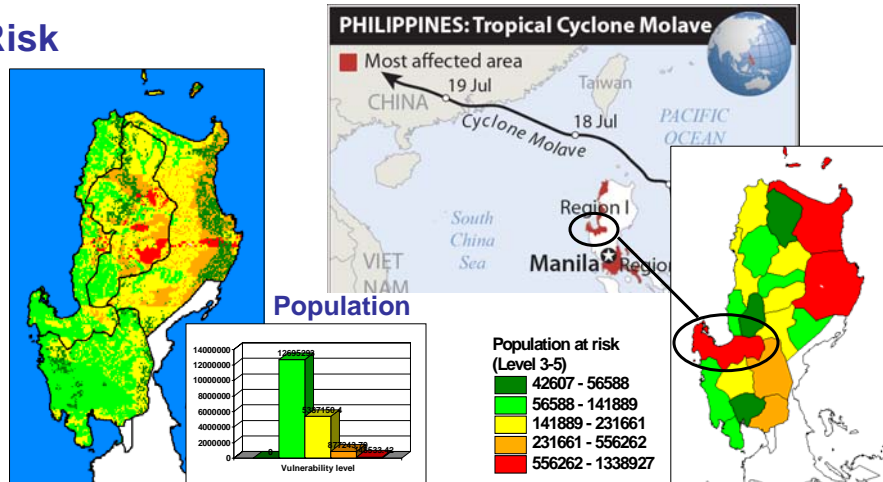


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# Example of application: Philippines

## Risk



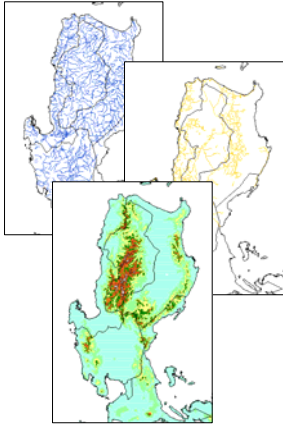
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## Challenges and opportunities: the important role of the NMAs

### Data availability



- ➔ Several layers needed to apply the approach
- ➔ most of the time, an important number of them is produced by the NMA
- ➔ Importance of the NMAs in the context of hazard, vulnerability, capacity and analysis

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## Challenges and opportunities: the important role of the NMAs

### Data availability, quality and compatibility



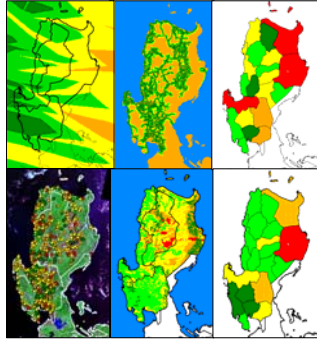
- ➔ Standards, practices, protocols, policies ...
- ➔ National Spatial Data Infrastructure (NSDI)
- ➔ Important to have the health sector on board of the NSDI process
- ➔ Encourage NMAs to invite the MOH to this process

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# Challenges and opportunities: the important role of the NMAs

## Technical capacity



+ interpretation skills from  
a geographic perspective

- ➔ Not necessarily available within the Ministry of Health
- ➔ Need for training, guidance, expertise,...
- ➔ Skills and capacity could be available at the National Mapping Agency

## Conclusion

WHO, through the establishment of the VRAM platform is proposing an integrated and systemic approach aiming at strengthening capacities in countries to conduct **health** risk assessments as well as translate them into disaster risk reduction programs and emergency preparedness planning:

- using geography and GIS as a common and neutral data integration and analysis platform
- building connections and collaboration between the **Ministry of Health** and the other stakeholders (i.e. NMA) taking advantage of their respective mandates and capacities
- concentrating on content and methods as the key elements of success

➔ Providing an additional driver for the NSDI process

# Thank you for your attention

**NSDIs main's objective should be to address today's challenges!**



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