Making A Difference in Managing Water-Related Disaster Through Survey and Assessment

By

Yolanda Benitez-Gomez

Philippines
Overview:

- Philippines is highly vulnerable to natural hazards due to its geographic location (earthquake, volcanic eruption)
- Climatic variability (tropical cyclones)
- Ranked 3rd in terms of number of people exposed to natural disasters
Overview:

• As a tropical country, it receives more than 2,000 mm of rainfall annually
• Often visited by typhoons (about 20 typhoons annually)
• A considerable part of the country is subject to extreme rainfall condition that often trigger flashflood and landslide
• Perennial flooding problem
• Landslide in Panaon Island in 2003
Hazard Mapping & Assessment Study

• Carried out in 2004 - 2005, the study was intended to do hazard mapping and assessment in order to produce hazard maps to help in risk and disaster management.

• Covered 9 pilot areas.
Objectives:

- To provide data and information on hazards to help policy makers and planners address disaster management and risk mitigation
- To help local community understand and cope with hazards (geologic and water-related)
Hazard Assessment & Mapping Study

- To help develop mitigation scheme for geologic and water related-hazards
- To generate information on the susceptibility of certain part of the country to certain hazards (flooding and landslide)
- To help develop action plans to better prepare local communities cope with water related disasters and hazards
Hazard Assessment & Mapping Study

- Mines and Geosciences Bureau (MGB) under the Department of Environment and Natural Resources (DENR)
- With funding from UNDP
The Major Components:

- Hazard survey, assessment and mapping component (technical aspect)
- Information, education and communication/advocacy component (social aspect)
The Project Approach:

For the preparation of 1:50,000 maps:

- Compilation of existing/available data (old maps and other relevant information)
- Conversion to digital format
- GIS analysis
The Project Approach:

For the preparation of 1:10,000 maps:
• Interpretation of aerial photo/images
• Conduct of detailed field survey and mapping (flood survey and landslide inventory)
• GIS analysis
The Project Outputs:

A. Hazard Maps focusing on landslide and flooding susceptibility
   - 1:50,000 scale
   - 1:10,000 scale

B. Information/advocacy materials and training of local community members
Examples of maps produced
Examples of maps produced
Examples of maps produced

FLOOD SUSCEPTIBILITY MAP OF NAGA CITY QUADRANGLE
Camarines Sur, Philippines

LEGEND:
- Regularly Flooded Area
- Seasonally Flooded Areas
- Not Prone to Flood
- Prone to Flood
- Prone to Total Flood
- Inundated Area
- Flooding Area
- Flooding Area and Inundated Area
- Road
- Municipal Boundary

GIS Processing:
- Geological Database and Information Systems Section
- Lands Geospatial Survey Division
- MGB GIS-V2: Geological Survey Division
- MGB GIS-V: Geological Survey Division
- MGB GIS-V2: Geological Survey Division

Base Maps:
- Sheet No. 2060 C/N "Naga City Quadrangle"
- Aster 2001 Imagery

INDEX MAP

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MINES AND GEOSCIENCES BUREAU
LANDS, GEOLOGICAL SURVEY DIVISION

United Nations Development Programme
Examples of maps produced:
Uses of the Maps Produced:

• For development planning, in particular, land use planning and zoning (basis for zoning areas)
• Input to the preparation of a national and local disaster management plan
• To educate and train local communities on coping with water-related disaster and risk
Current Initiatives of the Government:

- Continuation of assessment and mapping of other areas in the country (Eastern sea board portion)
- Preparation of hazard maps
- Intensive advocacy campaign at the local government and community levels
THANK YOU