Regional Workshop on Geo-referenced Disaster Risk Management Information System for South-East and East Asia, and the Pacific, 20-22 February 2013, Un ESCAP, Bangkok

Geospatial Information System in Indonesian Agency for Disaster Management (BNPB)

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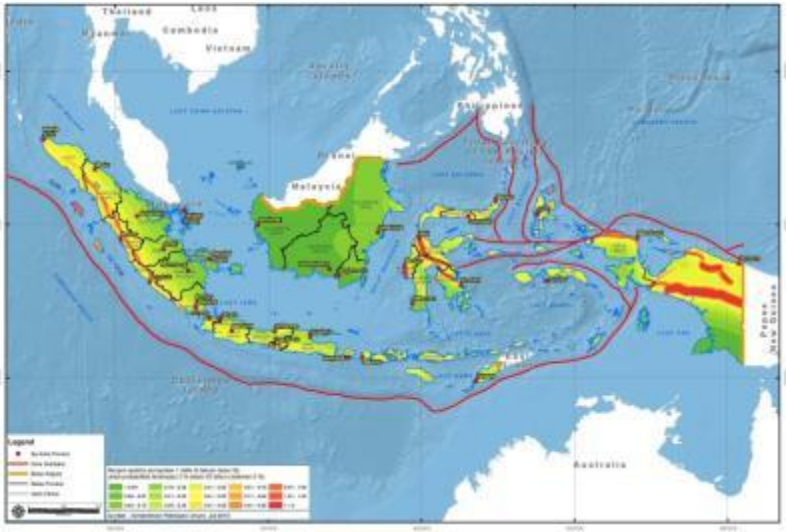
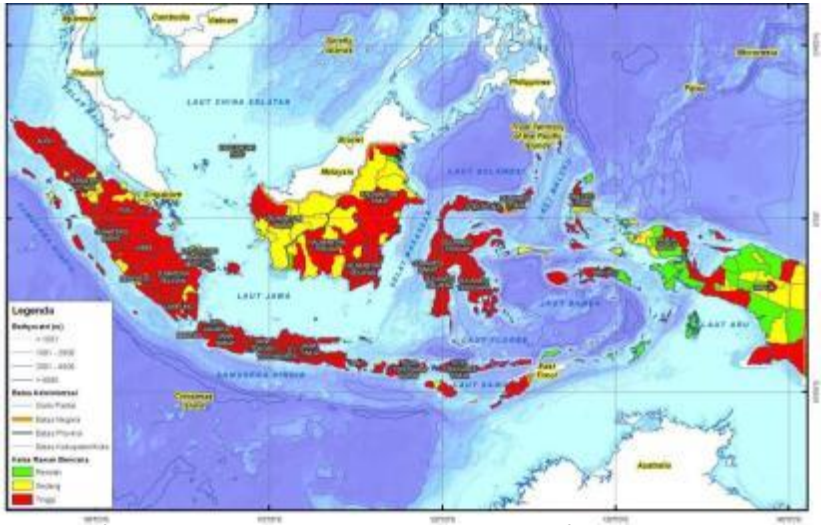
Phase of Disaster Management

Geospatial Information in Disaster Management Phase

Planning and Mitigation



Indonesia Earthquake Hazard Zone, 2011



Indonesia Disaster Prone Area Index, 2011

As potential emergency situations are identified, mitigation needs can be **determined and prioritized**, In the case of an earthquake, what developments are within the primary impact zone of earthquake faults? Based on the expected magnitude of an earthquake, soils, and other geologic data, what damage may occur

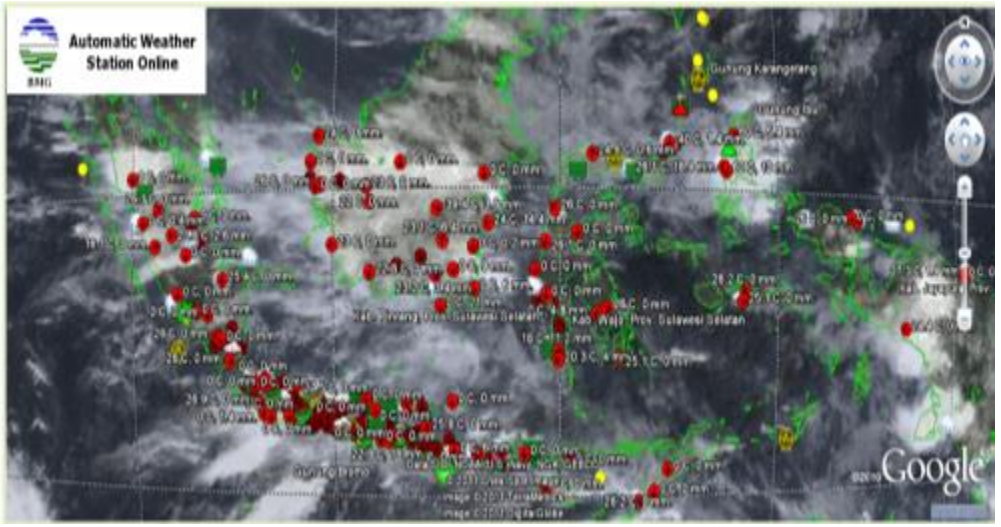
Using Geospatial Information, officials can pinpoint hazards and begin to evaluate the risk and consequences of potential emergencies or disasters

Values at risk can be **displayed quickly and efficiently** through a GIS. Utilizing existing databases linked to geographic features in GIS makes this possible

Geospatial Information in Disaster Management Phase

Preparedness

Distribution of Search and Rescue Equipment in Indonesia, 2011



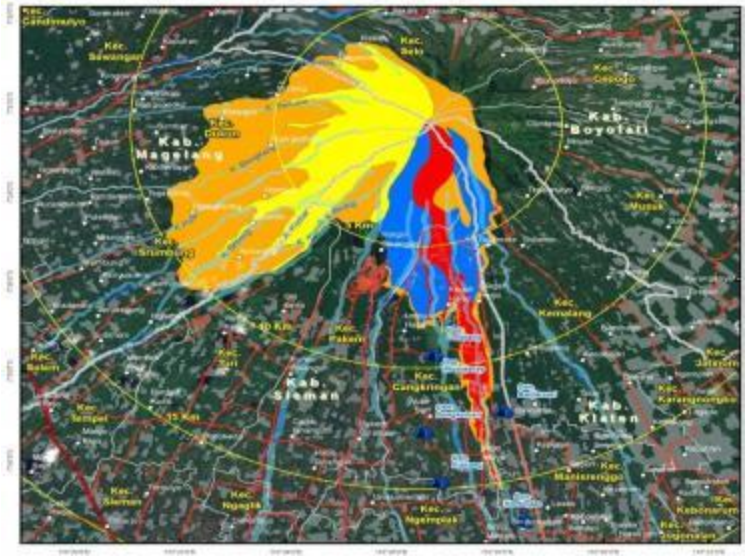
Geospatial BNPB's Indonesia Disaster Watch

Preparedness includes those activities that ***prepare for actual emergencies***. GIS can provide answers to questions such as How many paramedic, logistics units are required, and where should they be located?

GIS can display "real-time" ***monitoring for emergency early warning***, Earth movements (earthquake), reservoir level at dam sights, radiation monitors, and so forth, can all be monitored and displayed by location in GIS

Geospatial Information in Disaster Management Phase

Response



Merapi Volcano Eruption Affected Area, 2010

Number of Casualties, Wes Sumatera Earthquake 2009

Geo Information can assist immediately by helping decision makers understand the scope of the damage and identify locations where people may be trapped or injured or require medical support and rescue.

Analyzing critical infrastructure (facilities essential for the operation and sustainability of health services, food services, and government operations) that is or could be damaged or destroyed is essential to restoring vital services and government operations.

Decision makers can assign response resources to the highest life safety and facility repair priorities. Another critical mission that geospatial technology supports is emergency supply chain management

Geospatial Information in Disaster Management Phase

Recovery

Building/Housing Damaged Identification, Java Earthquake 2006

Number of T-shelter required, planned, and constructed, Java Earthquake 2006

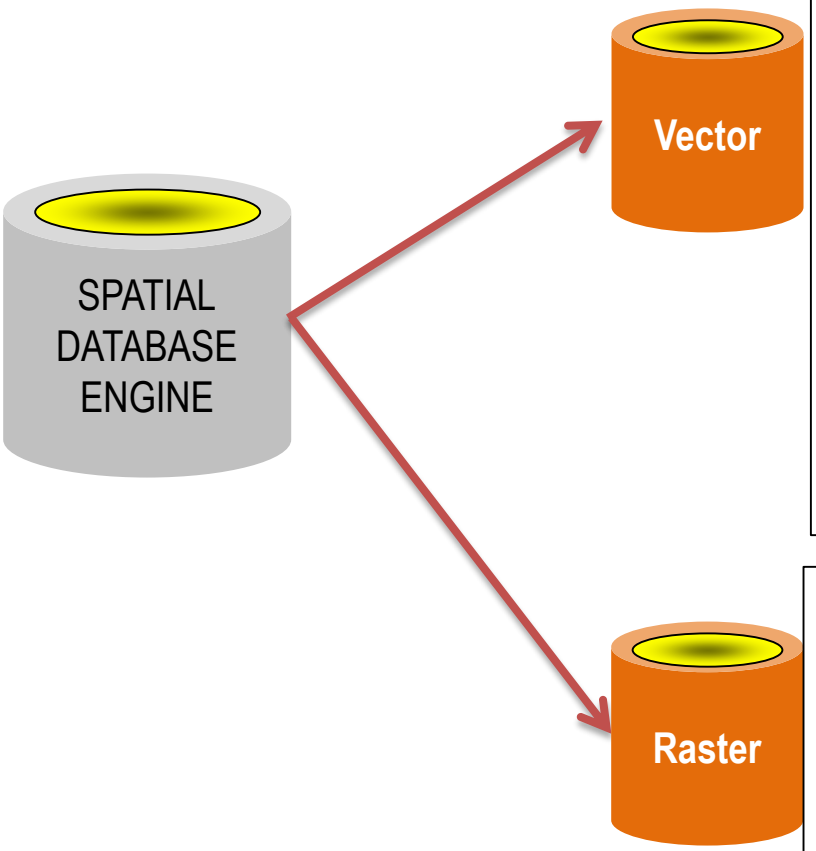
A GIS can work in concert with GPS to locate each damaged facility, identify the type and amount of damage, and begin to establish priorities for action (triage).

A GIS can display areas where services have been restored in order to quickly reallocate recovery work to priority tasks.

Long-term plans and progress can be displayed and tracked utilizing a GIS. Prioritization for major restoration investments can be made with the assistance of GIS

The Status of Geospatial Information

Geospatial Data Structure in BNPB



➢ **Basemap (25K, 50K, 250K)**

- Administrative Boundary (Bakosurtanal, BPS 2010) Road (Bakosurtanal, OSM, Tele Atlas, Navigasi.net), River (Bakosurtanal), Contour Line and Height Point (Bakosurtanal), Landuse and Settlement area (Bakosurtanal, OSM, Navigasi.net)

➢ **Thematic Map**

- Hazard and Risk Map for 33 provinces and selected 33 Districts/Municipalities
- Daily of Disaster events in Indonesia
- Statistical Maps of Disaster

- Digital Elevation Model (DEM) SRTM 90 m
- Digital Elevation Model (DEM) ASTER 30 m
- IKONOS
- Quick Bird
- Landsat
- SPOT

Satellite/Airborne Data

- Mostly using available data on internet i.e. Google Earth, Bing Maps, CRISP, etc.
- Provided by Government agencies (i.e. LAPAN), UN Agencies, UNOSAT, Foreign Government, etc.
- UAV
- Airborne oblique photo