Making Disaster Risk Data and Information Open and Available to all

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A Disaster Risk Assessment is Data Intense!

Risk Reduction:
- Sector planning,
- Infrastructure retrofitting,
- Education,
- Building codes,
- Risk mitigation works

Financial Protection:
- Reserve mechanisms,
- Risk transfer,
- Insurance,
- Budget appropriations

Preparedness:
- Development of early warning systems,
- Response planning,
- Training,
- Response systems

Resilient Reconstruction:
- Ensure reconstruction considers ALL risks,
- Reconstruction & rehabilitation planning

Risk Identification and Assessment:
- Hazard Mapping/Modeling,
- Exposure Mapping,
- Understanding vulnerability,
- Modeling,
- Risk mapping and communication
To Build Exposure Database

- Natural Features
- Physical Location, Size and Shape
- Networks
- Administrative Area
- Land Ownership
- Land Use
- Construction Period
- Structural Characteristics
- Social Characteristics
- Economic Characteristics

EXPOSURE DATABASE

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What are the challenges?

- Data Fragmentation Across Institutions
- Duplication of Effort
- Inaccessibility
- Out-of-Date Datasets
- Incompleteness
- Data management and curation (capacity and cost)
- Weak Usage/Application of Data
- Policy and Legislative Frameworks
- Expense of new data collection
- Fear and Power
What is Open Data?

**Data is Open if**
“anyone is free to use, reuse, and redistribute it subject only, at most, to the requirement to attribute and/or share-alike.”

**Legally Open**
It is important to place a license on open data. The World Bank’s own data policy is licensed under:

ODC-BY
Open Data Commons Attribution License

**Technically Open**
The data needs to be made available, in bulk, in a machine-readable format.

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Yet Progress is Being Made…

- The Open Data movement is increasingly embraced:
  - Governments: South Korea, Norway, Malawi, Australia, US, Mauritius and many more
  - Bilateral donors: USAID
  - International organizations: World Bank Group

- New tools are becoming available:
  - Open-source GIS tools (e.g. QGIS, GeoNode etc)
  - Participatory mapping and crowdsourcing (e.g. OpenStreetMap, data collection devices and apps)

- New datasets bring economies of scale
  - New private micro-satellites providing up-to-date imagery
  - New tools to collect digital elevation model datasets
Imagery Tracing
Field Data Collection
Promotion of Participatory Mapping in Data Poor Areas
**Haiti and West Africa Ebola Response**

**Haiti Before**

- 2010 Haiti:
  - > 600 volunteers from 29 countries
  - > 1.2 million edits
  - ~1 year of work completed in 20 days

**Haiti 28 Days Later**

**Monrovia Before**

- West Africa Ebola:
  - >2,000 volunteers
  - >12 million edits
  - >62 km of roads
  - >11,000 places
  - >500,000 buildings

**Monrovia After**
Simple & Robust Analytics
Pictures from Micro-Satelites
Supporting Malawi’s Flood Action Plan with Open Data for Resilience

1. Malawi Spatial Data Platform (MASDAP) – Nov 2012
Support the implementation of the Action Plan; improve data sharing across government agencies; promote open data; build data preparedness

Improve flood preparedness & response in Nsanje & Chikwawa; identify at-risk assets; fill data gaps
Welcome to the BETA version of MASDAP, a public platform for GIS Data to support development in Malawi.

Welcome to MASDAP

MASDAP is a web-based data sharing tool launched in November 2012, managed by the National Spatial Data Center (in the Department of Surveys), in collaboration with the National Statistics Office and a number of technical Ministries.

Get Started →
Participatory Mapping

**Objective:** To inform contingency planning & response activities for flood prone districts Nsanje & Chikwawa

- Identify assets at risk
- Use simple & inexpensive tools
- Provide open & accurate spatial data
- Train government officials, university students & local communities
- Create multi-purpose maps
- Share all data on MASDAP
- Build data preparedness
Participatory Mapping Outcomes

• Collaborative Process
• New / updated data
  - 15,000+ waypoints (village locations, road access, dwellings & village facilities) collected in 9 days for in most flood prone areas
  - Remote villages on globally accessible map for first time & all data shared on MASDAP
• Sustainable
  - 6-months internship with Humanitarian OpenStreetMap Team & community of mappers ready to be mobilized post disaster

Trained in the use of scenarios.
Open Data: Where to from here?

• **Demonstrate the Value of Open Data:**
  • Support Governments to appreciate the benefits that accrue from opening data and to develop the necessary institutional and legislative frameworks
  • Expand the number of international organizations embracing open data
  • Identify private sector actors who are willing to open data in highly vulnerable countries

• **Build Capacity to Collect, Manage, Share and Use Open Data**
  • Capacity building around data management and curation
  • Expand existing and create new tools to use open data (data visualization etc)
**Where to from here?**

- **Acquire once, use many – embrace economies of scale**
  - Consider making data technically and legally open every time (how many times are we all acquiring the same data?)
  - Build consortiums to acquire legally and technically open high-value datasets (e.g. high-resolution DEM, population attributes, administrative boundaries etc)
JOIN THE OPEN DATA FOR RESILIENCE INITIATIVE
Example for Zanzibar
Example for Zanzibar
Example for Zanzibar
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