


Strategic Framework on Geospatial Information and Services for Disasters

Case Studies for the Caribbean and the Philippines

Kunming Forum on United Nations Global Geospatial Information Management
Session 7

Kunming, China
10-12 May 2017




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BACKGROUND

Establishment of the Working Group

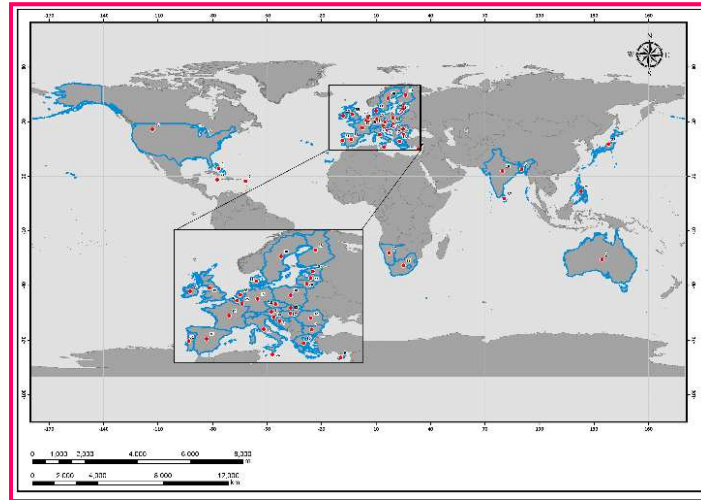
- Created during the 5th Session of UN-GGIM in August 2015
- Composed of senior officials and technical experts from around 50 Member States, as well as representatives from businesses, aid organizations and other related institutions
- Task Team 1, led by the Philippines, is tasked to develop a strategic framework on geospatial information and services for disasters
- Task Team 2, led by Jamaica, is tasked to conduct a review of existing global, regional and national frameworks, laws, rules, policies and regulations among Member States for the provision of geospatial information and services during times of disasters



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MEMBER STATES



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ABOUT THE FRAMEWORK

- List of Acronyms
- Preamble
- Expected Outcome and Goal
- Guiding Principles
- Priorities for Action
- Role of Stakeholders
- Implementation
- Definition of Terms
- References

A **participatory approach** was employed by the Working Group on Geospatial Information and Services for Disasters (WG-Disasters) in the formulation process



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a) Expected Outcome and Goal

- **Expected Outcome**

The human, economic and environmental risks and impacts of disasters are prevented and reduced through the use of geospatial information and services

- **Goal**

Quality geospatial information and services are available and accessible in a timely and coordinated way to support decision-making and operations within and across all sectors and phases of the emergency cycle



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b) Guiding Principles

2030 Agenda for Sustainable Development

International Strategy for Disaster Reduction

Sendai Framework for Disaster Risk Reduction 2015-2030

UN General Assembly resolution on international cooperation on humanitarian assistance in the field of natural disasters

UN General Assembly Resolution 59/12

Global Geospatial Statistical Framework

UN-GGIM's Statement of Shared Principles for the Management of Geospatial Information

Open Data

National Data Infrastructure



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Governance and Policies

- refers to the framing, implementing and monitoring decisions to make available and accessible all quality geospatial information and services across all phases of the DRRM
- specific activities:
 - Assessment and Planning;
 - Institutional Arrangements, Collaboration and Coordination; *and*
 - Monitoring and Evaluation

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Awareness Raising and Capacity Building

- refers to the improved understanding and appreciation of geospatial data and information as a vital element of DRRM



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Data Management

- refers to the comprehensive methods of collecting and managing geospatial data and information
- specific activities:
 - Data Development;
 - Data Standards and Protocols; *and*
 - Data Use Guidelines.



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Common Infrastructure and Services

- refers to the hardware, software, network and manpower capacities needed to process and further improve geospatial information and services, as well as the common operations center to be established by national governments
- focused on interoperability of systems and processes to allow geospatial data and information sharing among all actors



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Resource Mobilization

- refers to human resources, as well as technical, financial and other forms of logistical and administrative support required for the creation, improvement and maintenance of all geospatial information and services in order to sustain all DRRM activities.



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c) Role of Stakeholders

- **Member States** should be in the position to generate, maintain and provide quality geospatial information and services across all phases of the DRRM.
- Specific roles and responsibilities for:
 - Civil Society Groups, Volunteer Organizations and other Community-Based Organizations
 - Private Sector
 - Academic, Scientific and Research Entities and Networks
 - Media
- Support from **International Organizations**, including UN-GGIM, UN Agencies and international funding institutions



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UPDATES

- The strategic framework was presented in the following events:
 - Sixth Session of the UN-GGIM (New York City, August 2016)
 - International Forum on Geospatial Information and Services for Disasters (Barbados, September 2016)
 - Third Session of the UN-GGIM Americas Regional Committee (Mexico City, October 2016)
 - Fifth UN-GGIM Asia and the Pacific Regional Committee Meeting (Kuala Lumpur, October 2016)
- The UN-GGIM Bureau has also initiated a global consultation in March 2017 to solicit more inputs from UN Member States and key partners



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FOLLOW-UP ACTIONS

- The strategic framework will still be presented in the following events to solicit further comments and recommendations:
 - Kunming Forum on Global Geospatial Information Management (2017) in Kunming, China
 - Global Platform for Disaster Risk Reduction (2017) in Cancun, Mexico
- Once all inputs are integrated, a resolution will be prepared for the framework's endorsement to the ECOSOC.



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Case Study for the Caribbean Nations

Jamaica, Dominica, Haiti

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Applicability and Usefulness of the Draft Strategic Framework on Geospatial Information and Services for Disasters



Dominica



Haiti



Jamaica



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Case Study: JAMAICA

National and Sub-National Levels

a) What is NERGIST?

- National Emergency Response Geographic Information Systems Team
- Approved by Cabinet in 2010
- Dedicated to undertaking damage assessment and analysis prior to and post meteorological and geological events
- Provide existing geospatial data if available and required to support planning and recovery analysis exercises



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Case Study: JAMAICA

National and Sub-National Levels

- Group consists of 20 volunteer agencies across public and private sector
- The team has been trained in the use of the USAID/IDA methodology for performing initial damage assessment
- Coordinate secondary data collection and analysis
- Post maps and data generated pre and post events on the LICJ geospatial portal or other relevant websites



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Case Study: JAMAICA

National and Sub-National Levels

In 2012, NERGIST activities were centred primarily on Government's response to the effects of Hurricane Sandy by providing technical assistance in conducting damage assessment. **The data captured during the exercise is available in the NSDMD central data repository.** The following tasks were undertaken:

- Risks were identified, evaluated and prioritized
- The path of the hurricane was mapped in relation to critical assets
- A Risk Assessment Map was developed and shared with the ODPEM.



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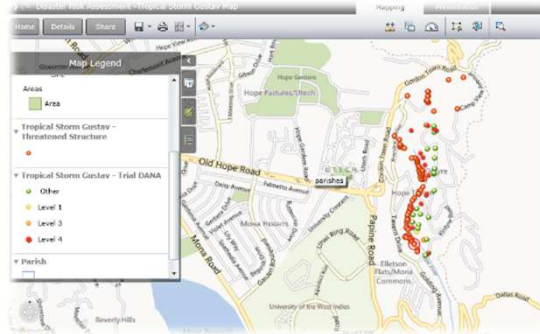
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Case Study: JAMAICA

National and Sub-National Levels

- NERGIST – Damage Assessment Web Map in ArcGIS



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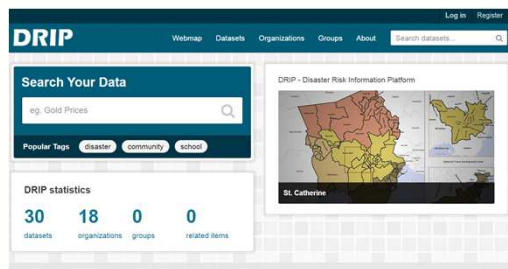
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Case Study: JAMAICA

National and Sub-National Levels

The Disaster Risk Information Platform (DRIP) was created as an information hub where users are able to access relevant documents, studies, maps, research related to hazard, risk and vulnerability information specific to St. Catherine.



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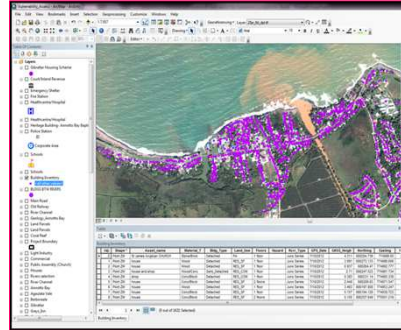
Case Study: JAMAICA

Annotto Bay Urban Area Hazard Assessment

Coastal town located on Jamaica's NE coast
Low lying – elevations of 1-3m above sea level
Community is traversed by 4 rivers- Annotto, Pencar, Mother Ford Drain, Crooked Rivers



- 1632 assets mapped
- The following attributes were described:
 - Land use
 - # of floors
 - Material of construction
 - Replacement cost for buildings
 - Finished floor level



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Case Study: DOMINICA

National and Sub-National Levels



In August 2015, total damages and losses from Tropical Storm Erika were estimated to be \$483 million, equivalent to **90 percent of Dominica's GDP** with a majority of damages in the transport sector. Dominica also experienced significant flooding and landslides in 2011 and 2013 that had a substantial economic impact.



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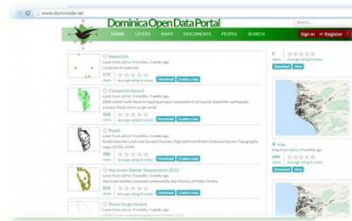
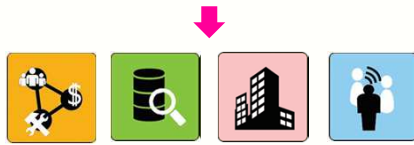
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Case Study: DOMINICA

National and Sub-National Levels

The Commonwealth of Dominica is vulnerable to numerous natural hazards arising from meteorological and geophysical events, including excess rainfall and hurricanes that result in landslides, floods and storm surges, earthquakes, and volcanic eruptions. In Dominica, GFDRR has helped improve the government's ability to collect, harmonize, store, and share geospatial data through the development in 2012 of a **risk data management platform**, DomiNode



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Case Study: HAITI

National and Sub-National Levels



Haiti lies in the middle of the Caribbean basin and according to the World Bank's Natural Disaster Hotspot study, Haiti is one of the most at risk countries in the world. **With 96% of its population living at risk**, Haiti has the highest vulnerability rating in terms of cyclones among the region's small developing island states (12.9/13)



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Case Study: HAITI

National and Sub-National Levels

Haiti's National Disaster Risk Management System (NDRMS) was signed into effect in 2001 by 10 key line ministers and the President of the Haitian Red Cross. The National Disaster Risk Management Plan (NDRMP) provides the operational framework for the NDRMS and identifies the specific roles and responsibilities of the participating institutions.

Over the last 8 years, the NDRMS has **improved its data collection** for risk assessments. Although there is currently no updated national, departmental or sectoral comprehensive risk assessment, there exists a number of significant initiatives



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Some Caribbean Islands lack the following:

- National level policy on the use of geospatial information, which would specify its usage, sharing, dissemination and accessibility.
- Formally established National Spatial Data Infrastructure policy or legislation which would dictate data sharing requirements use etc.
- The use of space-based data to allow for effective analysis and understanding of hazards and risk
- Advance technical expertise in hazard mapping technology and its related fields.



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Benefits of the Strategic Framework for the Caribbean Nations include:

- Coordinated, comprehensive and efficient disaster assessment exercises
- Accurate data provided to decision makers in a timely manner
- Duplication of effort to collect impact data is reduced
- A scientific framework to properly cost reconstruction and recovery exercises is provided
- Fair distribution of benefits to affected persons. This will enhance the credibility of the recovery exercise and will satisfy the donor organisations.



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Case Study for the Philippines

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Applicability and Usefulness of the Draft Strategic Framework on Geospatial Information and Services for Disasters

National and Sub-National Levels



The Philippines



National Mapping and Resource
Information Authority (NAMRIA)



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Case Study: THE PHILIPPINES

National and Sub-National Levels

What is NAMRIA?

- National Mapping and Resource Information Authority, under the Department of Environment and Natural Resources (DENR)
- Central mapping agency of the Philippine government
- Provides extensive map-making services and other geospatial information products across a wide array of focus areas, including DRRM and land use planning
- Assistance during major disaster events (e.g. Typhoon Haiyan – 2013)
- Strategic objective: Geospatially-empowered agenda for the Philippines in 2020



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Case Study: THE PHILIPPINES

National and Sub-National Levels

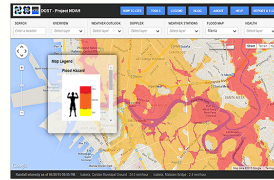
NAMRIA and the Strategic Framework



- Memo Circular 2016-02 (Geospatial Information Policy in NAMRIA)
- Draft UN-GGIM Survey Tool



- NAMRIA Geomatics Training Center (GTC)



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Case Study: THE PHILIPPINES

National and Sub-National Levels

NAMRIA and the Strategic Framework



- Proposed National Spatial Data Infrastructure (NSDI)
- Publication of the Common and Fundamental Operational Datasets
- Adherence to data management guidelines (e.g. open data)



- Philippine Geoportal Project (geoportal.gov.ph)
- Contributions to the NDRRMC's Operations Center



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Case Study: THE PHILIPPINES

National and Sub-National Levels

Other Initiatives

- Republic Act 10121 (Philippine Disaster Risk Reduction and Management Act of 2010), particularly on provisions for information sharing, technology development and establishing networks/linkages
- NDRRMC's Memorandum Circular No. 2016-02 (Creating the Information Management – TWG and ensuring the availability and accessibility of quality operational datasets to support DRRM in the Philippines)
- Various initiatives supporting the integration of geospatial data and statistics (e.g. PSA's Philippine Data Revolution Roadmap for the SDGs)
- Establishment of the UP Resilience Institute for Disaster Risk Reduction and Management (resilience.up.edu.ph), an academic arm within the UP system that will leverage timely researches on various hazards



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The Philippines recommends the following action points:

- Similar with the Caribbean nations, there is a need to formalize the creation of a National Spatial Data Infrastructure (NSDI). The policies and guidelines subsumed under the NSDI will provide for a common operational picture before, during and after disaster events
- Continue establishing LGU capacities in integrating GIS into their respective land use and other related plans
- Strengthen partnerships with the other UN Member States, academe, research firms and the private sector to enable technology and knowledge exchange solutions
- Establishment of the Big Data Center (under the auspices of DICT)



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CALL FOR ACTION

GET INVOLVED!



The UN-GGIM Working Group on Geospatial Information and Services for Disasters is calling all governments and DRRM organizations to support the adoption of the **Strategic Framework on Geospatial Information and Services for Disasters**.

Let us collaborate to make available and accessible all quality geospatial information and services across all phases of the DRRM.



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