

# The Fifth UN-GGIM-AP Plenary Meeting

## Activity Report of Working Group 2 on Disaster Risk Management 2015-2016

Kuala Lumpur, Malaysia  
17 October, 2016

*Toru Nagayama, Chair of WG2  
Geospatial Information Authority of Japan*



UN-GGIM-AP

Regional Committee of United Nations  
Global Geospatial Information Management  
for Asia and the Pacific

[www.un-ggim-ap.org/](http://www.un-ggim-ap.org/)

# WG2 Officers

## WG2 Chair

Mr. Toru Nagayama, Japan

## WG2 Vice Chairs

Dr. Tang Xinming, China

Mr. Adi Rusmanto, Indonesia

Mr. Peyman Baktash, Iran

Ms. Munkhtsetseg Dalkhaa, Mongolia

Mr. Rob Deakin, New Zealand



## WG2 – Expected outcome

### Expected outcome by 2030

NGIAs in Asia-Pacific region will implement necessary disaster risk reduction measures, required by SFDRR, by fully mobilizing their technical and administrative competency.

These measures will greatly contribute to reducing casualties and property loss by disasters in the region.

### Expected outcome by the end of current WG2 (2015-2018)

Enhance the capability of NGIAs in contributing to disaster risk reduction through utilizing geospatial information, with a view to an effective implementation of SFDRR in Asia-Pacific region.

**\*SFDRR:Sendai Framework for Disaster Risk Reduction 2015-2030**



# Summarized Work Plan of WG2 (2015-2018)

Work Item	Activities	Period	Output
1	Identify NGIAs' contribution areas for effective implementation of the SFDRR.	2015-2018	Contribution list
2	Investigate present and future roles of NGIAs through a questionnaire survey.	2015-2017	Survey report
3	Collect Best Practices (BP)	2015-2017	BP collection
4	Compile a guideline to help NGIAs promote geospatial activities for DRR.	2017-2018	Guideline
5	Coordination and cooperation with the UN-GGIM Working Group on disasters.	2015-2018	(enhanced coordination)
6	Encourage Member States to share earth observations infrastructure, technology and data resources.	2015-2018	(further sharing)



# Identifying NGIAs' contribution areas for SFDRR

- To help NGIAs find relevancy of their policy and measures to what is described in SFDRR
- A preliminary list with 60 potential areas was made

Potential areas for contribution of NGIAs to the effective implementation of Sendai Framework for Disaster Risk Reduction

			Description in the SFDRR	Potential area for contribution of NGIAs
			(b)Complete the assessment and review of the implementation of the Hyogo Framework for Action 2005-2015: Building Resilience of Nations and Communities to Disasters;	In view of the fact that the implementation status of Hyogo Framework for Action 2005-2015 has been assessed and reviewed, NGIAs will need to work to imagine how contribution from geospatial information sector, especially NGIAs will be understood when Sendai Framework for Disaster Risk Reduction 2030 will be reviewed.
			...to be focused on tackling underlying disaster risk drivers, such as rapid and rapid urbanization, poor land management...	Unsustainable use of natural resources as a result of unplanned and rapid urbanization and insufficient land administration will cause disaster risk aggravation can be prevented by administration in understanding and using geospatial information provided by NGIAs.
3	14	2	...monitoring, assessing and understanding disaster risk...	NGIAs can inform of disaster risk by themselves and coordinate with relevant organizations by understanding crustal movement and landform through geospatial information.
4	14	8	...enhancing multi-hazard early warning systems...	NGIAs can make a platform and provide geospatial information in coordination with relevant organizations to create early warning systems.
5	16	6	...the present framework aims to achieve the following outcome over the next 15 years: <i>The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries</i>	NGIAs need to be conscious of how their efforts employed lead to the SFDRR outcome through what kind of value chain.

SFDRR description

NGIAs' possible contribution

- It is like a "dictionary", to find out linkage between SFDRR languages and policy and measures to be taken by NGIAs for DRR
- Further elaboration is required.





# Questionnaire Survey: Outline

- From December 2015 to March 2016
- Purpose:
  - investigate the present roles of disaster management authorities and NGIAs
  - Find potential areas for extended roles of NGIAs and collaboration with disaster management authorities.
- 14 member states out of 56 responded.
  - East Asia: China, Hong Kong/China, Japan, Macau/China, Mongolia
  - South Asia: Bangladesh, Sri Lanka
  - Southeast Asia: Indonesia, Malaysia, Philippines, Singapore, Viet Nam
  - Oceania: Australia, Fiji



# Questionnaire Survey: Sections

**Section I.** General issues on DRR

**Section II.** Activities of NGIAs for DRR

**Section III.** Geospatial information management for DRR

**Section IV.** Challenges, solutions and future prospects

**Section V.** Best practices using geospatial information in the field of DRR (-> **Work Item No.3** )

**Section VI.** Future Approaches

**\*DRR: Disaster Risk Reduction**



# Questionnaire Survey: Section I Results

- **Types of major natural disasters**

- Landslides (12/14, meaning 12 out of 14 responding countries), Floods (12/14)
- Earthquakes (9/14), Storm surges (9/14) Typhoon etc. (9/14)

- **Governance**

- Have disaster risk management organizations (12/14)
- Have laws to govern disaster risk management policies (7/14)
- Access to related policy and information through websites (13/14)





# Questionnaire Survey: Section II Results

## NGIAs' engagement for disaster risk reduction

- NGIAs engaging in DRR (12/14)
- Legal and sub-legal foundation for NGIAs' roles in DRR (6/14)
- Have a section dedicated to DRR (4/14)
  - management, capacity building of the staff etc.
- Collaboration between NGIAs and disaster risk management organizations (11/12)
  - Data sharing, join drills, personnel exchange.

**\*DRR: Disaster Risk Reduction**



# Questionnaire Survey: Section III Results

## Geospatial Information Management for DRR

- NGIAs already developed and provided various kinds of geospatial information for DRR.
- Paper vs. Digital: Provision of paper-based materials (8) is still a major channel
- Users of geospatial information: national government entities (10/12) as well as local governments (10/12)



# Questionnaire Survey: Section IV Results

## Challenges and solutions

### (for NGIAs engaging in DRR) (12 countries)

- Major challenge: provision of trustworthy, timely geospatial information.
- Proposed solutions: collaborations between related organizations, international cooperation and the structuring of databases.



# Questionnaire Survey: Section VI Results

## Future Approaches

### (for NGIAs non-engaging in DRR) (2 countries)

- Challenges: 3D earth models more minute, and connecting to the NSDI web portal.
- Requests to UN-GGIM-AP-WG2: sharing of other countries' legal documents relevant to DRR; and sharing of the best practices



# Best Practices: Outline


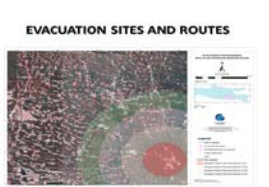

- Collected in conjunction with questionnaire survey.
- 14 best practices from 10 countries were collected

Country	Best Practice
Australia	*Real Time Crisis Response Mapping for Government Officials
Bangladesh	*Use of Geospatial information for DRR in Asia and the Pacific region
China	*Earthquake
Fiji	*Tropical Cyclone, Flooding
Hong Kong, China	*Contingency Plan for Natural Disasters
Indonesia	*Rapid Mapping of Kelud Mountain
Japan	*Floods *2011 Great East Japan Earthquake
Malaysia	*Use of Unmanned Aerial Vehicle (UAV) to Monitor the Flood and its Impact in Malaysia *Earthquake that struck Ranau in Sabah, Malaysia
Philippines	*Multi-Hazard Mapping of 28 Priority Provinces and the Greater Metro Manila Area *The Philippine Geoportal *Recovery and Rehabilitation after Typhoon Haiyan
Sri Lanka	*Tsunami – 2004 December 26





# Best Practices: an example

Country	Indonesia
Organization	Geospatial Information Agency
Title	Rapid Mapping of Kelud Mountain
Outline of the subject natural disaster	On February 13, 2014 mount Kelud erupted. The Centre of Thematic Mapping and Integration of Geospatial Information Agency (BIG) has conducted rapid mapping and analysis of Mount Kelud.
Response *1	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>DISASTER SUSCEPTIBILITY MAP OF MOUNT KELUD</p> </div> <div style="text-align: center;">  <p>EVACUATION SITES AND ROUTES</p> </div> </div> <p>BIG, together with some institutions and local governments, have provided the Disaster Susceptibility Map of Mount Kelud, Evacuation Sites and Routes, and Ash Distribution of Mount Kelud.</p> <div style="text-align: center; margin-top: 20px;">  <p>ASH DISTRIBUTION OF MOUNT KELUD</p> </div>
Effect *2	The above products have been published on internet so that many people in Blitar and Kediri Regencies could be saved.
Future *3	Many additional important information from ministries, local governments, and private sectors could be enriched the above maps.



## Best Practices: several findings

- NGIAs already conduct a variety of activities
- Mainly during disaster. A few before and post disaster.
- Products and services in each phase
  - Prior to: Hazard map provision
  - During: Aerial photo, satellite imagery, UAV images, geodetic data (CORS), topographic map.
  - Post: DEM for consideration of relocation.
- Targets: decision makers and citizens. A practices targeted local governments for enlighting and capacity building
- Future prospects: UAV introduction; more efficient data provision; information of vulnerable people in disaster; develop geospatial info. (CORS, topo map DB, DEM)



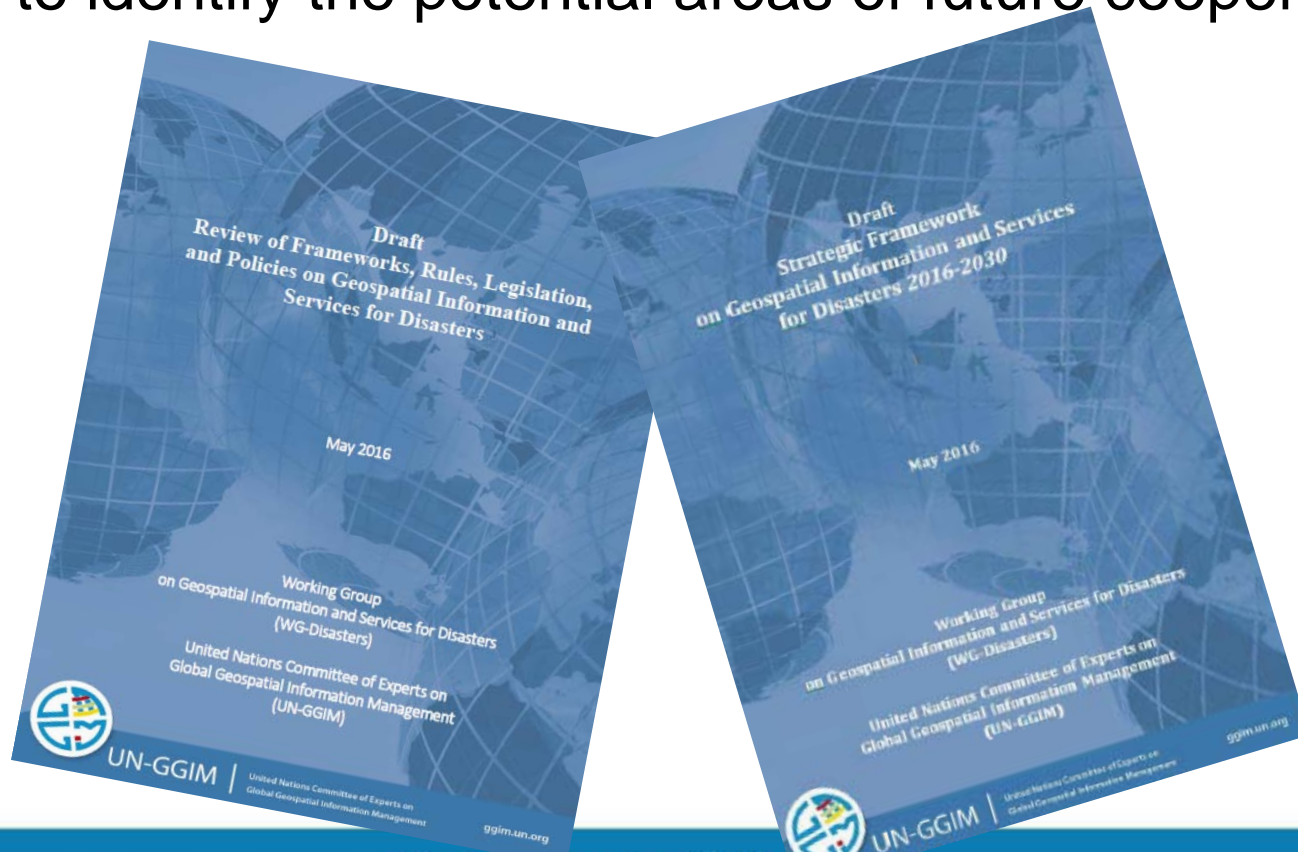
## Compile a guideline

- Currently no action has been made.
- It will be implemented in future, based on the results of activities No.1- No.3, as well as the Strategic Framework produced by GGIM WG-Disasters.



# Coordination and Cooperation with the UN-GGIM WG on Disasters

- Representing UN-GGIM-AP, the Chair of WG2 joined the UN-GGIM Working Group on Disasters as a member and to identify the potential areas of future cooperation.



# Sharing earth observation infrastructure, technology and data resources

- WG2 encourages members states to do so on a voluntary basis.
- Such sharing activities are expected to be included into best practices under work item No. 3 and considered in compiling a guideline under work item No.4.





# Summary of Activities

Work Item	Activities	Period	Output
1	Identify NGIAs' contribution areas for effective implementation of the SFDRR.	2015-2017	Started Contribution list
2	Investigate present and future roles of NGIAs through a questionnaire survey.	2015-2017	Almost Completed Survey report
3	Collect Best Practices (BP)	2015-2017	Continue BP collection
4	Compile a guideline to help NGIAs promote geospatial activities for DRR.	2015-2018	To be started Guideline
5	Coordination and cooperation with the UN-GGIM Working Group on disasters.	2015-2018	Continue (enhanced coordination)
6	Encourage Member States to share earth observations infrastructure, technology and data resources.	2015-2018	Continue (further sharing)



***Thank you  
for your attention***

