



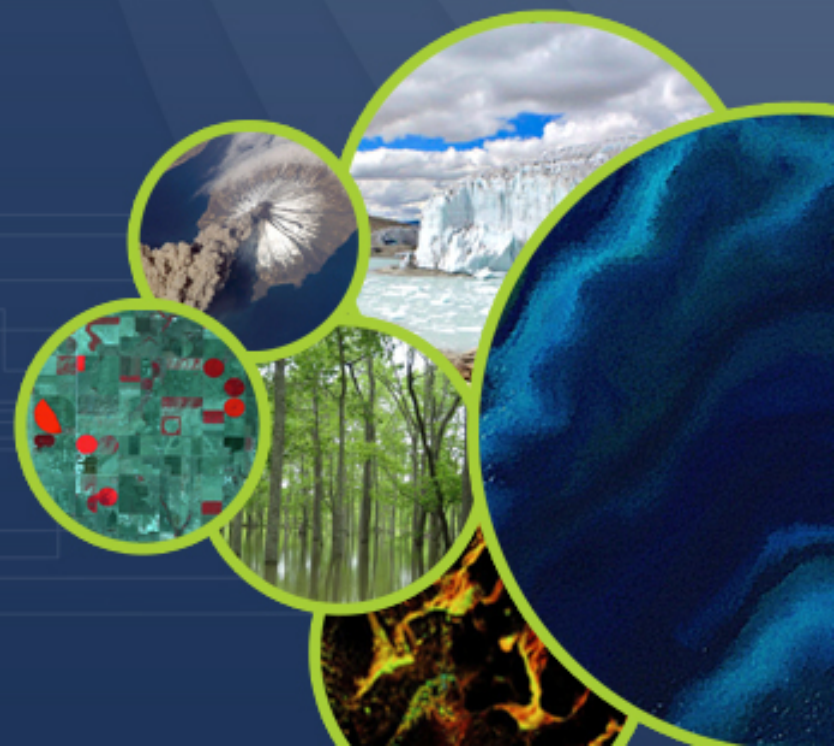
Committee on Earth Observation Satellites

# GEO-DARMA Update and Status

WG Disasters 12

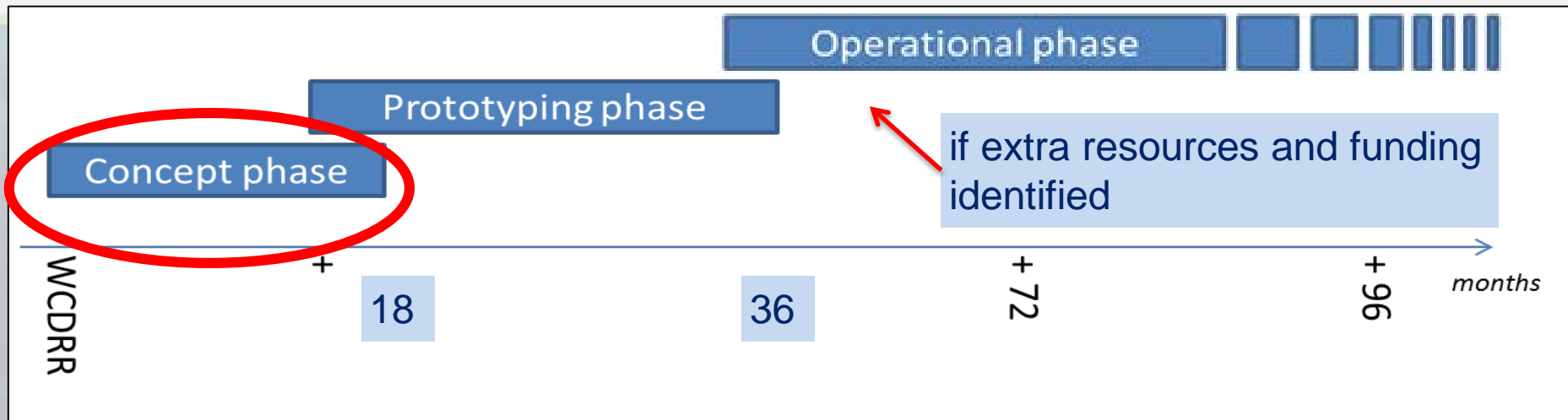
25 September, 2019 –  
Reykjavik, Iceland

Ivan Petiteville, Chair, GEO-DARMA SC  
Andrew Eddy, Secretary, GEO-DARMA SC





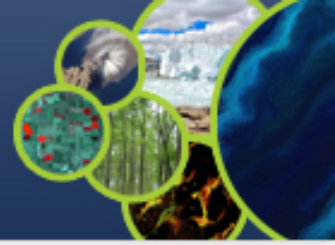
- **Concept phase completed for Africa and Asia in 2018; completed for Latin America/Caribbean summer 2019. Final approval underway.**
- **Iterative process means new projects welcome at any time, but must fit within identified DRR priorities.**



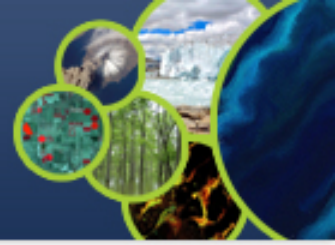


- **GEO-DARMA 5<sup>th</sup> SC meeting held May 2019. 3 Asian and 1 African project under development for 2020.**
- **Bilateral discussions during Global Platform meeting in Geneva May 2019, with outreach to Latin American and Caribbean partners. Agreement in principle to work with UNDRR Americas, CDEMA, CEPREDENAC and Andean Community on Regional Assessment for Latin America/Caribbean.**
- **1st draft regional assessment for LAC completed summer 2019 and under review.**

Action	Due	Initial Description	Comment/Status
DIS-15: Support for GEO-DARMA identification of major hazards and DRR issues for each selected region	Q2 2019	<p>GEO-DARMA will seek independent identification of disaster risk management priorities at regional level by authoritative regional institutions in line with the priorities from the Sendai Framework for Disaster Risk Reduction 2015-2030.</p> <p>This task will require the active support of major stakeholders in the field of disaster risk management at global, regional and national levels in order to implement a series of pilot projects.</p>	Final regional assessment (LAC) currently under review. Two previous regional assessments completed in 2018 (Africa and Asia).



- Regional assessments provide consensus on regional priorities
- Regional DRR priorities serve as filter for project selection, along with other criteria (ease of implementation, resources, impact/benefits, scalability, etc)
- New projects reviewed by SC for coherence with regional assessments. SC recommends projects for implementation.



## Latin America/ Caribbean

- Single draft prepared for regional review by CDEMA, CIMH, UNDRR/Americas, UNEP/Americas, Andean Community, CEPREDENAC, and AmeriGEO, based on Regional Action Plan for Sendai Implementation priorities

1 Strengthen disaster risk information systems through supporting national multi-hazard systems, disaster risk mapping initiatives, traditional knowledge, and methodologies for calculating economic, cultural and social losses from extensive and intensive disasters.

2 Strengthen of monitoring and recording of potential and existing disaster risks, with specific focus on historical record-keeping to inform future actions.

3 Strengthen systems and mechanisms for sharing disaster risk assessment guidance, best practices and methodologies across regions and sectors, promoting open access to data where applicable and as appropriate.

4 Promote comprehensive studies and integral evaluations on multi-hazard disaster risk, including climate change projections, and the identification of regional research priorities.

5 Promote the implementation of education programs and the use of disaster risk information, including by working with media outlets, as appropriate, for understanding disaster risk at all levels of society.

GD role: satellite EO can be a valuable source of disaster and risk information for all phases of the disaster cycle. GD can facilitate access and provide free data to demonstrate prototype systems.

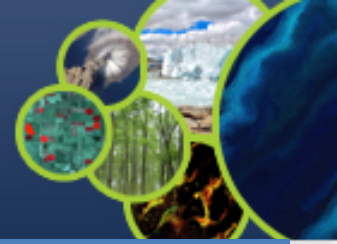
GD role: satellite EO can help establish libraries of past events to inform future decision making.

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GD role: satellite EO is a critical component to applying global systems on a regional and national scale over large areas. Prototype systems could be developed and proposed through GD.

GD role: satellite EO provides high-level synoptic information useful in promotion and awareness campaigns.

# LAC Regional Assessment Results (2)



## Latin America/ Caribbean

- Single draft prepared for regional review by CDEMA, CIMH, UNDRR/Americas, UNEP/Americas, Andean Community, CEPREDENAC, and AmeriGEO, based on Regional Action Plan for Sendai Implementation priorities

6 Strengthen dialogue, cooperation and sharing of knowledge on disaster risk reduction and management among decision makers, planning entities, scientific, academic and technological communities, civil society organizations, volunteers and other relevant actors, in accordance with respective mandates and priorities.

7 Strengthen disaster risk management strategies, governance and mechanisms and their evaluation at appropriate levels.

8 Enhance of capacity building programs and cooperation on disaster risk management and governance.

9 Foster multi-stakeholder and multi-national exchanges through sharing of experiences and best practices for integrating actions in DRR in all areas, including climate change adaptation, and sustainable development spheres.

10 Encourage regional studies on best practices concerning financial instruments for disaster risk transfer and management.

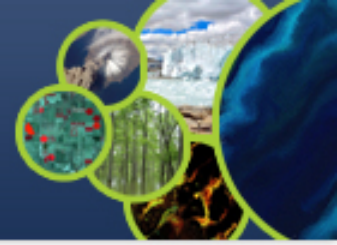
GD role: satellite EO is a neutral, objective source of information about risk and disasters, building consensus among a broad range of partners in DRR.

GD role: satellite EO as input to monitoring systems can improve the elaboration of DRR strategies.

GD role: capacity building tied to EO data exploitation is a key component of GD.

GD role: no specific role foreseen.

GD role: several organizations have developed parametric insurance tools that use satellite EO as an objective trigger for payouts, most recently in Southeast Asia. GD can be a mechanism to acquire data if a separate programme is established to set up the financial instrument for risk transfer.



## Latin America/ Caribbean

- Single draft prepared for regional review by CDEMA, CIMH, UNDRR/Americas, UNEP/Americas, Andean Community, CEPREDENAC, and AmeriGEO, based on Regional Action Plan for Sendai Implementation priorities

11 Enhance and mobilize investment in DRR, including through multiple sources and funding such as public and private partnerships, multi-lateral institutions and other means of cooperation.

12 Promote the sharing of best practices on the continuity of vital services taking into consideration all-hazards, as appropriate and applicable.

13 Strengthen the coordination, collaboration and participation of Member States, communities, regional and international organizations, civil society organizations, volunteers and other stakeholders, in disaster preparedness, response, and recovery, within the scope of respective mandates and priorities.

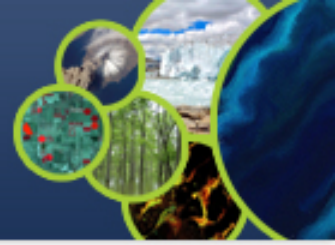
14 Promote the exchange of post-disaster recovery knowledge and best practices that incorporate the perspective of building back better to protect communities and their livelihoods.

GD role: no specific role foreseen.

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GD role: satellite EO has recently been showcased as a key tool for supporting recovery and building back better, notably in the context of the Haiti Recovery Observatory, following Hurricane Matthew. GD may be a mechanism to establish more systematic exploitation of satellite EO after major events.



## Latin America/ Caribbean

- Single draft prepared for regional review by CDEMA, CIMH, UNDRR/Americas, UNEP/Americas, Andean Community, CEPREDENAC, and AmeriGEO, based on Regional Action Plan for Sendai Implementation priorities

15 Strengthen knowledge sharing and exchange of experiences on urban and rural development plans that take into consideration disaster risk with the aim of enhancing planning tools such as building codes and master plans.

16 Develop and share best practices and strategies to improve integrated multi-hazard early warning systems, disaster risk information systems, monitoring networks, and exploring ways for stronger linkages among scientific and technical agencies, communities, and decision makers.

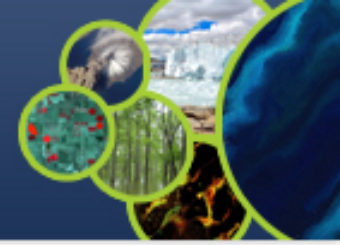
GD role: no specific role foreseen.

GD role: satellite EO is increasingly recognized as a critical tool in most integrated multi-hazard systems and a simple means of harmonizing data across diverse user bases. GD can provide easier access to data and facilitate the set-up of demonstrator systems.





- **For each project, champion presents:**
  - Alignment with regional priorities as identified in regional assessments
  - Ease of implementation
  - Ability of CEOS and other data providers to meet needs
  - Resourcing (finance, in-kind contribution, maturity of project development)
  - Benefits (cost benefits, societal benefits,...



Projects	Champion	Status
<i>Asia</i>		
<b>1. Developing Collaborative Mechanism and Tool for Near-real time Flood Monitoring in Southeast Asia (The Mekong Flood Project)</b>	ADPC	<b>Approved</b>
2. Integrating the Sustainable Development Goals into local action in support of the implementation of the 2030 Agenda in Asia and Pacific (monitoring urban development)	ESCAP and UN-Habitat	<i>Proposals require identification of specific zones of interest (and thematics), consolidation of partnerships, and final budgets.</i>
3. Coastal erosion mapping in Kiribati and other island states	ESCAP, Ministry of Fisheries and Marine Resources (Kiribati)	
<i>Africa</i>		
4. PRIDE (Program for disaster Risk Informed Decision-making, Engagement and Communication)	RCMRD	<i>Rescoping for smaller budget, and new partners.</i>

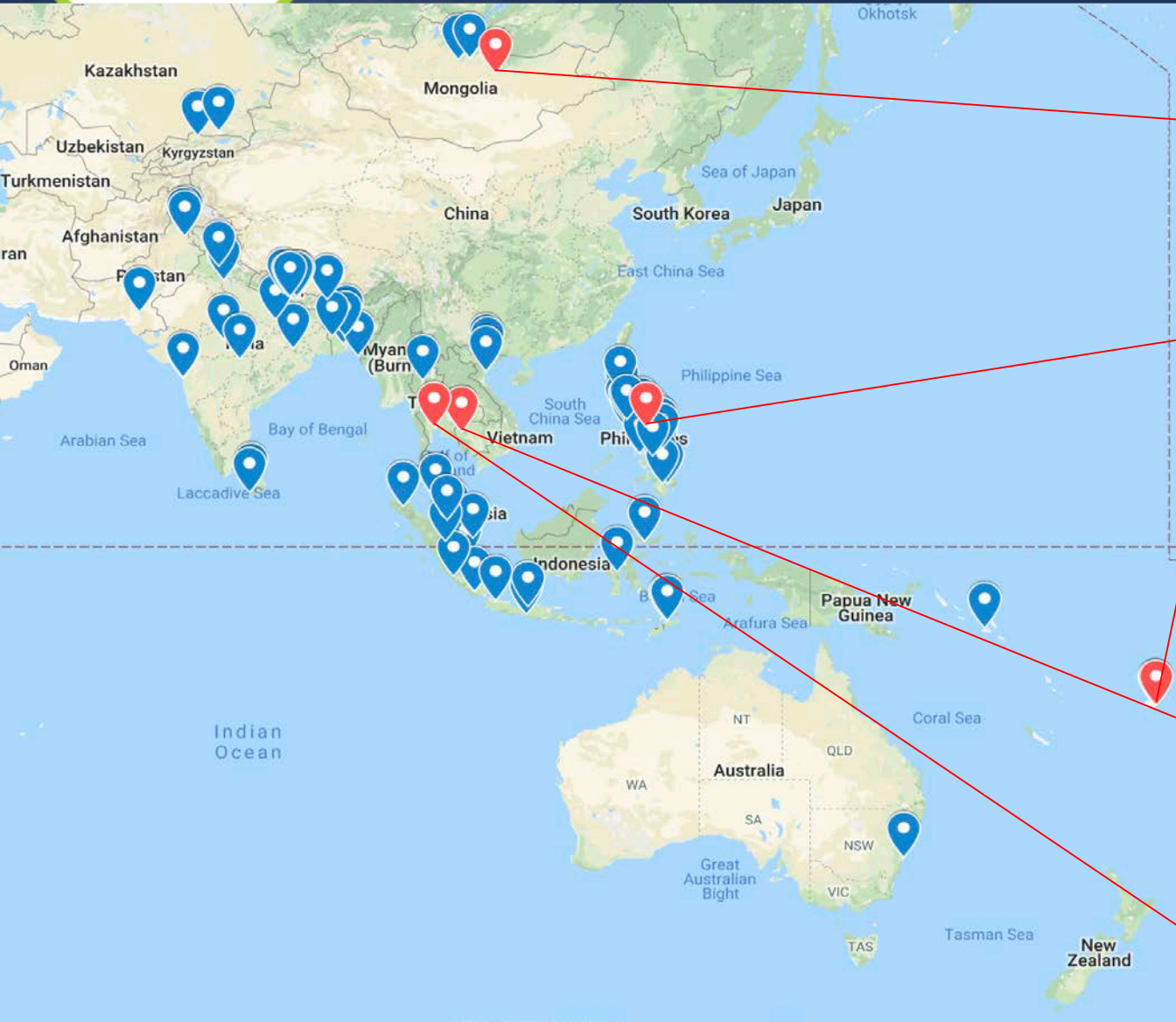
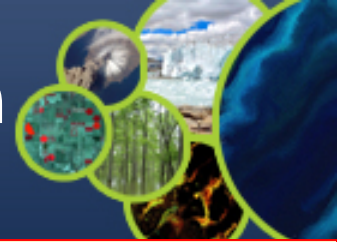


- SERVIR-Mekong has been able to develop a prototype version of a Near Real Time flood service focusing on the 2019 Myanmar flood season
- Maps have been processed based on Sentinel-1 observations for flood events in this season
- Validation efforts are now required to assess the quality of these products and data request for RADARSAT imagery for four 2019 events have been submitted to representatives of the Canadian Space Agency
- Pre-processing of the raw RADARSAT data has been agreed upon with Deltares, who are partners in the development of this project
- The results of this validation effort along with those conducted with imagery acquired by NASA will be put together in a joint summary report after the 2019 flood season for review by the GEO-DARMA steering committee
- Integration of CSK and Pleiades data to follow.



- **Championed by ESCAP, with OCHA and UN Pulse Lab;**
- **Leverages funded initiative to link urban development to Sustainable Development Goals and Sendai Framework for DRR;**
- **Applications to be tailored for each site, with linkages to data types; CEOS working with project team to link challenges to data and applications;**
- **Basic financing in place, but some partners still to be confirmed (e.g. EO value-adding);**
- **Recent change to project lead within UNESCAP – new project lead still coming on-board and needs to be briefed re GEO-DARMA component.**

# Monitoring Urban Development in Asia – Study Sites



**Ulaanbaatar** (Mongolia)  
 Population: 1.4 million Applicant: NGO

**SURM priorities:**

- Land-use planning; land administration
- Local economic development; livelihoods
- Ecosystems (forest restoration)

**Naga** (Philippines)  
 Population: 196,000 Applicant: LG

**SURM priorities:**

- Solid waste
- Affordable housing
- Local economic development; livelihoods

**Nasinu** (Fiji)  
 Population: 127,000 Applicant: LG

**SURM priorities:**

- Solid waste
- Local economic development; livelihoods

**Battambang** (Cambodia)  
 Population: 152,000 Applicant: LG

**SURM priorities:**

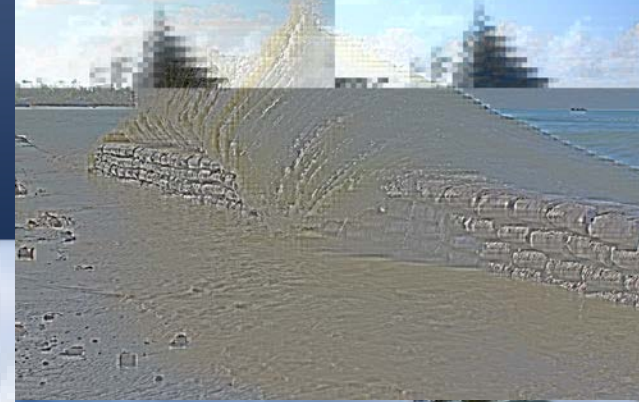
- Solid waste
- Local economic development; livelihoods
- Waste water

**Nadee** (Thailand)  
 Population: 26,000 Applicant: NGO

**SURM priorities:**

- Solid waste
- Local economic development; livelihoods

- **Championed by ESCAP, with Government of Kiribati; other nations may join;**
- **Project funding proposed in Japan June 2019 but not approved – review delayed to 2020.**



- **Championed by RCMRD;**
- **Project fits well with identified regional priorities, but ambitious and currently un-funded;**
- **Re-scoping completed;**
- **New proposal seeking funding within Africa region.**

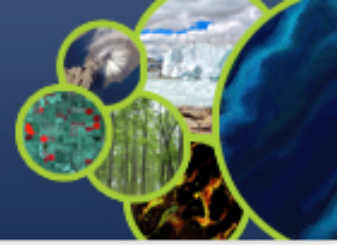


- ESCAP designated Secretariat of the UN-GGIM-AP since Nov. 2018.
- ESCAP is working on integrating geospatial information with statistics and other ground data for resilience building and sustainable development.
- ESCAP received fund from China and Russian Federation on developing common data format for integrated geospatial information and land account.
- Interest at UNESCAP to develop partnership with GEO-DARMA for spatial component.
- Proposal to be developed late 2019.





- **Regional Assessment Completion**
  - ✓ Presentation of DIS-15 to CEOS Plenary in 2019 – Action form CEOS workplan completed. Presentation at 2019 Plenary.
- **SERVIR Mekong/Myanmar NRT Flooding (GD1):** need to set up data access (CEOS and ADPC discussion) and ensure data processing/value adding is coordinated
  - ✓ RADARSAT data request submitted for four historical events from 2019;
  - ✓ Approval in principle by CNES and ASI – Project Team refining request.
- **Projects being consolidated (GD2,3,4):** new drafts showing AOIs, data needs, etc.
  - ✓ ESCAP projects still under definition – expect more input late 2019
  - ✓ RCMRD project requires funding
- **New projects (GD5, others TBD):** proposals can be received at any time and are reviewed against regional assessments by SC – new project being discussed with ESCAP right now; new projects expected from LAC late 2019.



# Thank you!

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