



Committee on Earth Observation Satellites

GEO-DARMA

WG Disasters 10

5 September, 2018 - Naples, Italy

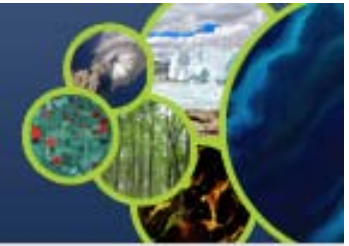
Ivan Petiteville, Chair, GEO-DARMA SC

Andrew Eddy, Secretary, GEO-DARMA SC





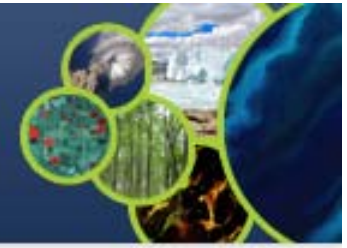
GEO-DARMA Recent Progress



- **GEO-DARMA SC 2, November 2017:**
 - Terms of Reference of SC approved;
 - Regional assessments for Asia and Africa reviewed and approved; six project proposals received for Asia/Africa.
- **GEO-DARMA SC 3, January 2018:**
 - Project proposals: four projects reviewed and tagged for further development.
- **CEOS WG Disasters 9 – March 2018**
 - Four projects presented in detail and comments received from WG members; discussion on data initiated
- **CEOS SIT – April 2018**
 - 1st GEO-DARMA project approved – NRT Flood Monitoring in Myanmar/Mekong
- **GEO-DARMA SC 4 – 20 May, 2018 in Mexico**



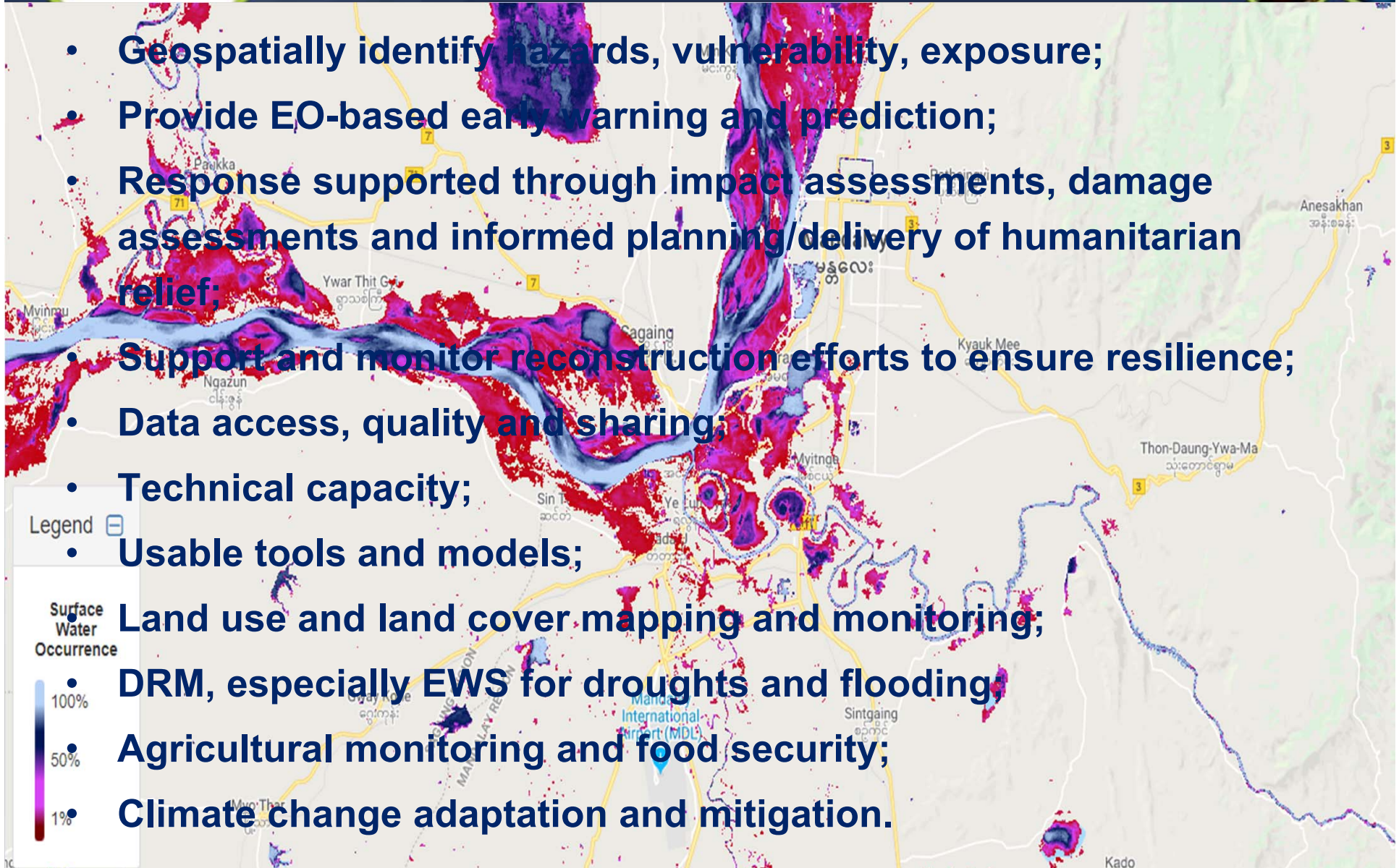
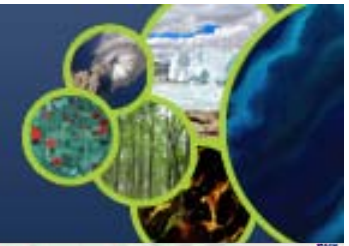
Regional Assessments and Projects



- 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.



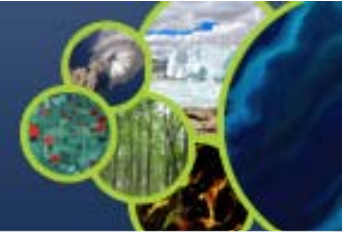
Summary of DRR Priorities Asia



- Geospatially identify hazards, vulnerability, exposure;
- Provide EO-based early warning and prediction;
- Response supported through impact assessments, damage assessments and informed planning/delivery of humanitarian relief;
- Support and monitor reconstruction efforts to ensure resilience;
- Data access, quality and sharing;
- Technical capacity;
- Usable tools and models;
- Land use and land cover mapping and monitoring;
- DRM, especially EWS for droughts and flooding;
- Agricultural monitoring and food security;
- Climate change adaptation and mitigation.



Summary of DRR Priorities Africa (1/2)



- **Key hazards: *drought*, floods, landslides, diseases, and seismic and volcanic hazards (atlas produced 2013);**
- **Hazard mapping, disaster monitoring, and early warning system establishment (esp. drought);**
- **Impact of disasters on livelihoods (e.g. vector-borne disease);**
- **Climate change and disaster vulnerability assessments and adaptation (focus on social vulnerability);**
- **Food security;**
- **Hazard mapping and risk assessment (geo, hydro-met, climatological, and technological hazards);**
- **Early warning/alert and tracking of natural hazards, including flood, drought and landslides;**





Summary of DRR Priorities Africa (2/2)



- **Disaster response and support for Crisis Mapping/Damage Assessment involving risk knowledge, technical monitoring, and early warning service, dissemination, and preparedness about hazards, vulnerabilities and risks, their nature and effects, early warning and risk reduction;**
- **Sub-regional and trans-boundary risks identification and assessments, through development and use of EO data and tools;**
- **Facilitate contingency planning activities at regional/national levels and consolidating National disaster risk information which includes natural hazards, vulnerabilities, and climate change risk; maintain Regional Risk Map;**
- **Develop, strengthen and operationalize mechanisms for partnership with private sector, CSOs, and volunteer groups.**



Overview - Proposed Projects Criteria for Further Development



- **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 - Overview



Projects	Champion	Status
Asia		
1. Developing Collaborative Mechanism and Tool for Near-real time Flood Monitoring in Southeast Asia (The Mekong Flood Project)	ADPC	Approved
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),</i>
3. Coastal erosion mapping in Kiribati and other island states	ESCAP, Ministry of Fisheries and Marine Resources (Kiribati)	<i>consolidation of partnerships, and final budgets.</i>
Africa		
4. PRIDE (Program for disaster Risk Informed Decision-making, Engagement and Communication)	RCMRD	<i>Rescoping for smaller budget, and new partners.</i>



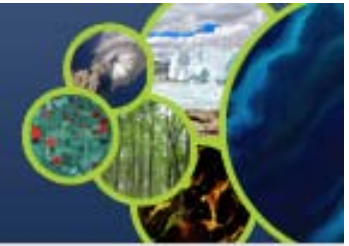
Next Steps – deadlines



- **Regional Assessment LAC:** need for input and consolidation
 - ✓ Inputs fall 2018
 - ✓ Consolidation late fall
 - ✓ Review by SC late 2018
- **Myanmar NRT Flooding (GD1):** need to set up data access (CEOS and ADPC discussion) and ensure data processing/value adding is coordinated
 - ✓ Input provided to DCT – awaiting response
- **Projects being consolidated (GD2,3,4):** new drafts showing AOIs, data needs, etc.
 - ✓ Fall 2018
 - ✓ Review by SC end 2018
- **New projects:** proposals can be received at any time and are reviewed against regional assessments by SC
- **SC5:** after next round of proposals consolidated



Next Steps – Data Issue (Message from Project Team)



- SERVIR-Mekong presently developing a near real time flood monitoring system (HYDRAFloods) which leverages data from multiple sensors to produce daily flood maps. Production team developed reliable means to preprocess data from various sensors into surface water maps and before release of this product testing of these maps is needed from high resolution imagery and flood maps from past events in Myanmar starting from the flood season in 2015.
- Request to CEOS is based on availability of such maps which would then be used for testing HYDRAFloods. This validation exercise will be documented in a report which will be shared with CEOS as well as other stakeholders such as the Department of Disaster Management (DDM), Myanmar before usage. Hence, it is requested that such data be provided by CEOS for SERVIR-Mekong in September for testing, analysis and reporting purposes of HYDRAFloods' performance by November 2018.



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GEO-DARMA data request - data volumes

For 2018:

Agency	ASI	CSA	CNES	CNES	ESA
Satellite	CSK	RADARSAT-2	SPOT	Pleiades	Sentinel-1
Archived and new images	30	15	20	15	All passes, available archives of past events of interest





Thank you!

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Monitoring Urban Development in Asia



- **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;**
- **Possible study sites include:**
 - **Jakarta, Columbo, Thimpu, Suha, Dhaka, and Papua-New Guinea.**
- **Applications to be tailored for each site, with linkages to data types;**
- **Financing in place, but some partners still to be confirmed (e.g. EO value-adding).**





Coastal Erosion in Kiribati

- **Championed by ESCAP, with Government of Kiribati; other nations may join;**
- **Funding TBC; ESCAP in discussion with donor states;**
- **Use high resolution and very high resolution optical imagery to track coastal change;**
- **Possible linkage to UNOOSA project for small island state capacity building;**
- **ESCAP developing KML files with AOIs and specific data types; further partnership under development.**





PRIDE – multi-hazard risk reduction

- **Championed by RCMRD;**
- **Project fits well with identified regional priorities, but ambitious and currently un-funded;**
- **Re-scoping to focus initially on leveraging existing, funded work – outputs to serve as showcase for donors;**
- **New proposal under preparation for Q3 review.**





Steering Committee (SC) Terms of Reference



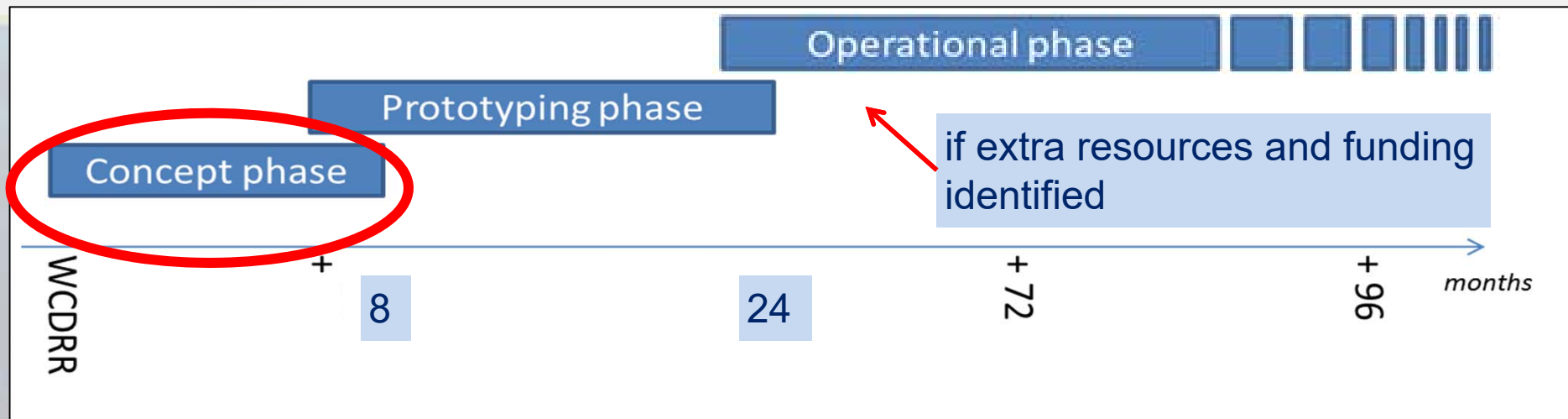
- **Governing body for GEO-DARMA**
 - Provides strategic leadership and governance oversight.
 - Has delegated authority of the project partners or contributors to make decisions that are in accord with the objectives, approach and scope of the project.
 - Makes key policy decisions.
 - Guides the Objectives and implementation of the GEO-DARMA Projects.
 - Ensures effective oversight through receiving regular reports and reviewing the results of project evaluations.
- **Meets by teleconference several times a year and in person once a year.**
- **Takes decisions by consensus.**
- **Supported by Secretariat provided by European Space Agency consultant.**



GEO-DARMA Phases



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





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