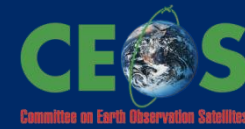


# Joint Disaster SBA team & WGISS meeting

Guy Seguin (CSA)  
CEOS Disaster SBA Team Coordinator



# Agenda



**1h30 Introduction,**

**G. Séguin, K. Moe**

**1h45 CEOS Response to the GEO 2009-2011 WP**

**G. Séguin**

**1h50 Report from Namibian and Caribbean regional pilots,**

**Stu Fry**

**2h15 Satellite disasters data Gap Analysis,**

**Shelley Stover**

**2h40 Natural Laboratories & Supersites,**

**G. Séguin**

**3h00 Update on the GA.4.Disasters activities,**

**K. Moe**

**3h30 AIP 5**

**G. Percivall**

**3h45 Report from the Feb 2012 ESA CEOS Disasters meeting, I. Petiteville**

**4h05 GEO Workplan 2012-2015 and proposed roadmap for the CEOS**

**Disaster activity,**

**G. Séguin**

**4h00 Inputs to the Feb. 14-15 CEOS-GEO workshop,**

**All**



- ➔ • **DI-06-09: Use of Satellites for Risk Management**
- **DI-09-01: Systematic Monitoring for Geohazards Risk Assessment**
  - ➔ ○ **a) Vulnerability Mapping and Risk Assessment**
  - **b) Seismographic Networks Improvement and Coordination**
- ➔ • **DI-09-02: Multi-Risk Management and Regional Applications**
  - **a) Implementation of a Multi-Risk Management Approach**
  - ➔ ○ **b) Regional End-to-End Disaster Management Applications**
- **DI-09-03: Warning Systems for Disasters**
  - ➔ ○ **a) Tsunami Early Warning System of Systems**
  - ➔ ○ **b) Implementation of a Wildland Fire Warning System at Global Level**



# DI-01 Informing risk management and Disaster reduction



## Related GEOSS Strategic Targets (*from GEO-VI Document 12 Rev1*)

### ***Disasters:***

- ***Improved use of observations and related information to inform policies, decisions and actions associated with disaster preparedness and mitigation.***
- **More effective access to observations and related information to facilitate warning, response and recovery to disasters.**
- **Increased communication and coordination between national, regional and global communities in support of disaster risk reduction, including clarification of roles and responsibilities and improved resources management.**
- **Improved national response to natural and man-made disasters through delivery of space-based data, resulting from strengthened International Charter on Space and Major Disasters.**
- **Support to the successful implementation of the Hyogo Framework for Action 2005-2015.**

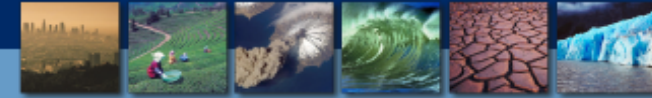
# DI-01 Informing risk management and Disaster reduction



## Description

- **Improve disaster risk management and reduction by providing timely information relevant to the full cycle of disaster management (mitigation, preparedness, warning, response and recovery).**
  
- **Adopt a multi-hazard end-to-end approach to ensure that relevant Earth observations and information effectively reach decision-makers and the public.**
  
- **Focus on four main areas:**
  - (1) Provide support to operational systems**
  - (2) Enable and inform risk and vulnerability analyses**
  - (3) Conduct regional end to-end pilots with a focus on building institutional relationships**
  - (4) Conduct gap analyses in order to identify missing data, system gaps, and capacity gaps.**

# DI-01 Informing risk management and Disaster reduction



## Components

 **C1 Disaster Management Systems, POC CEOS, G.S.**

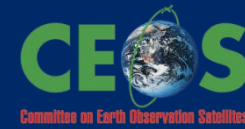
 **C2 Geohazards Monitoring, Alert and risk assessment, POC EUCenter, F.D.A.**

? **C3 Tsunami Early Warning and Hazard Assessment, POC GFZ, J.L.**

? **C4 Global Wildland Fire Information System, POC Max Planck I., J.G.G.**

 **C5 Regional end to end Pilot, POC NASA, S.W.F**

# Logical Model



- CEOS action ? ➤ **C1 Disaster Management Systems**
  - CEOS action ? ➤ **C2 Geohazards Monitoring, Alert and risk assessment**
  - CEOS action ? ➤ **C3 Tsunami Early Warning and Hazard Assessment**
  - CEOS action ? ➤ **C4 Global Wildland Fire Information System,**
  - CEOS action ? ➤ **C5 Regional end to end Pilot**
- **More timely dissemination of data in support of full cycle of disaster management at local, national and regional levels**
  - **Development of a multi-hazard, end-to-end approach for disasters**
  - **Support implementation of Hyogo Framework**
- ***Improved use of observations and related information to inform policies, decisions and actions***

Contribute to





# C1 Disaster Management Systems



## *Priority Actions*

- **Improve access to information produced through key disaster management mechanisms such as the International Charter on Space and Major Disasters, Sentinel Asia, GMES Emergency Management Services, and SERVIR**
- **Promote quick and easy access to in-situ data and reference maps required in case of emergency. Integrate baseline geographic information and reference maps with real-time data from satellite or in-situ platforms into online Graphical User Interface and Decision Support System tools**
- **Make information related to environmental risk and vulnerability easily accessible to a wide range of decision-makers through a centralized platform. Build upon the South African Atlas (based on a spatial database system and a repository of global-change related information) and the Chinese disaster assessment system (based on Geographic Information Systems)**
- **Enhance the use of satellite data for disaster management, based on lessons-learned and experience from countries and organizations, and develop best practice guidelines for technical and procedural cooperation in satellite-based emergency mapping**
- **Review global and regional disaster risk management systems. Perform a gap analysis considering data, metadata, systems, and capacity (building upon existing analyses)**

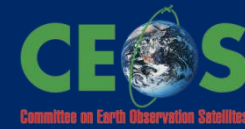
# C2 Geohazards Monitoring, Alert and risk assessment



## *Priority Actions*

- **Apply a fully integrated approach to geohazards monitoring, based on collaboration among existing networks and international initiatives, using new instrumentation such as in-situ sensors, and aggregating space (radar, optical imagery) and ground-based (subsurface) observations. Develop open comprehensive natural-hazards datasets, initially focusing on selected targets (e.g. Supersites)**
- **Support the establishment of Supersites and Natural Laboratories. Provide an electronic infrastructure allowing easy access to data (space & in-situ) and a wide range of tools, and a platform for on-line collaboration. Develop a consolidated Supersites Strategic Plan (covering space, ground, infrastructure meta-data, processing and data dissemination)**
- **Enhance global earthquake monitoring, alert, and damage assessment. Improve the global and regional coordination of seismographic networks. Enable rapid data access to waveform data for early warning, rapid shaking assessment and rapid damage assessment**
- **Support global earthquake risk assessment. Improve global standards and establish regional programs for hazard and risk assessment in a global framework. Support the implementation of the Global Earthquake Model initiative (GEM)**
- **Develop large-area vulnerability modeling and mapping using novel algorithms and methodologies based on Synthetic Aperture Radar (SAR) and optical satellite data**

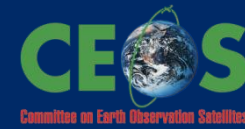
# C3 Tsunami Early Warning and Hazard Assessment



## *Priority Actions*

- **Support tsunami early warning. Establish an inventory of relevant systems such as the German Indonesian Tsunami Early Warning System (GITEWS) and the European Tsunami Alerting Device (TAD)**
- **Promote real-time data sharing in particular seismic and sea-level (deep-ocean and tide-gauge data). Standardize procedures, terminology, communication and evacuation practices. Optimize tsunami evacuation plans through the use of damage scenarios and traffic flow models**
- **Support tsunami hazards assessment. Enable and develop a global tsunami hazard map through provision of bathymetry and topography data**

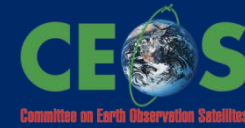
# C4 Global Wildland Fire Information System



## *Priority Actions*

- **Support the establishment of an operational Global Wildland Fire Early Warning System (GWFEWS). Assess and realize the potential contributions of existing regional systems e.g. EFFIS (European Forest Fire Information System), CFFDRS (Canadian Forest Fire Danger Rating System), and AFIS (Africa Fire Information System)**
- **Improve fire management cooperation and regional coordination with local systems. Produce common global fire danger metrics. Conduct regional inter-calibration of Fire Danger Indices (FDIs) within GWFEWS**
- **Support and promote the use of satellite data for wildfire risk assessment (near real-time, rapid refresh hot-spot detection) and damage assessment (burn scar mapping)**
- **Develop longer-term predictions of fire-danger based on advanced numerical weather models (in coordination with WE-01)**
- **Expand fire-danger rating systems to countries that do not have the financial nor institutional capacity to develop their own system**

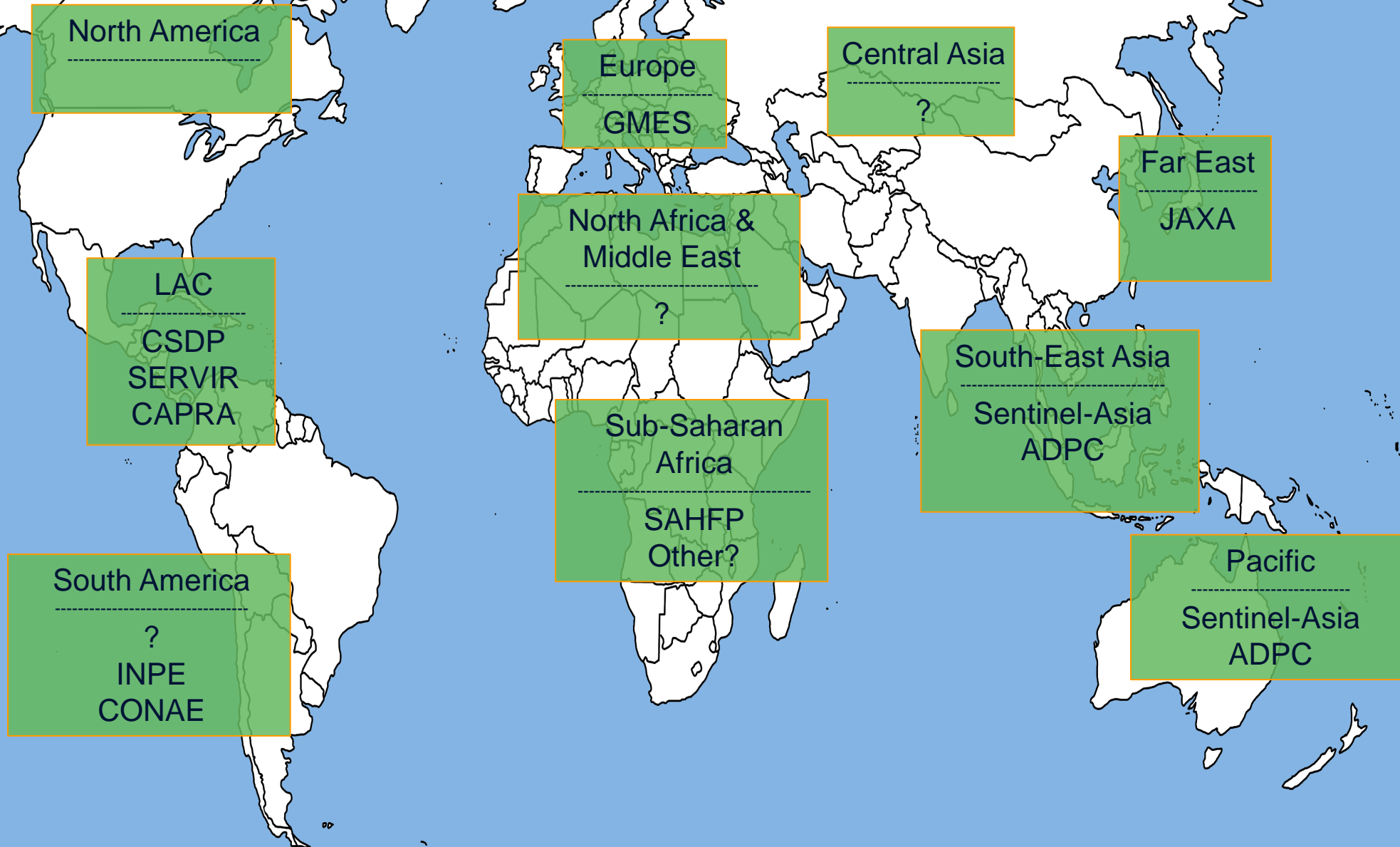
# C5 Regional end to end Pilot



## *Priority Actions*

- **Implement regional and cross-cutting end-to-end projects. Develop natural-risk decision-support tools and applications supporting the full cycle of disaster management, especially for developing countries. Support the implementation of the GEO Caribbean Satellite Disaster Pilots and Sensor Web applications in Namibia**
- **Identify locations for tandem centers of excellence in developed and developing regions, and initiate the formation of these centers**

# Building on regional success



# CEOS Disaster Actions Roadmap (Preliminary)



## C1 Disaster Management Systems

- Improve access and coordination  
(International Charter on Space, Sentinel Asia, GMES and SERVIR )
- Enhance the use of satellite data (lessons, exp.)
- Perform Gap analysis

12/13

13/14

14/15

## C2 Geohazards Monitoring, Alert, Assessment

- Data coordination for Supersites
- Volcanic ash
- Develop Topographic and Bathymetric data

## C4 Global Wildland Fire Information System

- Global Operational Fire Warning

## C5 Regional end to end Pilot

- Develop end to end Regional Pilot
- Develop coordination with the Charter