



International Working Group for
Satellite-based Emergency Mapping



International Working Group on Satellite based Emergency Mapping (IWG-SEM) - Members

Organization Acronym	Organization Name
ADPC	Asian Disaster Preparedness Center
AHA Center	ASEAN Coordinating Centre for Humanitarian Assistance and disaster management
AIT	Japan Aerospace Exploration Agency / Asian Institute of Technology / Jaxa
AKDN-Focus	Focus Humanitarian Assistance India
CNES	Centre national d'études spatiales - Fench
CU-Boulder	University of Colorado Boulder
DFO	Dartmouth Flood Observatory
DLR	Deutsches Zentrum für Luft- und Raumfahrt
EC-ECHO	European Commission - Humanitarian Aid and Civil Protection
EC-GROW	European Commission – Internal Market, Industry, Entrepreneurship and SMEs
EC-JRC	European Commission - Joint Research Centre
ESA	European Space Agency
GEO	Group on Earth Observations
GWU	George Washington University
HHI-SP	Harvard Humanitarian Initiative - Signal Program
HRW	Human Rights Watch
ICIMOD	International Centre for Integrated Mountain Development
ITHACA	Information Technology for Humanitarian Assistance, Cooperation and Action
JAXA	Japan Aerospace Exploration Agency
MoT/HydroMet	Ministry of Transport ,Mandalay, Myanmar
NASA	National Aeronautics and Space Administration - US
NASRDA	National Space Research and Development Agency - Nigeria
NDRCC	National Disaster Reduction Center of China, MoCA
PDC	Pacific Disaster Center
RCMRD/SERVIR	Regional Center for Mapping of Resources for Development - Kenya/ SERVIR Africa
RECTAS	Regional Centre for Training in Aerospace Surveys
RIT	Rochester Institute of Technology -Department of Information Sciences & Technologies
SERTIT	SERVICE Régional de Traitement d'Image et de Télédétection
SsBCh	Forest Protection Department of the Forestry Sub-Secretariat of Chubut Province Government in Patagonia, Argentina
UMD	University of Maryland



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Organization Acronym

UN Cartographic Section

UNDSS

UNITAR/UNOSAT

UNOCHA

UNOOSA/UN-SPIDER

UNU-EHS

UN WFP

USGS/EROS

WB

Organization Name

United Nations Cartographic Section

United Nations Department of Safety and Security

UNITAR'S Operational Satellite Applications Programme

United Nations Office for the Coordination of Humanitarian Affairs

United Nations Platform for Space-based Information for Disaster Management and
Emergency Response - UN-SPIDER

United Nations University - Institute for Environment and Human Security

United Nations - World Food Programme

U.S. Geological Survey

World Bank



What are our objectives?

www.un-spider.org/network/iwg-sem

“Supporting disaster response by improving international cooperation in satellite based emergency mapping.”

Global trends in satellite-based emergency mapping

Stefan Voigt, Fabio Giulio-Tonolo, Josh Lyons, Jan Kučera, Brenda Jones,
Tobias Schneiderhan, Gabriel Platzeck, Kazuya Kaku, Manzul Kumar Hazarika,
Lorant Czarán, Suju Li, Wendi Pedersen, Godstime Kadiri James, Catherine Proy, Denis Macharia
Muthike, Jerome Bequignon, Debarati Guha-Sapir

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purpose, achievements, challenges

The ultimate goal of SEM is **to improve disaster relief effectiveness** and thus to help reduce suffering and fatalities **before, during, and after a disaster** event occurs

- What are the **temporal trends** in overall SEM response rate and time?
 - Are the SEM resources being deployed in the **areas of greatest need**?
 - What is the individual **reach of the different SEM mechanisms**?
 - Can we ascertain the **fitness for purpose** of the SEM?
-
- global SEM activities are progressively evolving.
 - the scope of global SEM activities should be broadened to better include drought, extreme temperature events, global pandemics, and other slow on-set events
 - SEM requires ~2 days on average to complete, as compared with the ~6 to 8 hours required for mapping after the availability of satellite imagery.



recommendations & next steps

we suggest the establishment of **international guidelines on emergency mapping, quality assurance, and harmonization**, tailored to specific disaster types

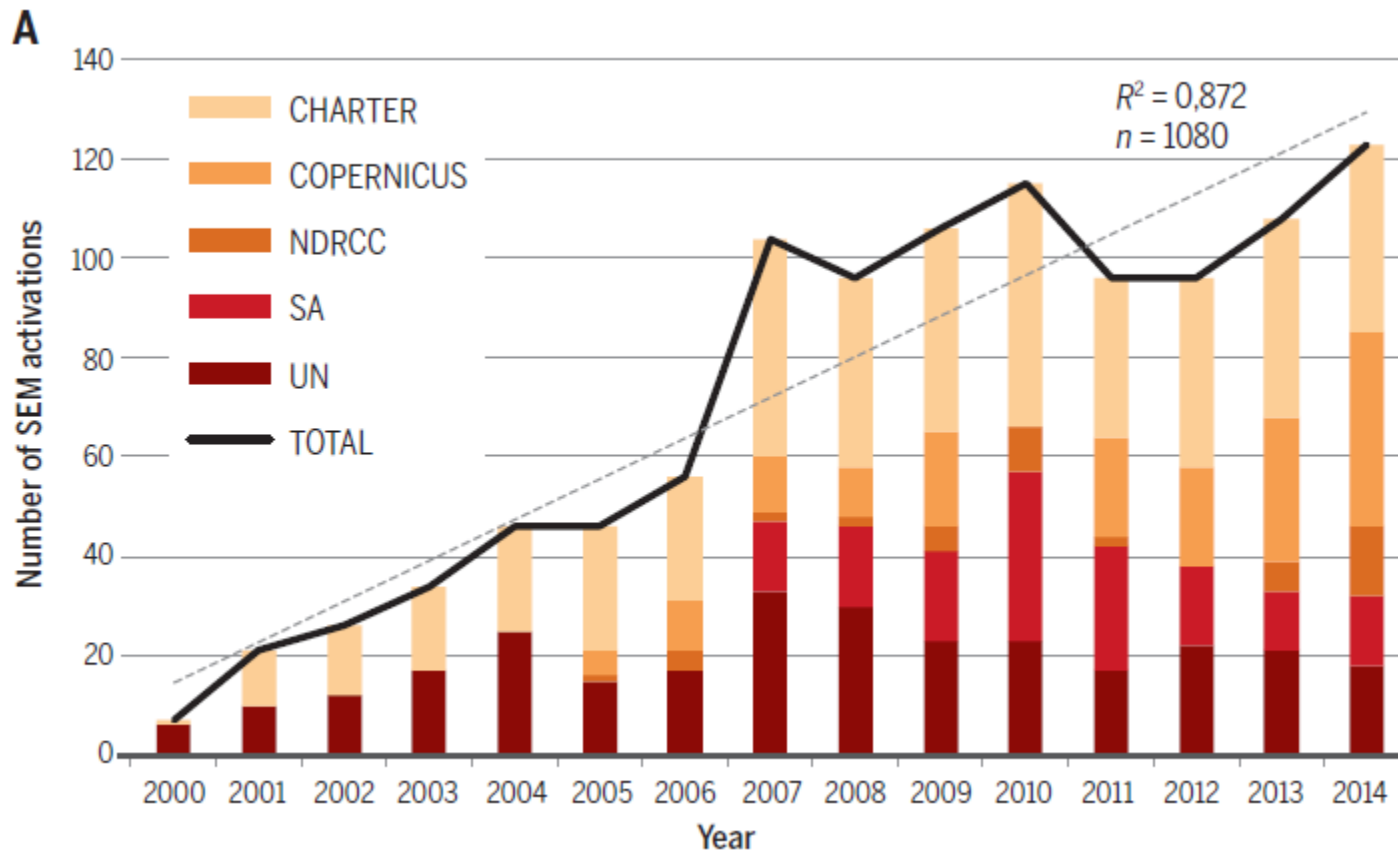
operational **global partnerships** among agencies and organizations are essential for strengthening space-based disaster relief efforts

Improved **real-time information exchange on SEM** activities, mapping requirements, and locations of available SEM-derived products at any given time

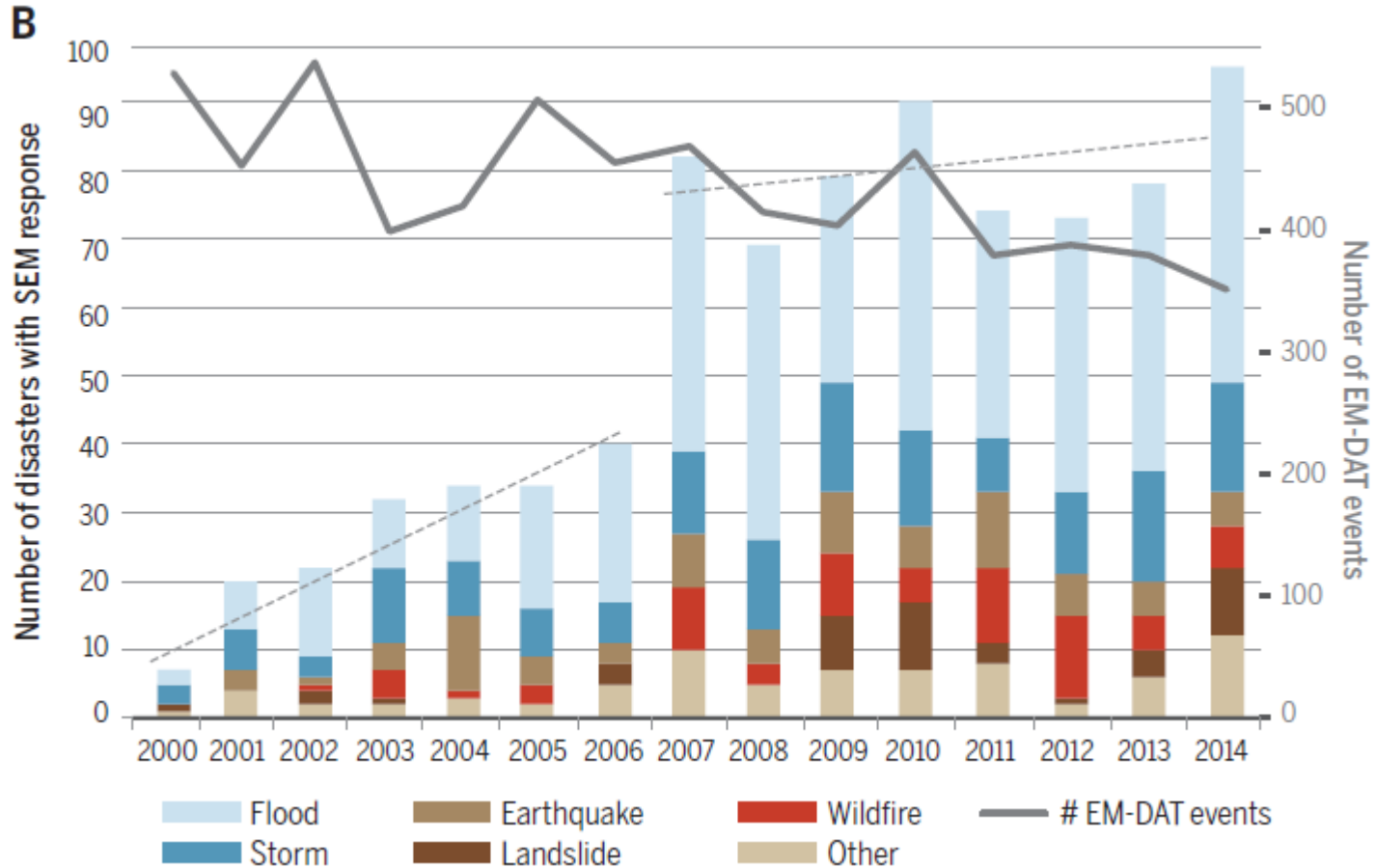
automation and image data mining as well as mass-data processing techniques will play a key role in the global SEM landscape

real-time processing and analysis of satellite imagery for visual analytics and fusion with crowd-sourced and social media information is also likely to play a bigger role.

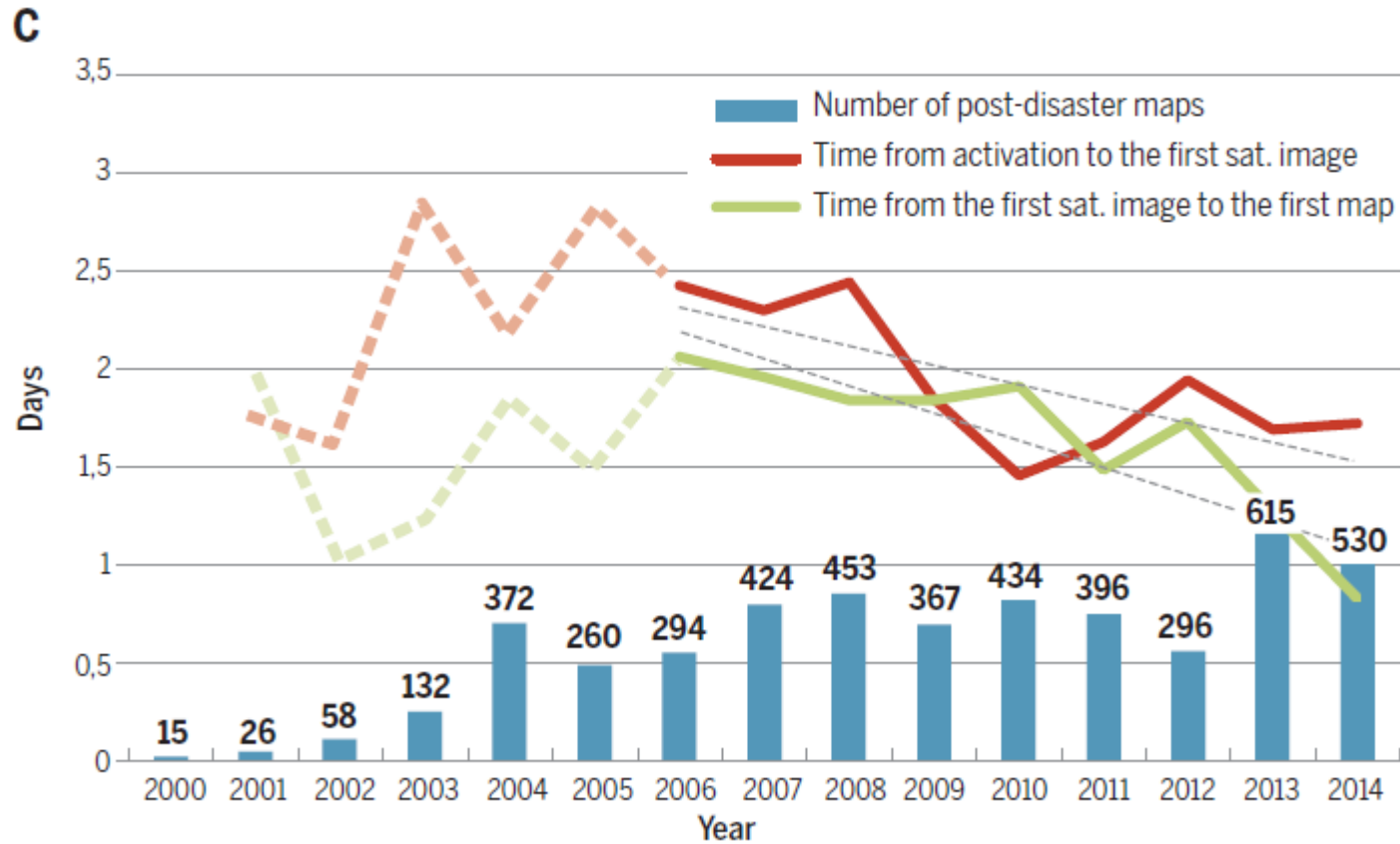
the mechanisms



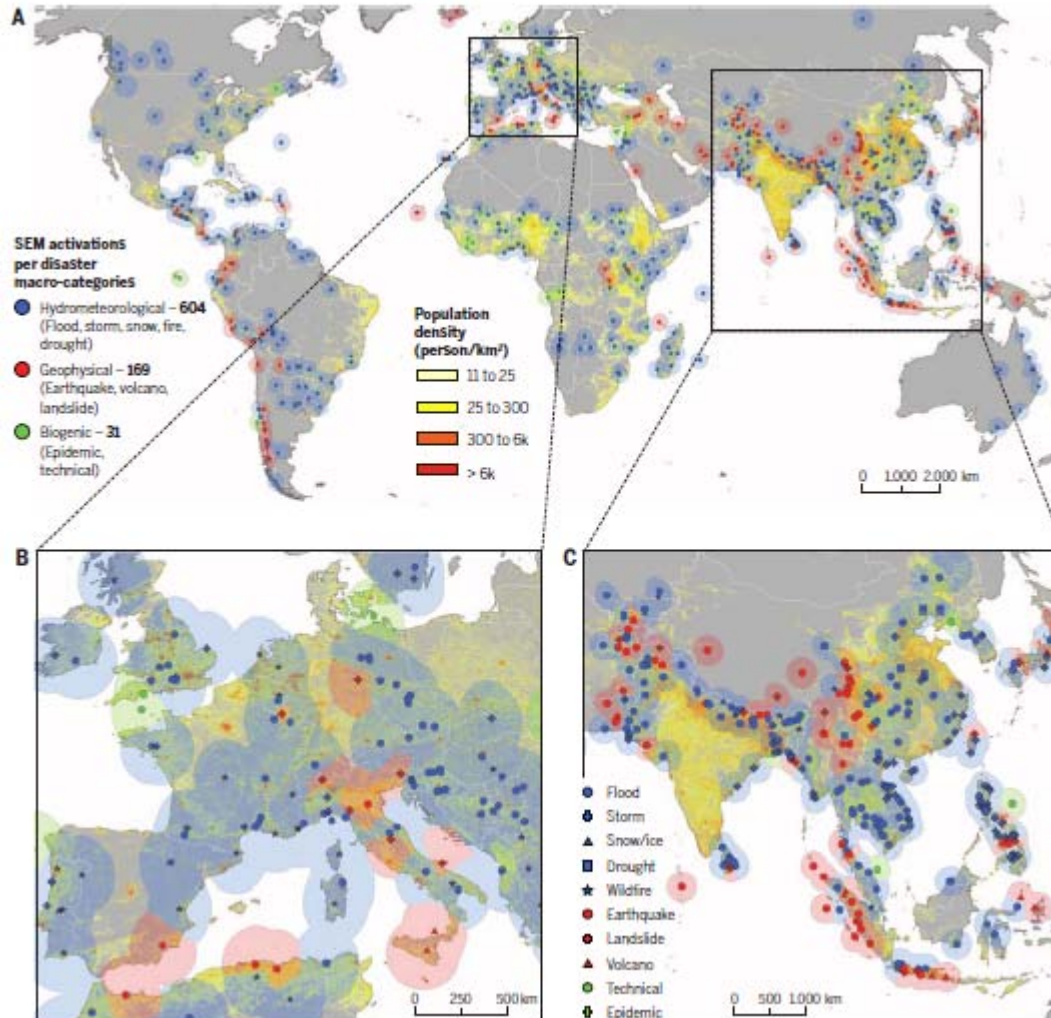
the hazards



time to react



where





- What is the mission of GP-STAR in your view?
to facilitate, advocate, provide conceptual guidance
- What activities, projects, programmes can you affiliate/contribute to GP-STAR?
the IWG-SEM experience & community
- What outcomes (procedures, products, information, knowledge, know-how) can you contribute?
mapping guidelines and the process to develop them
- What role and working field in GP-STAR do you foresee for your organisation?
contributor

Suggested first action:

- Guiding document outlining the components of DRR & examples of how EO can contribute



join us

present chair:

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www.un-spider.org/network/iwg-sem