

The Sendai Framework for Disaster Risk Reduction — Opportunities for Earth observation

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3rd UN World Conference on Disaster Risk Reduction

- 14-18 March 2015, Sendai Japan
- 185 States officially represented
- > 6,500 delegates
 - Intergovernmental and multi-stakeholder events
- > 40,000 participants
 - Public forum
- 42 intergovernmental organizations, 236 non-government organizations, 38 UN entities; and over 300 private sector representatives



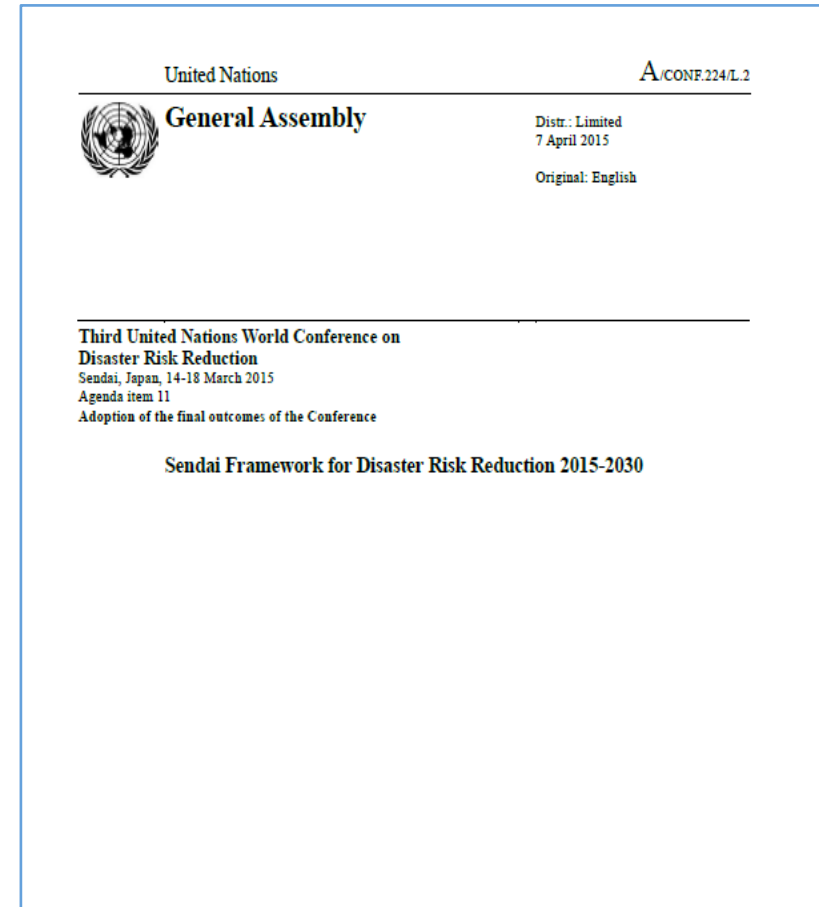
Sendai Framework for Disaster Risk Reduction 2015-2030



3rd UN World Conference on Disaster Risk Reduction

Sendai Framework for Disaster Risk Reduction 2015-2030

- Adopted on 18 March 2015
- 4 Priorities for Action
- 7 Global Targets



Sendai Framework for Disaster Risk Reduction 2015-2030

- 4 Priorities for Action

1. **Understanding** disaster risk
2. Strengthening disaster risk governance to **manage disaster risk**
3. Investing in disaster **risk reduction** for **resilience**
4. **Enhancing disaster preparedness** for effective response, and to “Build Back Better” in **recovery, rehabilitation and reconstruction**



Sendai Framework for Disaster Risk Reduction 2015-2030

7 Global Targets:

- To support the assessment of global progress in achieving the outcome and goal of this framework
 1. Substantially **reduce global disaster mortality** by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015.
 2. Substantially **reduce the number of affected people** globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015.
 3. **Reduce direct disaster economic loss** in relation to global gross domestic product (GDP) by 2030.
 4. Substantially **reduce disaster damage to critical infrastructure** and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.



Sendai Framework for Disaster Risk Reduction 2015-2030

7 Global Targets:

5. Substantially increase the number of countries with **national and local disaster risk reduction strategies** by 2020.
 6. Substantially enhance **international cooperation to developing countries** through adequate and sustainable support to complement their national actions for implementation of this framework by 2030.
 7. Substantially **increase the availability of and access to multi-hazard early warning systems and disaster risk information** and assessments to the people by 2030.
- These targets will be measured at the global level and will be complemented by work to develop appropriate indicators. National targets and indicators will contribute to the achievement of the outcome and goal of this framework.



Sendai Framework for Disaster Risk Reduction 2015-2030

Follow-Up Actions:

- The Conference invites the General Assembly ... to consider the possibility of including the [review of the global progress](#) in the implementation of this framework for disaster risk reduction, taking into account the contributions of the Global Platform for Disaster Risk Reduction and regional platforms for disaster risk reduction ...
- The Conference recommends to the General Assembly the establishment of an open-ended [intergovernmental working group](#), comprised of experts nominated by Member States, and supported by the United Nations Office for Disaster Risk Reduction (UNISDR), with involvement of relevant stakeholders, for the [development of a set of possible indicators to measure global progress](#) in the implementation of this framework in conjunction with the work of the inter-agency expert group on sustainable development indicators



References to Space Based and Geospatial Information in the Sendai Framework



Sendai Framework for Disaster Risk Reduction 2015-2030

References to “Space Based / Geospatial Information” in the Document:

- Earth observation and space-based technologies will contribute to
 - Priority for Action 1 “Understanding disaster risk”; and
 - Priority for Action 4 “Enhancing disaster preparedness for effective response and to Build Back Better in recovery, rehabilitation and reconstruction”



Sendai Framework for Disaster Risk Reduction 2015-2030

References to “Space Based / Geospatial Information” in the Document:

Priority 1. Understanding disaster risk: -> National and local levels

To achieve this, it is important to:

- ... (c) Develop, update periodically and disseminate, as appropriate, location-based disaster risk information, including **risk maps**, to decision makers, the general public and communities at risk to disaster in an appropriate format **by using, as applicable, geospatial information technology**;
- ... (f) Promote **real-time access to reliable data, make use of space and in situ information**, including **geographic information systems (GIS)**, and use information and communications technology innovations to enhance measurement tools and the collection, analysis and dissemination of data;



Sendai Framework for Disaster Risk Reduction 2015-2030

References to “Space Based / Geospatial Information” in the Document:

Priority 1. Understanding disaster risk: -> Global and regional levels

To achieve this, it is important to:

- ... (c) Promote and enhance, through international cooperation, including technology transfer, access to and the sharing and use of non-sensitive data, information, as appropriate, **communications and geospatial and space-based technologies and related services**. Maintain and strengthen in situ and **remotely-sensed earth and climate observations**.; ...
- ... (g) Enhance the scientific and technical work on disaster risk reduction and its mobilization through the coordination of existing networks and scientific research institutions at all levels and all regions with the support of the UNISDR Scientific and Technical Advisory Group in order to: strengthen the evidence-base in support of the implementation of this framework; promote scientific research of disaster risk patterns, causes and effects; **disseminate risk information with the best use of geospatial information technology**; provide guidance on methodologies and standards for risk assessments, disaster risk modelling and the use of data; identify research and technology gaps and set recommendations for research priority areas in disaster risk reduction; ...



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References to “Space Based / Geospatial Information” in the Document:

Priority 4. Enhancing Disaster Preparedness

To achieve this, it is important to:

National level:

... (b) Invest in, develop, maintain and strengthen people-centred **multi-hazard**, multi-sectoral forecasting and **early warning systems**, disaster risk and emergency communications mechanisms, social technologies and hazard-monitoring telecommunications systems

Global level:

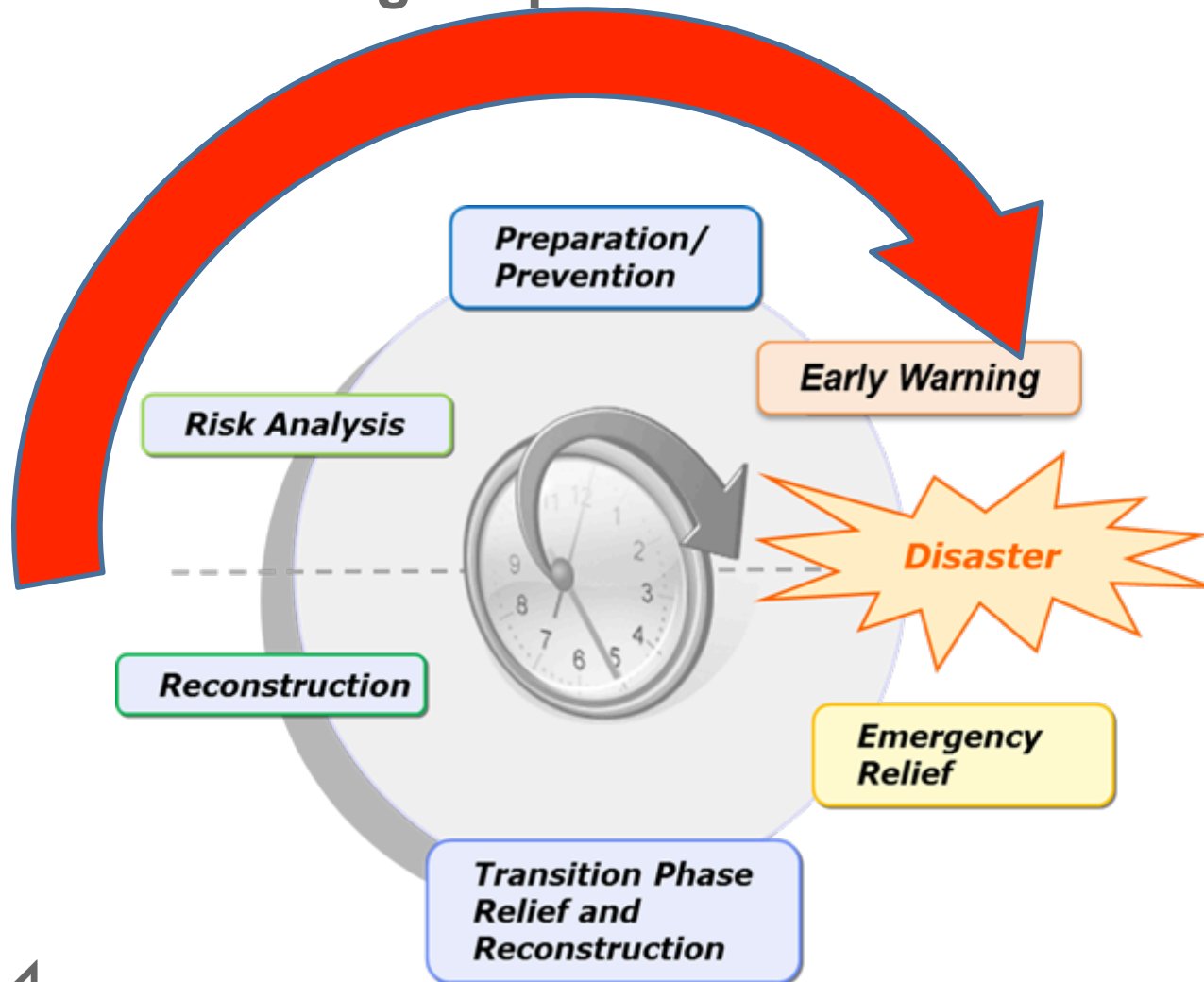
... (a) Develop and strengthen, as appropriate, coordinated regional approaches and **operational mechanisms to prepare for and ensure rapid and effective disaster response** in situations that exceed national coping capacities;



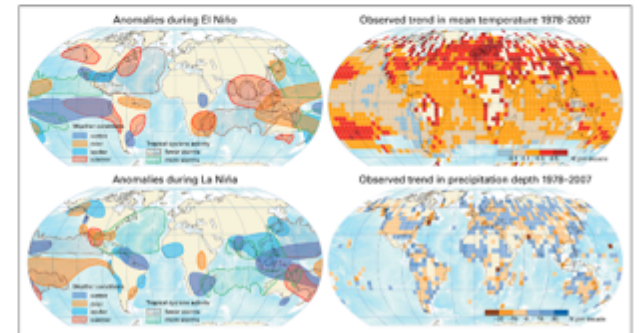
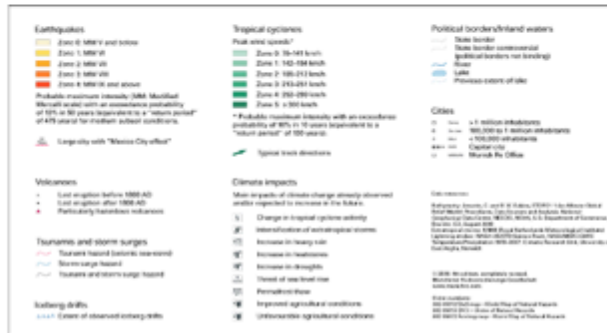
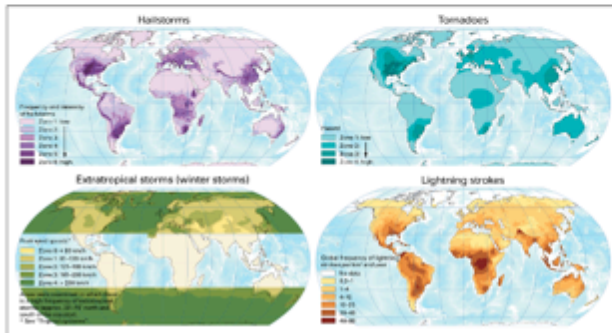
Possible Contributions of Earth Observation



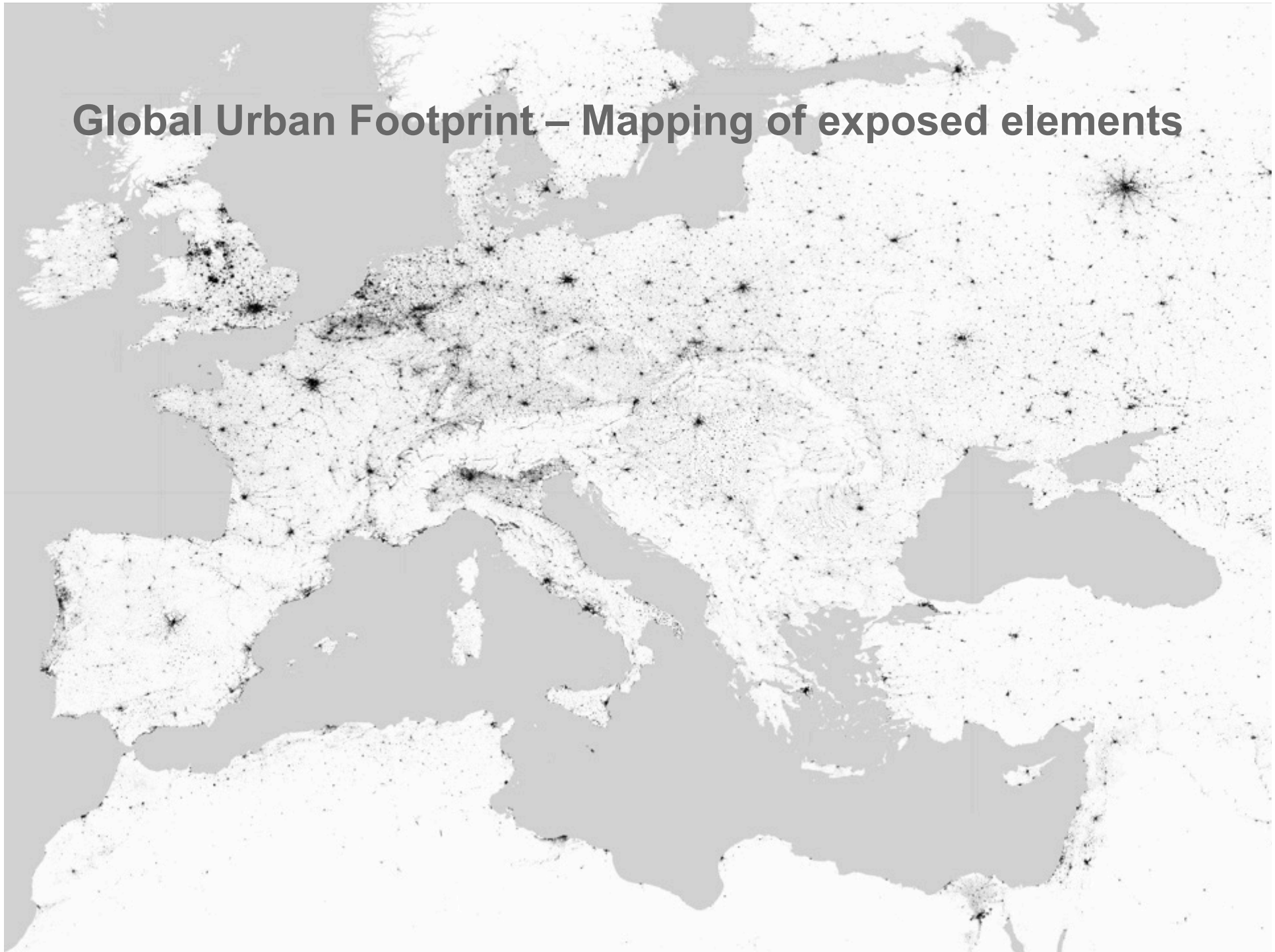
Focus on Risk Assessment, Prevention, Early Warning and enhancing Preparedness for effective Response



Münchener Rück
Munich Re Group



Global Urban Footprint – Mapping of exposed elements



Global Urban Footprint

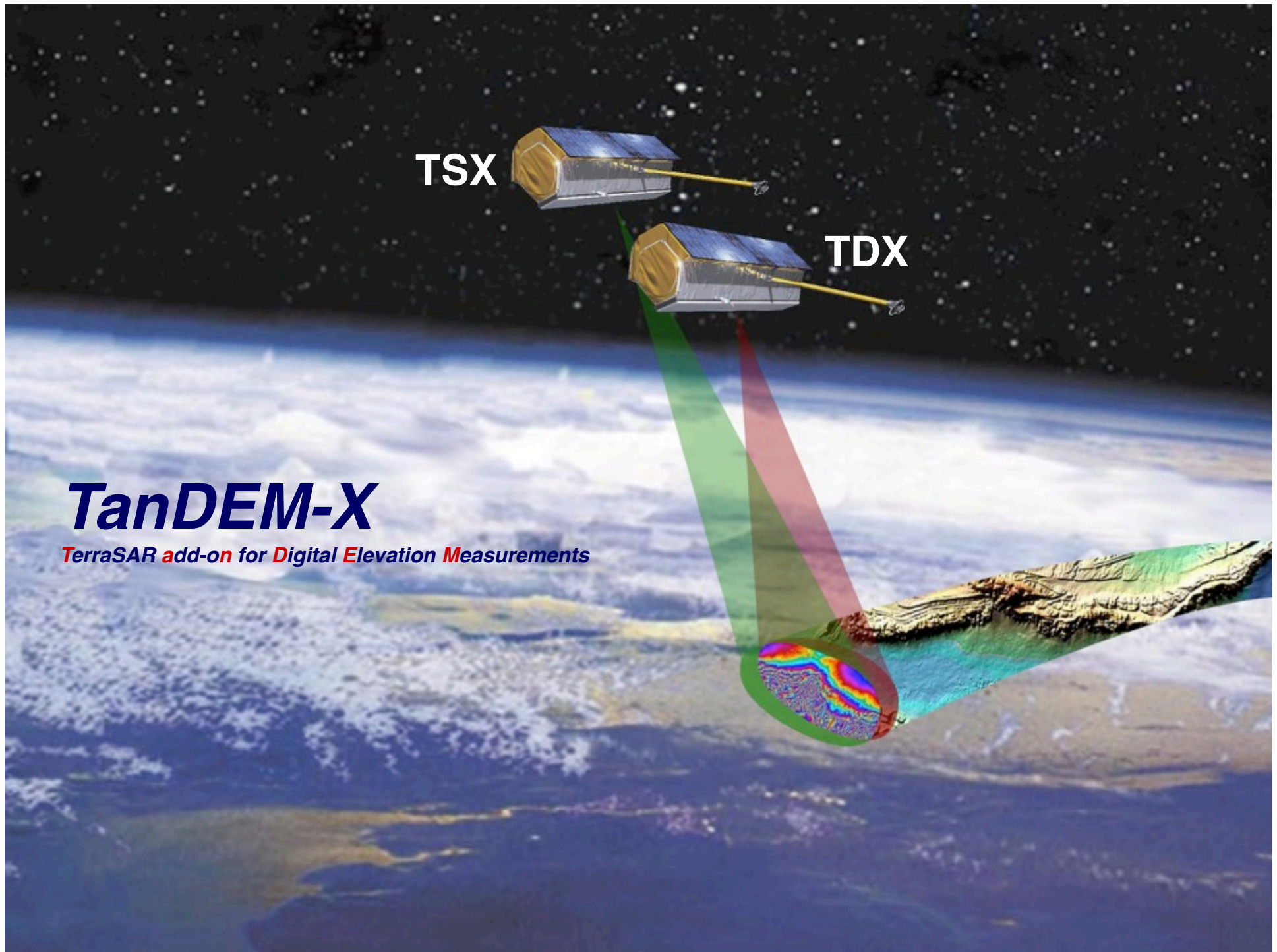


TSX

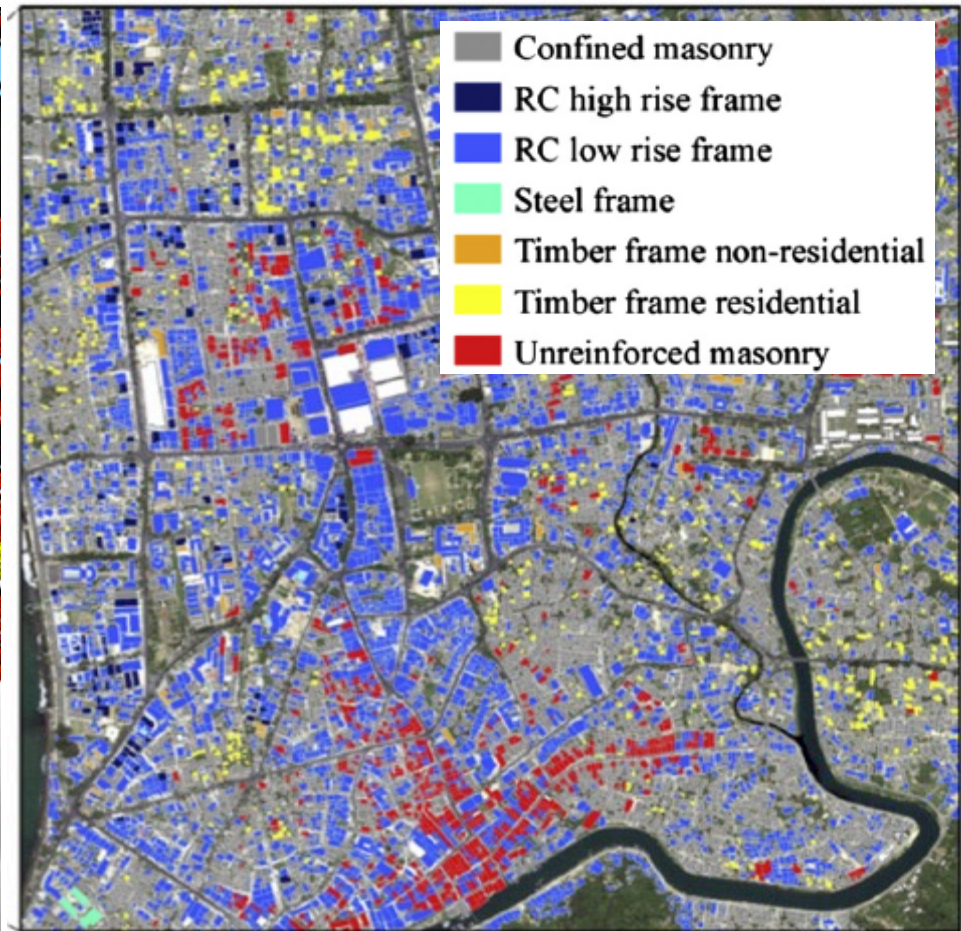
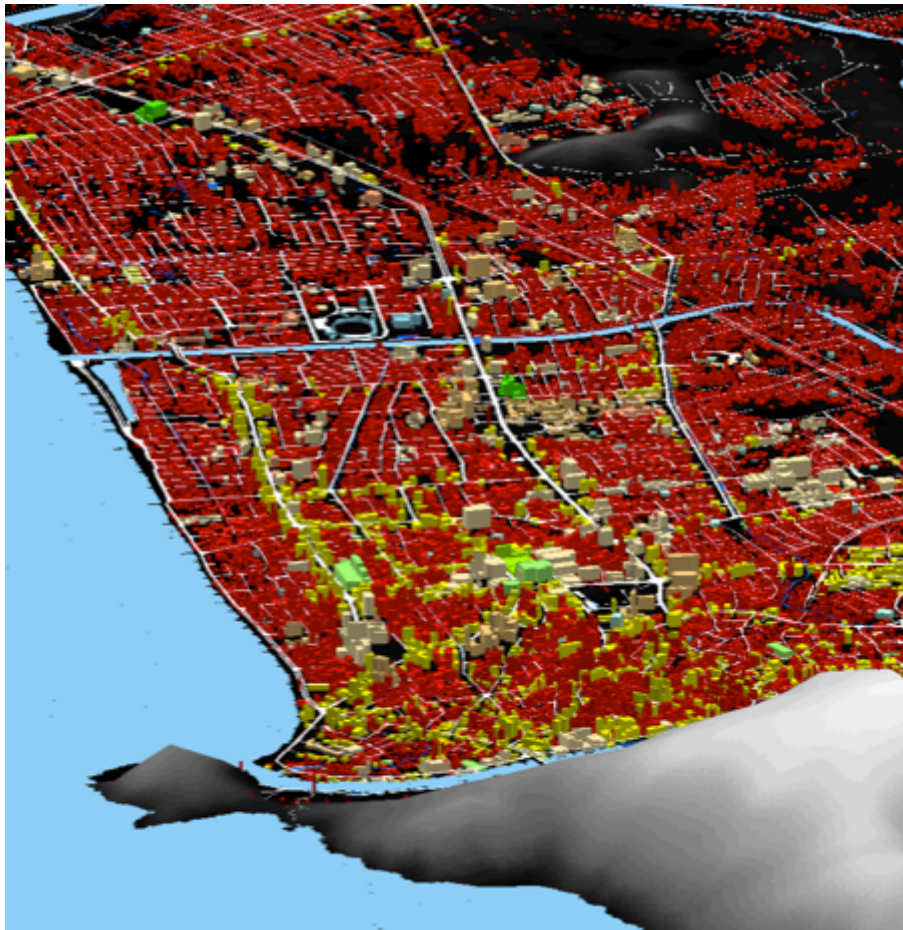
TDX

TanDEM-X

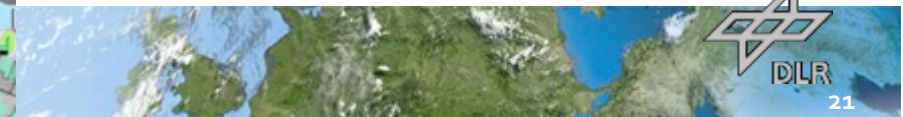
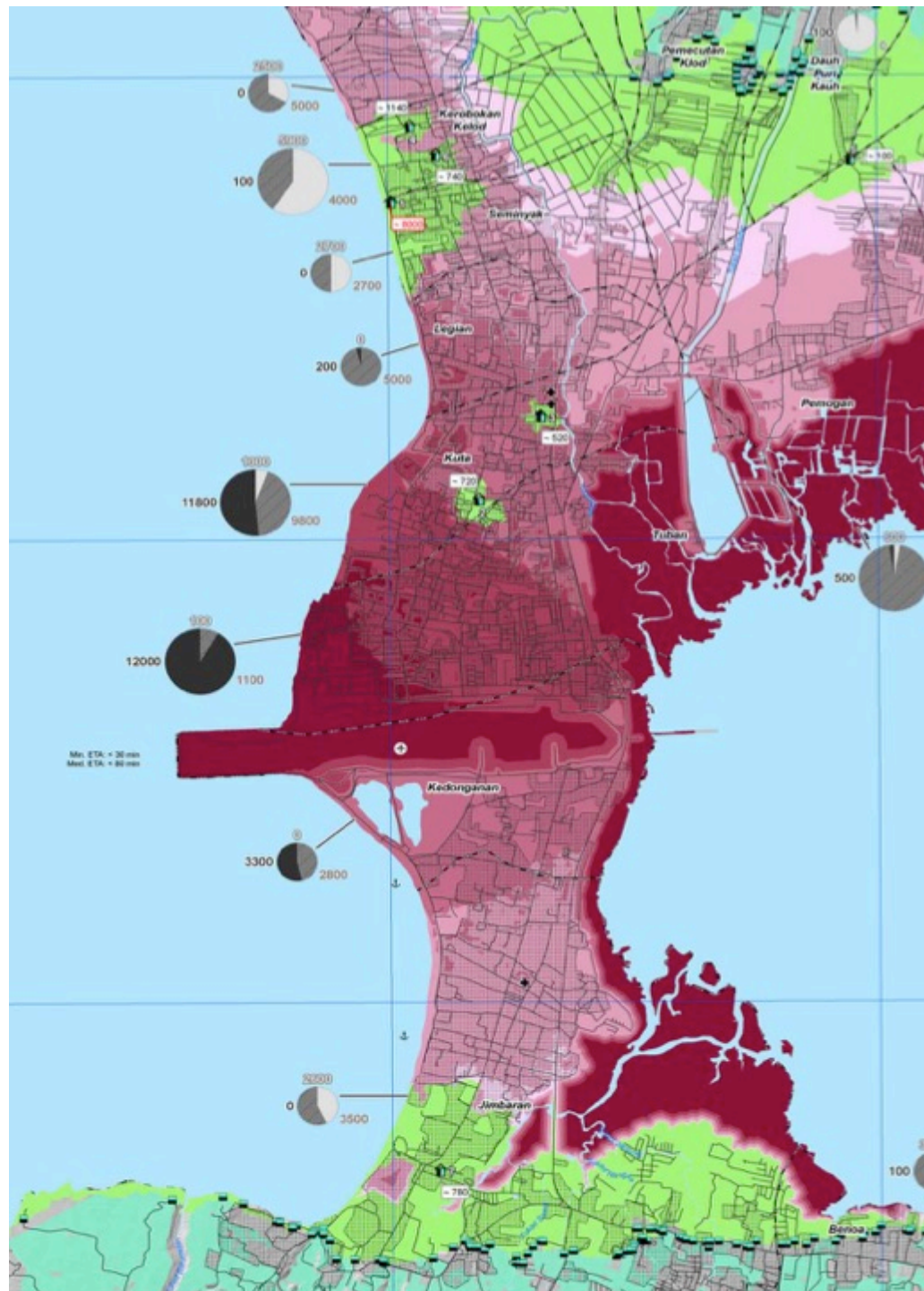
*TerraSAR **add-on** for **Digital Elevation Measurements***



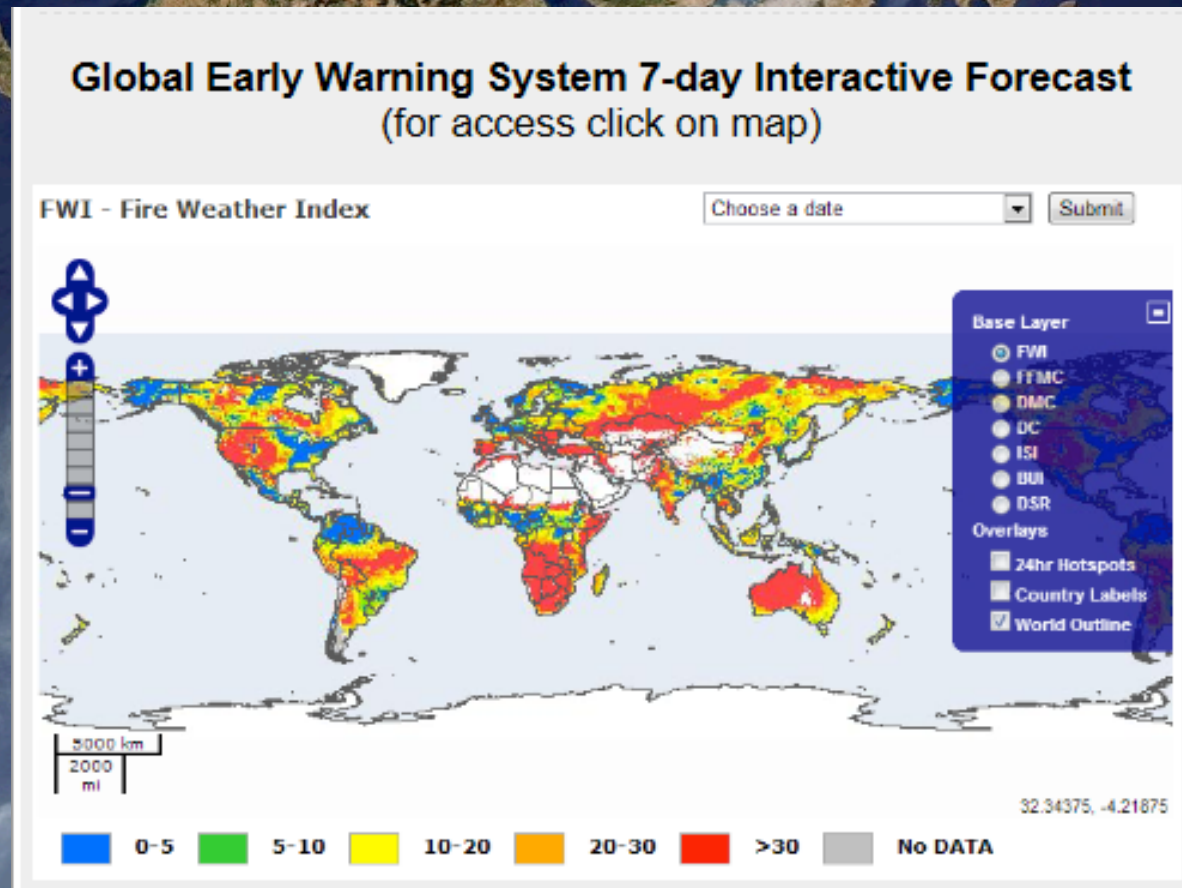
3D Mapping and Categorization of Buildings



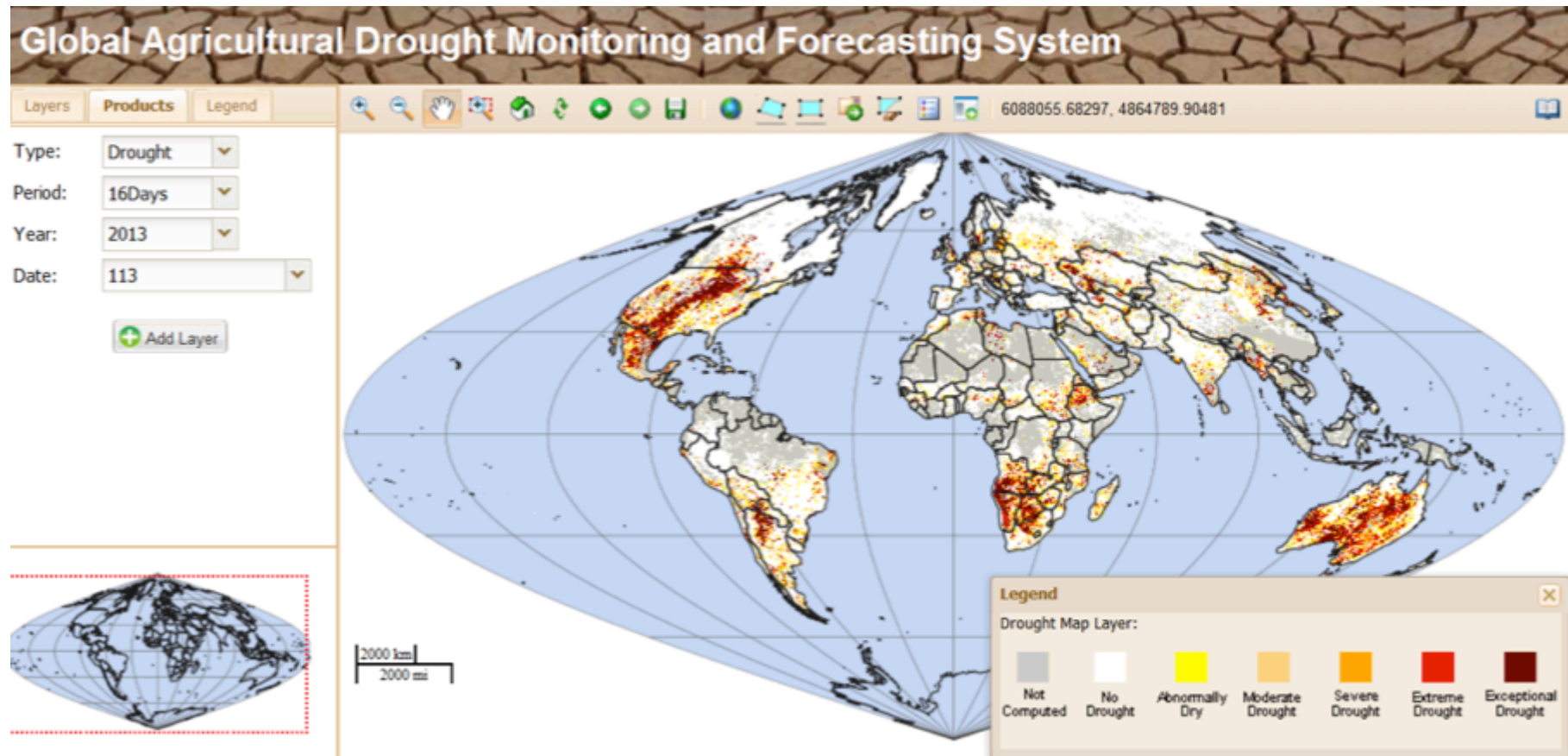
Evacuation Time Map



Global Early Warning System for Wildland Fires



Global Drought Monitoring and Forecasting System



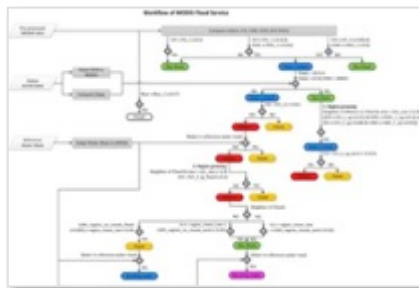
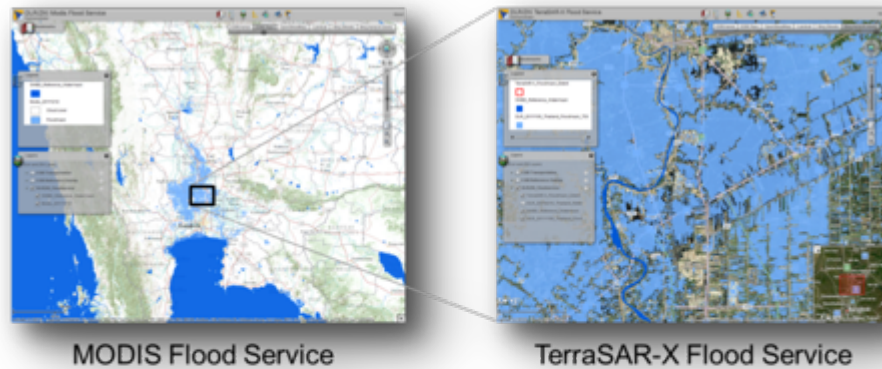
- Based on time series of NDVI and VCI (Vegetation Condition Index) data as well as an drought indicator

Copyright: Center for Spatial Information Science and Systems



Reduced Response Time by Automated Flood Mapping

Operational Processing Chains



Future: Sentinel Missions



Sentinel-1



Sentinel-2



Sentinel-3



Sentinel-1a

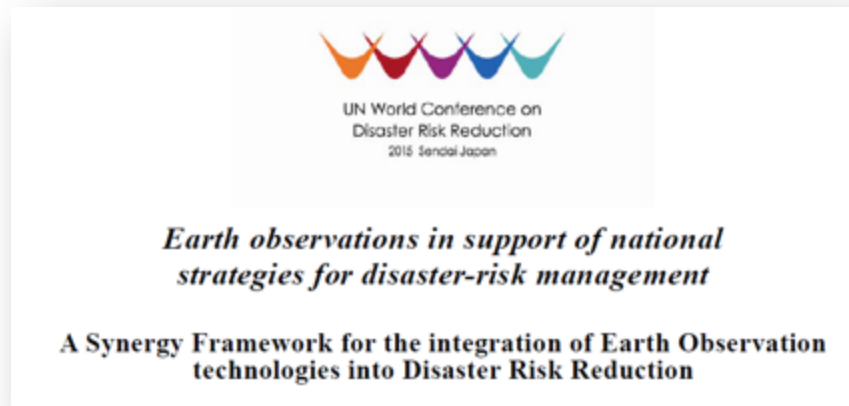


Initiative on Earth Observation Global Partnership



Earth Observation Global Partnership

- During the WCDRR UNOOSA / UN-SPIDER and several international partners launched an initiative on Earth observation Global Partnership
- Voluntary commitment to contribute to the achievement of the goals of the Sendai Framework
- In particular to address the specific requirements with reference to the use of Earth observation and space-based technologies



Earth Observation Global Partnership

- “White Paper”



Earth Observation Global Partnership

- Current Partners and interested Parties

- United Nations Office for Outer Space Affairs (UNOOSA)
- United Nations Platform for Space - based Information for Disaster Management and Emergency Response (UN - SPIDER)
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)
- United Nations Office for Disaster Risk Reduction (UNISDR)
- United Nations Institute for Training and Research (UNITAR)
- UNITAR's Operational Satellite Applications Programme (UNOSAT)
- Group on Earth Observations (GEO), the Committee on Earth Observation Satellites (CEOS)
- European Union (EU)
- International Working Group on Satellite Emergency Mapping (IWG-SEM)
- German Aerospace Center (DLR)
- Chinese Academy of Sciences – the World Academy of Sciences Centre of Excellence on Space Technology for Disaster Mitigation (CAS - TWAS SDIM)
- International Centre for Integrated Mountain Development (ICIMOD)
- International Water Management Institute (IWMI)
- National Emergency Commission of the Dominican Republic (CNE)
- Disaster Management Centre of Sri Lanka (DMC)
- National Disaster Reduction Center of China (NDRCC)
- World Meteorological Organization (WMO).



Work to be done during this Conference ...

- Identify and discuss the current and upcoming capabilities of Earth observation to support the requirements laid down in the Sendai Framework.
- Means of implementation in terms of applicability, transferability, technical and human capacities needed
- Identify gaps to be filled by future research and development work





Thank you for your attention

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