

Big Earth Data from Space for DRR and Emergency Response in Africa

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DLR



Knowledge for Tomorrow



Big Earth Data

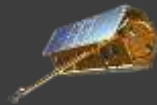
National Missions

TerraSAR-X



Commercial Missions

TanDEM-X



Copernicus Programme

Sentinel-1



New Space

Sentinel-2



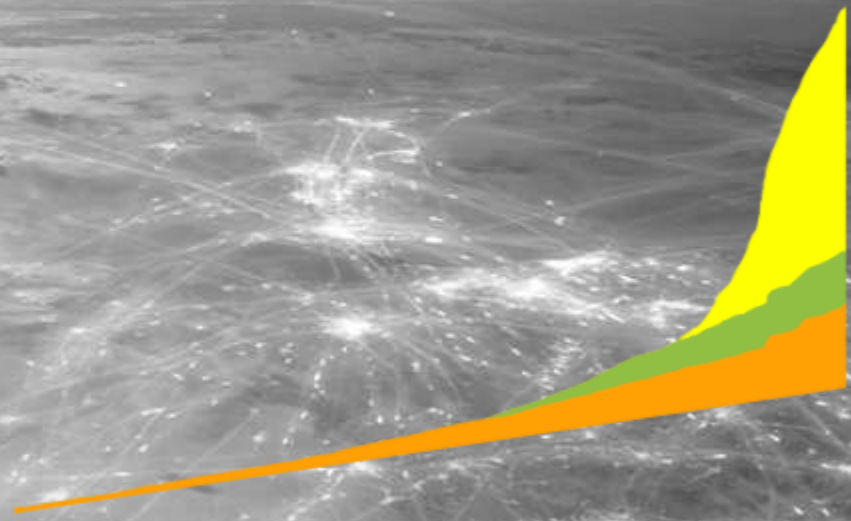
Daily Number of Uploaded Photos (Mio)

■ Flickr
■ Snapchat
■ Instagram
■ Facebook
■ WhatsApp

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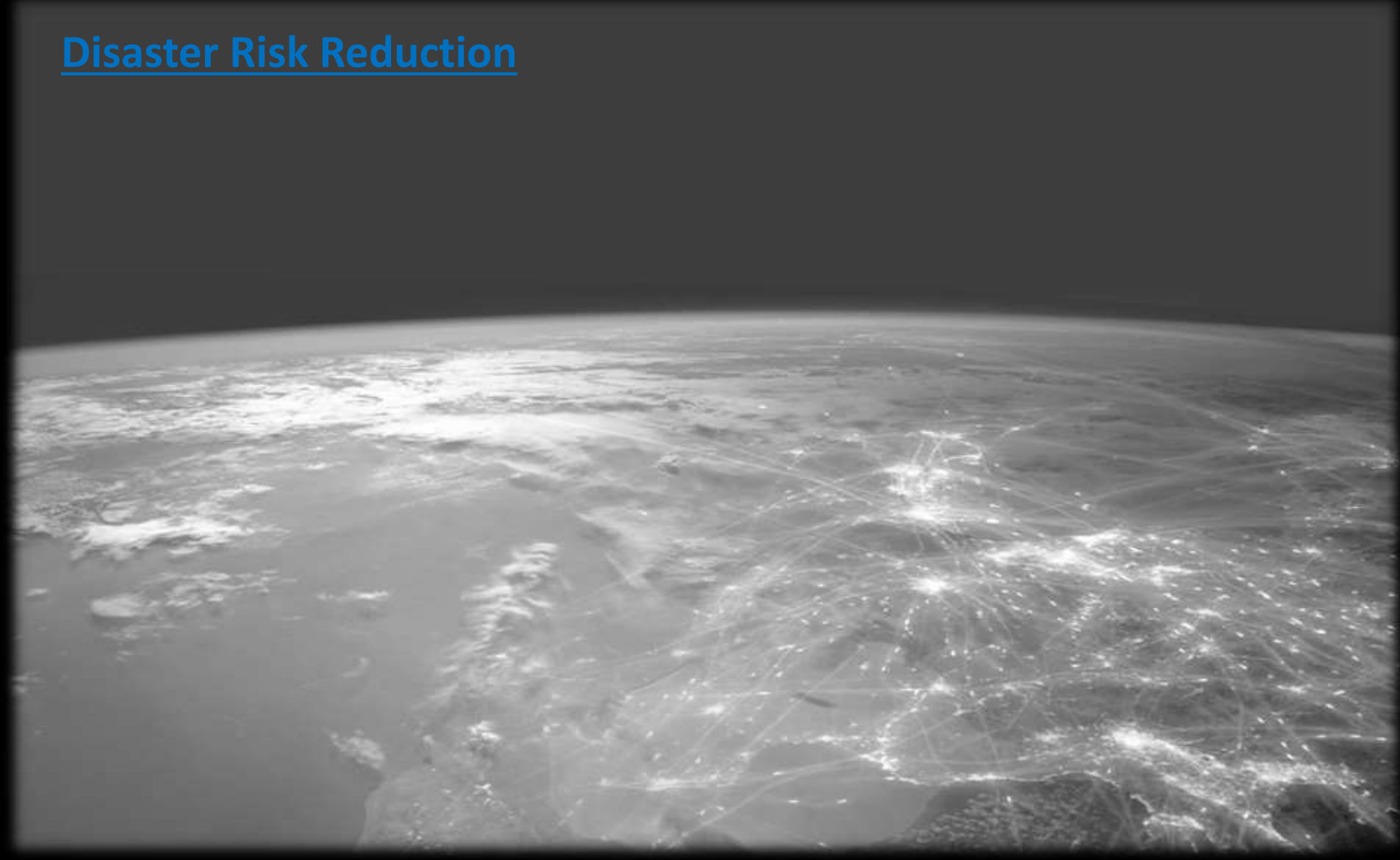
2007 2008 2009 2010 2011 2012 2013 2014

1800
1500
1000
500
0

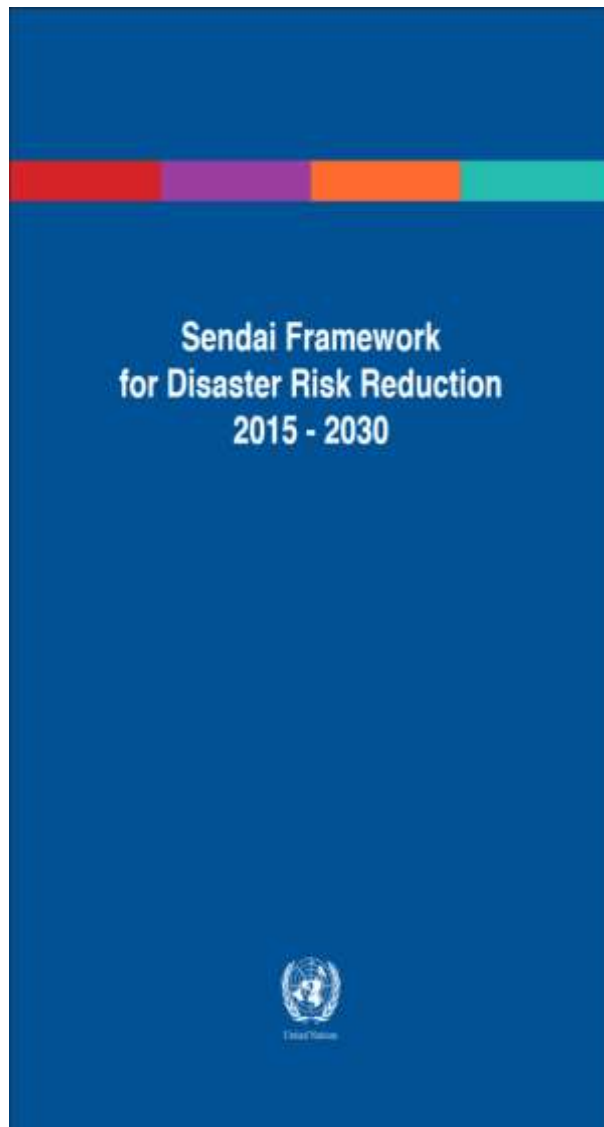


Big Earth Data for ...

Disaster Risk Reduction



UN Framework for Disaster Risk Reduction



7 GLOBAL TARGETS	Reduce	Increase
	Mortality/ global population 2020-2030 Average << 2005-2015 Average	Countries with national & local DRR strategies 2020 Value >> 2015 Value
	Affected people/ global population 2020-2030 Average << 2005-2015 Average	International cooperation to developing countries 2030 Value >> 2015 Value
	Economic loss/ global GDP 2030 Ratio << 2015 Ratio	Availability and access to multi-hazard early warning systems & disaster risk information and assessments 2030 Values >> 2015 Values
	Damage to critical infrastructure & disruption of basic services 2030 Values << 2015 Values	

World Settlement Footprint: Mapping Global Urbanization

▪ *Global Urban Footprint (GUF).*

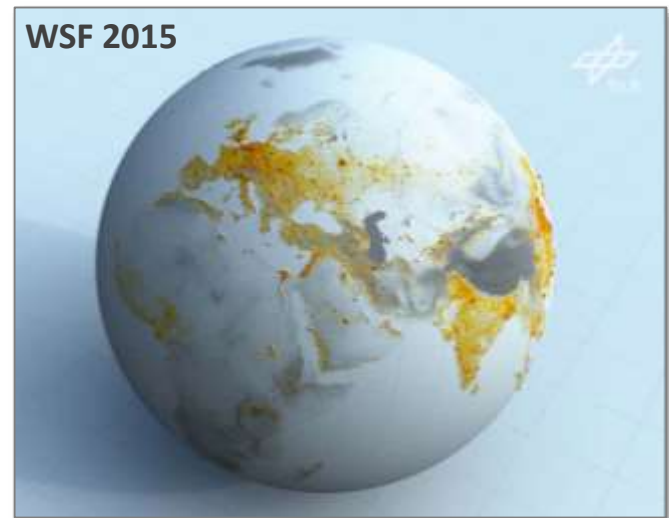
- Data base: 182,249 TerraSAR-X/TanDEM-X images (3m) collected in 2012 (308 TB).
- Spatial resolution: 12 m (scientific use), 84m (non-profit use).
- Release: November 2016.
- Users: >300 institutions from 43 countries.

▪ *World Settlement Footprint (WSF).*

- Use of free and open data.
- Multi-source (Sentinel-1, Landsat/Sentinel-2).
- Multi-date (use of all scenes acquired).
- Multi-facility (DLR, HPC-IT4I, GEE).

Product portfolio:

- WSF 2015 (10m, binary mask).
- WSF 2015 Density (30m, imperviousness).
- WSF Evolution (30m, 1984-2015).

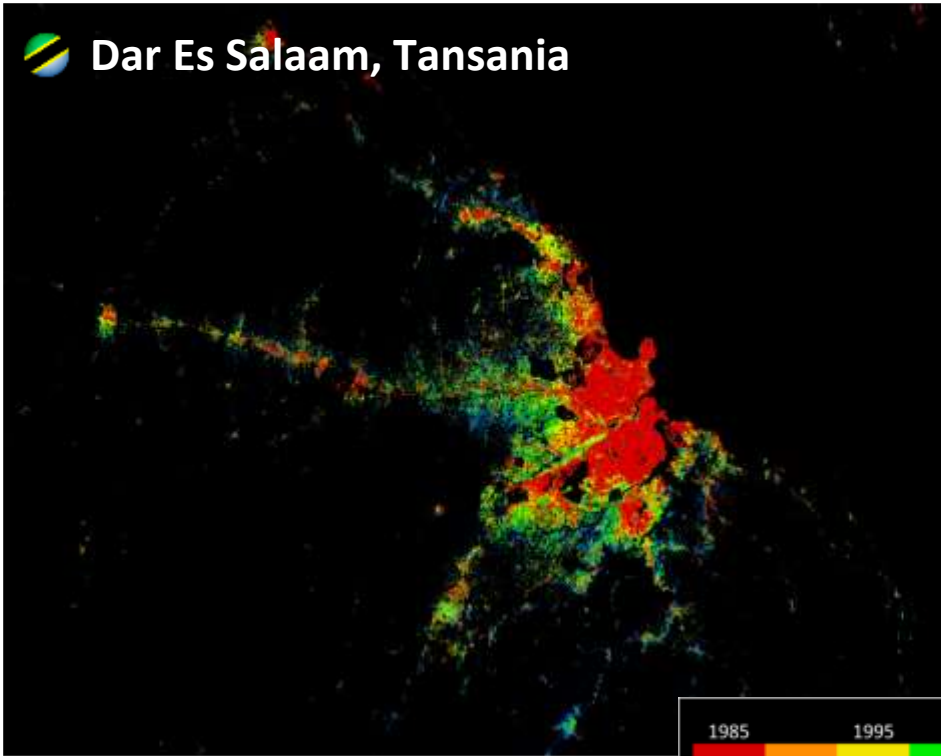


A grayscale world map showing the evolution of human settlement footprint. Darker areas represent higher density of settlements, with prominent clusters in North America, Europe, and East Asia. The map uses a grid system with latitude and longitude lines.

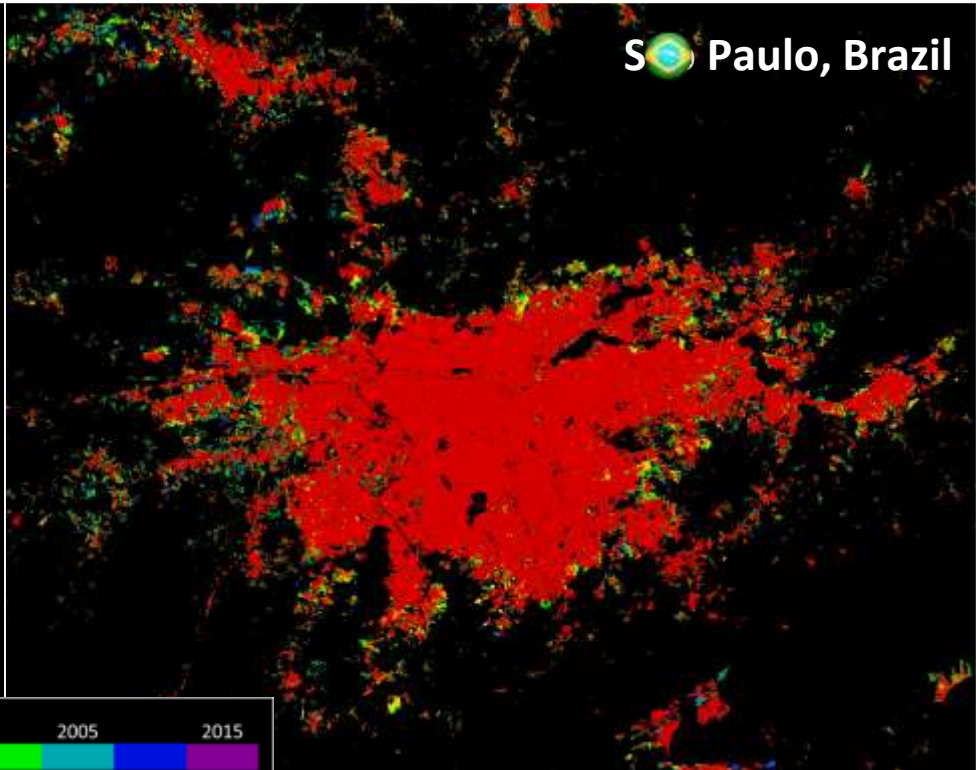
World Settlement Footprint

Evolution

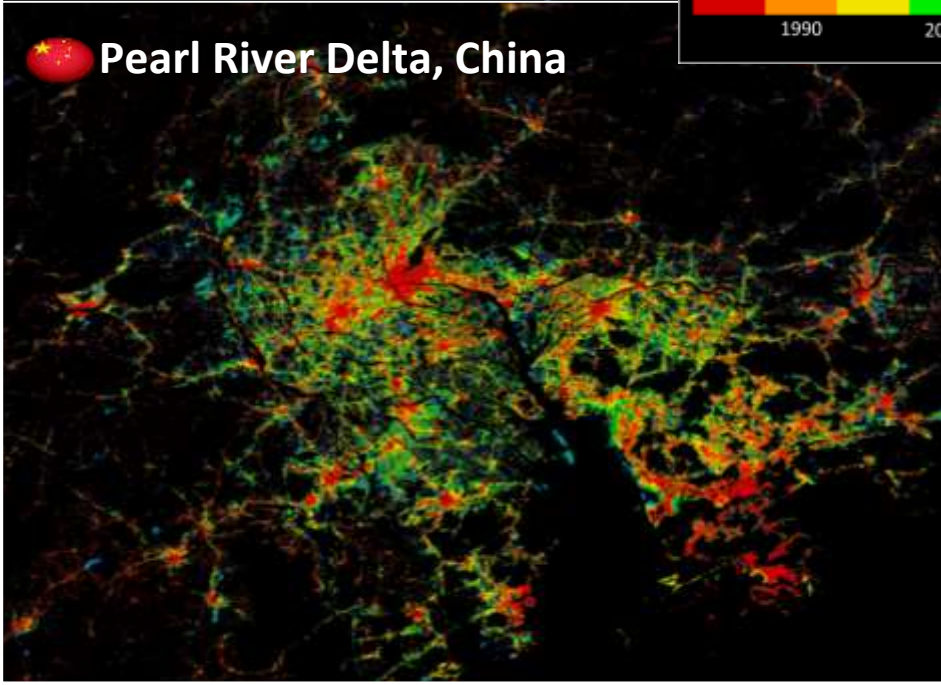
 Dar Es Salaam, Tansania



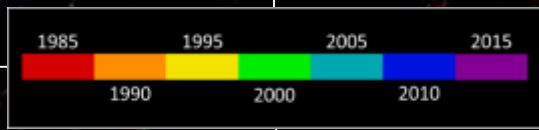
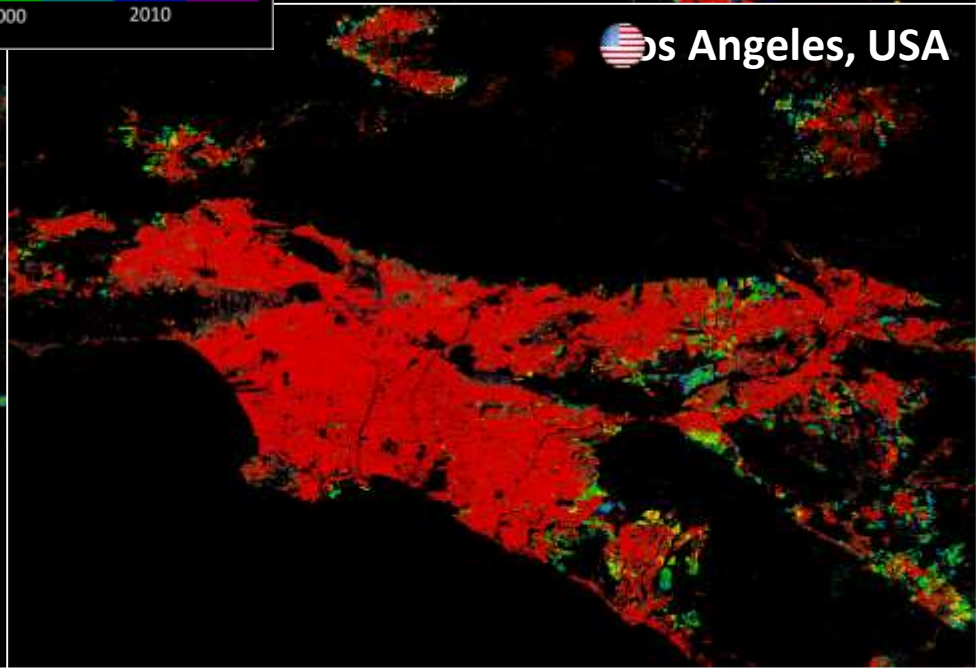
 Paulo, Brazil



 Pearl River Delta, China



 Los Angeles, USA



Big Earth Data for ...

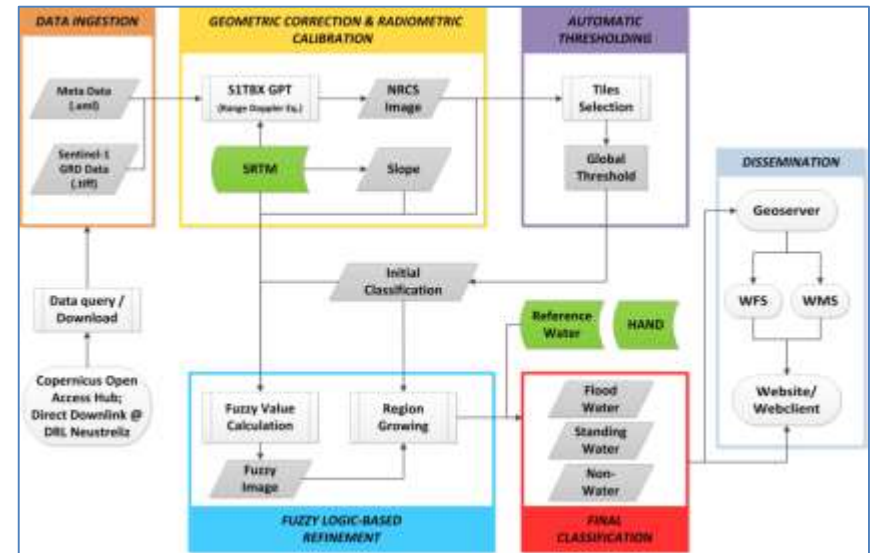
Disaster Risk Reduction
and Emergency Response



Emergency Response



Towards a „data driven“ approach on global scale



Big Earth Data for ...

Disaster Risk Reduction
and Emergency Response
with Africa

