

Climate data processing for climate resilience

Tajikistan and Kyrgyzstan

Data access, processing and methodological concepts

Webinar
17. - 27. 11.2020

DAY 07
Disaster Risk Reduction



Objectives of Day 06

Date: 23.11

Presentation: EO_SDG

<https://github.com/nilshempelmann/climdatatutorial>

Objectives:

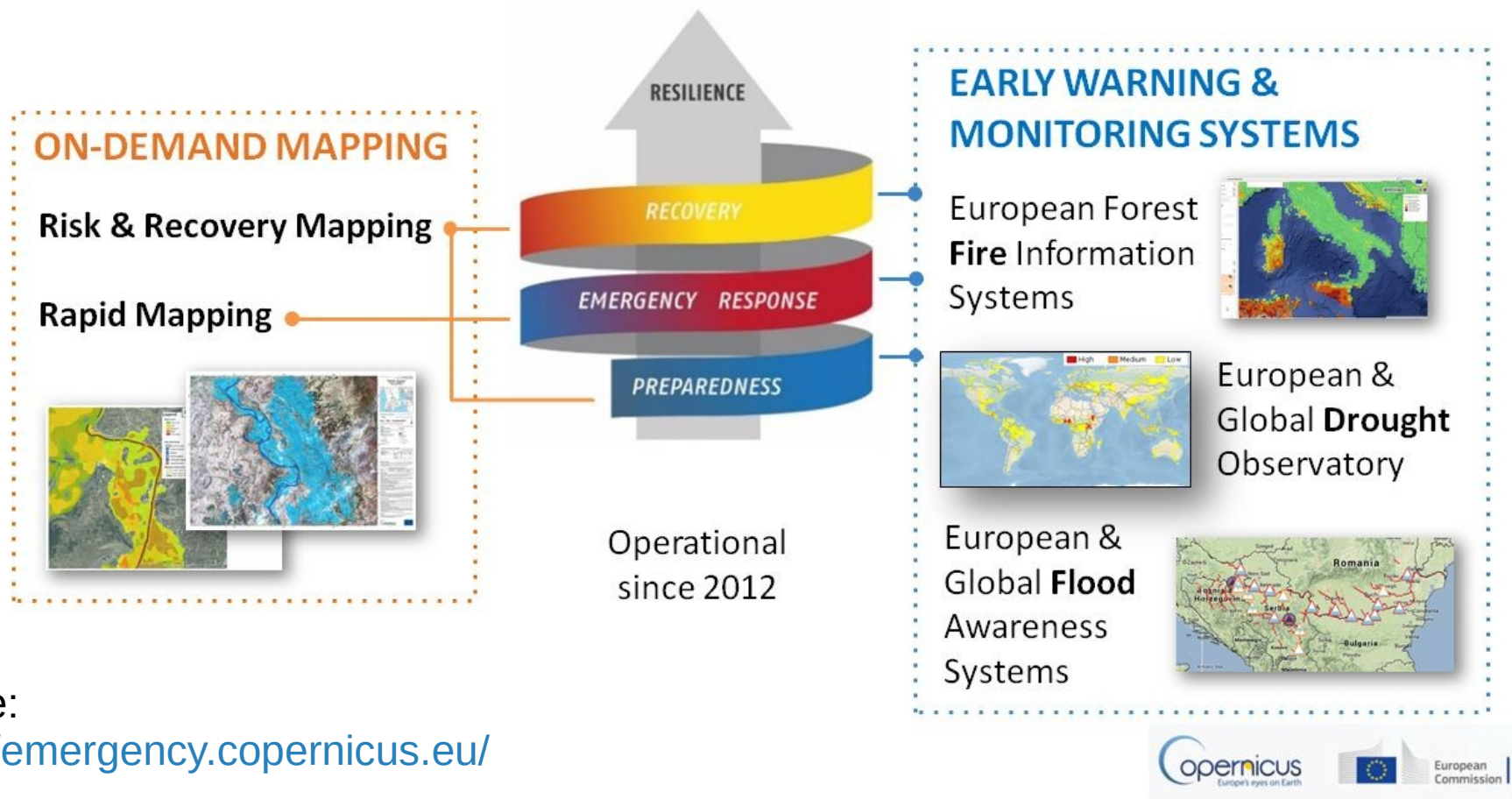
- Wrap up of yesterday
 - - Climate Services Information System – GeoSpatialData Infrastructure
- Database for Disaster Risk Reduction
- Disaster Risk Reduction response system



Extreme Event



Copernicus Emergency Management Service (CEMS)



Source:

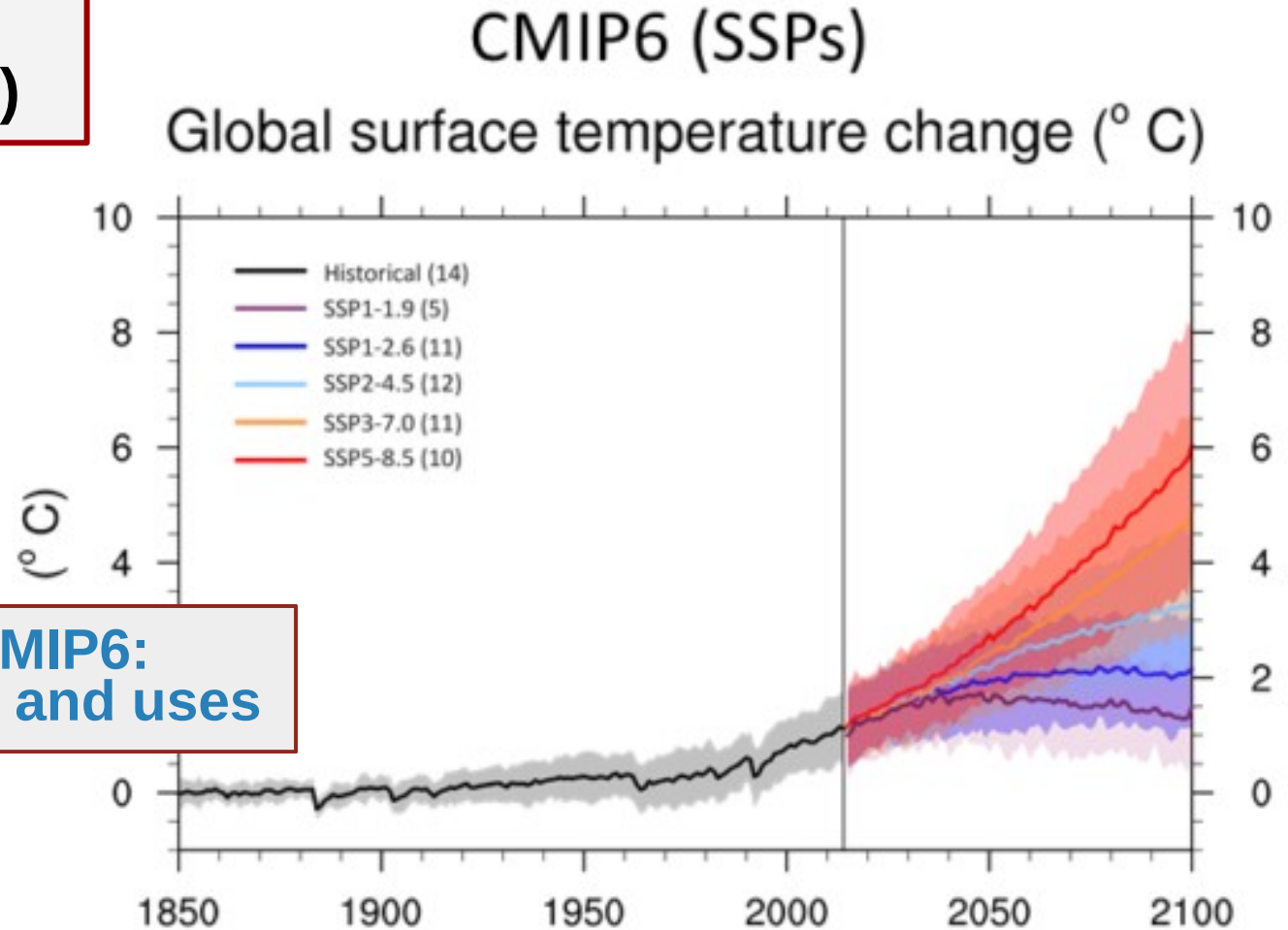
<https://emergency.copernicus.eu/>



Longterm prevention (= Adaptation Strategy)

Source:
crescendoproject.eu

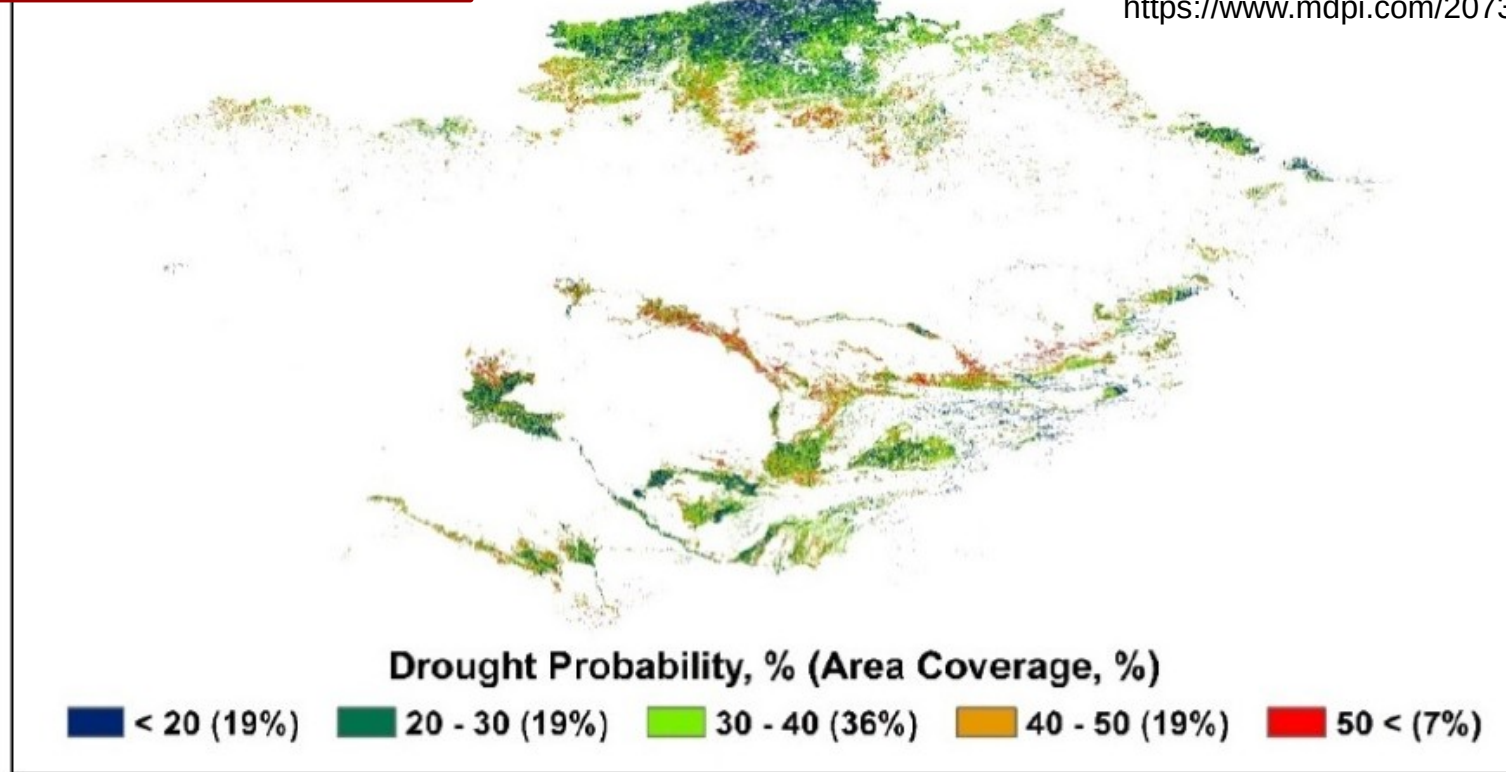
Climate Sensitivity in CMIP6:
Causes, consequences and uses



midterm prevention

Source: Nurgul Aitekeyeva et al. 2020:

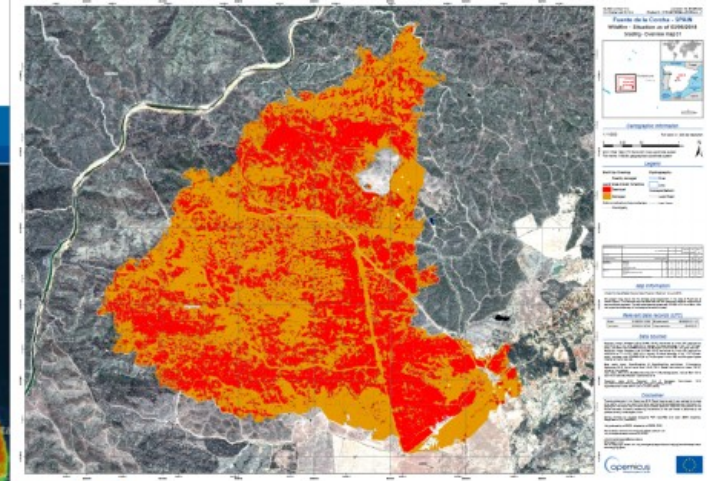
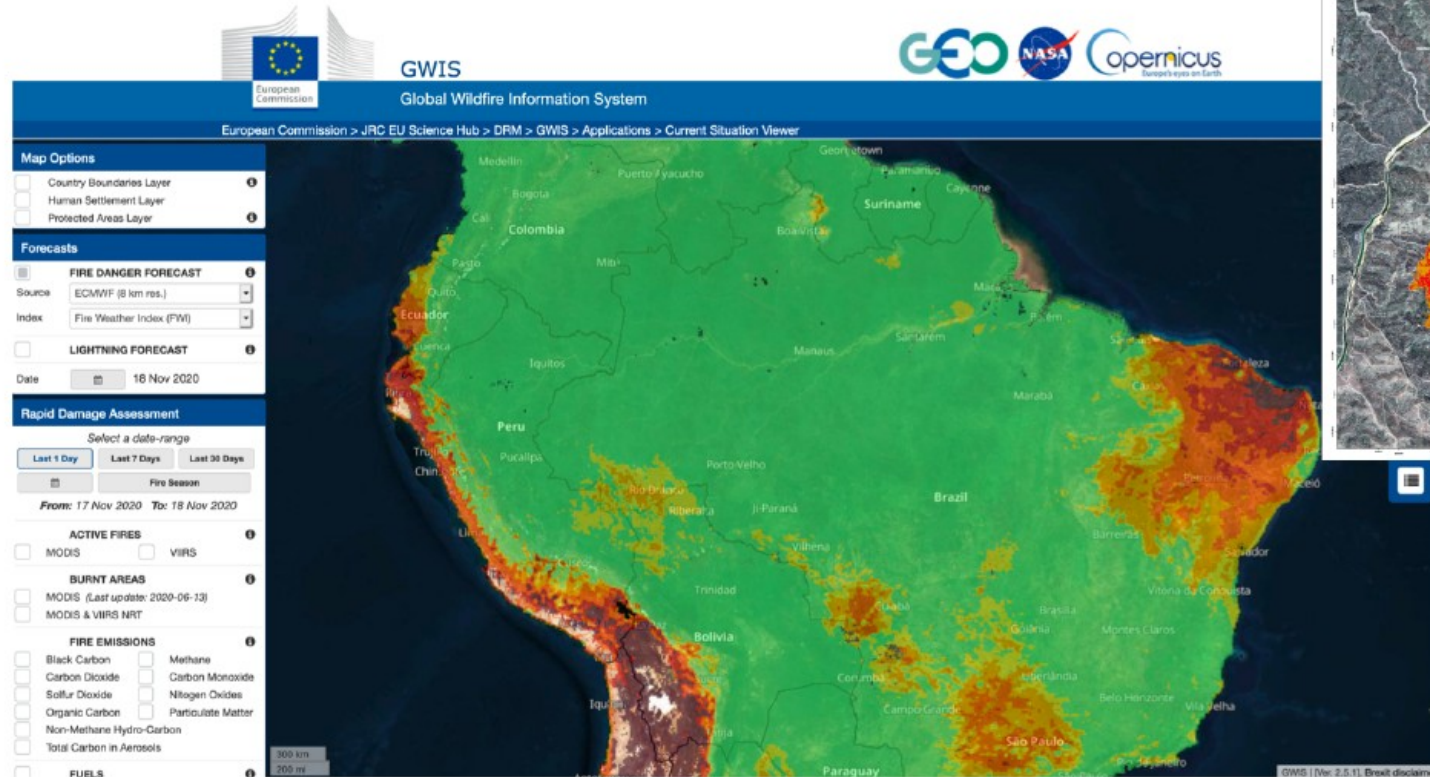
<https://www.mdpi.com/2073-4441/12/6/1738/htm>



Drought Risk Assessment in Cultivated Areas of Central Asia Using MODIS Time-Series Data



Early warning and preparedness



Built Up Grading

- Possibly damaged

Land Use-Cover Grading

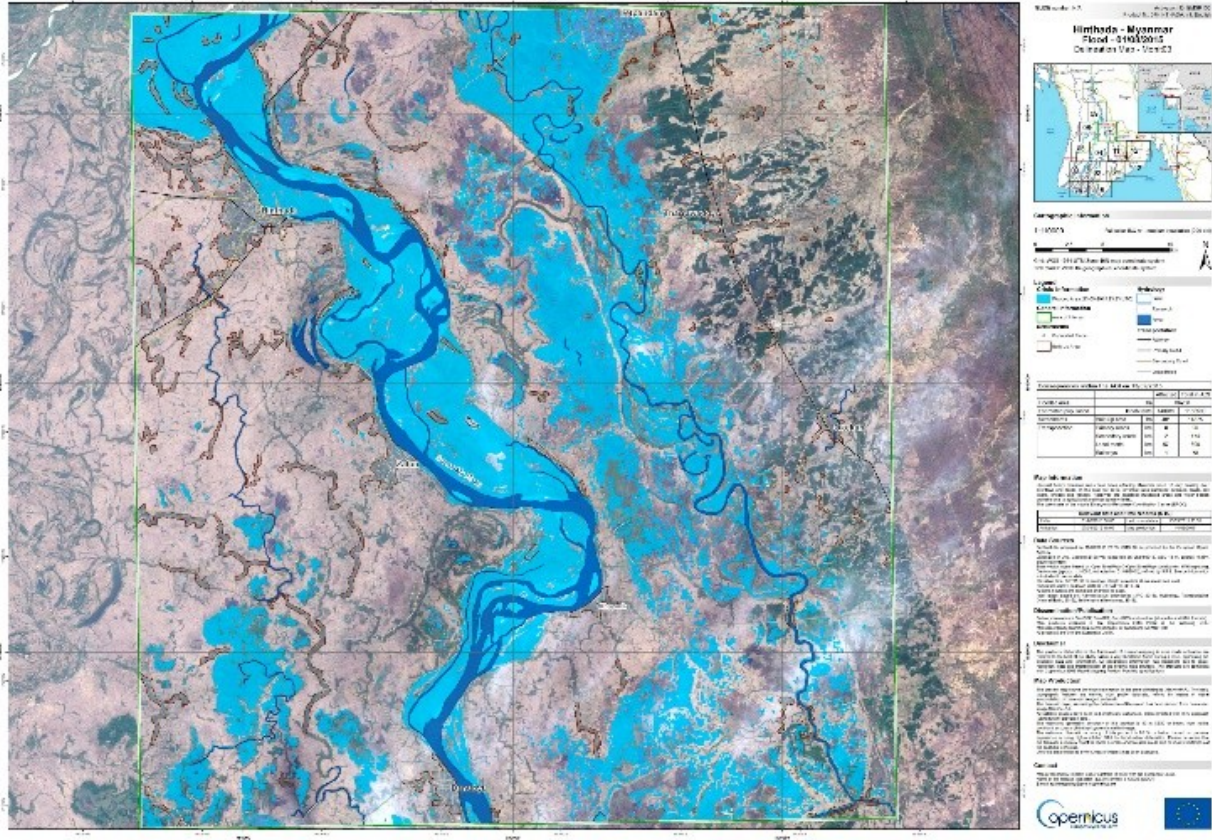
- Destroyed
- Damaged

Global Wildfire Information system:

https://gwis.jrc.ec.europa.eu/static/gwis_current_situation/public/index.html



Response Phase



Recovery



Consequences within the overview AOI on 23/08/2014

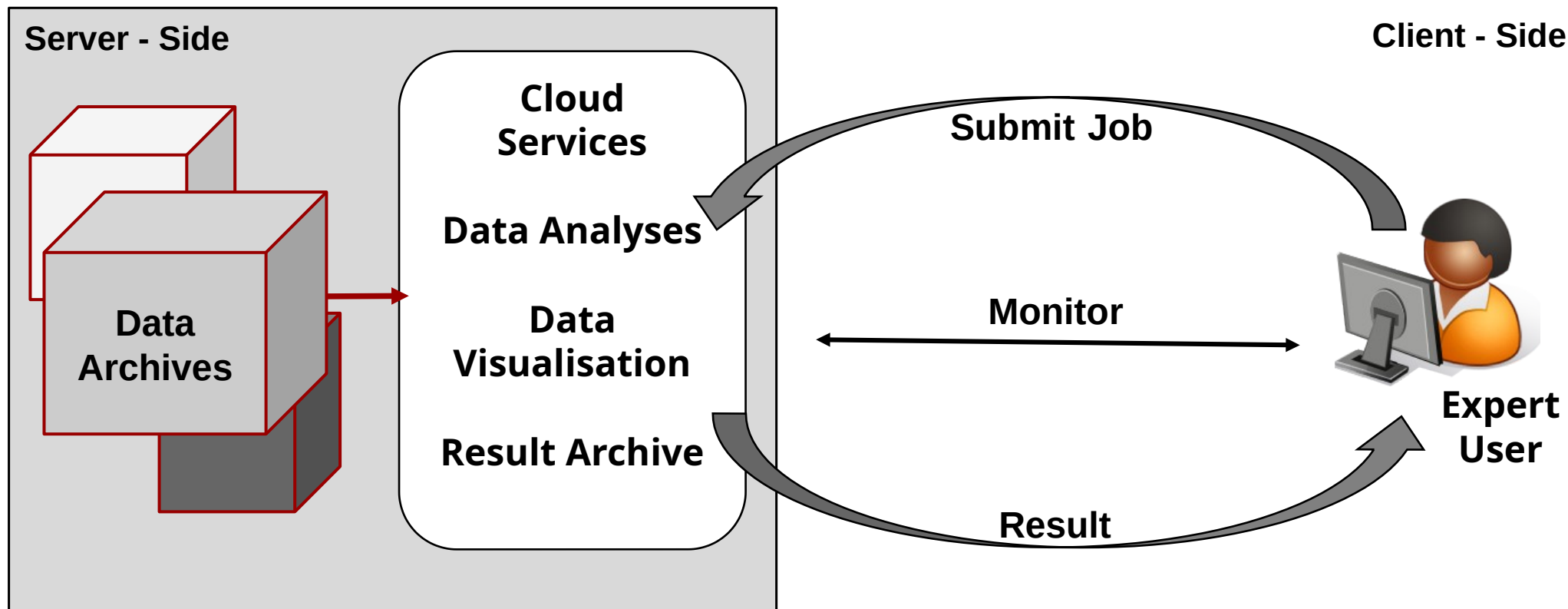
		Affected	Total in AOI
Burnt/Flooded/Affected area	ha	68774	
Estimated population	Inhabitants	8710	1248301
Settlements	Residential	ha 431	61767
	Primary roads	km 0	32,79
	Secondary	km 12,46	245,52
	Local roads	km 53,96	1471,63
Transportation	Railways	km 0,17	99,04
	Stations	No. 0	6
	Bridges	No. 2	49
	Helipad	No. 0	1
Land use	Bare soil	ha 36867	42094
	Cropland	ha 31538	154652
	Grassland	ha 14	397

Assessment of crop damage

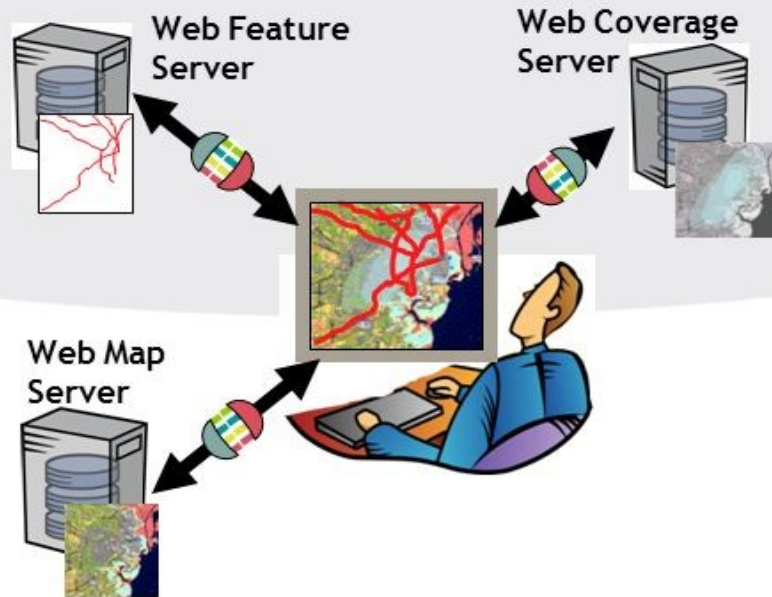


high performance environment

(low internet bandwidth)



The geospatial web is enabled by OGC standards:



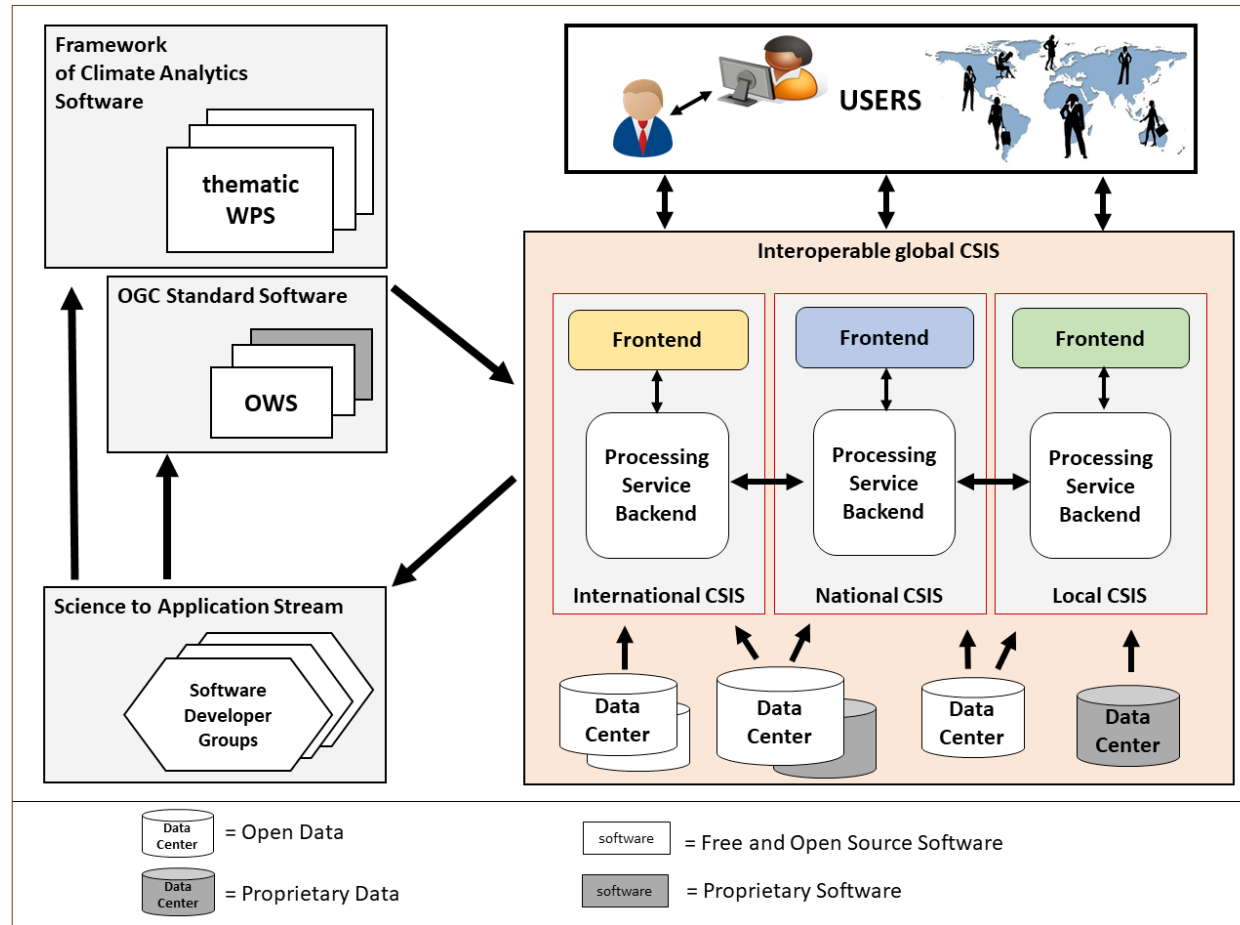
Web Map Service (WMS)
Web Map Tile Service (WMTS)
Web Feature Service (WFS)
Web Coverage Service (WCS)
Catalogue (CSW)
Geography Markup Language (GML)
KML
Others...

Relevant to geospatial applications: Critical Infrastructure, Emergency Management, Weather, Climate, Homeland Security, Defense & Intelligence, Oceans Science, etc

Osservare per prevedere, prevedere per prevenire



Climate Services Information System



Climate Services Information System

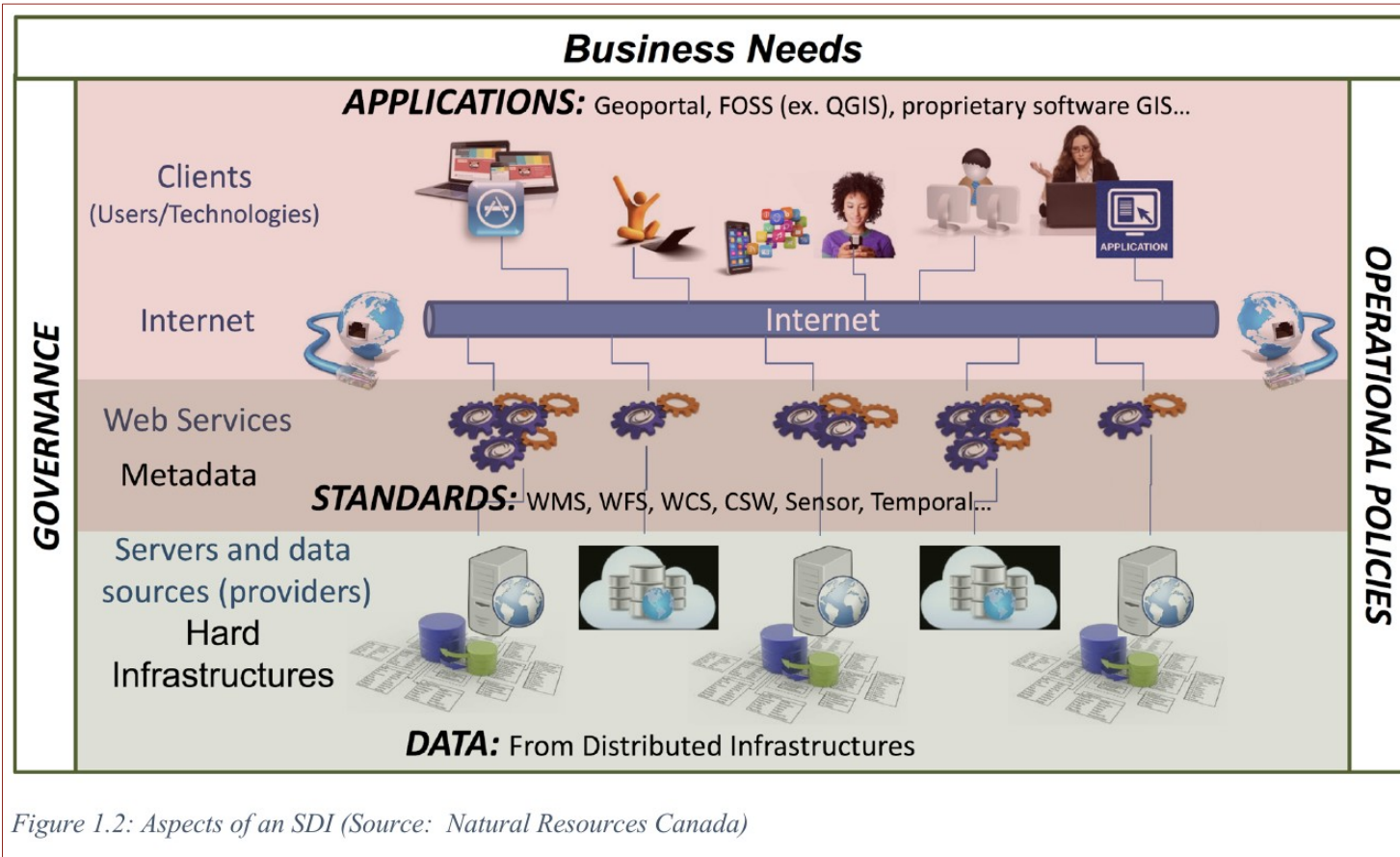


Figure 1.2: Aspects of an SDI (Source: Natural Resources Canada)

Source: OGC 2018:

OGC Development of Disaster Spatial Data Infrastructures for Disaster Resilience Engineering Report



**Hands ON:
SNAP Toolbox**

