Monitor high risk areas

Applications

Risk monitoring

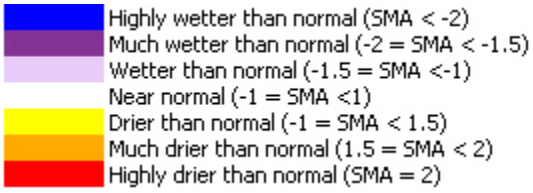
The availability of reliable and up to date information on the environment and the forces that shape it can significantly improve the management of risk and monitoring of risk sensitive areas. For this reason monitoring high risk areas represent a crucial activity to diminish the impact of natural disasters. The information coming from Earth observation satellites can prove to be vital to prepare disasters and reduce damages for people and property.

Examples of areas to be monitored are those exposed to hydro-meteorological risks or to geo-hazards such as landslides and terrain subsidence (1). Monitoring these areas is useful both for scientists to better understand the impact of natural forces on the environment and prepare adaptation strategies and for operational users to react more efficiently in case of emergency.

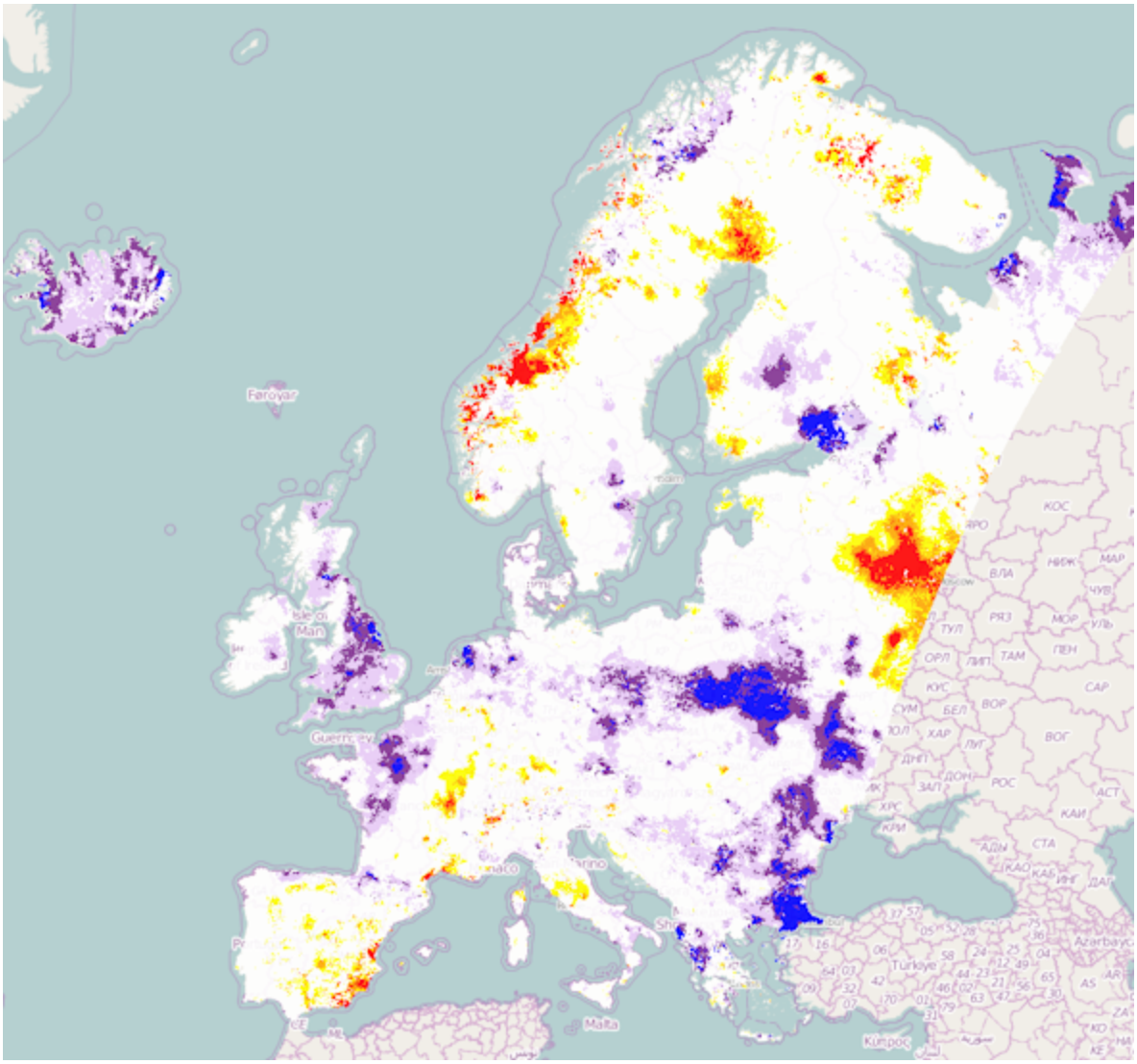
In Europe, an operational service for emergency management already exists in the Copernicus framework: the Emergency Service has a worldwide coverage and covers

- Floods
- Earthquakes
- Landslides
- Severe Storms
- Fires
- Technological disasters
- Volcanic eruptions
- Humanitarian crises
- Tsunamis

Among the different components of the service, the non-rush emergency service provides information for prevention, preparedness and disaster risk reduction or recovery. Reference maps obtained by satellite data provide a comprehensive and updated knowledge of the territory and its assets (2).



Soil Moisture Anomaly Map of 4th of June 2014 © EFAS



One example of a specific field of application of risk monitoring is the European Flood Awareness System, which produces European overviews on ongoing forecasted floods up to 10 days in advance, to better protect citizens, environment, property and cultural heritage.

The Sentinels will contribute to the availability of useful data for monitoring high risk areas (3):

- Sentinel-1 SAR instrument can be used to monitor earthquake prone areas, and mapping and monitoring fault lines.
- Sentinel-2 mapping will serve both for reference maps and assessment maps (during the events).
- Sentinel-3 altimeter will support flood monitoring.

References

(1) http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSDNET/EXTEOFD/0,,contentMDK:23238891~pagePK:64168445~piPK:64168309~theSitePK:8426771,00.html

(2) http://emergency.copernicus.eu/mapping/ems/emergency-management-service

(3) https://sentinel.esa.int/web/sentinel/thematic-areas/emergency-management