Emergency Management Service

Support to Disaster Management from Space

P. Salamon & many more

European Commission Joint Research Centre

Emergency Management

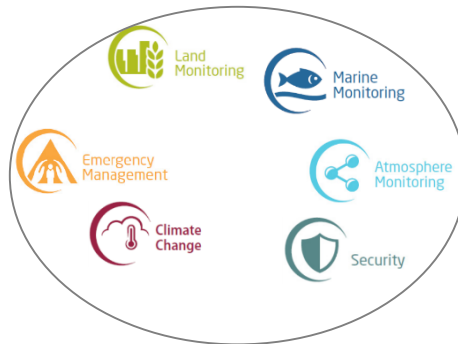Copernicus
Europe's eyes on Earth

European Commission

Emergency Management

6 services use Earth Observation data to deliver …

Sentinels & Contributing Satellite Missions

In-situ measurements

Source: ESA

Land Monitoring

Marine Monitoring

Emergency Management

Atmosphere Monitoring

Climate Change

Security

… added value products

Emergency Management

- Operational since April 2012
- Addresses natural and man-made disasters **globally**
- Provides EO, model & in-situ based disaster management information

- Supports all phases of the disaster management cycle:
  - ➤ Warnings & risk assessments
  - ➤ Information on the impact of natural and man-made disasters

- Complementary to national efforts
- Provides European wide information to the European Union's Emergency Response and Coordination Centre (ERCC)
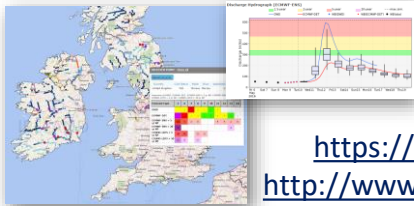
http://emergency.copernicus.eu

RESILIENCE

RECOVERY

EMERGENCY RESPONSE

PREPAREDNESS

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Emergency Management

Flood Awareness Systems

Flood monitoring & forecasting

https://www.efas.eu/
http://www.globalfloods.eu/

Drought Observatories

Drought monitoring & forecasting

NEW!

http://edo.jrc.ec.europa.eu/
http://edo.jrc.ec.europa.eu/gdo/

Forest Fire Information Systems

Near real-time & historical information on forest fires

http://effis.jrc.ec.europa.eu/
http://gwis.jrc.ec.europa.eu/
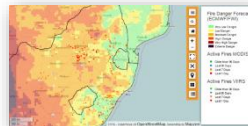
On-demand Mapping

any disaster

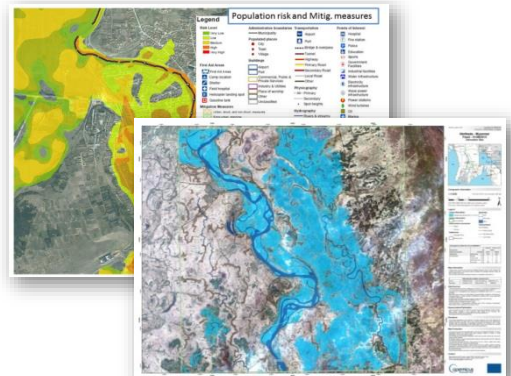### Rapid Mapping

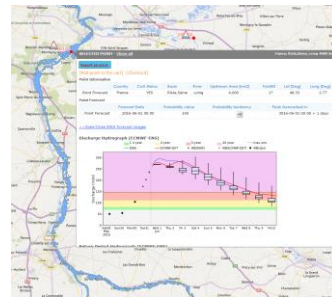24/7 on-demand and fast provision of geospatial information

Risk and Recovery Mapping
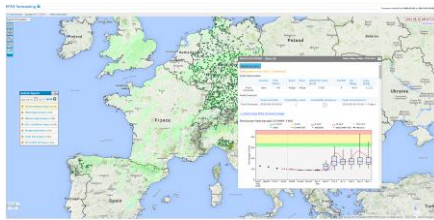
On-demand GI supporting prevention, preparedness, disaster risk reduction, reconstruction, recovery

- **Need:** lack of coherent flood information and coordination in Europe for trans-national flood events, e.g. during Elbe and Danube floods in 2002

- **Aim: European Flood Awareness System** (EFAS) provides added value, trans-national flood early warning information to EC civil protection and national authorities.

- **JRC :** started development in 2003 - since September 2012 fully operational as part of the Copernicus Emergency Management Service

- Users: European civil protection, national hydro-met authorities

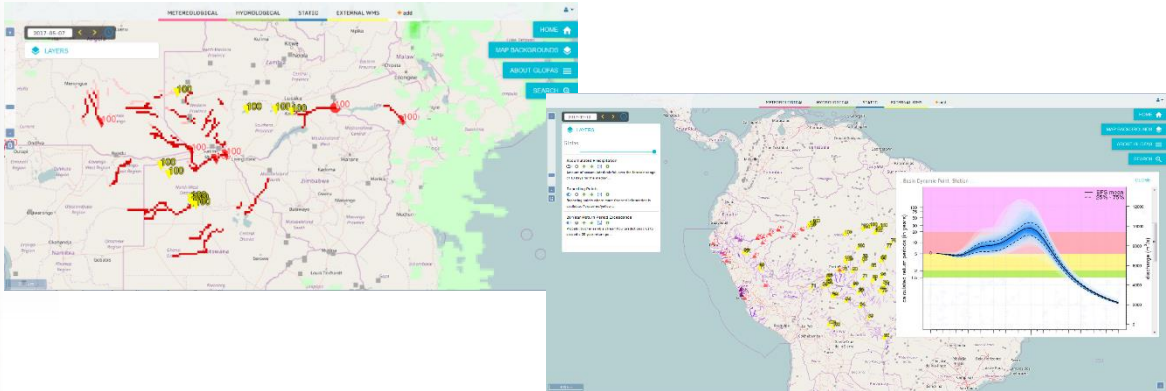- Expansion to global scale => **Global Flood Awareness System** (GloFAS)

Emergency Management

Why: To provide complementary, added value flood forecast information
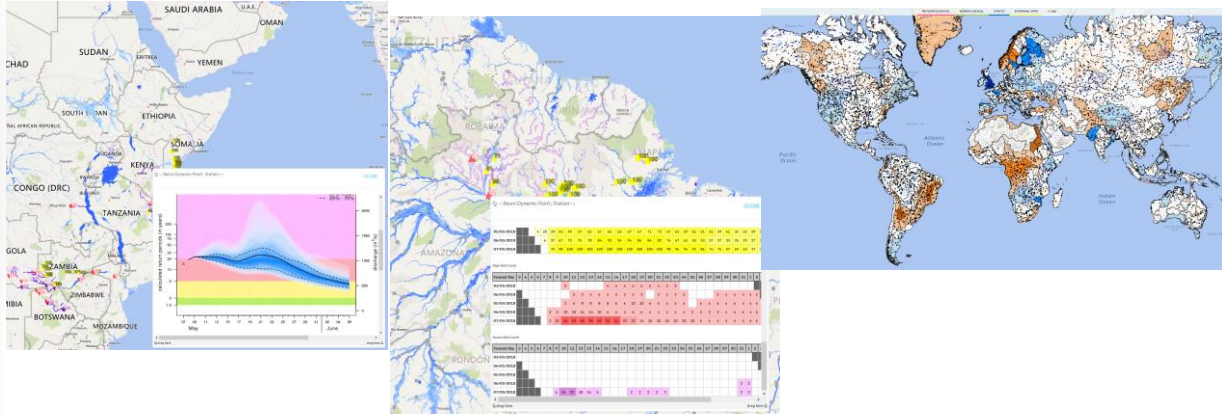
Users: Development agencies, international aid organizations, DG ECHO ERCC, national hydro-met services, private sector (e.g. insurance). Currently more than 1500 registered users.

How: Joint development of EC JRC, ECMWF as well as national hydro-met services and universities. Fully operational since 2018 as part of the Copernicus Emergency Management Service

Emergency Management

- ➢ Flood forecasts up to 30 days
- ➢ Flood forecast related products (persistence diagrams/ return period threshold exceedances/ return period hydrographs)
- ➢ Seasonal outlook
- ➢ Flood hazard maps
  - ➢ Real time linking between forecast and hazard maps inc. impact estimates (under development)
- ➢ Interactive forecast viewer
  - ➢ Possibility to integrate external WMS
- ➢ Data access & service: WMS-T / WCS (foreseen) / specific ftp data transfer upon request

Emergency Management

COPERNICUS
Emergency Management Service

European Commission

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Europe's eyes on Earth

LATEST NEWS : 2018-04-24 | The Copernicus Emergency Management Service Monitors Floods in Dalarna, Sweden

Copernicus Emergency Management Service

Copernicus Emergency Management Service (Copernicus EMS) provides information for emergency response in relation to different types of disasters, including meteorological hazards, geophysical hazards, deliberate and accidental man-made disasters and other humanitarian disasters as well as prevention, preparedness, response and recovery activities. The Copernicus EMS is composed of an on-demand mapping component including the provision of rapid maps for emergency response and risk & recovery maps for prevention and planning and of the early warning and monitoring component which includes systems for floods, droughts, and forest fires:

Copernicus EMS - Mapping

The Copernicus EMS - Mapping addresses, with worldwide coverage, a wide range of emergency situations resulting from natural or man-made disasters. Satellite imagery is used as the main datasource. The service covers in particular:

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

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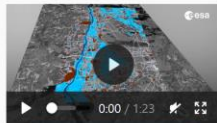
Copernicus EMS - Mapping

European & Global Flood Awareness System

The European and Global Flood Awareness Systems (EFAS & GloFAS) provide complementary flood forecast information to relevant stakeholders supporting flood risk management at national, regional and global level.

The forecasts are derived using in-situ and satellite data as well as hydro-meteorological models and aim at facilitating users with a wide range of added value (medium-range lead time, probabilistic, river basin wide, flash flood indicators etc.) flood forecast products.

EFAS   GloFAS

European Forest Fire Information System (EFFIS) and Global Wildfire Information System (GWIS)

The European Forest Fire Information System (EFFIS) monitors forest fire activity in near-real time and archives historical information on forests fires in Europe, Middle East and North Africa. The Global Wildfire Information System (GWIS) is a joint initiative of the Copernicus EMS and the Group on Earth Observations (GEO) work programs aiming at monitoring wildfire occurrence and impact at the global level. Both, EFFIS & GWIS, support wildfire management at national, regional and global levels.

EFFIS and GWIS Systems

Drought Observatory

The EMS Drought Observatory (DO) provides drought-relevant information and early-warnings for Europe (EDO) and the globe (GDO). Short analytical reports (Drought News) are published in case of imminent droughts.

EDO and GDO build on open web services and connect drought data providers and users from global to regional levels.

EDO   GDO

Find out more:

http://emergency.copernicus.eu/

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