

Copernicus Information & Training Session



Copernicus Emergency Management Service

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Copernicus
Europe's eyes on Earth

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 Copernicus EU  www.copernicus.eu

Space

Outline of the Presentation

EMS Service Overview

Copernicus EMS – Mapping

Rapid Mapping Domain

Risk & Recovery Domain

Copernicus EMS – Early Warning

EFAS Actors & Services

EFFIS Actors & Services

Service & Overview

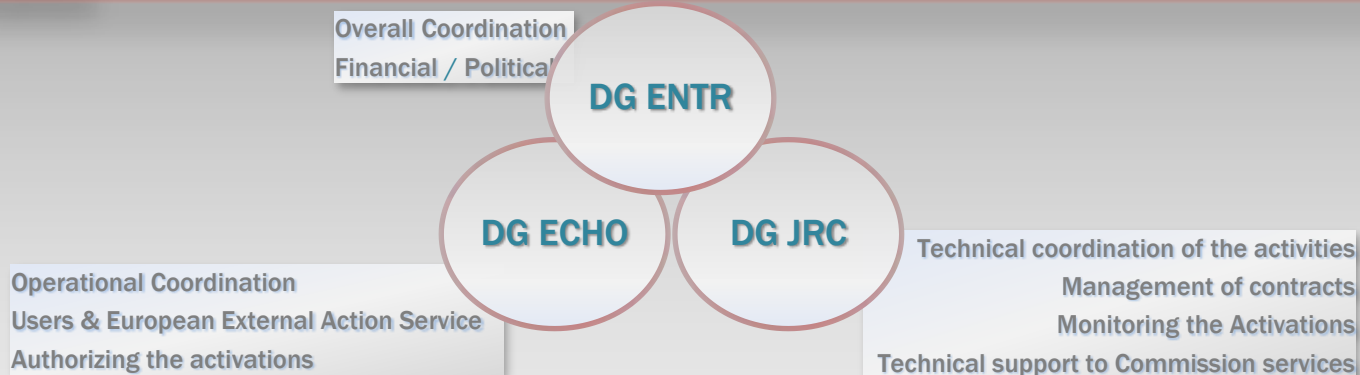
Emergency Management Service - EMS

- ❑ COPERNICUS service; Atmosphere, Marine, Land & Climate Change monitoring, **Emergency Management & Security**
- ❑ Operational since April 2012
- ❑ Continuation: full operational service [Copernicus Regulation OM(2013)0312-2013/0164(COD)]

EMS implementation: 4 separate service modules



EMS Coordination



EMS Mapping - Application Domain

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COPERNICUS EMS - Mapping

- Worldwide coverage
- Satellite imagery is used as the main data source
- Wide range of **Emergency Situations** resulting from natural or man-made disasters



Support

- Emergency management - **Response** activities immediately following an emergency event
- Recovery, Reconstruction, disaster Risk Reduction, Preparedness & Prevention**



EMS Mapping - Application Domain

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☐ COPERNICUS EMS – Early Warning

- ☐ European coverage
- ☐ monitoring and forecasts (10/ 6 days)

European Flood Awareness System - EFAS

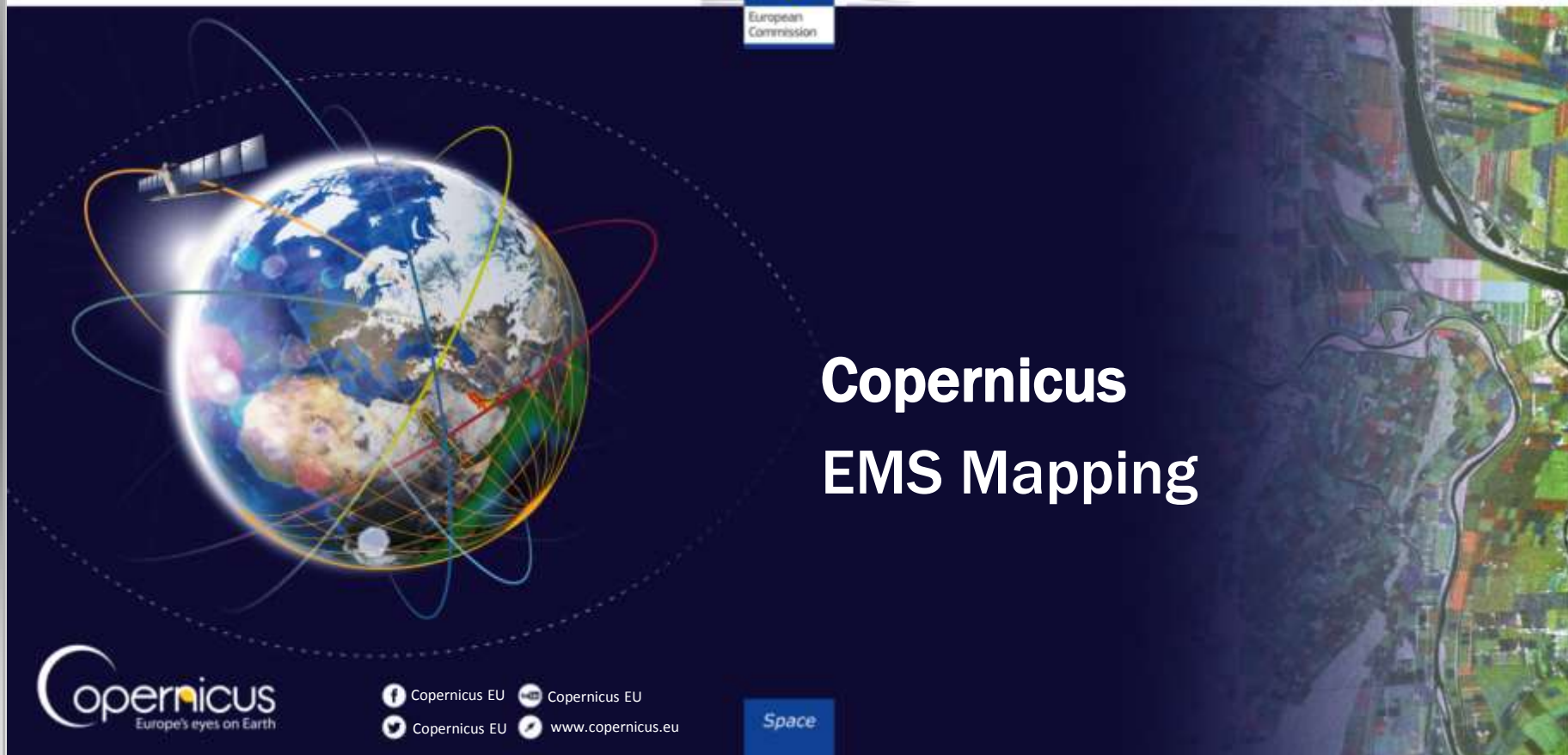
European Forest Fire Information System - EFFIS

The screenshot shows the Copernicus Emergency Management Service website. At the top, there are logos for the European Commission and Copernicus. The main heading is "Copernicus Emergency Management Service" with the URL emergency.copernicus.eu overlaid in blue. Below the heading, a paragraph describes the 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. Three modules constitute the Copernicus EMS:"

Three modules are highlighted in separate boxes:

- Copernicus EMS - Mapping:** Describes worldwide coverage of emergency situations. Includes a list of disaster types: Floods, Severe Storms, Tsunamis, Volcanic eruptions, Earthquakes, Technological disasters, Landslides, and Humanitarian crises. A satellite image of a flooded area is shown.
- European Flood Awareness System:** Describes the first operational system for monitoring and forecasting flood events across Europe. Includes a screenshot of the EFAS web interface.
- European Forest Fire Information System:** Describes specific applications available in EFFIS, including "Current Situation" (latest data on fire season) and "Fire Alerts" (news on wildfires). Includes a screenshot of the EFFIS web interface.

Copernicus Information & Training Session



EMS Mapping - Actors

Products
Download
Feedback

Authorized Users
Civil Protection Authorities
Other National Focal Points

Activation Request

<http://emergency.copernicus.eu/mapping/list-of-components/EMSR180>

EMSR180: Fires on Thassos Island

Event Time (UTC): 2016-09-10 07:00
 Event Time (LOC): 2016-09-10 10:00
 Event Type: Forest fire, wild fire
 Activation Time (UTC): 2016-09-10 14:16
 Reference image produced: 0
 Delineation image produced: 0
 Grading image produced: 0
 Activation Status: Closed
 Affected Countries/Territories:
 [X] Hellenic Republic
 Area Description: Island of Thassos, Greece
 Authorized User:
 Greece/General secretariat for Civil protection -
 Directorate for Emergency Planning and Response
 Activation Reason:
 On Saturday 10-09-2016 morning, four fires that started on the island of Thassos (IG Greece) and continue to burn for a third day. The fires were probably caused by strong lightning activity in the island that was not followed by rain (Dry storm). Villages have been evacuated.
 Requested Product: Delineation and monitoring



echo-ercc@ec.europa.eu
Emergency Response
Coordination Centre
24/7

DG JRC
Technical Supervision
Quality – Specifications - Timeliness

Activation Approval

European Space Agency
Prompt Support
EO Data Provision

Data / Services Providers

Publication of Results

EMS Mapping - Who can Use the Service

Authorized Users

Service Trigger

- Service Request Form (SRF) **directly** to the European Response Coordination Centre (ERCC)
 - National Focal Points (NFPs); EU Member States & countries participating in the European Civil Protection Mechanism
 - EC Services (DGs) and
 - Situation Room of the European External Action Service

Associated Users

Service Trigger

- Through the Authorized Users**
 - Local, Regional and Other public entities
 - International Governmental Organisations
 - National & International Non-Governmental Organisations
 - Entities and Institutions within the EEAS sphere; EU Delegations, INTCEN, EU Satellite Centre

General Public Users

No Service Trigger

- Information of activation requests through the web portal

EMS Mapping - Service Request

Service Request Form/ SRF

Service Request Form (SRF) Copernicus EMS Risk and Recovery Mapping

To be sent to the ERCC (Mon-Fri 9-17h) Email: echo-ercc@ec.europa.eu Tel: +32-2-29-21112

Please provide the information requested in the areas marked in blue. For more information on the service and a printable/editable version of this form, please refer to <http://emergency.copernicus.eu>.

Activation details

Activating institution

National Focal Point EC Services EEAS

Organisation Name:

Contact Person:

Phone: (Office) Mobile:

E-mail: Fax:

Date: / / (dd/mm/yyyy)

Activated on behalf of (if applicable)

Activation details

Region/district, country:

Brief description of the activation: (event type, affected population, etc.)

Intended use of the maps to be produced:

Product Details

Map types

Please select the product type and provide a brief description/name (e.g. Earthquake hazard analysis for Tehran; Flood risk analysis for population and assets in Senegal; Evacuation plan for Haiti, etc.)

Type	Short description/name
<input type="checkbox"/> Reference map:	
<input type="checkbox"/> Pre-disaster situation map	
<input type="checkbox"/> Post-disaster situation map	

Copernicus EMS Risk & Recovery Mapping Service Request Form (SRF)

Disaster

Date/ Area

Information Content

Scale/ Format

Service Request Form (SRF) Copernicus EMS Rapid Mapping

To be sent to the ERCC (24/365 availability) Email: echo-ercc@ec.europa.eu Tel: +32-2-29-21112

The service request must be communicated by email AND followed by a phone call to the ERCC

Please provide the information requested in the areas marked in blue. At least the information in sections "Activation Details" (to be provided once per activation) and "Details for Area of Interest" (to be provided for each Area of Interest) is required to efficiently process your request. The earlier a request form is submitted, the sooner satellites can be tasked for image acquisition. For acronyms see page 4.

For more information on the service and a printable/editable version of this form, please refer to <http://emergency.copernicus.eu>. In case you need help, the ERCC will support you.

Activation details (provide this sheet once per activation)

Activating institution

National Focal Point EC Services EEAS

Organisation Name:

Contact Person:

Phone: (Office) Mobile:

E-mail: Fax:

Activation date: / / (dd/mm/yyyy)

Activated on behalf of (optional):

Details on the disaster

Disaster type	Time and location
<input type="checkbox"/> Fire (forest or wild fire)	Date (dd/mm/yyyy): / /
<input type="checkbox"/> Flood	Time (UTC): -
<input type="checkbox"/> Earthquake	Country:
<input type="checkbox"/> Industrial accident	Region or District:
<input type="checkbox"/> Wind storm	GLIDE number (if available):
<input type="checkbox"/> Other (Please specify):	See http://www.glide.number.net

Additional information (e.g. extent, damage, affected population, end users, links to media or situation reports):

Triggering other services (International Charter, national services, UNOSAT, Sentinel Asia, etc.)

The user triggered other services No Yes if yes, please specify:

The user plans to trigger other services No Yes if yes, please specify:

Copernicus EMS Rapid Mapping Service Request Form (SRF)

<http://emergency.copernicus.eu/mapping/ems/how-use-service>

EMS Mapping - Acts & Facts

Uninterrupted Service (almost five years)

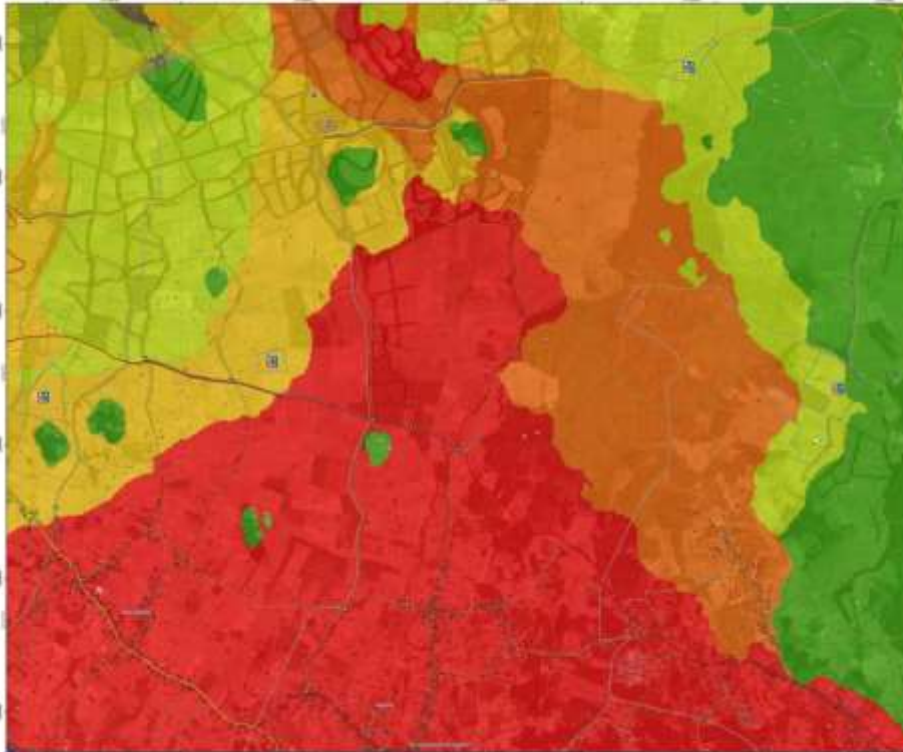
- On-demand and fast provision (within hours or days) of geospatial information
 - RM** - within hours or (few) days
 - RRM** - within twenty days (after delivery of EO data): Accurate Analysis & Modelling

- Worldwide Coverage
 - More than 40 worldwide Users organizations
 - More than 50 different Countries

- Intensive Production
 - Thousands (~ 10.000) of maps delivered to the Users (2.000 – RM / 8.000 –RRM)
 - More than 200 activations (185 – RM / 35 –RRM)

EMS Mapping - Thematic Products

THEMATIC MAPS - Standardized format



Thessaly - Portugal
1:250,000
Copernicus
Logo

- Map Title**
Information content/ Location/ date
- Map Index**
- Cartographic Information**
Scale/ Projection System
- Map Legend**
- Statistical Information**
Areas, Assets, etc
- Users/ Usage Information**
- Data Sources**
Satellite/ Other
- Publication/ Framework**
- Methodological Approach**

GEO INFORMATION LAYERS & DATA BASES

TECHNICAL INFORMATION – REPORTS & METADATA

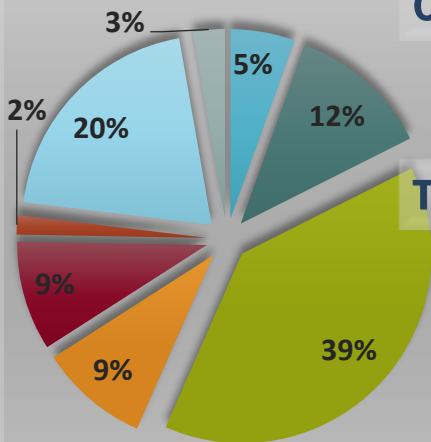
EMS Mapping - Provided Services/ Products

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RAPID MAPPING

On-demand and fast provision (hours-days) of geospatial information

Rapid Mapping activations as per September 2016



Two Service Levels

SL1 : 9 h to 12 h after the imagery delivery & quality approval

SL5 : within 5 working days

Three Types of Products

- EARTHQUAKE
- FIRE
- FLOOD
- WIND STORM
- OTHER - landslides
- OTHER - volcano
- OTHER - humanitarian

Reference Maps

RAPID MAPPING

- Updated knowledge on the territory and assets – affected area
- Data prior to the disaster; pre-event image captured as close as possible prior to the event
- Content: topographic features, exposed assets, other available information



http://emergency.copernicus.eu/mapping/system/files/components/EMSR185_11JEREMIE_REFERENCE_OVERVIEW_v1_300dpi.jpg

<http://emergency.copernicus.eu/mapping/ems/ems-rapid-mapping-products>

Delineation Maps

RAPID MAPPING

- Assessment of the event extent (and of its evolution if requested)
- Derived from satellite post-disaster images.
- They vary depending on the disaster type and the delineation of the areas impacted by the disaster; burnt area, flooded area, earthquake impact area



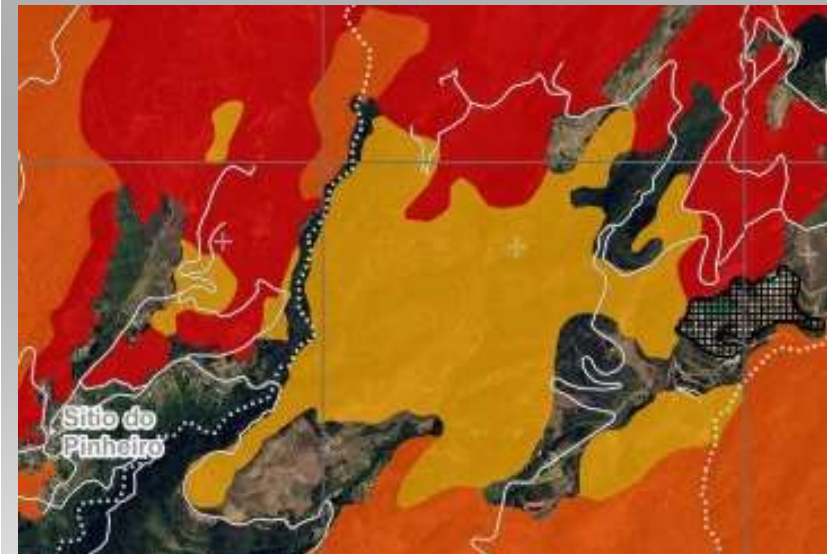
http://emergency.copernicus.eu/mapping/system/files/components/EMS_R180_01THASSOS_DELINEATION_OVERVIEW-MONIT01_v1_300dpi.jpg

<http://emergency.copernicus.eu/mapping/ems/ems-rapid-mapping-products>

Grading Maps

RAPID MAPPING

- Assessment of the damage grade (and of its evolution if requested): They include **extent, magnitude or damage grades** specific to each disaster type.
- Derived from satellite post-event images
- They may also provide relevant and up-to-date information, specific to affected population & assets



http://emergency.copernicus.eu/mapping/system/files/components/EMSR175_01CALHETA_GRADING_OVERVIEW-MONIT02_v1_300dpi.jpg

<http://emergency.copernicus.eu/mapping/ems/ems-rapid-mapping-products>

RISK & RECOVERY MAPPING

Eol beginning 2016

*Disaster management
global stakeholders*

Civil Protection

*Members of NGO's
(humanitarian)*

On-demand provision (month) of geospatial information

Emergency management not related to the immediate response phase

Prevention

Preparedness

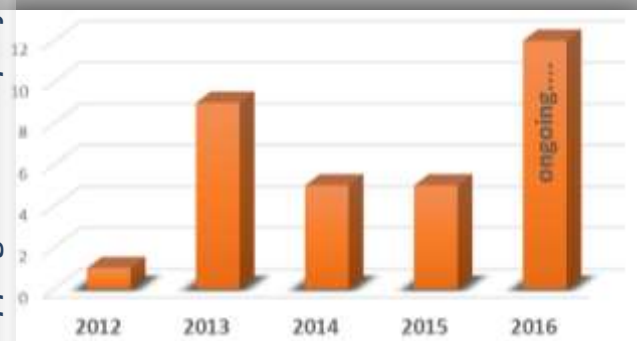
Disaster Risk Reduction

Recovery

Wide Variety of situations to be addressed

Three Types of Products

R&R Mapping activations per year

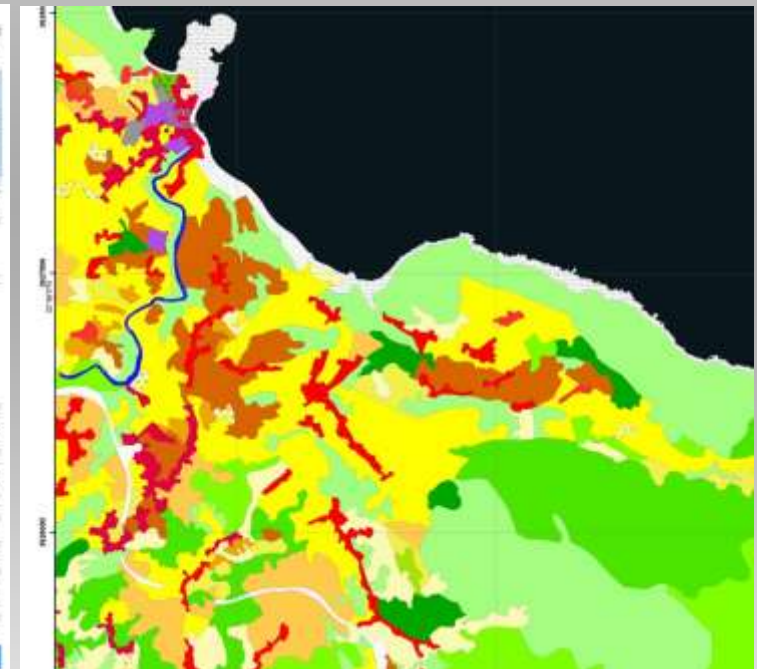
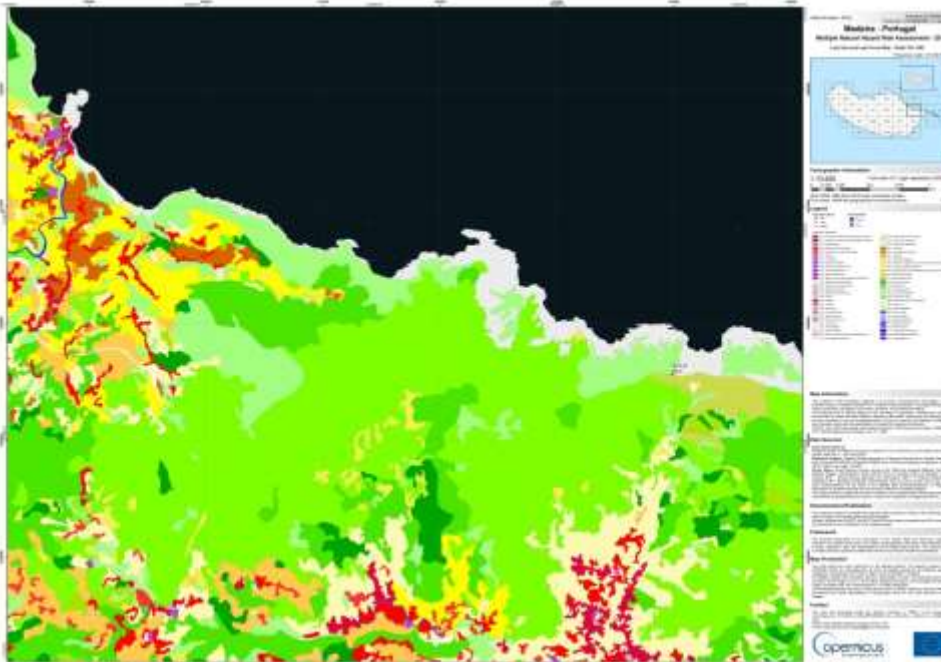


*Greece, Portugal,
Spain, Poland
Austria, Germany,
Bulgaria, Hungary &
DG JRC, DG ECHO*

Reference Maps

RISK & RECOVERY MAPPING

- ❑ Comprehensive and Updated knowledge on the territory and relevant assets
- ❑ Disaster Risk Reduction Context - Content: topographic features, assets, LU/LC, etc



<http://emergency.copernicus.eu/mapping/list-of-components/EMSNO20/LULC/ALL>

<http://emergency.copernicus.eu/mapping/ems/ems-risk-and-recovery-mapping-products>

Pre-disaster situation Maps

RISK & RECOVERY MAPPING

- Relevant and up-to-date thematic information to assist / focus planning for contingencies on areas vulnerable to hazards, aiming to minimise loss of life and damage
- Hazard, Exposure, Vulnerability, Risk status, Evacuation plans, Modelling scenarios

Hazard - UNISDR 2009

A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. In technical settings, hazards are described quantitatively by the likely frequency of occurrence of different intensities for different areas, as determined from historical data or scientific analysis

Exposure - UNISDR 2009

People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses. it susceptible to the damaging effects of a hazard (distance with reference to Hazard zone & topography)

Vulnerability - UNISDR 2009

The characteristics and circumstances of a community, system or asset that makes it susceptible to the damaging effects of a hazard (accounts for specific parameters with respect to the assets' type)

Risk - ISO 31010

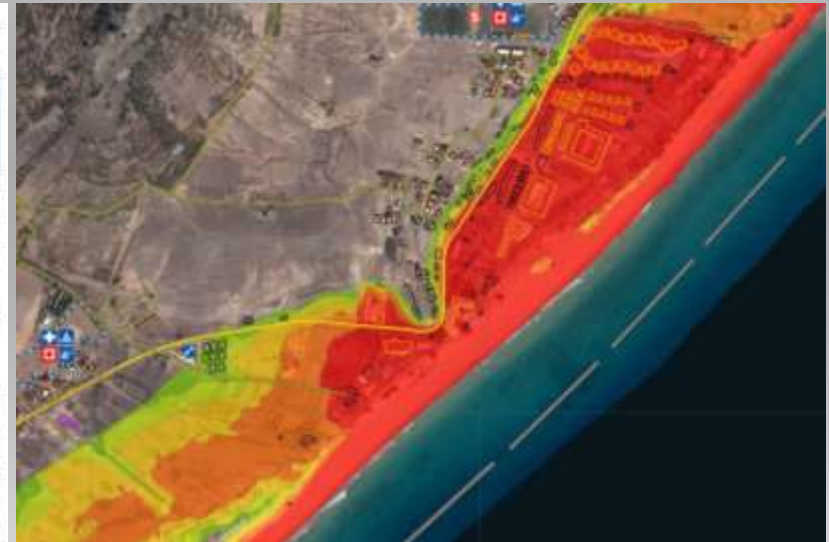
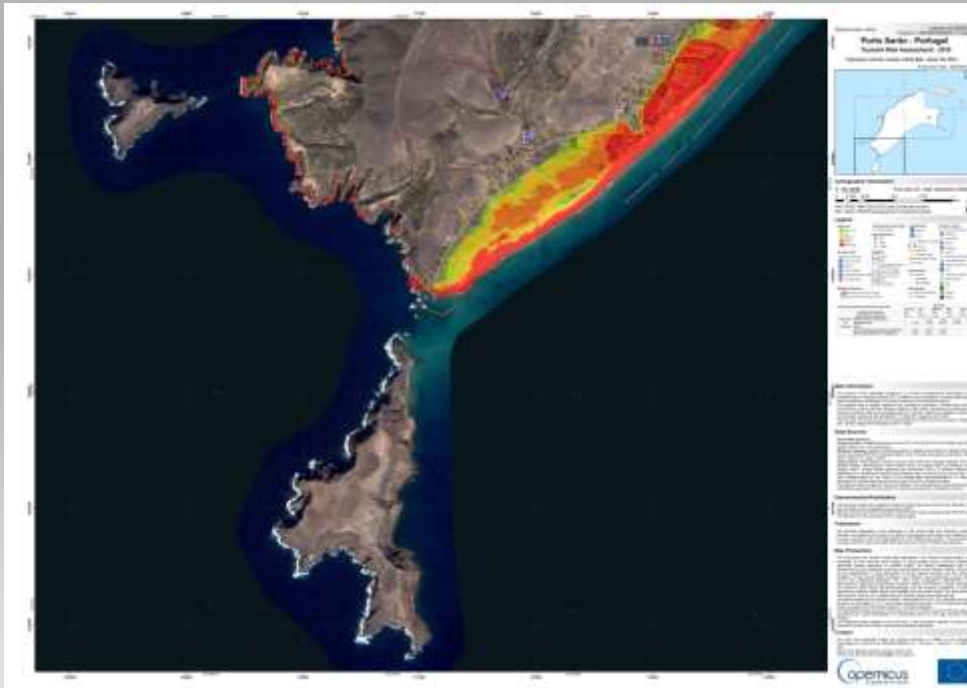
Risk is the combination of the consequences of an event (hazard) and the associated likelihood/probability of its occurrence (Convolution of Hazard and Vulnerability of the exposed assets/ population)

<http://emergency.copernicus.eu/mapping/ems/ems-risk-and-recovery-mapping-products>

Pre-disaster situation Maps

RISK & RECOVERY MAPPING

- ❑ Relevant and up-to-date thematic information to assist / focus planning for contingencies on areas vulnerable to hazards, aiming to minimise loss of life and damage
- ❑ Hazard, Exposure, Vulnerability, Risk status, Evacuation plans, Modelling scenarios



http://emergency.copernicus.eu/mapping/system/files/components/EMSN020_02PORTOSANTO_04TSUNAMIRISK00POPEENVASSRISK_DET_AILS-TILE2034_v1_300dpi.jpg

<http://emergency.copernicus.eu/mapping/ems/ems-risk-and-recovery-mapping-products>

Post-disaster situation Maps

RISK & RECOVERY MAPPING

- Relevant and up-to-date thematic information for the needs of reconstruction planning
- Progress monitoring, mapping long-term impact
- Post disaster needs assessment, recovery plans, reconstruction/rehabilitation monitoring, Internally Displaced Persons (IDP) monitoring, Refugee Camp monitoring



http://emergency.copernicus.eu/mapping/system/files/components/EMSN022_01VRATSA_02FL201403WPERSISTPRE_DETAILS-TILE1002_v1_300dpi.jpg

<http://emergency.copernicus.eu/mapping/ems/ems-risk-and-recovery-mapping-products>

COPERNICUS EMS –RRM : Azores Archipelagos case

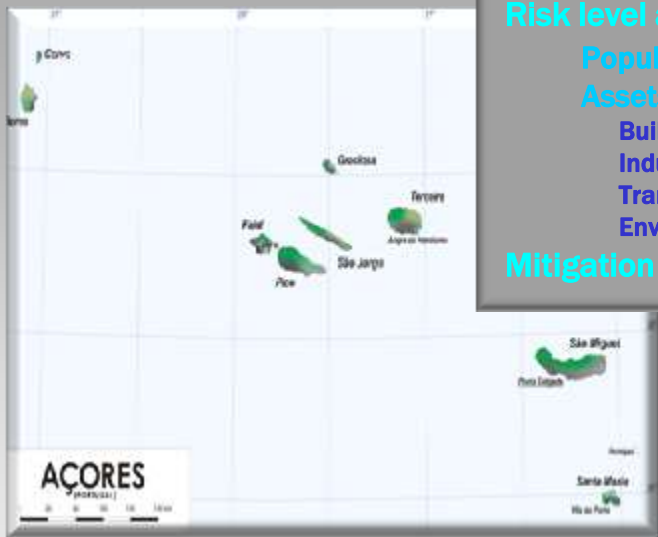
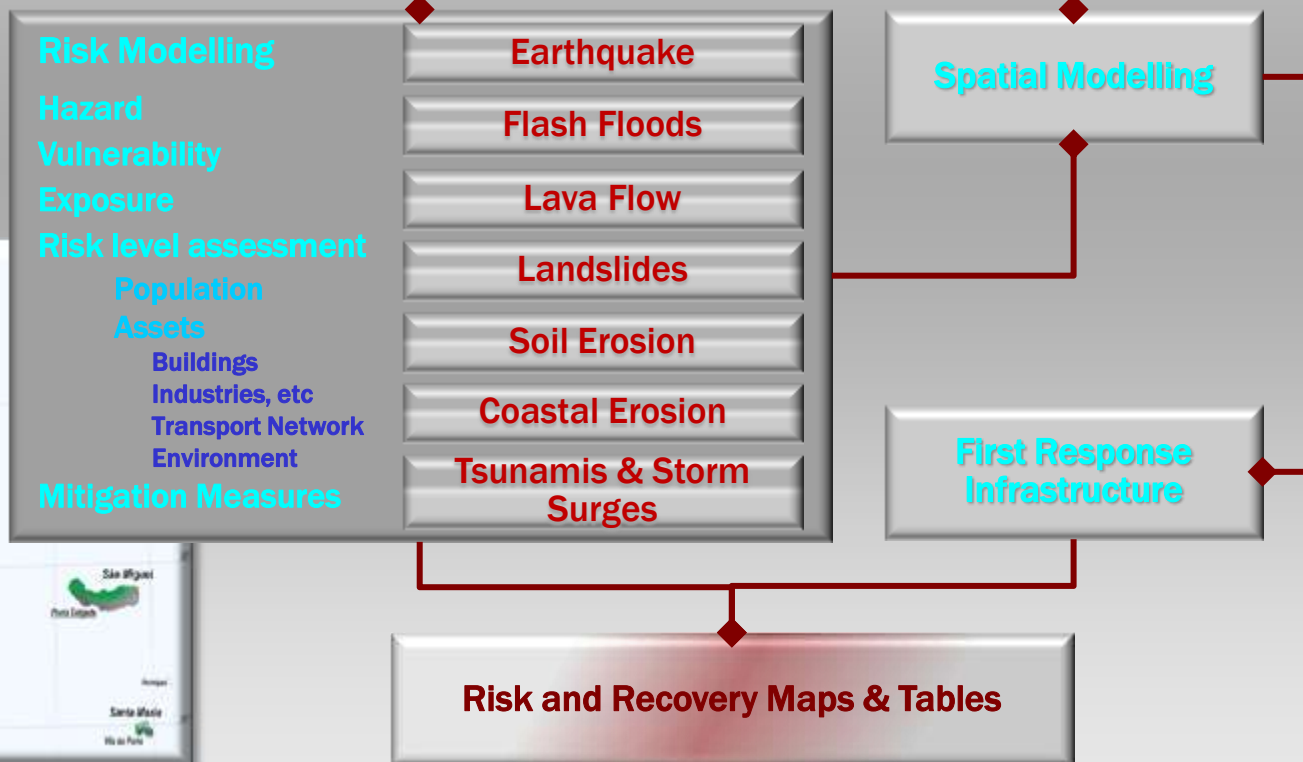
Activation triggered by three regional Authorities - Pre-disaster activities planning and disaster management

Serviço Regional Proteção Civil e Bombeiros dos Açores

Direção Regional Obras Públicas e Comunicações

Centro de Informação e Vigilância Sismovulcânica dos Açores

Establishment of the
Geo-spatial
Data Base

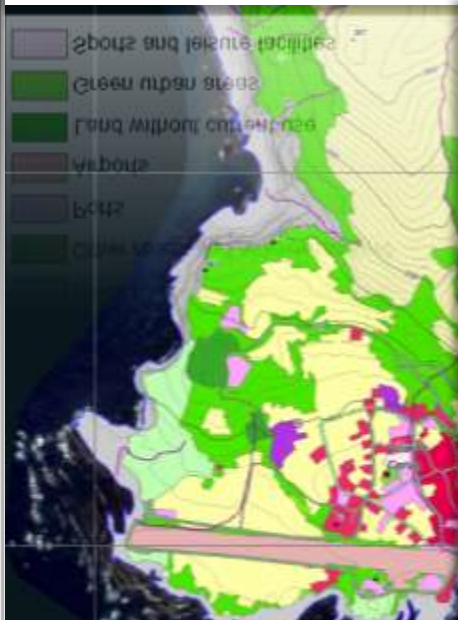


COPERNICUS EMS –RRM : Azores Archipelagos case

Land Use - Land Cover

- | | |
|--|-------------------------------------|
| Continuous Urban Fabric (P.B.F. > 80%) | Arable land |
| Isolated Structures | Pastures |
| Commercial, Public & Private Services | Broad-leaved forest |
| Industry & Utilities | Coniferous forest |
| Main roads and associated land | Shrubs and/or herbaceous vegetation |
| Local roads and associated land | Natural grassland |
| Other roads and associated land | Bare rock |
| Ports | Beaches, dunes and sand planes |
| Airports | Sparsely vegetated areas |
| Land without current use | Inland wetlands |
| Green urban areas | Lakes |
| Sports and leisure facilities | Water reservoirs |

Thematic Layers / nomenclature



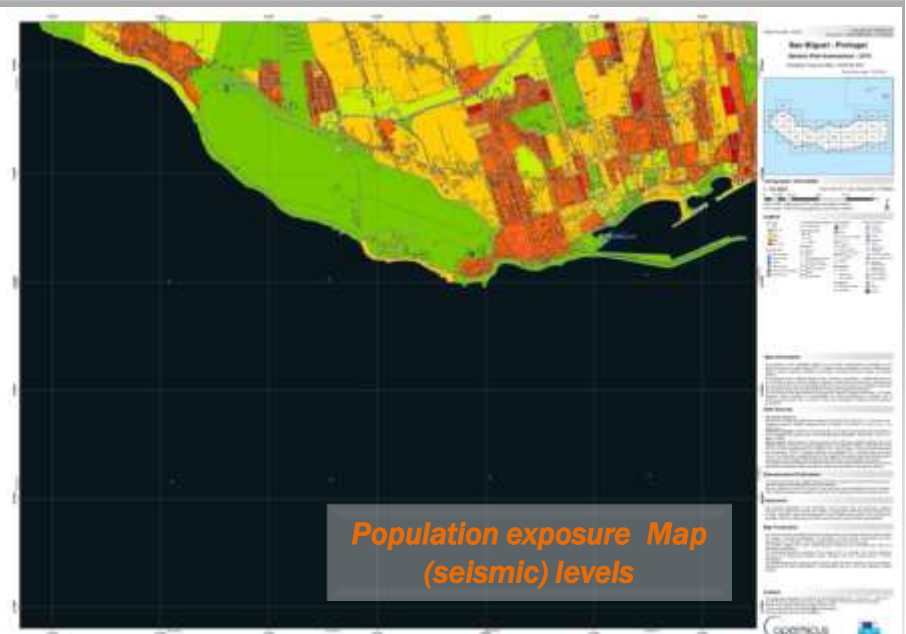
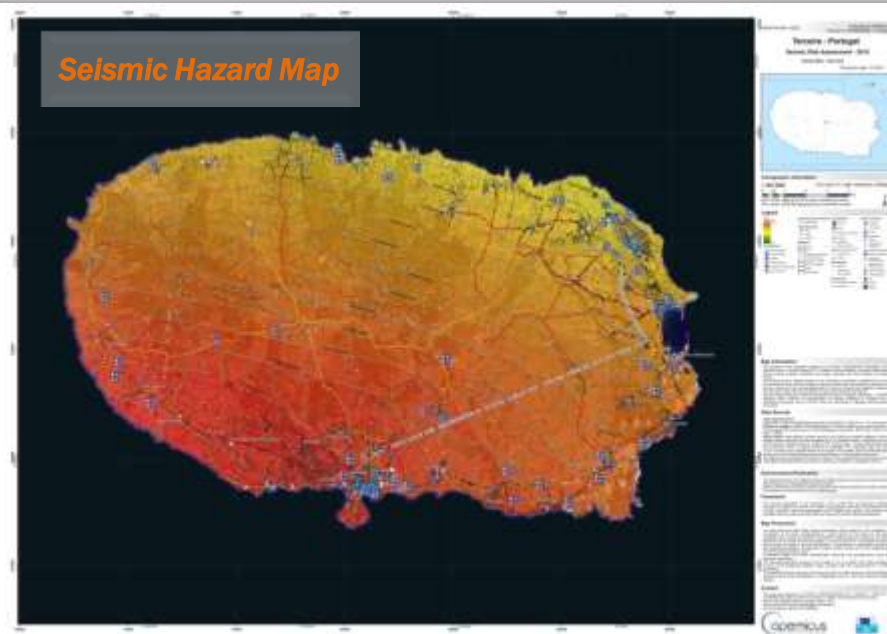
- | | | | |
|---|--|--|--|
| <p>Risk Level</p> <ul style="list-style-type: none"> Very Low Low Medium High Very High | <p>Administrative boundaries</p> <ul style="list-style-type: none"> Municipality <p>Populated places</p> <ul style="list-style-type: none"> City Town Village <p>Buildings</p> <ul style="list-style-type: none"> Airport Port Commercial, Public & Private Services Industry & Utilities Place of worship Other Unclassified | <p>Transportation</p> <ul style="list-style-type: none"> Airport Port Bridge & overpass Tunnel Highway Primary Road Secondary Road Local Road Other <p>Physiography</p> <ul style="list-style-type: none"> - 300 - Primary — Secondary ▲ Spot heights <p>Hydrography</p> <ul style="list-style-type: none"> Rivers & streams Coastline | <p>Points of Interest</p> <ul style="list-style-type: none"> Hospital Fire station Police Education Sports Government Facilities Industrial facilities Water infrastructure Electricity infrastructure Wave power infrastructure Power stations Wind turbines Oil Marina Military |
| <p>First Aid Areas</p> <ul style="list-style-type: none"> First Aid Areas Camp location Shelter Field hospital Helicopter landing spot Gasoline tank | <p>Mitigation Measures</p> <ul style="list-style-type: none"> Breakwaters, seawalls, groynes Structural reinforcement of assets | | |

COPERNICUS EMS –RRM : Azores Archipelagos case

Pre-disaster situation Maps

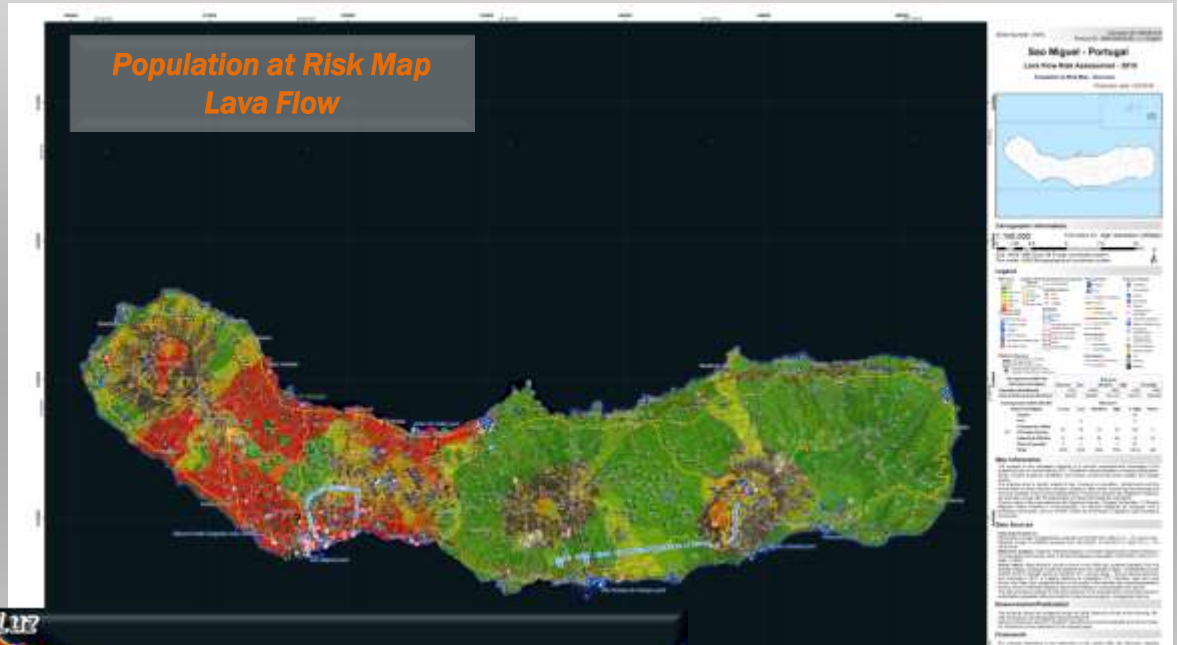
- ❑ Evaluation of possible damages (vulnerability of assets, areas, etc)
- ❑ First response conditions (access roads, evacuation possibilities, locations of first aid and shelters, etc)
- ❑ Mitigation measures
- ❑ Objective and comprehensive assessment of new (secondary) risks (landslides, flash floods, etc)

Towards in minimizing the impact of future events through undertaking the necessary preparedness measures with reference to: Human Life, EMS Infrastructure, Damage Extent



COPERNICUS EMS –RRM : Azores Archipelagos case

Pre-disaster situation Maps



COPERNICUS EMS -RRM : Azores Archipelagos case

Integration of Risk Data

- First Aid Areas
- Camp location
- Shelter
- Field hospital
- Helicopter landing spot
- Gasoline tank

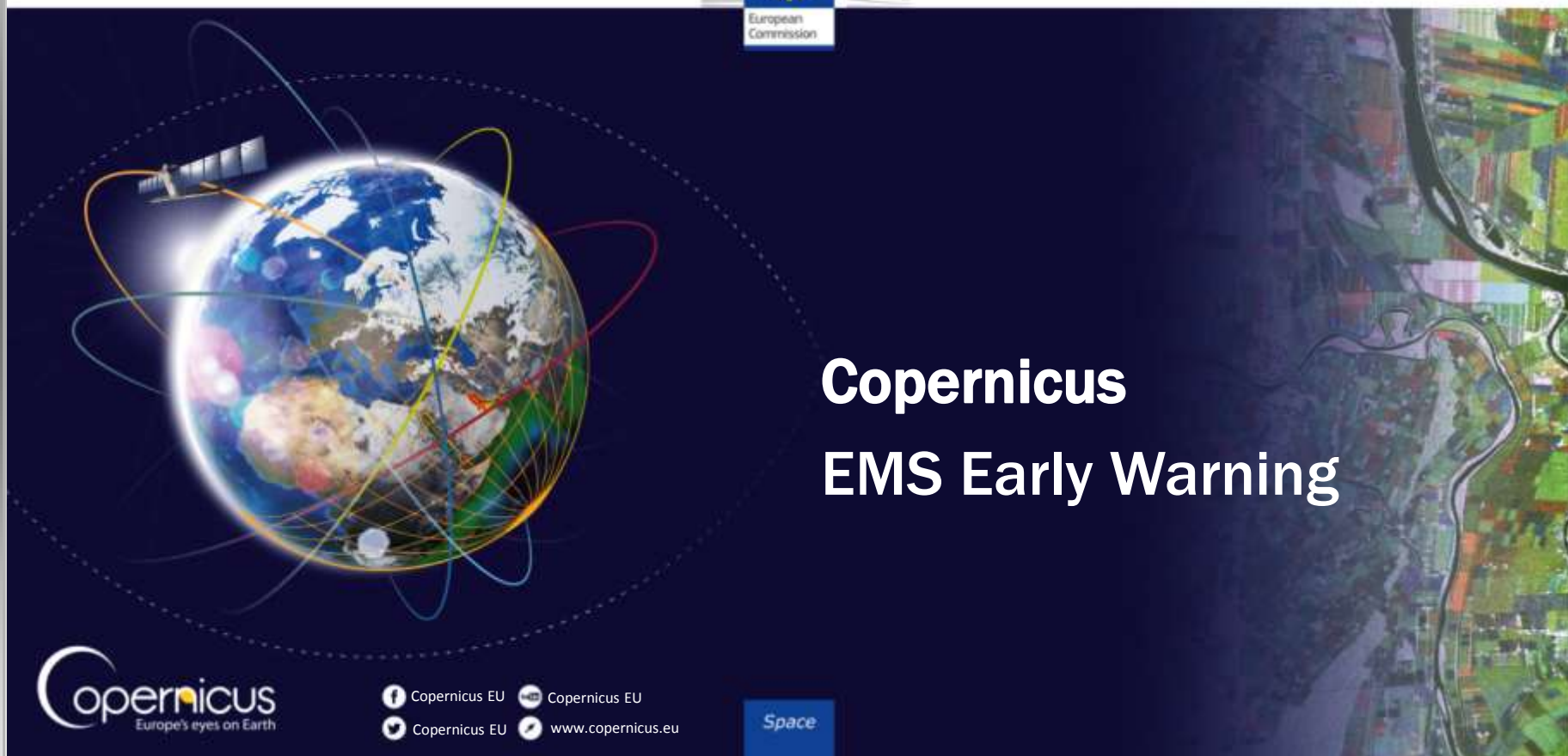


Response Infrastructure Hierarchy (efficiency)

Roads Disruption Vulnerability

- Very Low
- Low
- Medium
- High
- Very High

Copernicus Information & Training Session



Copernicus EMS Early Warning



- Copernicus EU
- Copernicus EU
- Copernicus EU
- www.copernicus.eu

Space

EMS Early Warning - Application Domain

European Flood Awareness System

EFAS

EFAS provides:

- Added value information** to the national hydrological services
- Unique Overview on the **current** and **forecast flood** situation to the European Commission's Emergency Response Coordination Centre (ERCC) of DG ECHO
- Pan-European overview maps** of flood probabilities up to 10 days in advance
- Detailed forecasts** at stations where the national services are providing real time data

EFAS information can contribute to timely activate of the EMS – (RAPID) Mapping for an improved flood extent monitoring

54 national/regional authorities are part of the EFAS partners network

www.efas.eu/partners-list.html

European Forest Fire Information System

EFFIS

Modular web geographic information system: near real-time and historical information on forest fires and forest fire regimes in the European, Middle Eastern and North African regions

Fire monitoring: full fire cycle, providing information on the pre-fire conditions and assessing post-fire damages (fire prevention, preparedness, fire fighting and post-fire operations)

Established by the European Commission (EC) in collaboration with the national fire administrations to :

- Support the services in charge of the protection of forests against fires in the EU & neighbouring countries
- Provide the EC services and the European Parliament with harmonized information on forest fires in Europe

Supported by an Expert Group

43 countries in Europe, Middle East and North Africa

EMS Early Warning – EFAS

EFAS Operations

Meteorological data collection Centre
Historic and real-time data across Europe



Hydrological data collection Centre
Historic and real-time discharge and water level data



Computational Centre
Forecasts & post-processing calculations

web interface of the EFAS-Information System



Dissemination Centre



EFAS results Analysis; daily basis Information to the EFAS partners
User meetings and training

European Flood Awareness System EFAS



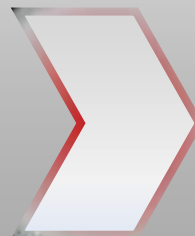
<https://www.efas.eu/>

EMS Early Warning – EFAS

Dissemination
Centre

1- Daily analysis
Full information

2 - Notification



Information Flow & Decision Making

EFAS
Partner

Use **1** or
wait for **2**

After **2** Further
Investigation

EFAS info usage
Non Compulsory



EMS Early Warning – EFAS

Notifications



Formal Notification

Catchment area > 2000 km²
Event > 48 h in advance
Forecasts parameters exceeding thresholds



Informal Notification

Catchment size, forecast parameters related criteria **not met**
Officer in Duty evaluation
At least one of multiple forecasts indicates **severe** flooding risk



Flash Flood Notification

The probability of exceeding a 20 year return period magnitude of the surface runoff index forecasted 35%
and the forecasted start of the event is < 72 hours



ERCC overview

Daily overview sent to the ERCC
 information on ongoing floods in Europe as reported by the national services and by EFAS

EMS Early Warning – EFAS

Information Layers

Flood summary layers (3/11)

Current & Past floods situation: active information on alert areas, flood forecasting, flood probability and real time hydrographs

Hydrological layers (0/6)

Maps of the individual forecasts based on different meteorological inputs such as the ensemble for ECMWF and the COSMO consortium and the deterministic forecast from the German Weather office and the ECMWF

Meteorological layers (0/8)

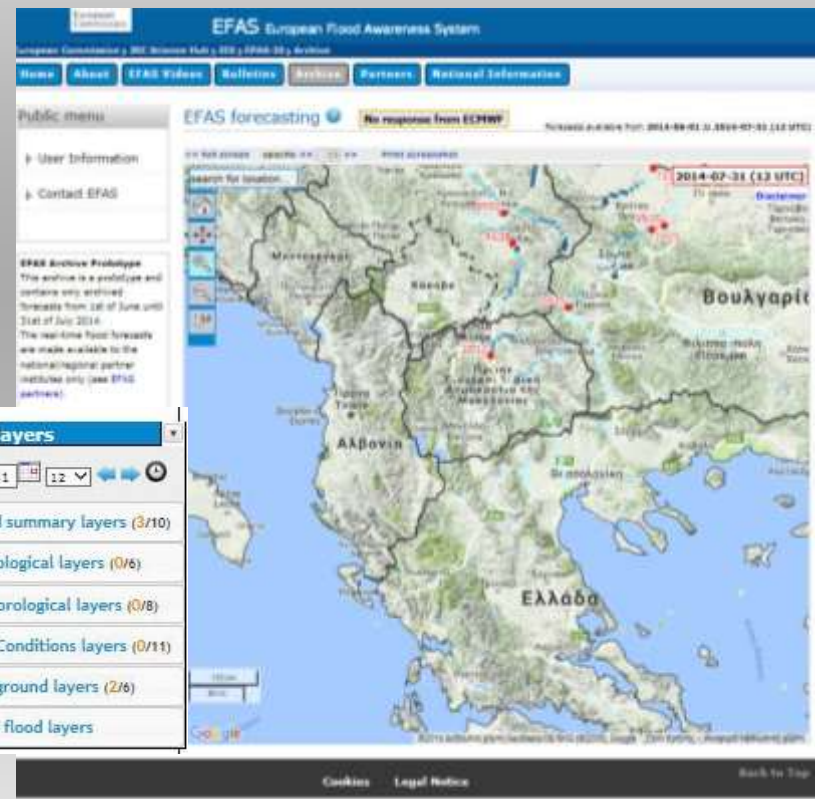
Accumulated rainfall & EFAS forecast
 Deterministic medium-range forecasts and Ensemble forecast for flood warning beyond 48 hours

Init. Conditions layers (0/11)

Maps such as the simulated soil moisture or snow water equivalent and associated anomalies, which are important background information when analysing flood forecast

Flash flood layers (0/2)

Flash flood warnings are generated using the methodology of the Enhanced Runoff Index based on Climatology

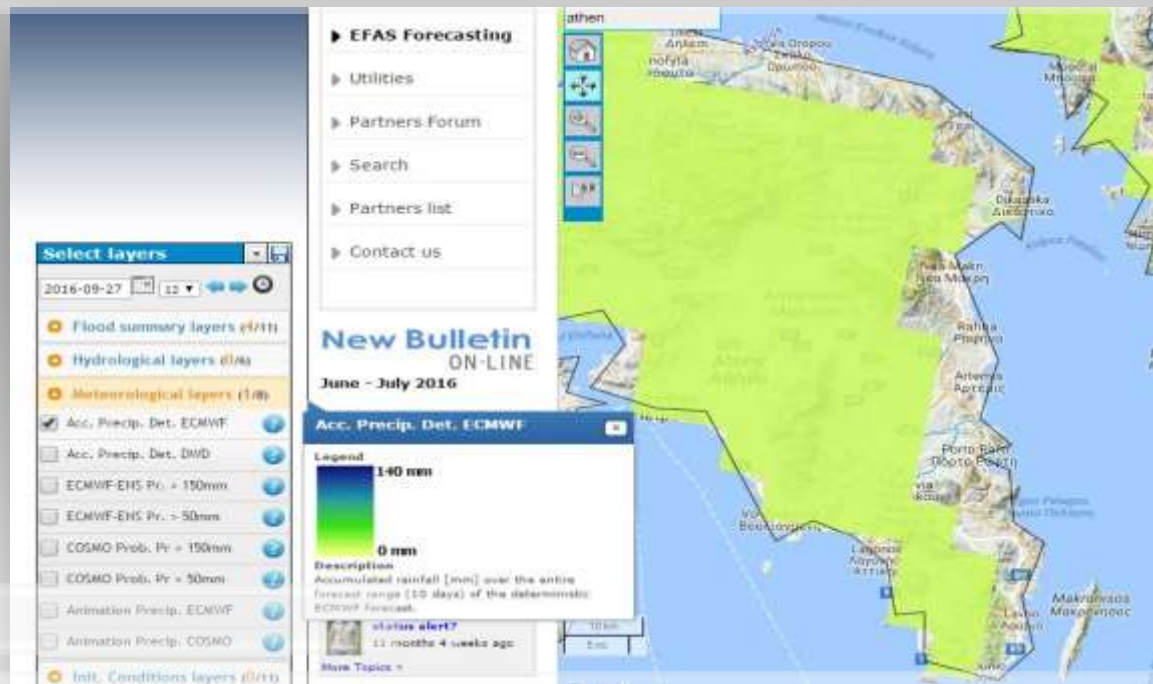


EMS Early Warning – EFAS

Deterministic Forecasts

- ❑ DWD/German Weather office (ICON & ICON-EU) – global model, 7 forecast days (~ 6.5 km, day 1-3 / ~ 13 km, day 4-7)
- ❑ ECMWF European Centre for Medium-Range Weather Forecasts – global model, 10 forecast days, ~ 9 km

Weather Forecast



Ensemble Forecasts

- ❑ ECMWF VAREPS – global model, 51 members, 10 forecast days, ~18 km
- ❑ COSMO-LEPS – Europe, 16 members, 5 forecast days, ~ 7 km

EMS Early Warning – EFAS

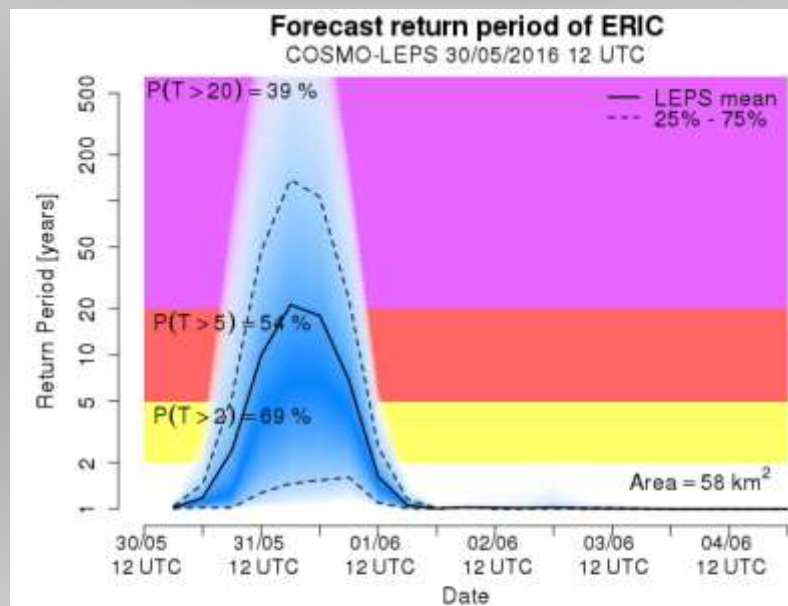
Products and services: Flash Floods Layers

Flash flood layers (0/2)

- Medium Alert - T>2 years
- High Alert - T>5 years
- Severe Alert - T>20 years
- EPIC Above Medium

Probability (forecast) for a precipitation intensity exceeding different threshold levels

- Based on accumulated upstream precipitation forecast for durations up to 24 hours (no hydrological simulation)
- Accounts for soil moisture status, geomorphology and land-use; a soil moisture - runoff coefficient relation
- COSMO-LEPS forecasts
- River network at 1 km resolution
- Catchments area between 25 km² & 2000 km²
- Probabilistic return period shown for lead time range 12-120 hours



Point Information

Country	CoA Status	Region	River	Upstream Area [km ²]
France	YES	Loire	France - Loire, above Allier	58

Landslide susceptibility of the affected areas

Very high	High	Moderate
0%	22%	33%

EMS Early Warning – EFAS

Handling False Alarms...

EFAS is providing information to the national hydrological services only when there is a danger that critical flood levels might be exceeded.

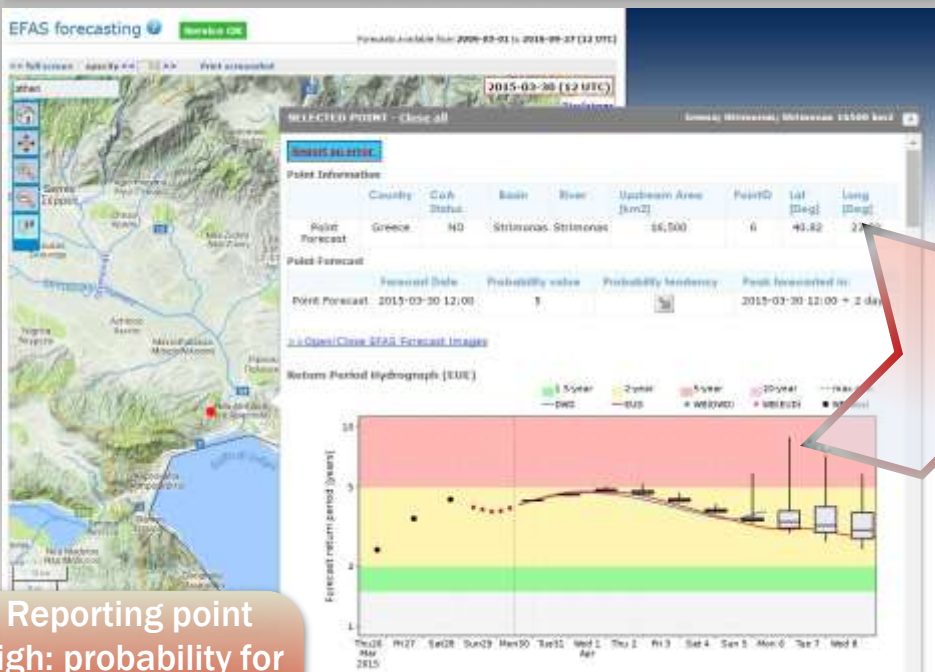
Critical thresholds: at every grid point and therefore cannot be derived from observations.

- Long term discharge time series are calculated - based on observed meteorological data - at each grid with the same LISFLOOD (hydrological) model parameterization that is set up in the forecasting system
- From these long-term simulations return periods are estimated – currently 1, 2, 5 & 20-year return periods.
- All flood forecasts are compared against these thresholds – at every pixel – and the calculated threshold exceedance
- If critical thresholds are exceeded persistently over several forecasts, information at these locations is produced (colour - coded overview maps or time series information at control points)
- The persistence criteria were introduced to reduce the number of false alarms and focus on large fluvial floods caused mainly by widespread severe precipitation, combined rainfall with snow-melting or prolonged rainfalls of medium intensity

EMS Early Warning – EFAS

To RAPID Mapping ...

EFAS flood summary layer 30.03.2015

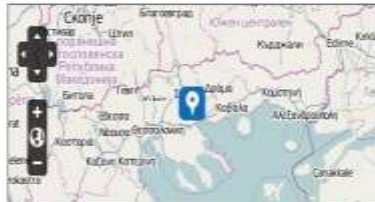


Reporting point high: probability for exceeding EFAS high threshold > 10%

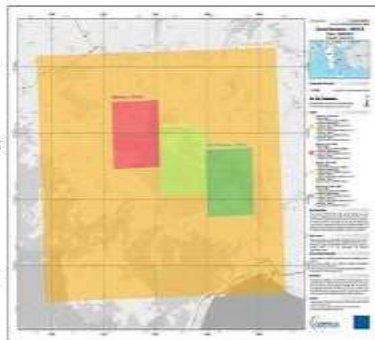
EMS Rapid Mapping activation 31.03.2015

EMSR122: Flood in Greece

Event Time (UTC): 2015-03-30 15:00
 Event Time (LOL): 2015-03-30 18:00
 Event Type: Flood
 Activation Time (UTC): 2015-03-31 12:41
 Reference maps produced: 4
 Delineation maps produced: 12
 Grading maps produced: 0
 Activation Status: Closed
 Affected Countries/Territories: Hellenic Republic
 Area Descriptor: Central Macedonia
 Authorized User: Greece|General secretariat for Civil protection - Directorate for Emergency Planning and Response
 Activation Reason: Due to heavy rainfall during last month, extensive damages have been reported in infrastructures and networks along the Strymonas river, in Central Macedonia. Many embankments have been broken, especially in the southern part of the river, flooding the road network and the rural network, while many hectares of agricultural land have been completely inundated.
 Requested Product: Reference + Delineation Maps



Tweet Coverage map: GeoRSS:



EMSR122 - Activation Extent Map
 Release: r06 - Version: v1 - Delivered: 2015-04-03 13:23
 View as: EMSR122-AEM-IPC - EMSR122-AEM-EMZ - EMSR122-AEM

EMS Early Warning – EFAS

To access the EFAS-IS

www.efas.eu

Personal login is required to access forecasts,
notifications etc.

EFAS team contact (email)

info@efas.eu

EMS Early Warning – EFFIS

Users and Network

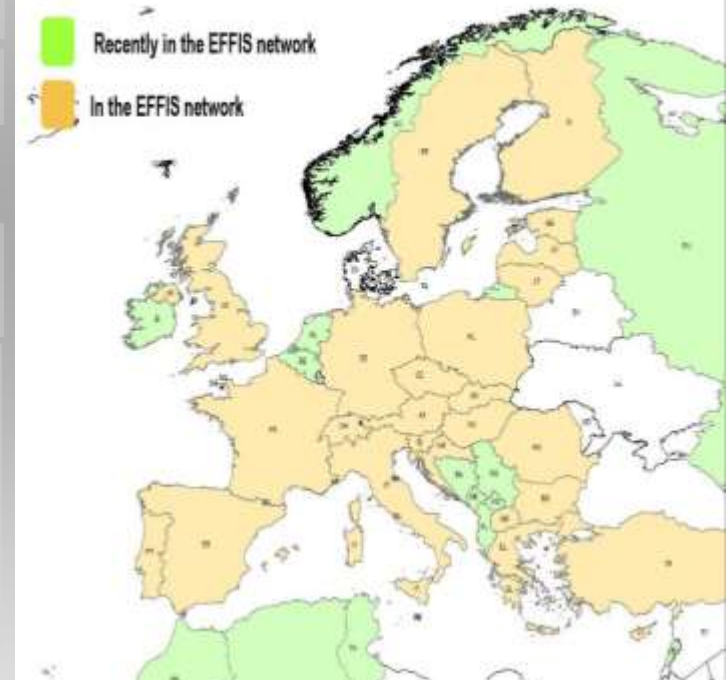
Services & products freely accessible via the EFFIS portal

<http://forest.jrc.ec.europa.eu/effis>

EFFIS Users include

- EC DGs and Services,
- European Parliament,
- Associated national/regional forest fire & civil protection services,
- FAO, Silva Mediterranea,
- UNECE

Network of 39 Countries, over 2.4 million records



EMS Early Warning – EFFIS

Current Situation

Current fire season in Europe and in the Mediterranean area

- Meteorological fire danger maps
- Forecast up to 6 days
- Daily updated maps of hot spots and fire perimeters

Fire History

Build customized maps of historical fire incidence.

European Fire Database querying: number of fires, burned area & average fire size of selected years (nuts 1-3 level depiction/ 2013)

Fire News

A selection of news (press) on wildland fires in Europe updated daily

News can be browsed for specific countries selected by the user from the news map

Applications

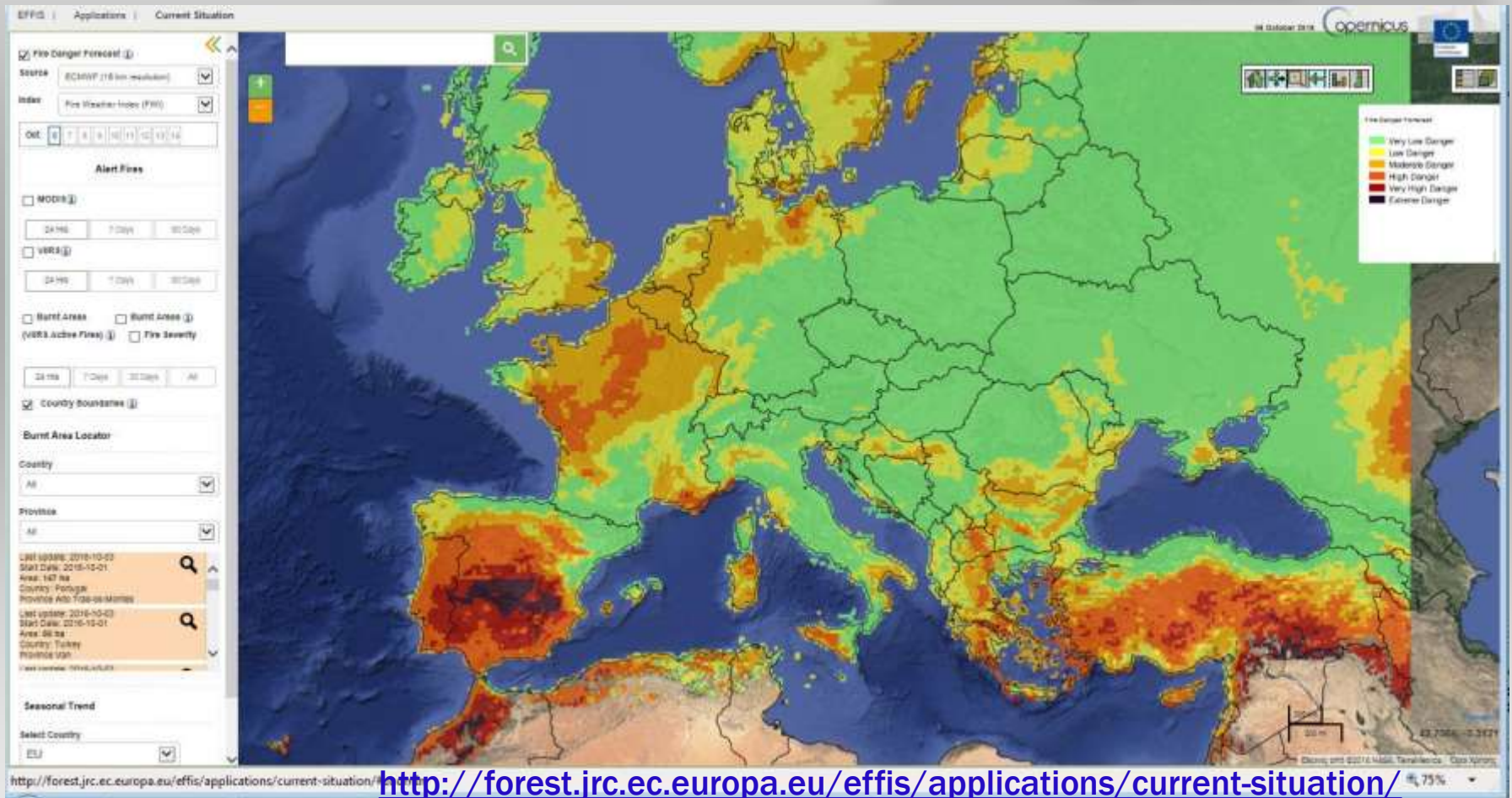


The screenshot shows the EFFIS website interface. At the top, there is a navigation bar with the European Commission logo and the text 'JOINT RESEARCH CENTRE' and 'EFFIS - European Forest Fire Information System'. Below this, a breadcrumb trail reads 'European Commission > EU Science Hub > Research > FOREST > EFFIS > Applications'. The main content area is titled 'Applications' and contains a list of application categories on the left and three featured application cards on the right. The cards are: 'CURRENT SITUATION' (with a map thumbnail), 'FIRE HISTORY' (with a map thumbnail), and 'FIRE NEWS' (with a map thumbnail). A 'Mission' section is visible at the bottom of the page.

EMS Early Warning – EFFIS

Current Situation

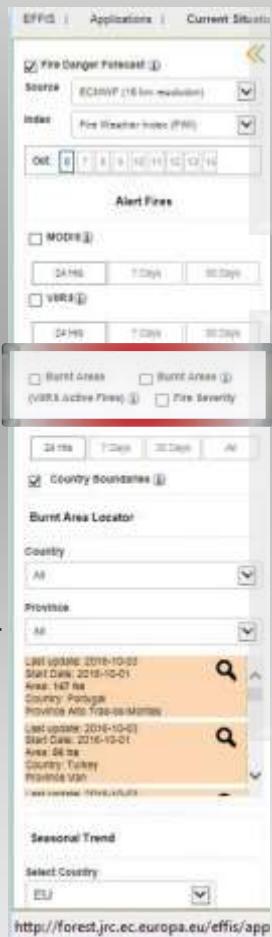
Applications



EMS Early Warning – EFFIS

Current Situation

Applications



Fire Danger Forecast module:

Daily maps - all year around - of 1 to 10 days forecasted fire danger level using numerical weather predictions (received daily from 3 systems, the European Centre for Medium-Range Weather Forecast (ECMWF), French (MeteoFrance) and German (DWD) meteorological services)

- Short & long-term fire danger forecast
- Monthly & seasonal fire weather forecast

Active fire and burnt area mapping:

- Medium spatial resolution (~ 300 m) near-real time mapping of burnt areas, (twice a day/ pan-European region MODIS/VIIRS/Sentinel3)
- High spatial resolution (~10-30 m) weekly (or bi-weekly) mapping of burnt areas (e.g. Sentinel2, Landsat8, SPOT)
- Fire Severity based on the Relative Difference Normalized Burn Ratio



Thanking YOU.....



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www.geoapikosisis.gr