



PROGRAMME OF
THE EUROPEAN UNION



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European
Commission

#EUSpace

European Flood Awareness System

Flash Flood Products

INLINE Workshop | 2026, May 26-28

EFAS Dissemination Centre Presenter



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RWS

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Water Management Centre for
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**Officer on duty of EFAS
Dissemination Centre**



Content

- EFAS objectives and organization
- Flash Floods in EFAS
Generation of Flash Flood Reporting Points and Notifications based on ERIC Indicator
- Results of partner survey 2025
- Future changes
- Radar based and urban products

EFAS Objectives

Support national flood forecasting authorities by providing complementary, added value information



Added Value Information:

- Medium range forecasts (Lead times up to 10 days)
- Probabilistic information
- Catchment wide harmonized information
- Serves as a knowledge exchange platform for operational flood forecasting

Aggregate information to support flood management & international civil protection at the European level



Aggregated Information:

- Combined information from national flood authorities & the EFAS system
- Daily summarizes to the ERCC about ongoing and forecasted floods
- Tools to support preparatory measures and international aid assistance before and/or during major floods

EFAS Operational Centres

JRC (Joint Research Centre)

- Responsible for contract management of the Operational EFAS
- Coordinates scientific and technical development



EFAS Hydrological Data Collection Centre

- Operated by GHENOVA Digital
- Collects historic and real-time discharge and water level data across Europe



EFAS Meteorological Data Collection Centre

- Consortium consisting of KISTERS AG & German Weather Service (DWD)
- Collects historic and real-time meteorological data across Europe



EFAS Computational Centre

- Located at European Center for Medium-Range Weather Forecasts (ECMWF)
- Responsible for running of forecasts, post-processing calculations, and the EFAS-IS web interface



EFAS Dissemination Centre

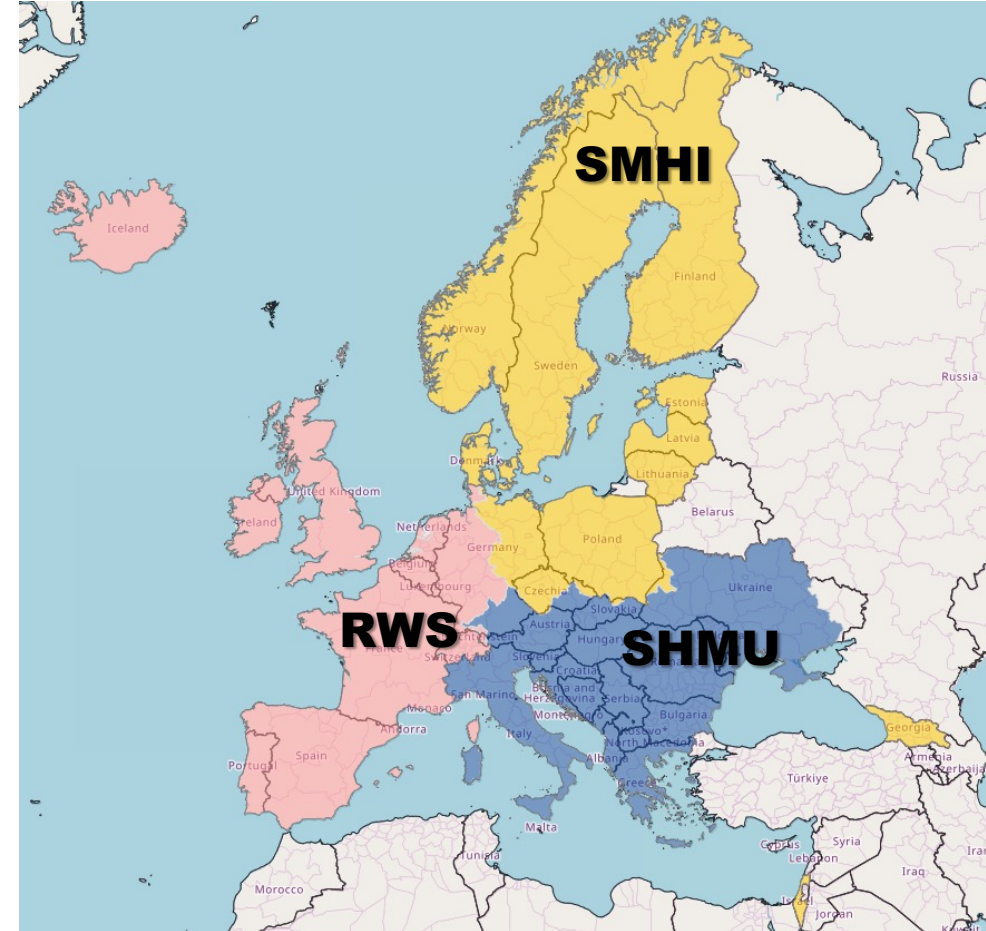
- Consortium of Swedish Meteorological & Hydrological Institute, Slovak Hydrometeorological Institute, and Dutch Rijkswaterstaat
- Analyzes EFAS results daily, disseminates information to EFAS partners, organizes user meetings, and provides training





EFAS Partner Network

- **EFAS Partnership:**
- Is free and available for both EU & non-EU countries
- Requires the signing of a Conditions of Access (CoA) agreement with the EFAS Dissemination Centre
- Includes the right to attend and vote at the Annual Partners Meeting
- **EFAS Partners:**
- National, regional or local authorities with a legal obligation to provide flood forecasting services or that have a national role in flood risk management within their country and the European Commission Services
- Receive full access to the EFAS-IS portal and all EFAS real-time forecasts, products, and notifications
- **EFAS Third Party Partners:**
- Authorities that contribute to flood risk management within a country, often in close collaboration with the relevant flood forecasting authorities
- Formally nominated/revoked by the EFAS Partner for their area
- Receive access to the EFAS-IS portal and EFAS real-time forecasts, products, and notifications in their region
- **EFAS Research Project Partners:**
- Organizations working on specific research projects that want to test EFAS projects
- Limited, restricted access to EFAS forecasts

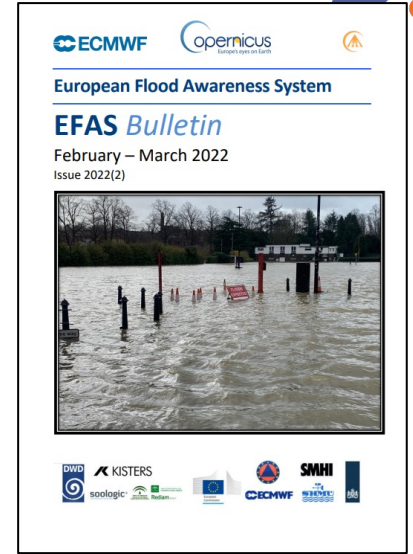
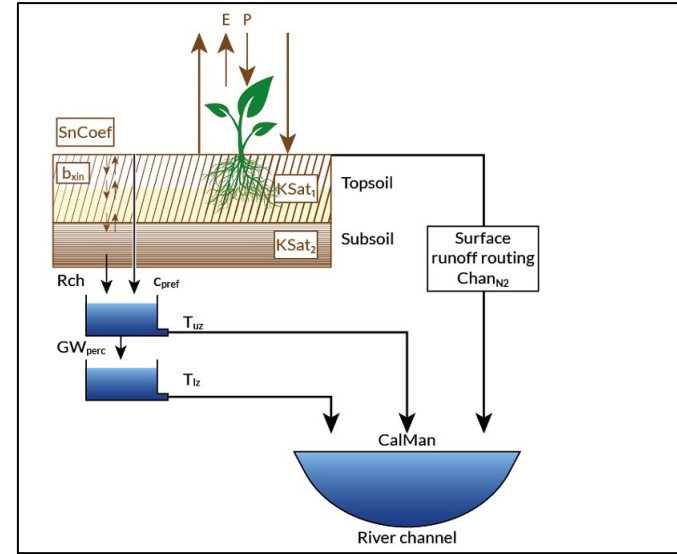


EFAS Partner Regions (March, 2026)



EFAS Responsibilities

- **Data Collection:**
 - Collects historical and real-time hydrological and meteorological data
- **Computation:**
 - Performs runs of the hydrological model twice daily
 - Maintains and develops the hydrological model and the EFAS-IS portal
- **Dissemination:**
 - Provides complementary, flood early warning information to the EFAS partner network and the European Response and Coordination Centre (ERCC)
 - Sends notifications to partners and ERCC
 - Sends daily overviews to ERCC and JRC
 - Provides daily overviews in the EFAS-IS portal
- **Feedback & Education:**
 - Collects feedback from EFAS partners
 - Arranges annual partner meetings
 - Releases Bimonthly Bulletins
 - Provides training, webinars, and videos



Flash Floods in EFAS

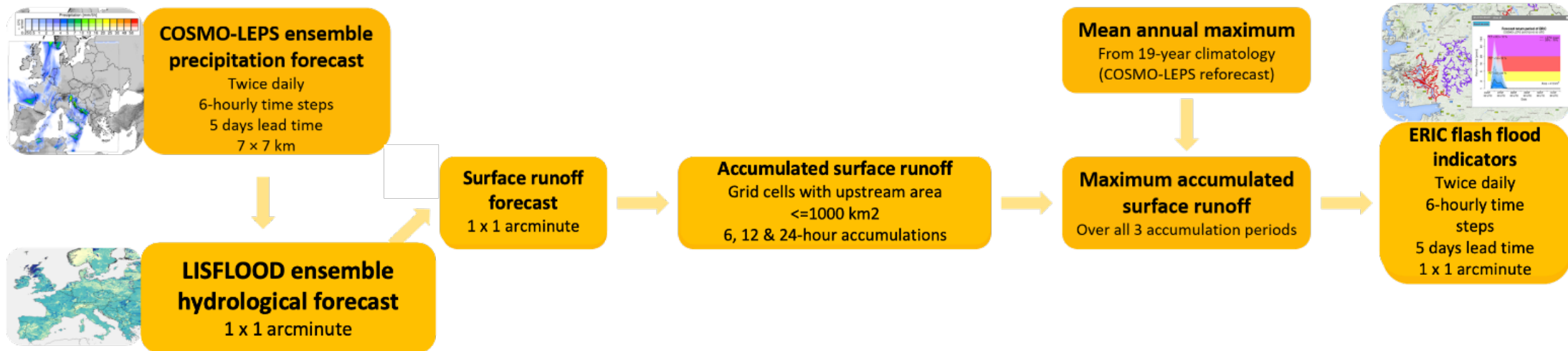
- Flash flooding within river networks only
- Not associated with pluvial or urban flooding
- $150 \text{ km}^2 < \text{Catchment Size} < 1000 \text{ km}^2$
 - **Catchments $> 1000 \text{ km}^2$ are covered by EFAS hydrological forecasts**
 - **Catchments $< 1000 \text{ km}^2$ and $> 150 \text{ km}^2$ are covered by the EFAS flash flood indicator**



In 2025 the EFAS Dissemination Center issued 1,517 Flash Flood Notifications of which 270 on the Iberian Peninsula

ERIC Flash Flood Indicator

- *(Enhanced Runoff Index based on Climatology)*



ERIC [Raynaud et al., 2015]

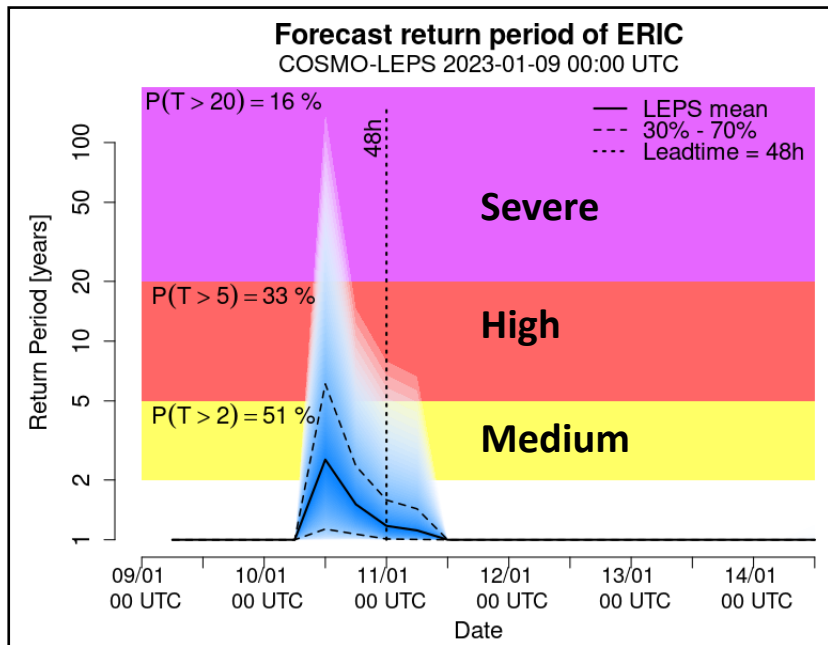
- Based on ensemble surface runoff forecasts from LISFLOOD hydrological model forced with COSMO LEPS precipitation
- Forecasted accumulated upstream surface runoff compared to a reference threshold
- Indicators provided for the next 5 days for catchments between 25 and 1,000 km²



Generating Reporting Points

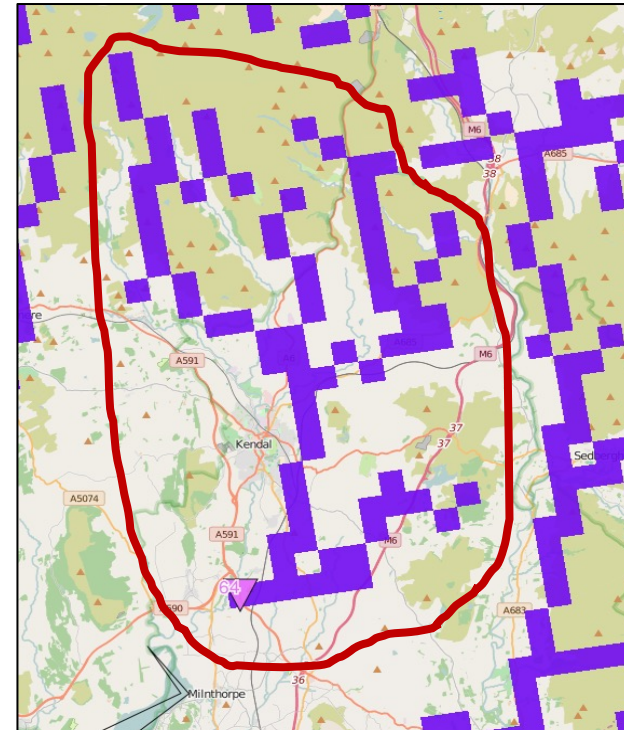
Return Period Hydrograph:

- Convert ERIC at each timestep to return period
- Fit Gumbel distribution to annual maxima series



Affected Upstream Drainage:

- Highlight the 1 arcmin river pixels upstream of each warning point





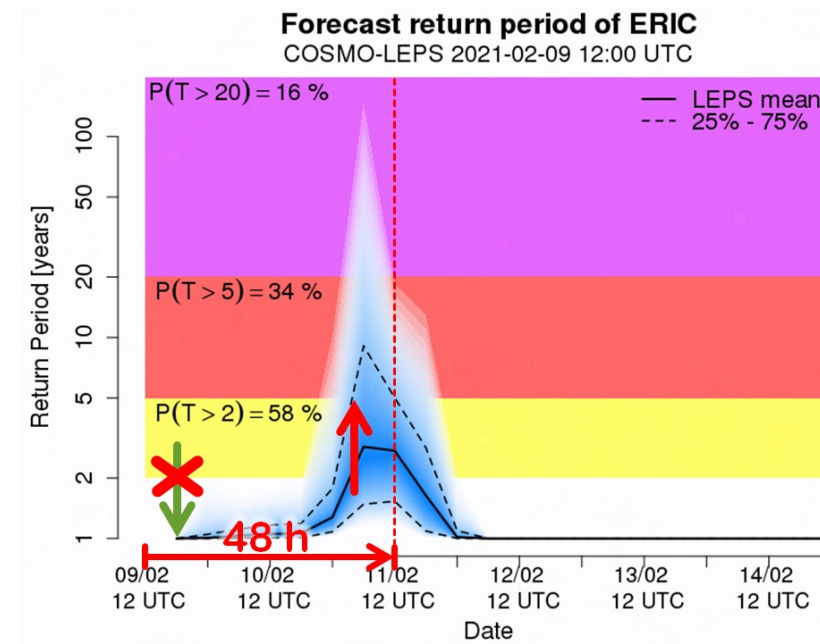
EFAS Flash Flood Notifications

Flash Flood Notifications are issued when EFAS predicts a certain **probability of extreme precipitation with possible flash flooding** in an administrative region

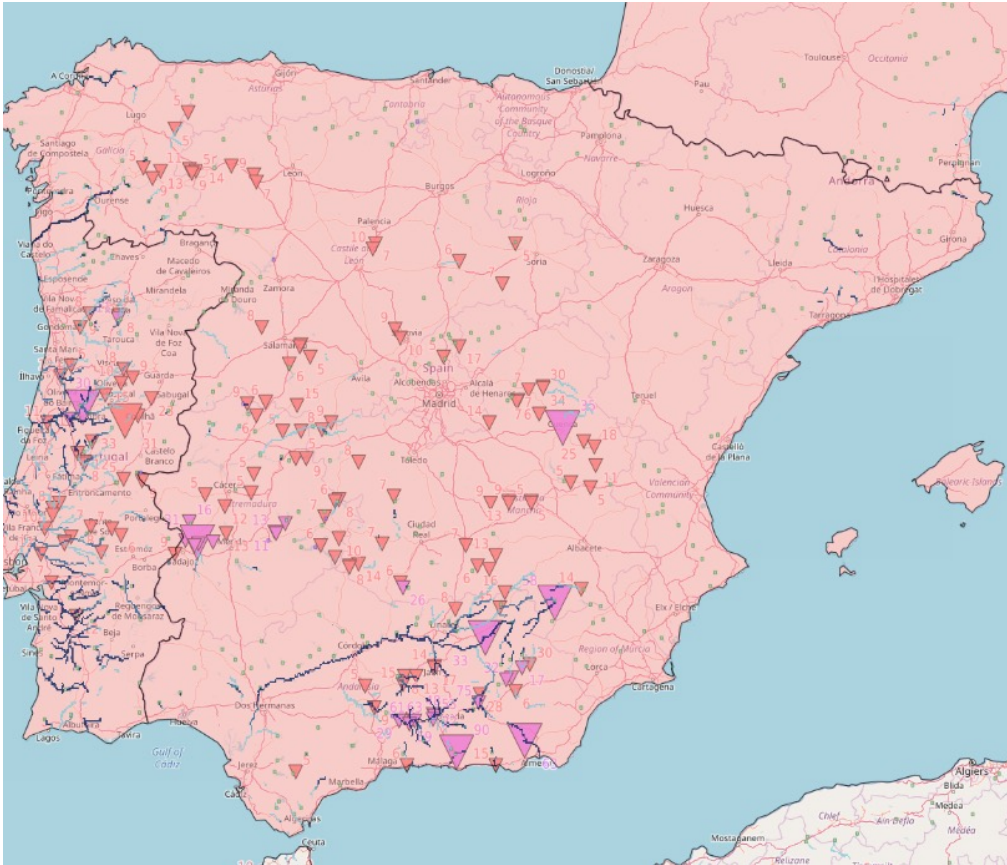
- Catchment part of Conditions of Access
- Probability of exceeding 5-year return period $\geq 30\%$
- Start of the event has a lead time ≤ 48 hours from the forecast time.
- Actual lead time to the earliest predicted peak is > 0



EFAS Flash Flood Notification



How does it look in EFAS-IS?





Flash Flood Notification Emails

EFAS Flash Flood Notification*

NOTIFICATION DETAILS:

- Country(jes): **Spain**
- Administration Region(s): **Jaén**

Location

- Likely start of event: **Wednesday, 4th of February 2026 - 12:00**

Timing

- Probability to exceed a 5-year flash flood return period threshold: **49 %**
- Probability to exceed a 20-year flash flood return period threshold: **40 %**

Total Probability

ADDITIONAL INFORMATION:

- Forecast date: 2026-02-02 12 UTC
- Affected area susceptible to landslides: Very High: 040 km², High: 0105 km², Moderate: 0132 km²
- Forecaster Comments: -

This is the only notification you will receive for this event! Please follow the evolution of the event on [EFAS](#).

More information about the EFAS flash flood notifications is available on the [EFAS wiki](#)

EFAS FORECASTER ON DUTY

* *indicating a high probability of extreme precipitation and potential flash flooding*

LEAVE A FEEDBACK FOR THIS NOTIFICATION

[Leave the Feedback!](#)

(you need to be logged in on the EFAS website)

[Open a preview with the notification's details HERE](#)

Flash Flood Notification emails also include a link to view more information on the Notification Archive



Flash Flood Notification Emails

EFAS Flash Flood Notification*

NOTIFICATION DETAILS:

- Country(ies): **Ireland**
- Administration Region(s): **West**
- Likely start of event: **Tuesday, 4th of February 2025 - 00:00**
- Probability to exceed a 5-year flash flood return period threshold: **35 %**
- Probability to exceed a 20-year flash flood return period threshold: **13 %**

ADDITIONAL INFORMATION:

- Forecast date: 2025-02-02 12 UTC
- Affected area susceptible to landslides: **Very High: 27 km², High: 11 km², Moderate: 15 km²**
- Forecaster **Comments**: -

This is the only notification you will receive for this event! Please follow the evolution of the event on [EFAS](#).

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Click link to open notification preview

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EFAS FORECASTER ON DUTY

** indicating a high probability of extreme precipitation and potential flash flooding*

To leave Feedback for the notification please go to the [EFAS Feedback page](#).

Feedback reminders for this notification: [id - 2666id - 2734](#)

For a detailed view with all available EFAS layers and ability to follow the evolution of the forecast, please go to the [EFAS Map viewer](#).

The forecast date shown here is 2025-02-02-12
This is a preview showing the Notification point and the ERIC Reporting Point layer. No further interaction is possible.



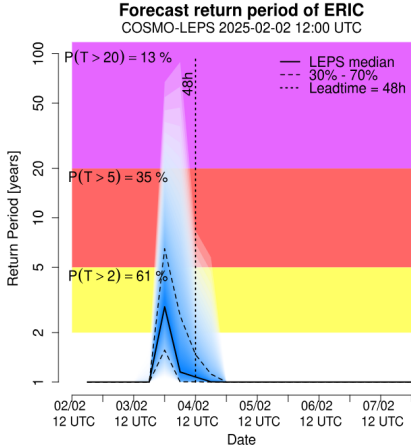
[Info for West](#)

Click button to see additional tables and plots

Info for West

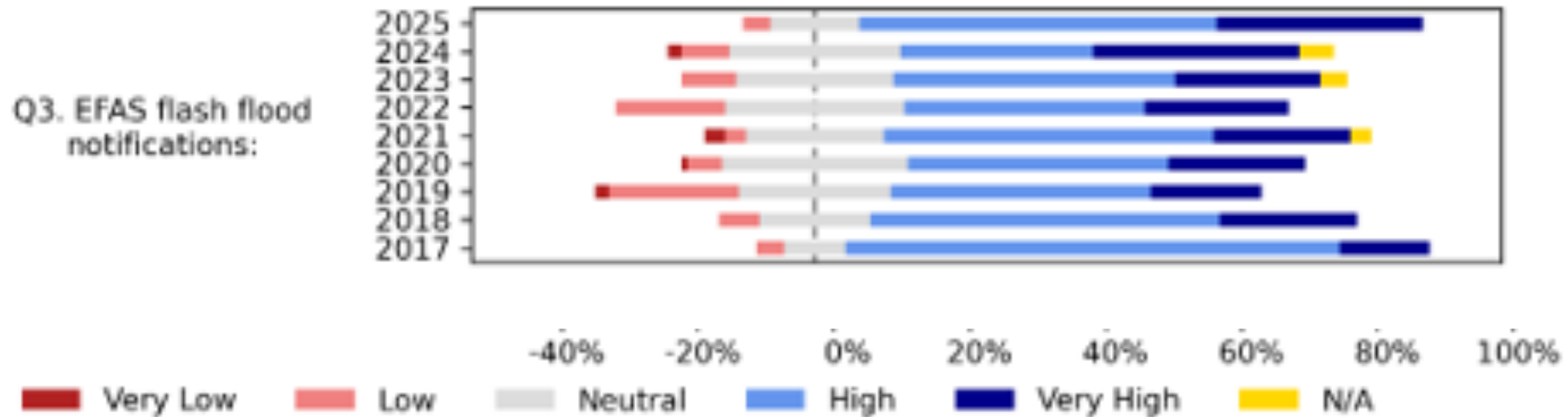
Point Information							
Country	CoA Status	Basin	River	LISFLOOD Drainage Area [km2]	PointID	Lat [Deg]	Long [Deg]
Ireland	YES	Corrib	Corrib	166	200044	53.475	-9.3086

Landslide susceptibility of the affected areas		
Very high	High	Moderate
27 km2 (16%)	11 km2 (7%)	15 km2 (9%)



Results from partner survey 2025

- Generating Flash Flood notifications based on ERIC has limitations. Partners report missed events and false alarms but...
- Ratings of the added value of the EFAS Flash Flood Notifications (83% high/very high) for 2025 was the highest since 2017!





Future changes to the ERIC Reporting Points

COSMO LEPS is going to be retired (soon)

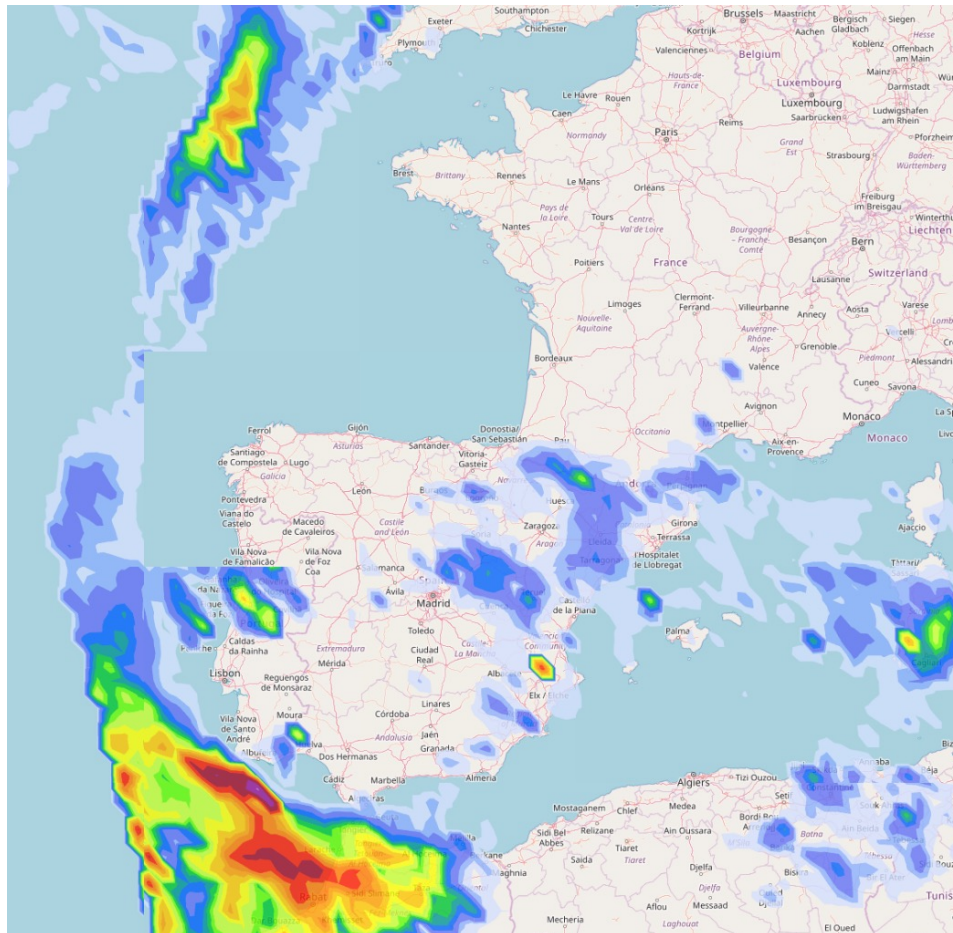
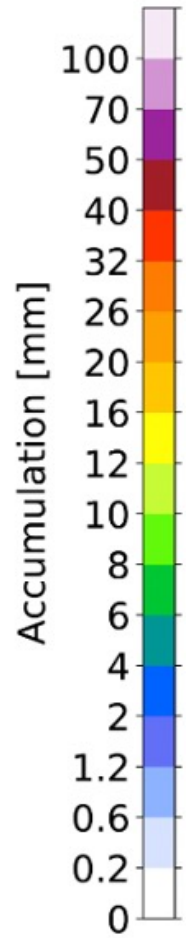
Current investigations how to calculate the flash flood reporting points in the future

Possibilities:

- High resolution ECMWF EPS ensemble (9km) as a replacement of COSMO LEPS
- Skip the ERIC calculations and derive flashfloods directly from the LISFLOOD hydrographs
- Use of radar and urban products

Radar-Based Accumulated Precipitation

• Previous 24h Accumulated Precipitation



- Flash flood layers
- ERIC Affected Area ☆
 - ERIC Notification Points ☆
 - ERIC Reporting Points ☆
 - Radar Coverage ☆
 - Radar-based Accumulated Precipitation 80th Percentile ☆
 - Radar-based Intense Precipitation Hazard ☆
 - Radar-based Previous 24h Accumulated Precipitation ☆

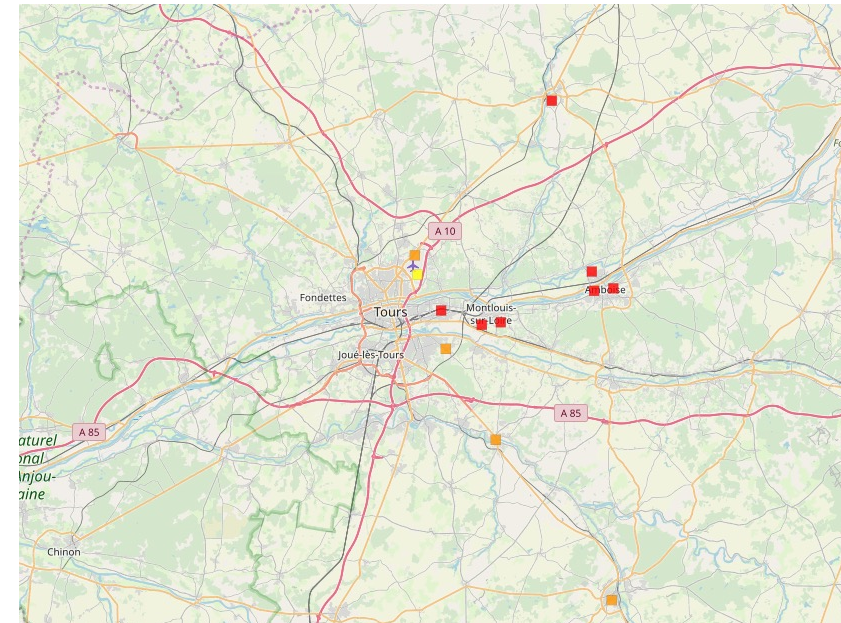
Estimated from gauge-adjusted OPERA radar composites

Urban Flash Flood Forecast Products

- Nowcast-based products to highlight the risk of flash flooding
- Developed within the EDERA project



Intense Precipitation Hazard Forecasts:
Highlights areas (ellipses) where intense precipitation may cause flash flood impacts



Urban Flash Flood Hazard Forecasts:
Highlights severity of potential flash flooding in urban areas



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Emergency
Management

Further information
www.efas.eu

Queries
info@efas.eu





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Thank you



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