

Co-designing a Checklist for Analysing the EDERA Forecast Products

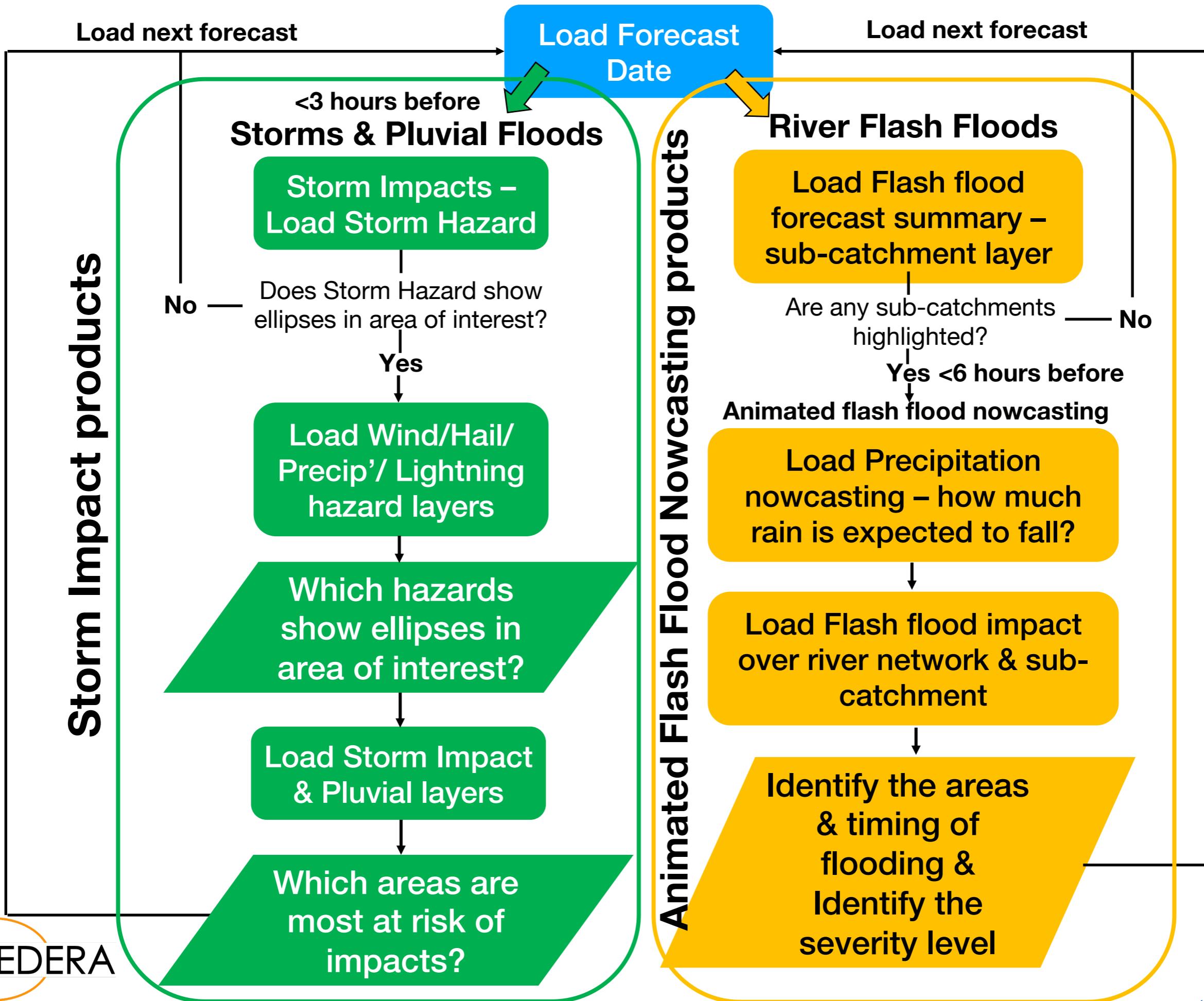
Session Aim

To start thinking about how to use the EDERA forecast products

- Guided demonstration of the products for a case study
- Eventual output: A checklist which could explain to analysts how to use the EDERA forecast products...

Are you already familiar with some of the EDERA products?

- Have you used any of the products in the TAMIR project?
- Have you used them since the TAMIR project?
- How have you used them?



River floods Case Study: Pomar de Cinca 25th May 2023 from 15:00 UTC



Workflow

- 06:00 UTC – Check Official warnings
 - Have any been issued, what time period do they cover?
 - Does Sub-catchment summary layer highlight anything during the same period
- From ~1-2 hours before expected arrival of event
 - Check the latest forecast each hour
 - River flash flooding > check Sub-catchment summary layer
 - If sub-catchments highlighted > check Animated Flash Flood Nowcasting
 - Urban flooding > check Storm Impacts layers
 - Check every 15 mins if a signal is shown

06:00 Check Official Warnings

EDERA Platform

Flash flood forecast summary (0-120h)

Official warnings (1)

Official warnings

Official Warnings

Flash flood impact over sub-catchment

Meteorological layers

Seamless precipitation

Flash flood impact

Flash flood impact over sub-catchment

Storm Impact

Animated flash flood

Flash flood past 24h

Static layers

Exposure (1)

Exposure

Flood hazard and risk

Flood Area (T1000)

Flood Area (T050)

Flood Area (T010)

2023-05-25 12:00 - 2023-05-26 06:00

Rain in Centro de Huesca

Time & Duration

From: 2023-05-25 17:00:00+00 UTC

To: 2023-05-25 19:59:59+00 UTC

Severe rain warning. Centro de Huesca

One-hour accumulated precipitation: 30 mm.

Be prepared. Take precautions and keep up to date with the latest weather forecast. Severe damages to people and properties may occur, especially to those vulnerable or in exposed areas.

Forecasting time: Thu, 2023-05-25 06:00 UTC

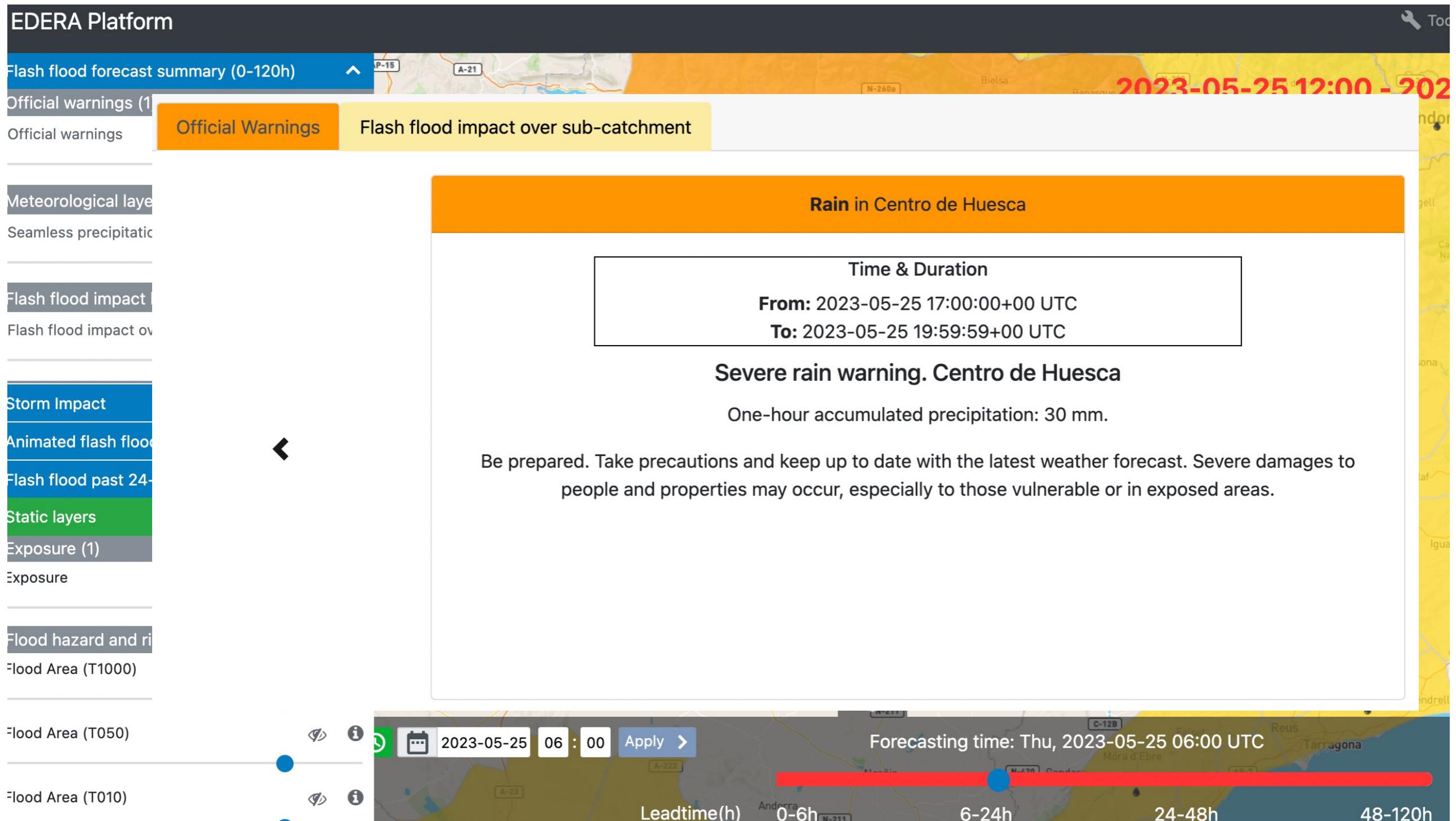
Leadtime(h)

0-6h

6-24h

24-48h

48-120h



06:00 Check Sub-catchment Summary

EDERA Platform

Flash flood forecast summary (0-120h) 

Official warnings (1)

Official warnings  

Official Warnings  Flash flood impact over sub-catchment

Meteorological layers (1)

Seamless precipitation accumulation  

Flash flood impact layers (1)

Flash flood impact over sub-catchment  

Storm Impact 

Animated flash flood nowcasting 

Flash flood past 24-h summary 

Static layers 

Exposure (1)

Exposure  

Flood hazard and risk maps (3)

Flood Area (T1000)  

Flood Area (T050)  

Flood Area (T010)  

2023-05-25 12:00 - 2023-05-25 18:00:00

Lat, L

Impact matrix

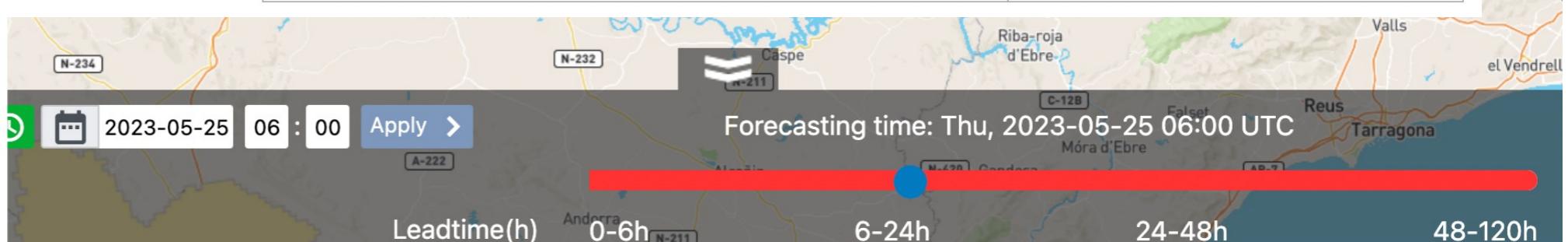
	Low Exposure	Medium Exposure	High Exposure
High Likelihood			
Medium Likelihood			
Low Likelihood	✓		

Exposure information

	#
Total population affected	30
Education facilities affected	
Health facilities affected	
Energy generation facilities affected	
Time of the event peak	2023/05/25 18:00:00

Forecasting time: Thu, 2023-05-25 06:00 UTC

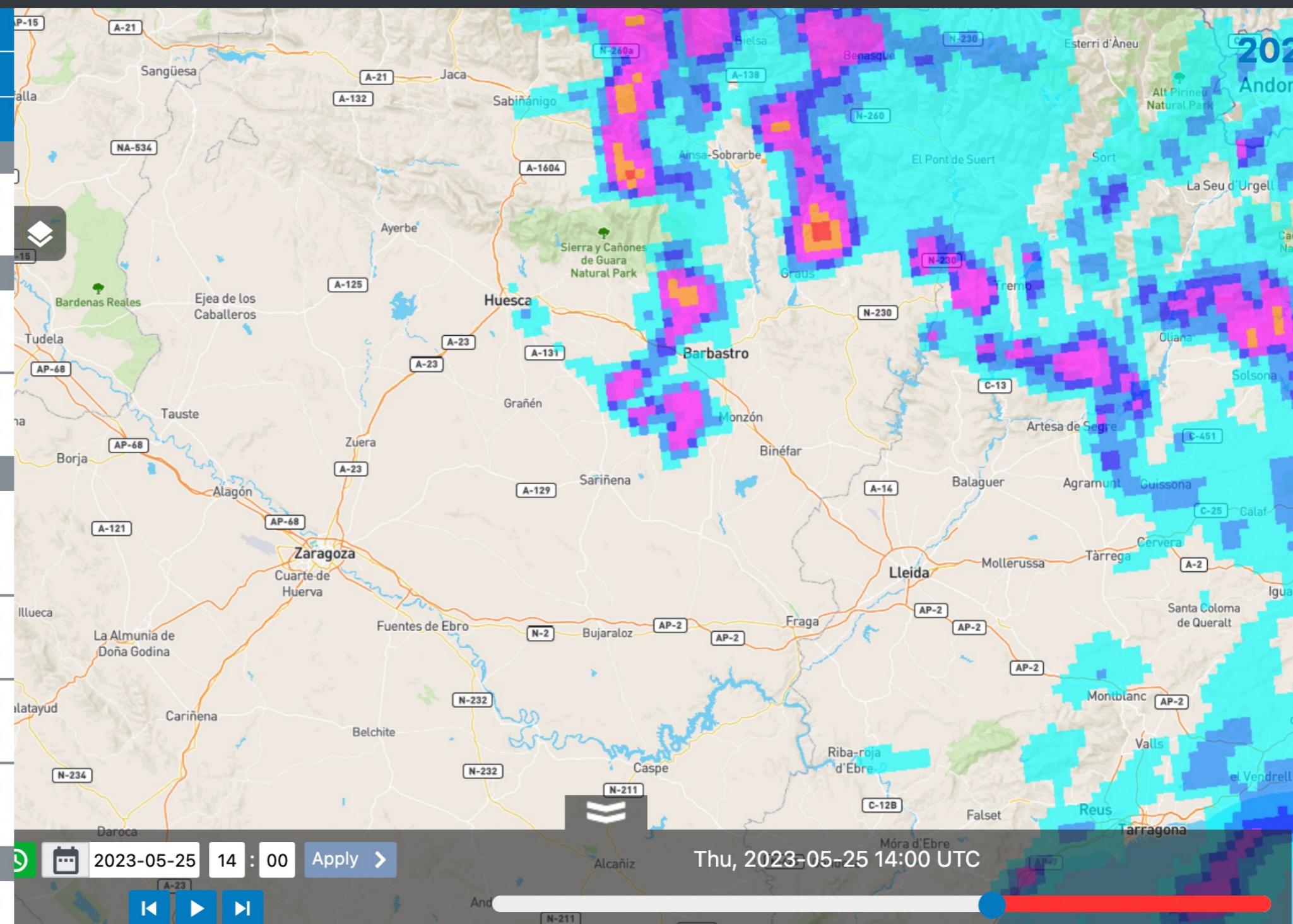
Leadtime(h) 0-6h 6-24h 24-48h 48-120h



14:00 Weather system moves in... as shown by precipitation nowcasting

EDERA Platform

- Flash flood forecast summary (0-120h)
- Storm Impact
- Animated flash flood nowcasting
- Official warnings (1)
- Official warnings
- Meteorological layers (2)
- Hourly precipitation 80th percentile
- Hourly precipitation - radar nowcasting
- Flash flood impact layers (4)
- Flash flood impact over the river network
- Pluvial flood hazard in urban areas
- Flooded areas
- Flash flood impact over sub-catchment
- EFAS (4)
- ERIC Points



**14:00 Weather system moves in...
check Flash flood impact forecast**

EDERA Platform

Tools

Flash flood forecast summary (0-120h)

Storm Impact

Animated flash flood nowcasting

Official warnings (1)

Official warnings

Meteorological layers (2)

Hourly precipitation 80th percentile

Hourly precipitation - radar nowcasting

Flash flood impact layers (4)

Flash flood impact over the river network

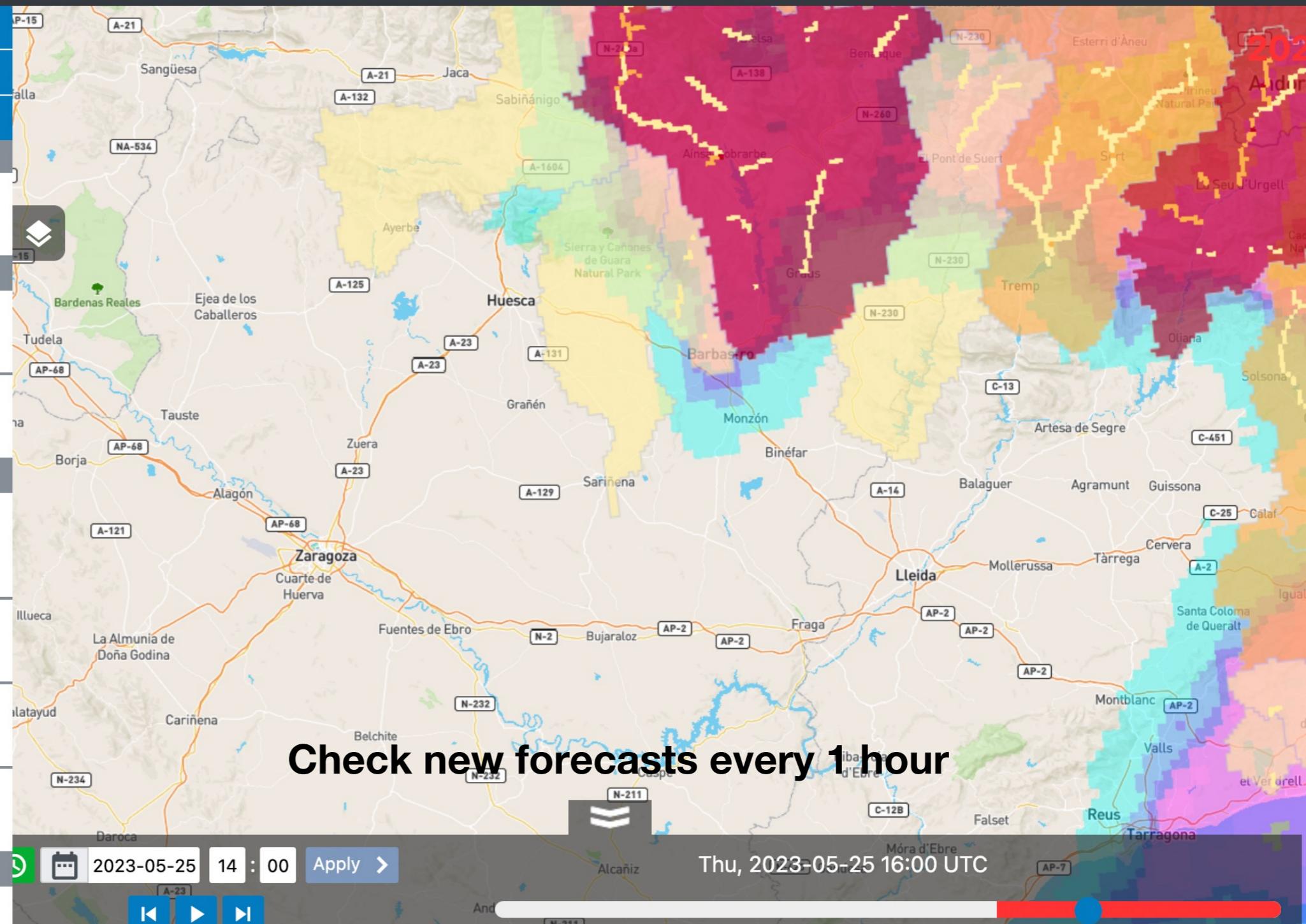
Pluvial flood hazard in urban areas

Flooded areas

Flash flood impact over sub-catchment

EFAS (4)

ERIC Points



Check new forecasts every 1 hour

Thu, 2023-05-25 16:00 UTC



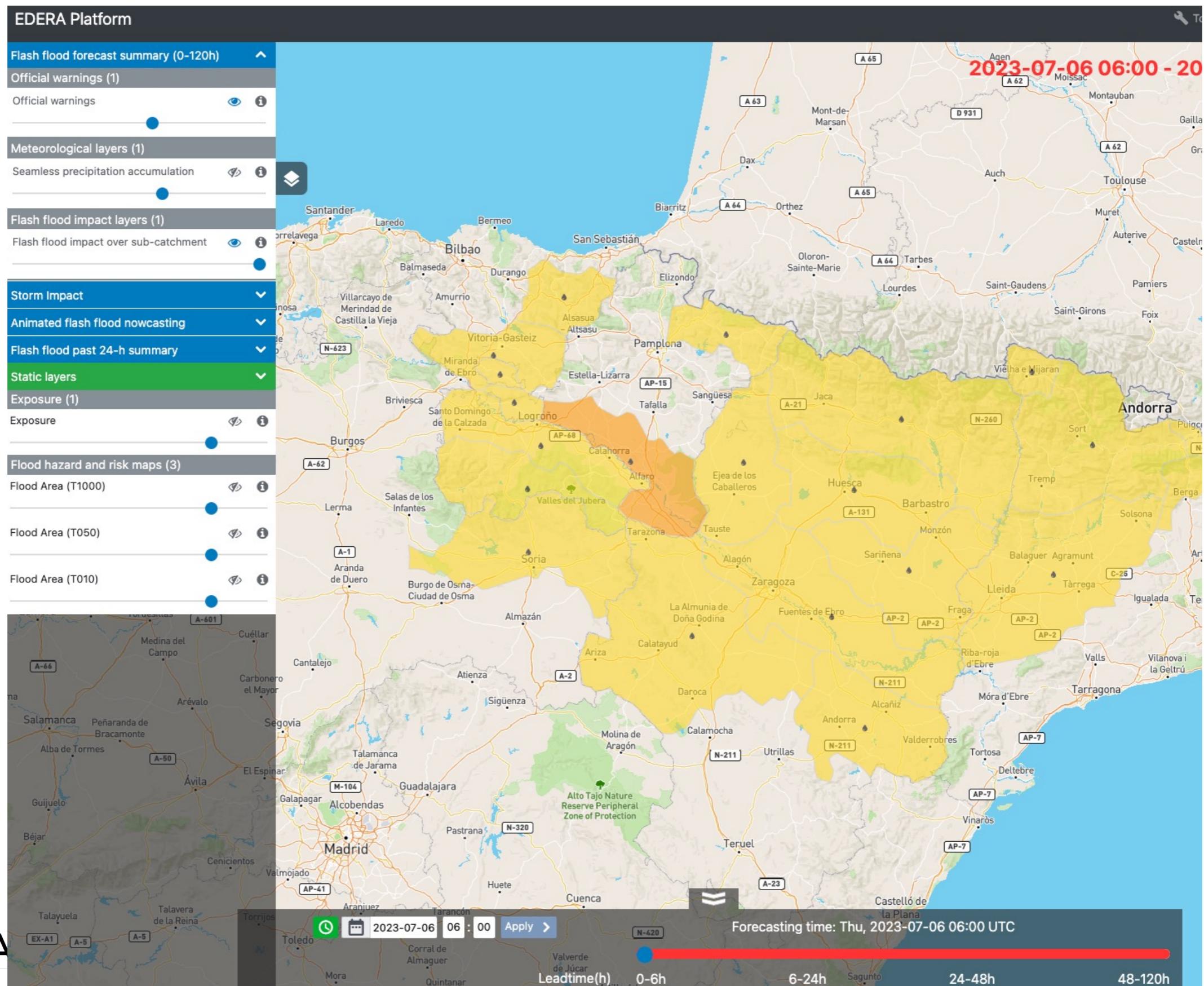
Urban Floods Case Study: Zaragoza, 6th July 2023



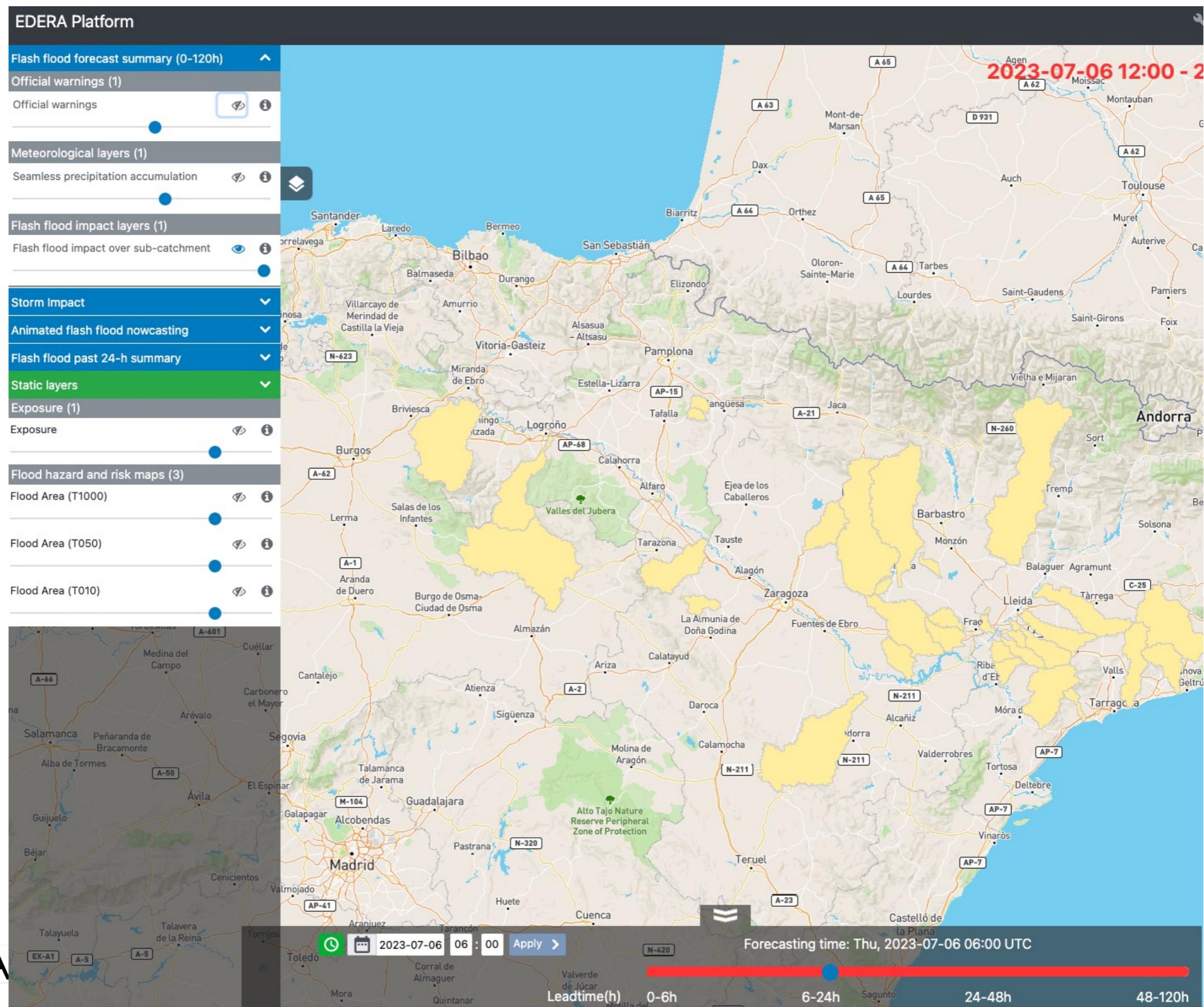
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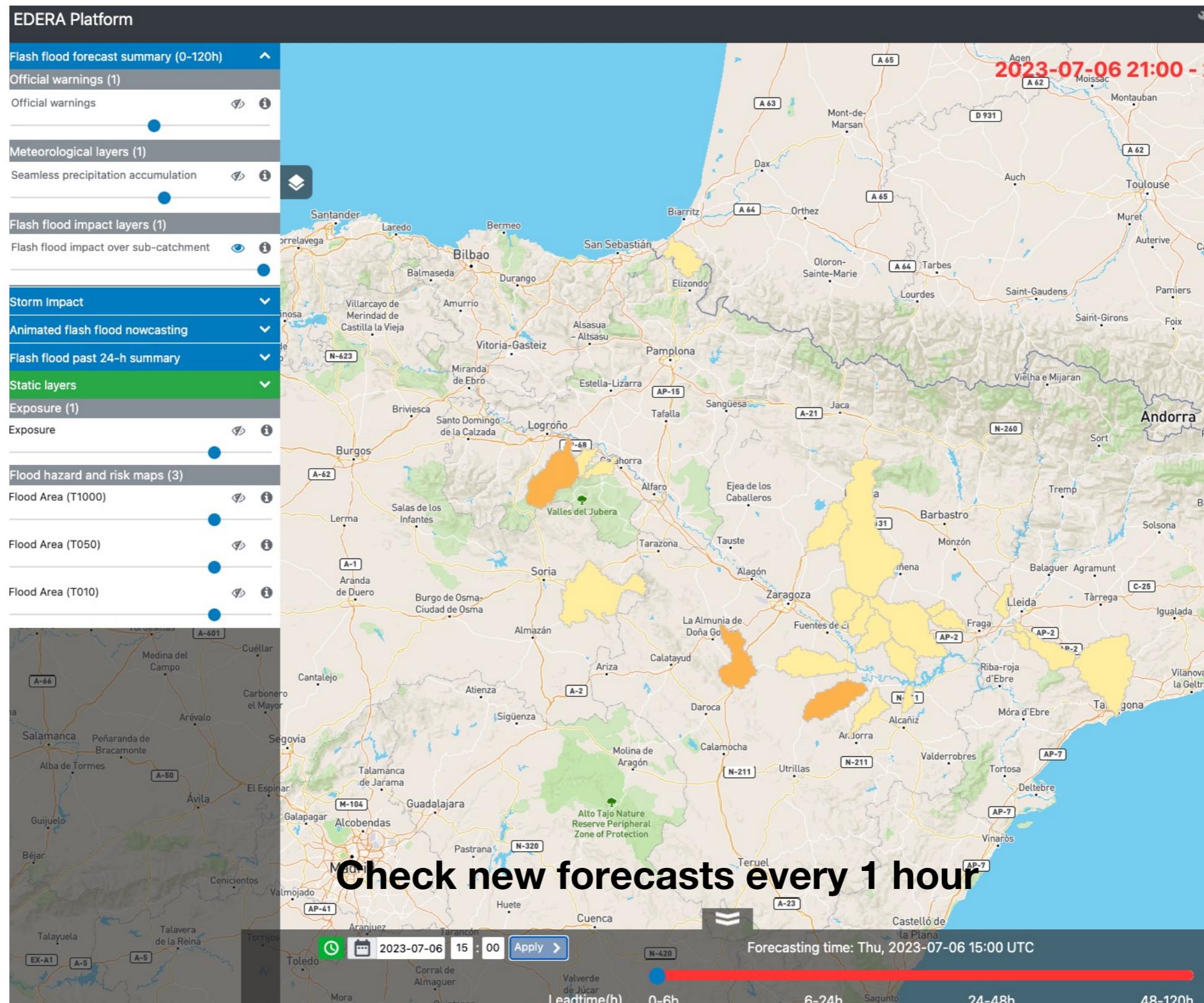
06:00 Check Official Warnings



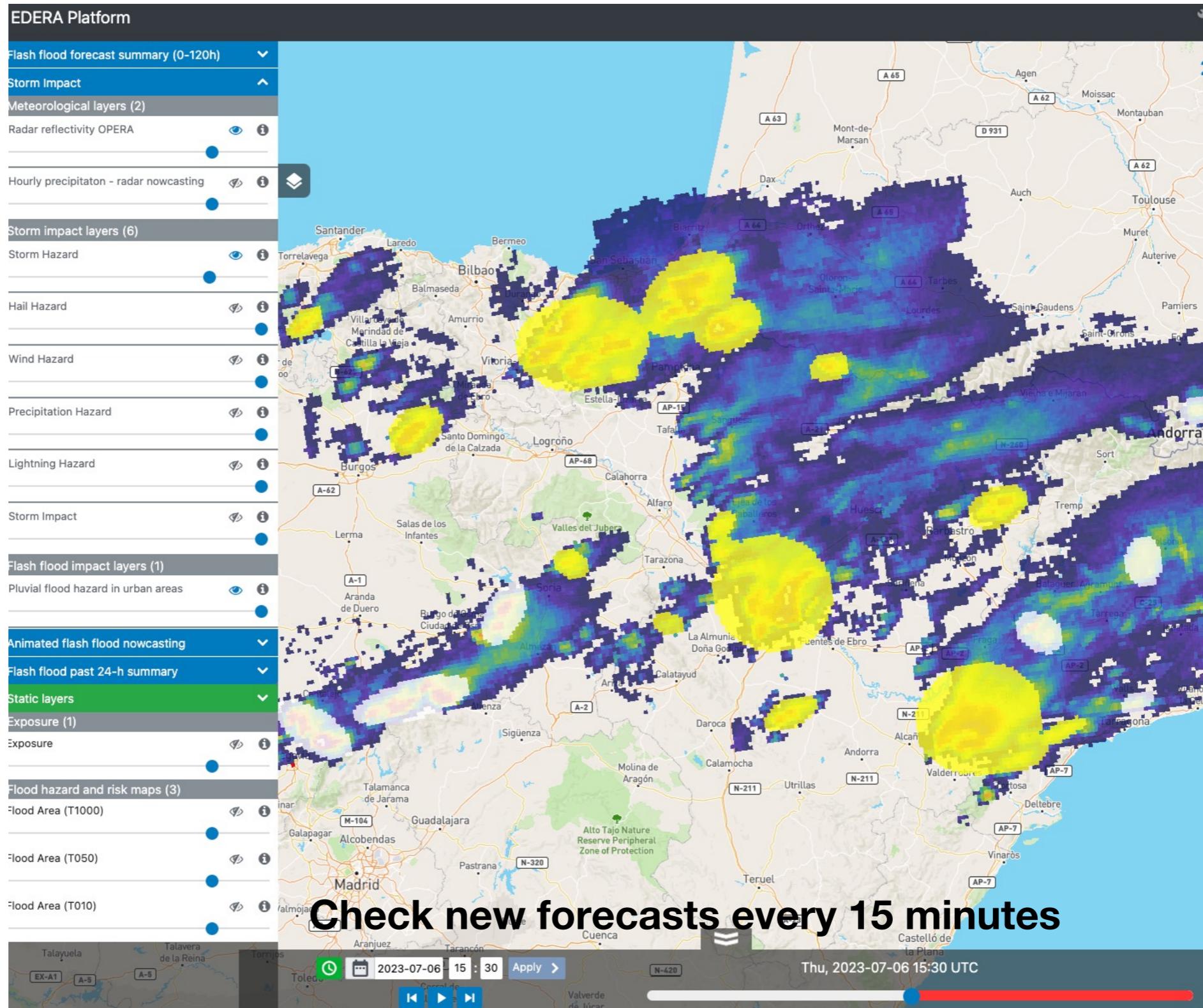
06:00 Check Sub-catchment Summary



15:00 Weather System is moving in... check River Flash Flood Risk



15:00 Weather System is moving in... check Urban Flash Flood Risk



Suggested Checklist

1. Check summary layers to get situation overview
2. If catchments highlighted at risk:
 - Analyse Animated flash flood nowcasting layers
3. Check storm impacts to assess risk of urban flooding
4. For additional contextual information
 - Analyse summary past 24h layers for antecedent conditions
 - Static layers to identify areas prone (and vulnerable) to flooding

Discussion: **Would it be useful to design a checklist to provide to your analysts?**

Draft Checklist

Steps		EDERA Forecast Product(s)	Actions
1.	Forecast overview	Flash flood summary <ul style="list-style-type: none">Flash flood impact over sub-catchmentSeamless precipitation accumulation	<ul style="list-style-type: none">Select latest forecast dateAre any sub-catchments showing risk of flash flooding over next 0-6 hours in your area of interest?Is any heavy rainfall expected in your area of interest over the next 0-6 hours?If no = no further actionIf yes = follow next steps
2.	River flash flood risk	Animated flash flood nowcasting: <ul style="list-style-type: none">Flash flood impact over river networkFlash flood impact over sub-catchment	<ul style="list-style-type: none">Use the time slider to view each hourly timestepIdentify the catchment(s) and timestep(s) when river flash flooding is possible
3.	Urban flash flood risk	Storm Impact: <ul style="list-style-type: none">Storm Impact EDERAHourly precipitation	<ul style="list-style-type: none">Use time slider to view each hourly timestep