

Hands-on Analysis: Storm Kristin, Portugal 29th January 2026

Calum Baugh & Karen O'Regan (ECMWF)

Nuno Moreira, Barbara Delgado, Nuno Lopes, Jorge Ponte (IPMA)
Xinyu Li, Marc Berenguer, Shinju Park, Victor Gonzalez (UPC)

Session Overview

Aim: Get hands-on experience with INLINE platform and products for a use case

Objectives - At the end you (hopefully) will be confident to:

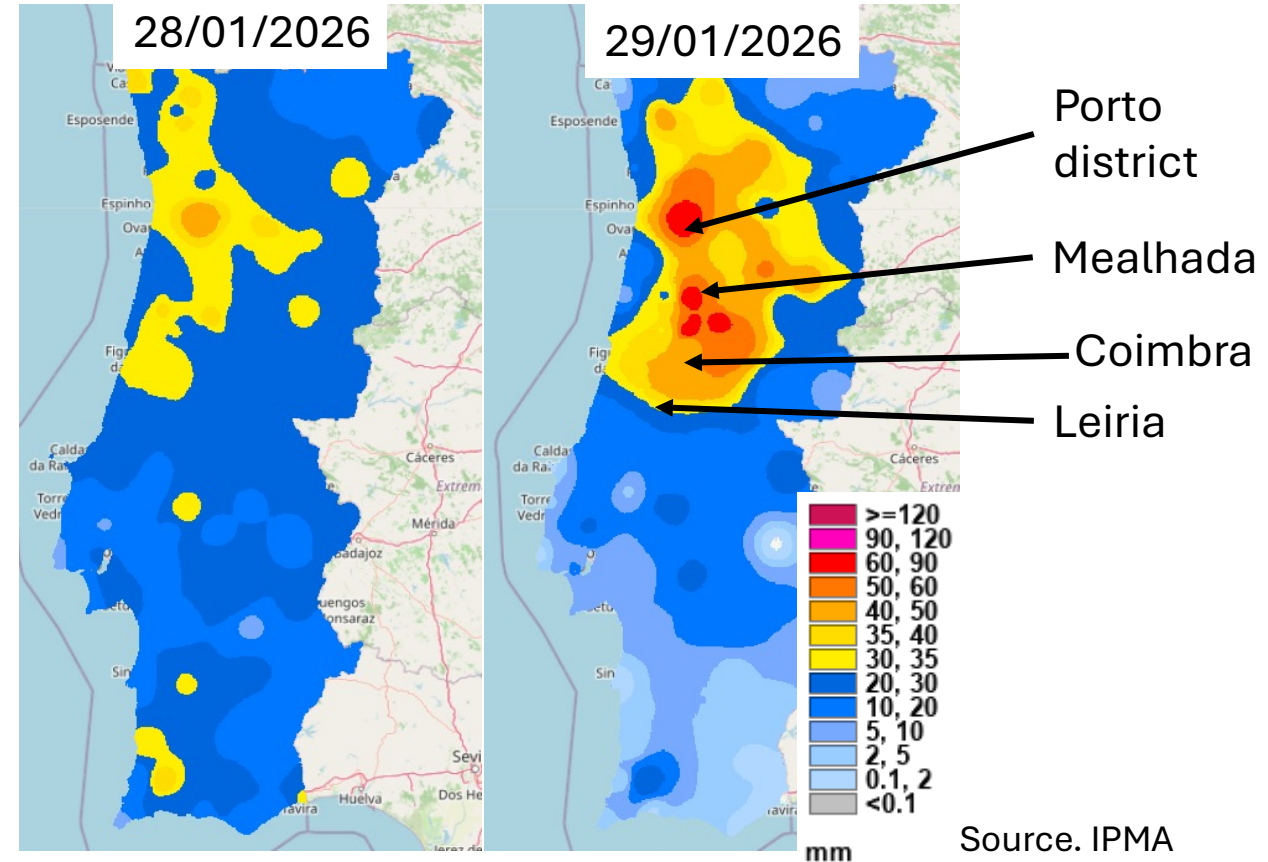
- Load different forecast dates and products within the INLINE platform
- Understand how each product can help anticipate flash flooding

Session Overview

1. Recap of Storm Kristin in Portugal – 5 mins
2. Split into groups of 5 or 6 people – 10 mins
3. Within your groups analyse the forecast in Portugal at the following times:
 1. 28th January 2026 05:00 UTC (15 mins)
 2. 29th January 2026 05:00 UTC (15 mins)
 - Analyse summary layers (5 mins)
 - Analyse animated layer (10 mins)
4. Group feedback – 15 mins

Storm Kristin Recap

- Affected Portugal from 28th January 2026
- Made landfall on the 28th January (~05:00 UTC)
- Heaviest rainfall on 29th January
- Majority of reported impacts due to wind hazard
- Heavy rainfall in north of country affected districts including Leiria, Coimbra up to Porto

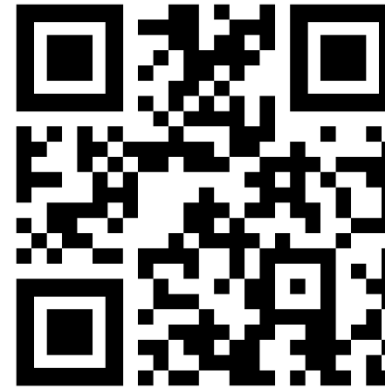
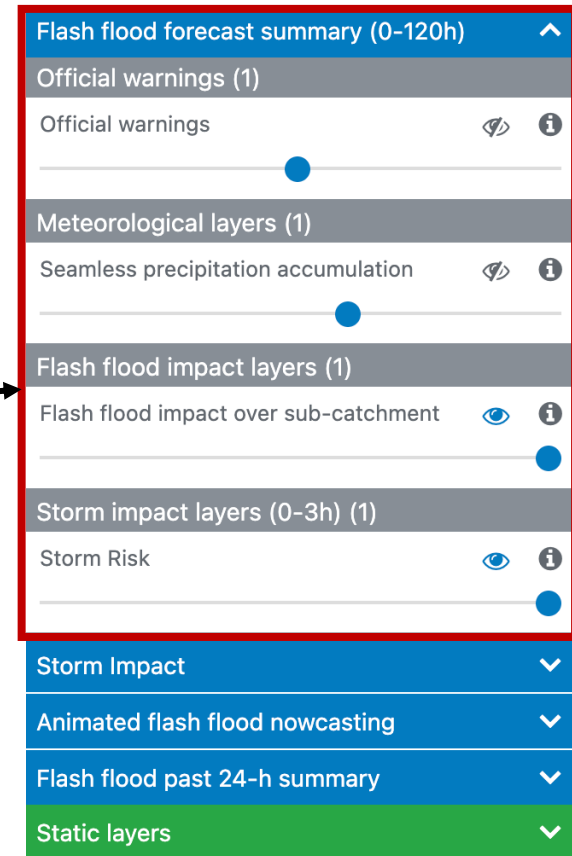


Source. IPMA

Part 1: 2026-01-28 05:00 ~24 hours ahead of rainfall

You have 15 minutes to do the following:

1. At least 1 person in each group - Log in to the INLINE platform
2. Focus on northern Portugal
3. Load the forecast on **28th January 2026 at 05:00 UTC**
4. View the layers in the **Flash flood forecast summary (0-120h)** tab
 1. Use time slider to view 6-24 & 24-48h periods


Part 1: 2026-01-28 05:00 ~24 hours ahead of rainfall

During these 15 minutes, answer the following questions:


Using the Flash flood forecast summary (0-120) layers:

- 1. Which layers highlighted risk of heavy rain or flash flooding over the next 6-48 hours?**
- 2. What were the differences between the *Official Warnings* and *Flash flood impact over sub-catchment* layers?**
 1. What were the differences in the areas they highlighted
 2. Differences in the predicted timing of the event?
- 3. In the *Flash flood impact over sub-catchment* layer:**
 1. What was the maximum predicted impact level?
 2. When was the maximum expected? (check the pop out window by clicking on catchments)

Part 2a: 2026-01-29 05:00 just ahead of rainfall

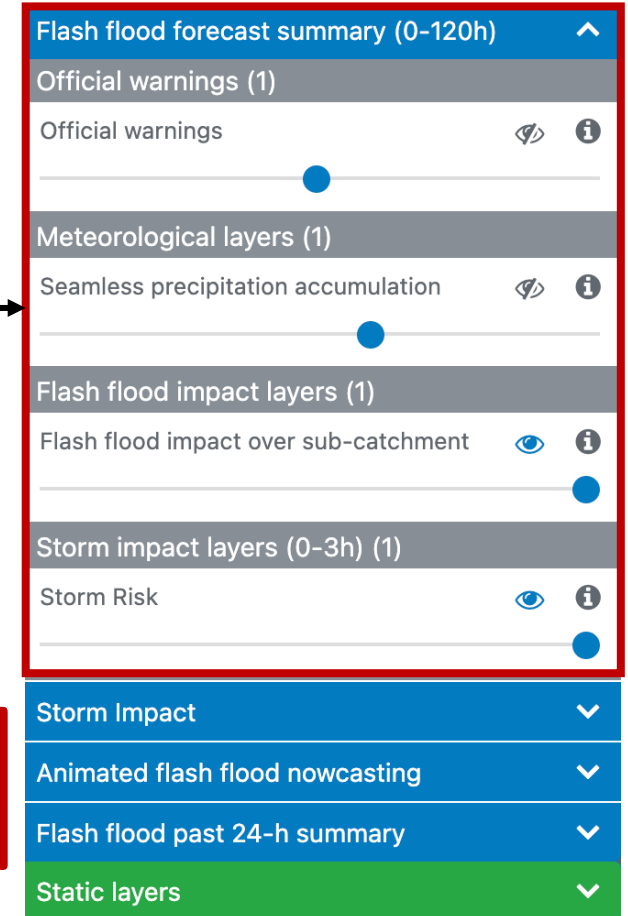
You have 5 minutes to do the following:

1. Load the forecast on **29th January 2026 at 05:00 UTC**
2. View the layers in the **Flash flood forecast summary (0-120h)** tab
 1. Use time slider to view 0-6, 6-24 periods



Forecasting time: Thu, 2026-01-29 05:00 UTC

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



Flash flood forecast summary (0-120h)

Official warnings (1)

Official warnings

Meteorological layers (1)

Seamless precipitation accumulation

Flash flood impact layers (1)

Flash flood impact over sub-catchment

Storm impact layers (0-3h) (1)

Storm Risk

Storm Impact

Animated flash flood nowcasting

Flash flood past 24-h summary

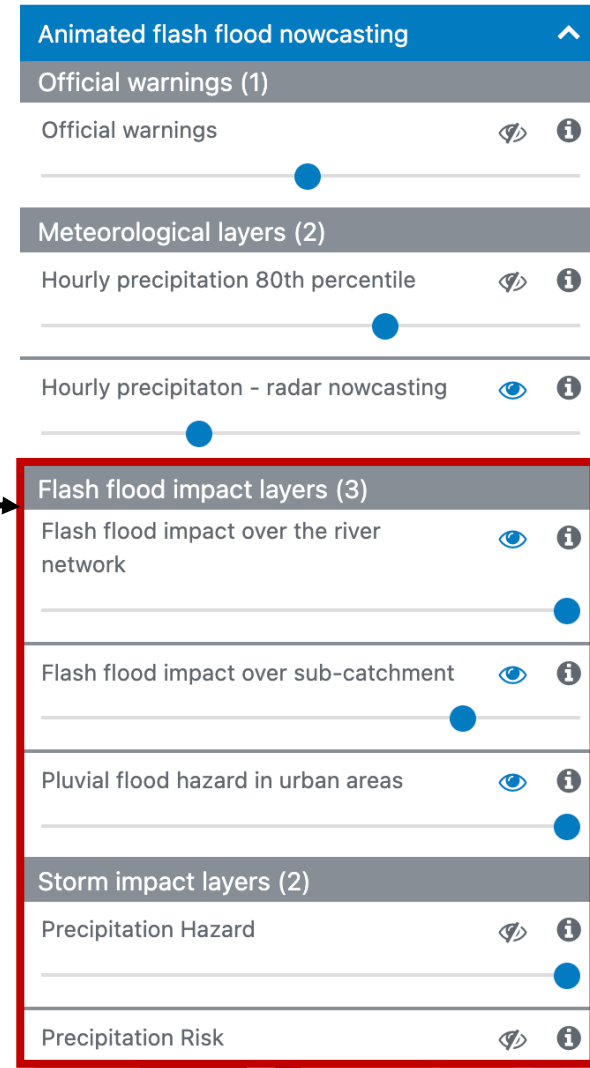
Static layers

Question: What has changed since the previous forecast?
 e.g. are new areas highlighted, has impact level changed, time of peak changed?

Part 2b: 2026-01-29 05:00 just ahead of rainfall

You have 10 minutes to do the following:

1. Load the forecast on **29th January 2026 at 05:00 UTC**
2. View the layers in the ***Animated flash flood nowcasting*** tab
 1. Focus on the ***Flash Flood Impact & Storm Impact*** groups (you can look at the other products if you wish)
3. Use the time slider to view how the event is forecast to evolve over time



The screenshot shows the 'Animated flash flood nowcasting' interface. It features several sections with sliders and icons for visibility and information:

- Animated flash flood nowcasting** (blue header)
- Official warnings (1)** (grey header)
 - Official warnings (with eye and info icons)
- Meteorological layers (2)** (grey header)
 - Hourly precipitation 80th percentile (with eye and info icons)
 - Hourly precipitaton - radar nowcasting (with eye and info icons)
- Flash flood impact layers (3)** (grey header, highlighted with a red box)
 - Flash flood impact over the river network (with eye and info icons)
 - Flash flood impact over sub-catchment (with eye and info icons)
 - Pluvial flood hazard in urban areas (with eye and info icons)
- Storm impact layers (2)** (grey header)
 - Precipitation Hazard (with eye and info icons)
- Precipitation Risk** (with eye and info icons)

Part 2b: 2026-01-29 05:00

During these 10 minutes, answer the following questions:

- 1. Describe how flash flooding is expected to evolve in the next 6-hours over the affected area** i.e. give a short description of the forecast
- 2. Which layers which layers were most helpful to analyse the risk of heavy rain or flash flooding over the next 6 hours?**
- 3. What difficulties did you encounter when analysing the forecast?** (e.g. interpreting the products, using the platform)

1. 2026-01-28 05:00 forecast, which layers highlighted risk of heavy rain or flash flooding over the next 6-48 hours?
2. What changed between the forecast of 2026-01-28 05:00 and 2026-01-29 05:00?
3. 2026-01-29 05:00 forecast, describe how flash flooding is expected to evolve in the next 6-hours over the affected area i.e. give a short description of the forecast
4. 2026-01-29 05:00 forecast, which layers were most helpful to analyse the risk of heavy rain or flash flooding over the next 6 hours?
5. 2026-01-29 05:00 forecast, did all the layers you analysed show the same signal?
6. Overall, what difficulties did you encounter when analysing the forecast? (e.g. interpreting the products, using the platform)