Prompts for open discussion

Communicating Uncertainty in Weather Forecasting

Uncertainty is inherent in every forecast.

- The challenge: How to convey this uncertainty to the public without eroding trust or causing confusion.
- The goal: Enable better, more informed decision -making.

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Text -Based Strategies

- Phrases like "there is a 70% chance of rain" or "rain is likely " **ARE they CLEAR enough?**

- Brief explanation about uncertain elements: "The storm's path is highly uncertain."

- Directly communicate confidence?

"We have high confidence in this thunderstorm forecast, but low confidence in the timing of the event"

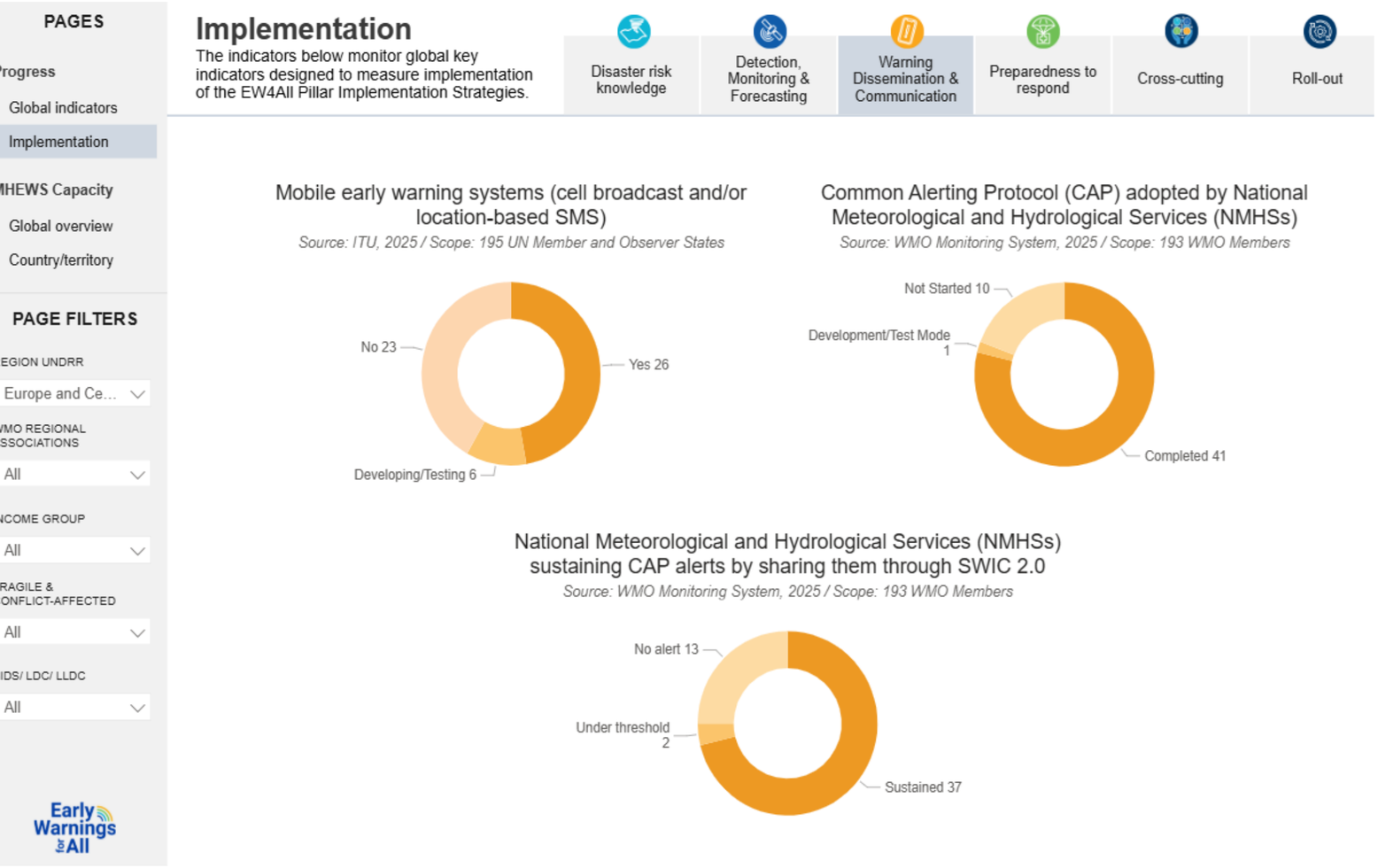
Visualizing: Graphics, Numbers, and Beyond

- VISUALS:
  - Use "**spaghetti plots** " to show multiple possible outcomes from different model runs?
  - **Color -Coded Maps** :
    - Use color gradients to show confidence?
    - Use Graphics to show probability?
- NUMBERS
  - State-specific percentages ("50% chance of thunderstorms").
  - Provide ranges instead of single values ("Temperatures will be between 18°C and 22°C").

Is qualified subjectivity ENOUGH?

- forecasters prefer to communicate uncertainty through objective values - a scientifically rigorous approach.
- resistances to including the subjective **judgment of the expert,** perceived as less reliable or less "scientific."
- BUT the judgment of an expert with years of experience is a **"qualified" subjectivity. It can offer critical context that models alone cannot provide.**

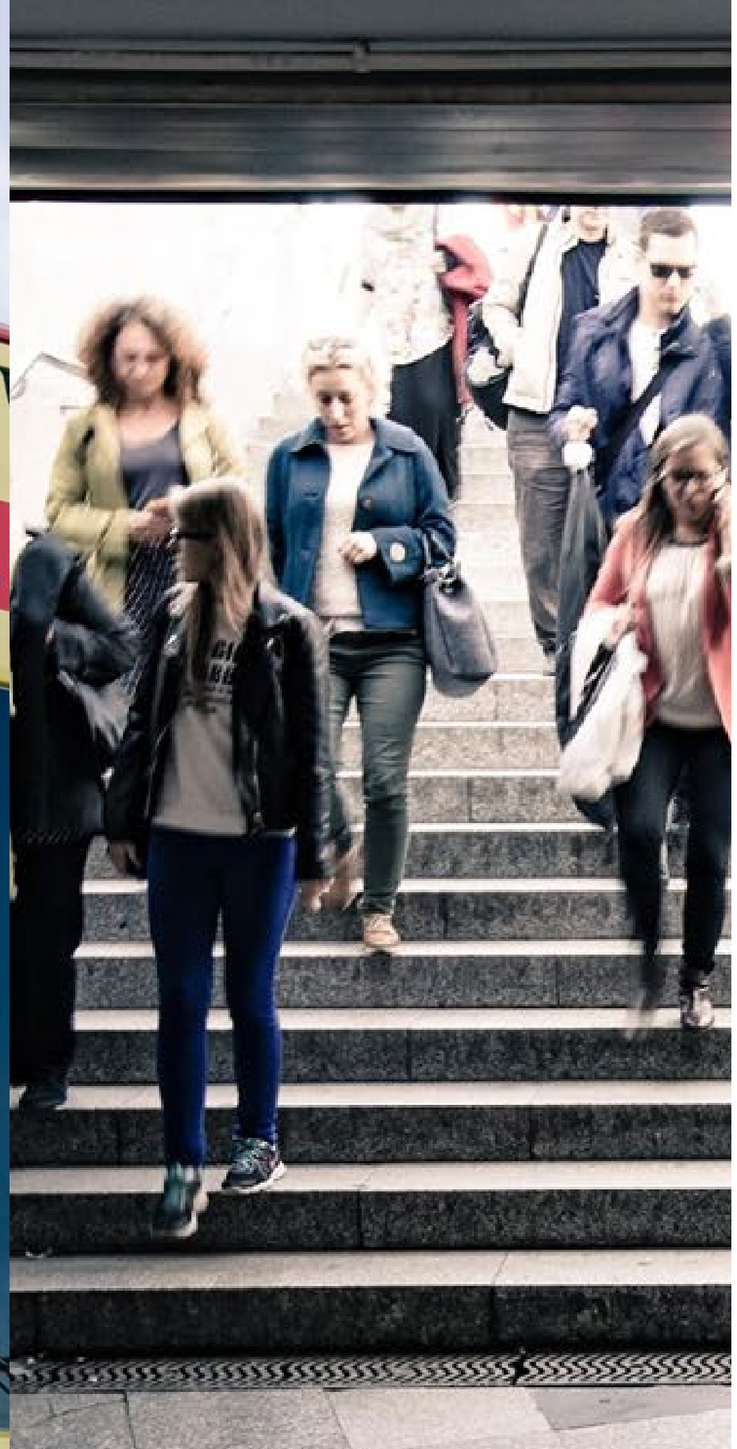
experiences, point of view, solutions?



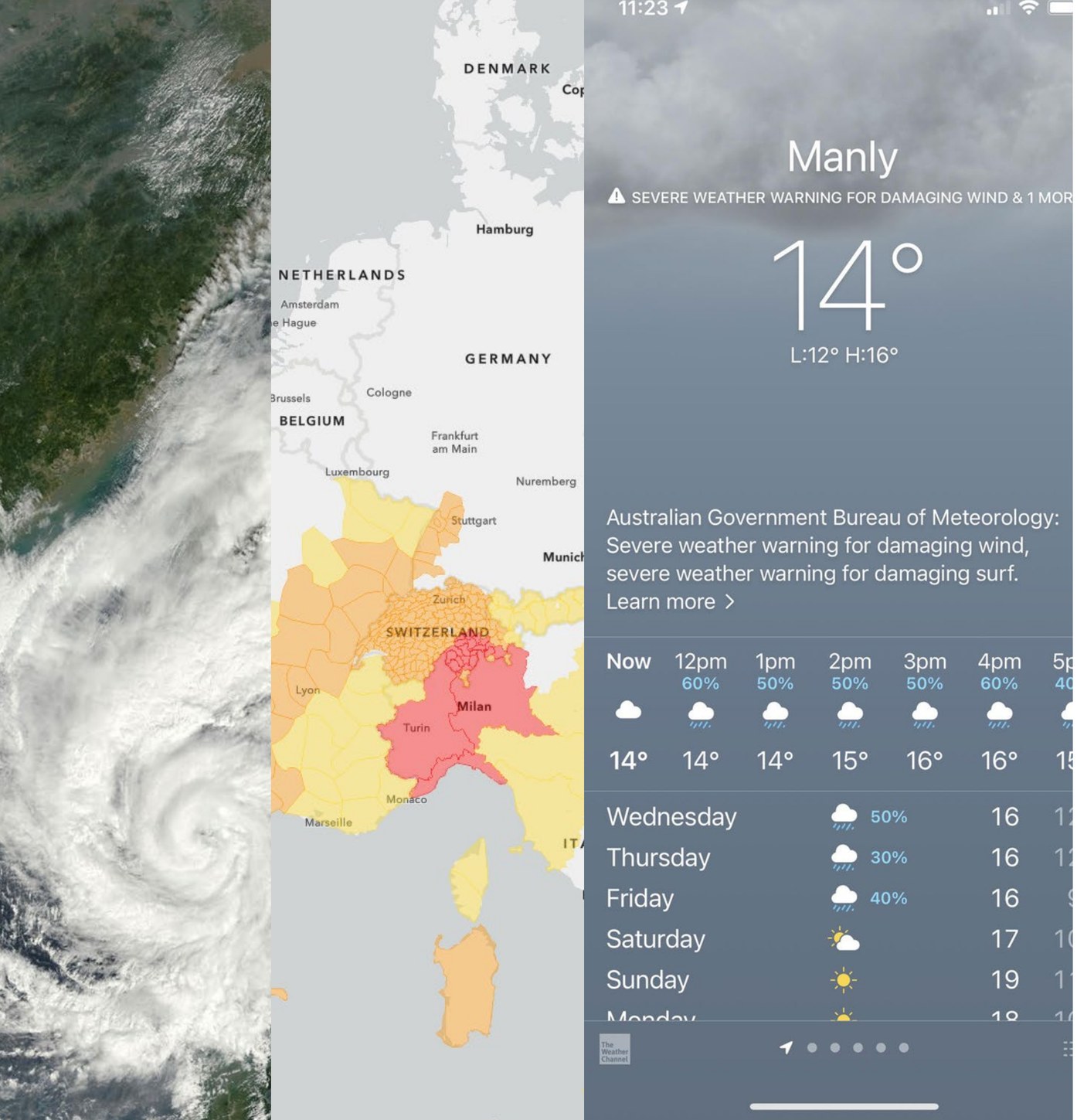
- How to increase the uptake and reliability of early warnings in Europe?
- Do you implement any specific actions towards mobile early warning systems and multi - hazard warning systems in your service?
- What can we learn from partners in other regions?

- How do we ensure credibility of warnings?
- Do professional services speak one voice?
- Who has the authority to issue warnings?
- During transitional weather, do we explain the change well enough?

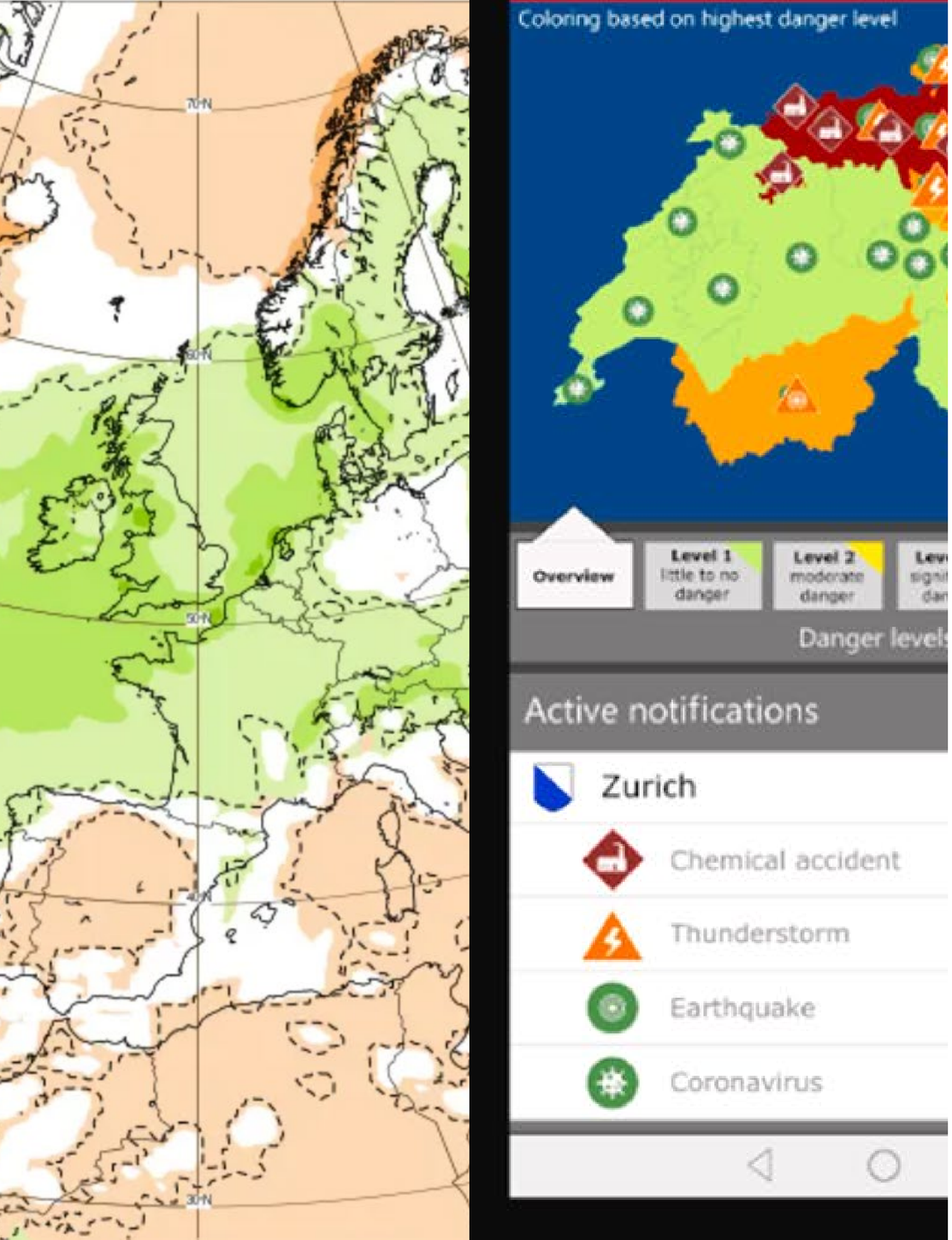
- What if the warnings do not materialise ?
- How do we treat the ‘cry -wolf effect’?
- There is scientific evidence for a lack of effect on short -term trust, but the long -term effect persists (LeClerc et al., 2015; Lim et al., 2019)
- Do we explain the uncertainty behind the warnings?
- How to keep open dialogue and honesty with the public?



- How to diversify the message between the audiences?
- How do we communicate with first -line respondents (emergency services, the police, fire brigades)?
- How to communicate impacts to local authorities?
- What needs to be known, and how to make the information concise and efficient?



- Which warning styles are the most intuitive to the users?
- Would you rely on third parties distributing your message?
- If yes, how to ensure the correct attribution and credibility?
- Does it increase reach?
- What is the best design and practice in communicating impacts?



- What depth of information do we need to provide to different users?
- How not to overload the audience?
- How to anticipate adequate knowledge of the user?
- What information do media outlets need to keep the warnings relevant and not sensational?
- Are the short weather warnings too simple or complicated?

- How do professionals in the field of meteorology perceive the severity spectrum of conditions?
- How to appropriately assign the class of severity? Should the climatological threshold be considered, reference to past events, or a broad understanding of the current environment?
- How do we make sure that the public understands our reasoning?