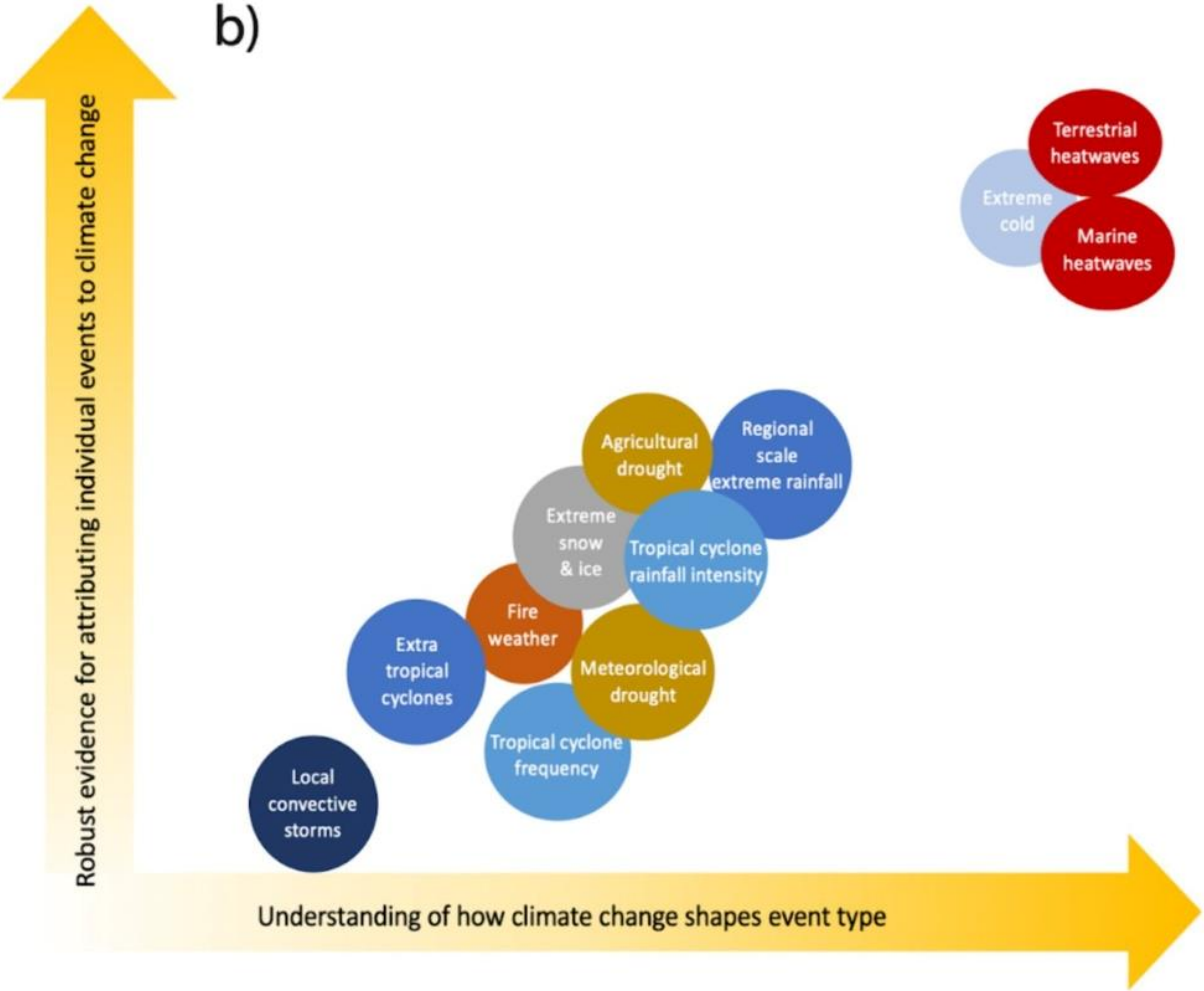
World Weather Attribution

Extreme event attribution

Julie Arrighi
Red Cross Red Crescent Climate Centre

Attributing C

Extreme Heat



old Spell

WWA approach

To what extent did climate change impact the frequency or intensity of this class of event?

Rapid Studies:

- Disaster monitoring and study triggering
- Impact-relevant event definitions
- Multi-method hazard analysis
- Results synthesis
- Vulnerability and exposure analysis
- Communications

Event specific experts involved in each study

- examples: local NMHS, local universities, local Red Cross or Red Crescent societies

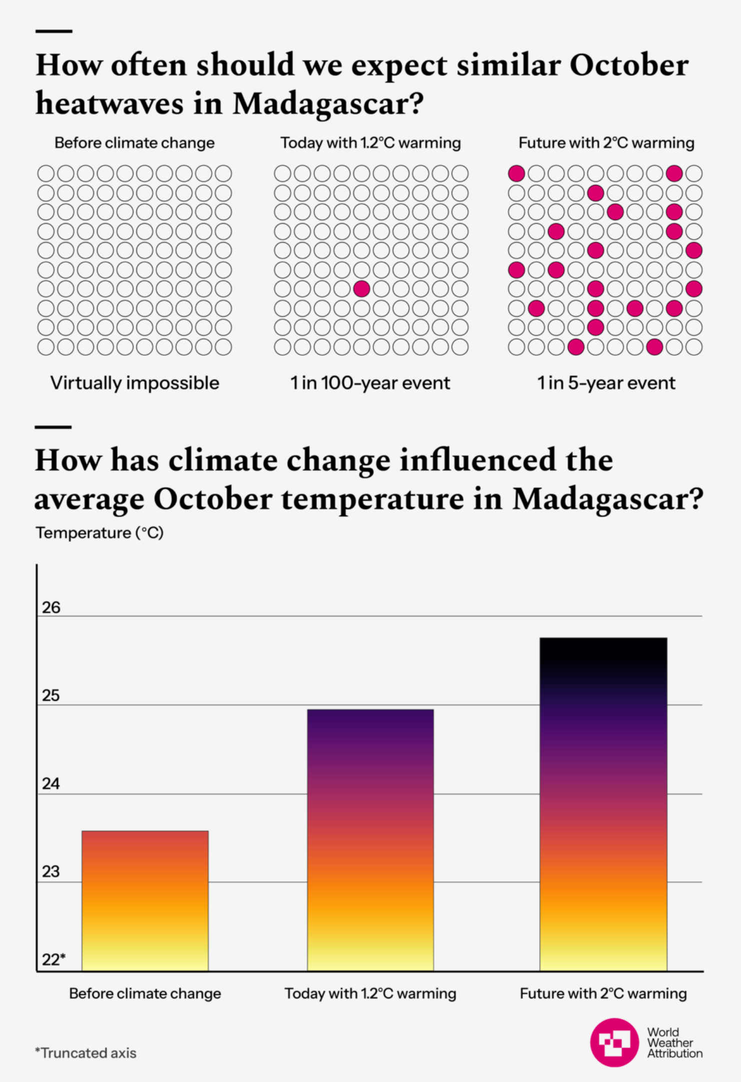
IMPERIAL

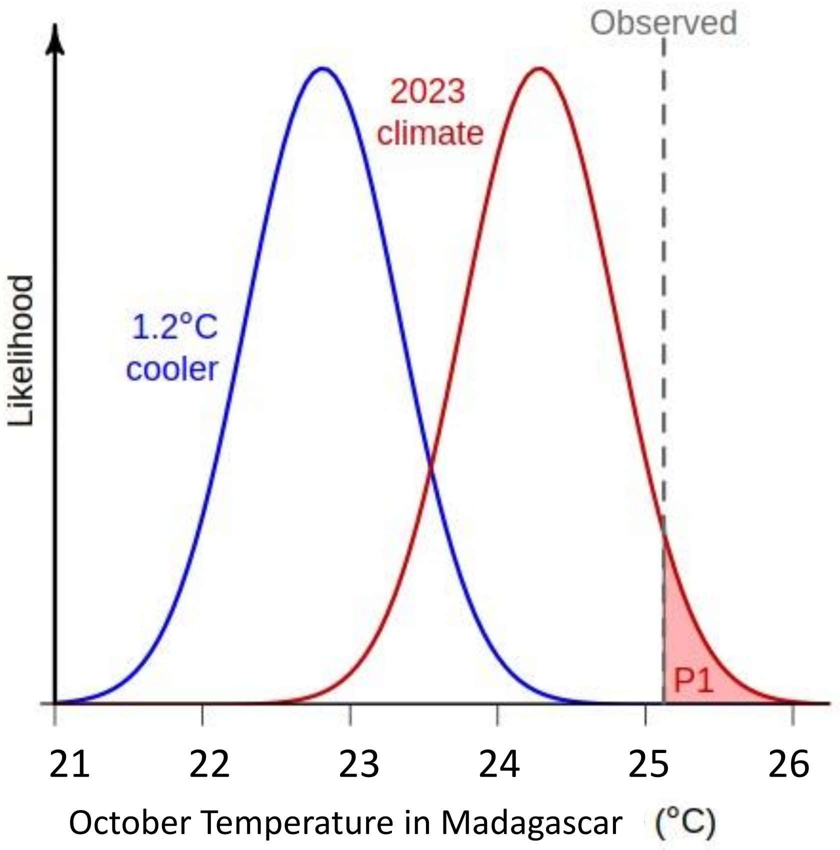
Koninklijk Nederlands Meteorologisch Instituut
Ministerie van Infrastructuur en Waterstaat

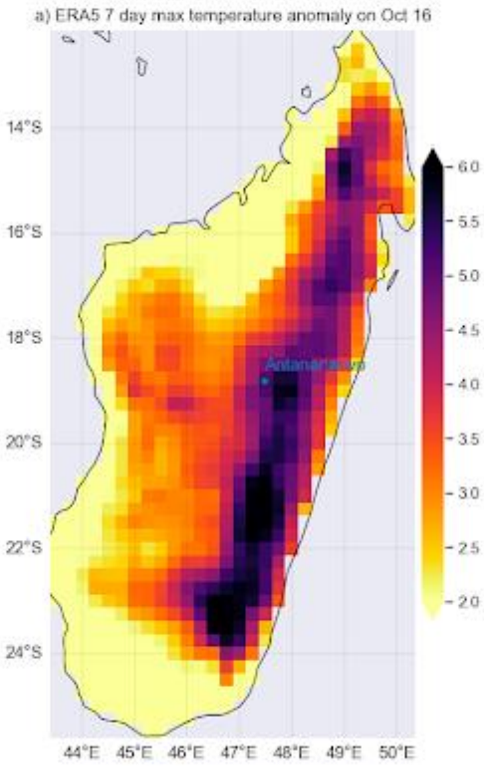
Climate Centre

GSCC

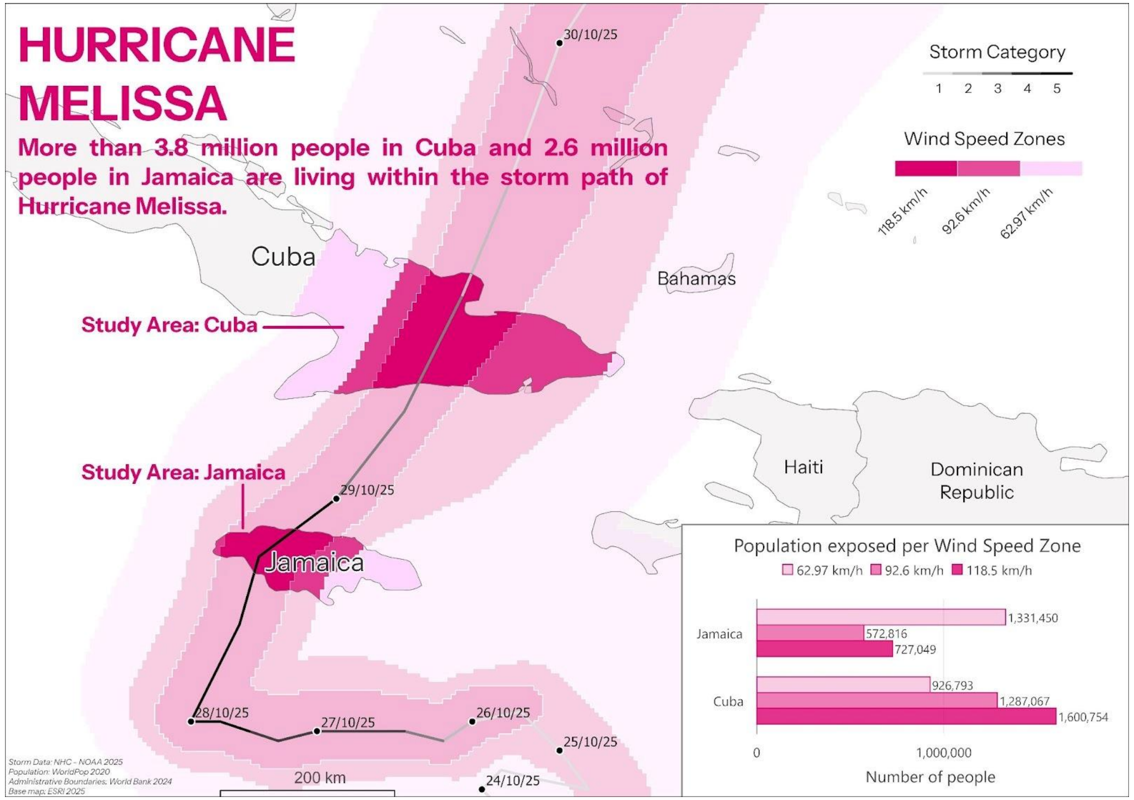
Madagascar Extreme Heat – October 2023







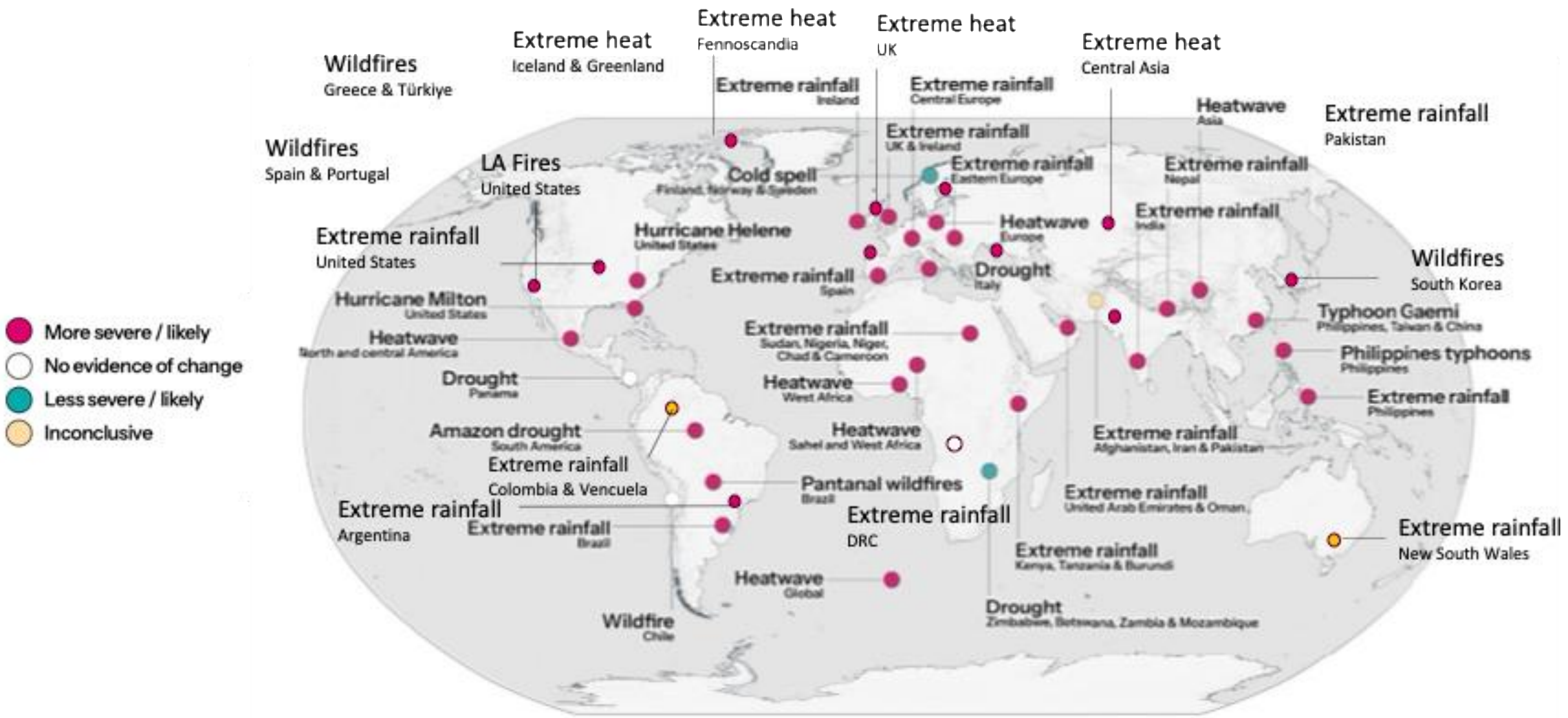
Hurricane Melissa



Findings:

- Climate change increased maximum windspeeds by 7% and extreme rainfall intensity by 16% (IRIS model)
- Maximum rainfall over five days 20-50% higher than pre-industrial (observations)
- Temperature and humidity conditions in which Melissa developed were made six times more likely due to climate change

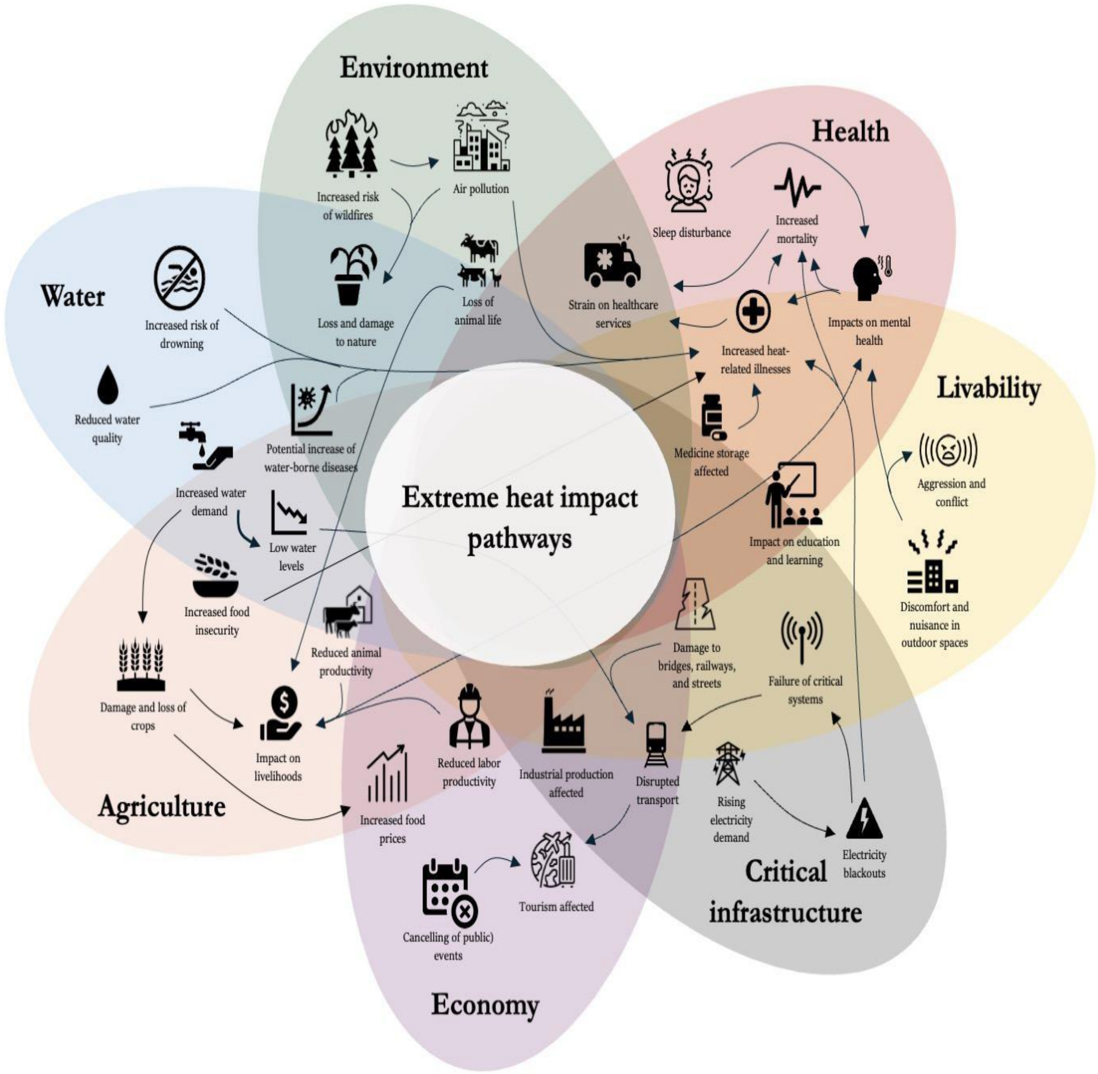
Attributed extreme events 2024/25



Frontiers and Gaps

Frontiers:
- Compounding and cascading events
- Impact attribution
- Operational services
- Policy relevance

Gaps:
- Data gaps – access and quality
- Knowledge gaps
- Resourcing/outreach on attribution methods



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