



world weather attribution

# **Understanding the era of loss and damage – opportunities and challenges in attributing & projecting extreme events and their consequences**

**Dr Fredi Otto + many others**

Grantham Institute for Climate Change and the Environment  
Imperial College London

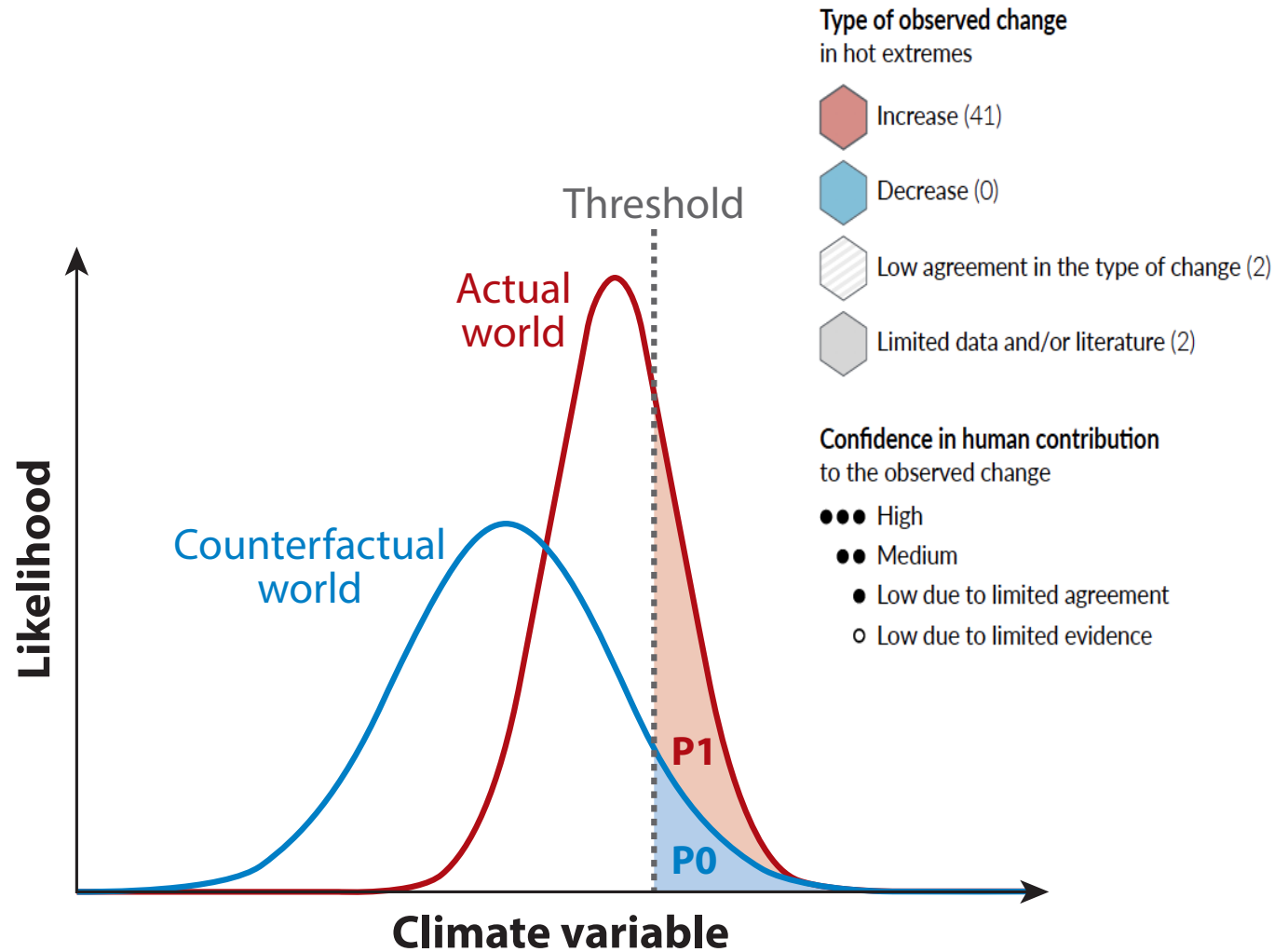
 **@FredioOtto**

**We are in the era of loss &  
damage**

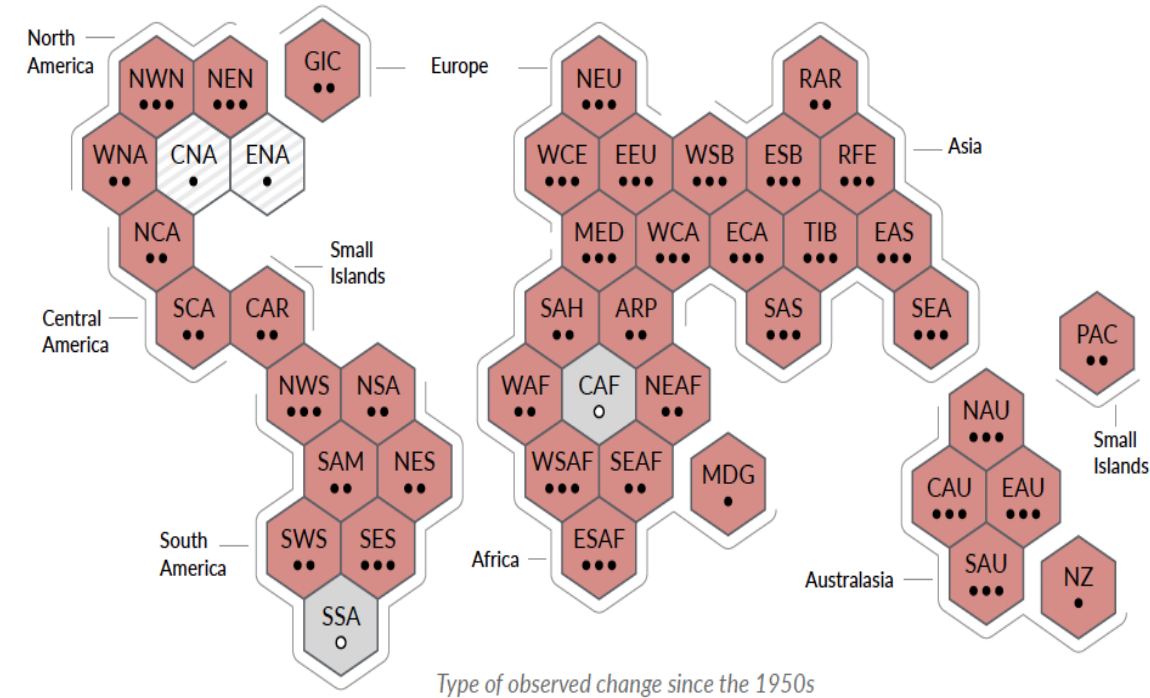


<https://www.worldweatherattribution.org>

# Climate change is already affecting every region across the globe with human influence contributing to many observed changes in weather and climate extremes



a) Synthesis of assessment of observed change in **hot extremes** and confidence in human contribution to the observed changes in the world's regions

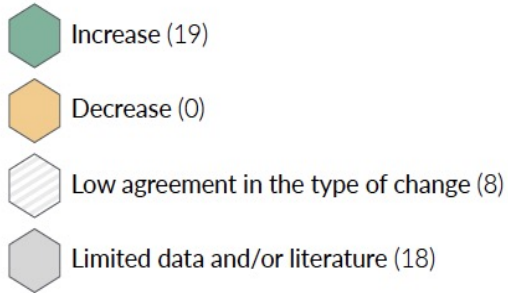




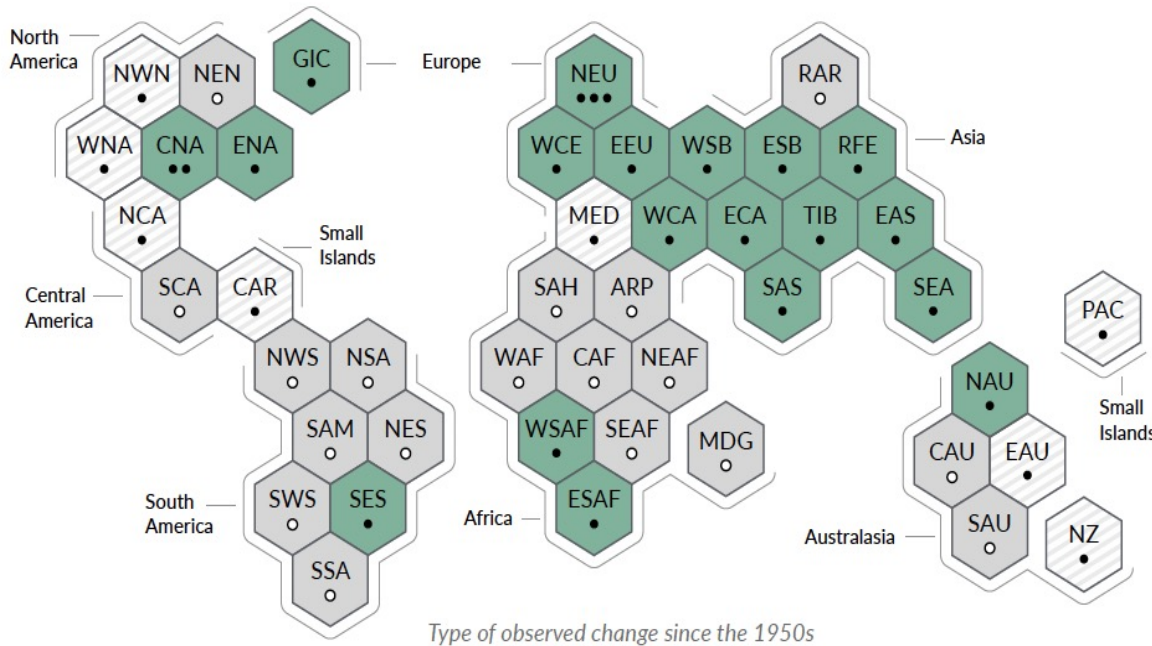
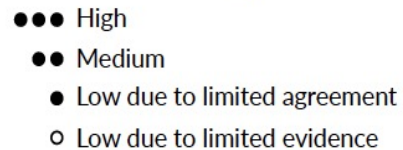
# Evidence base for mitigation is much stronger than for adaptation & loss and damage – no inventory of the impacts of climate change exist

b) Synthesis of assessment of observed change in **heavy precipitation** and confidence in human contribution to the observed changes in the world's regions

Type of observed change in heavy precipitation



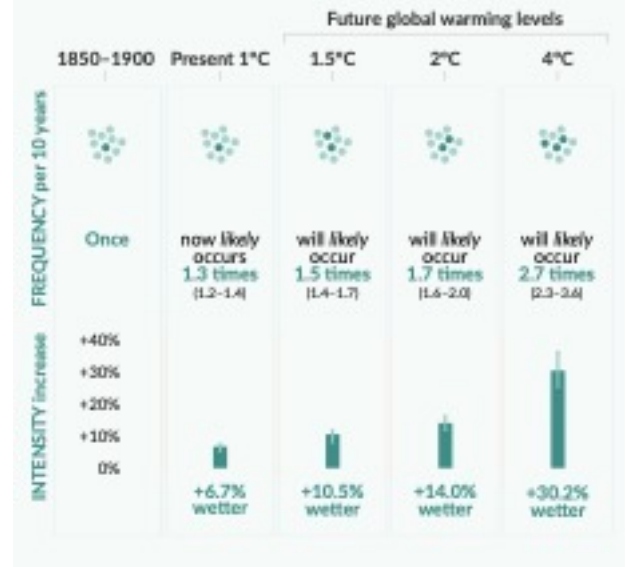
Confidence in human contribution to the observed change



Type of observed change since the 1950s

## Heavy precipitation over land 10-year event

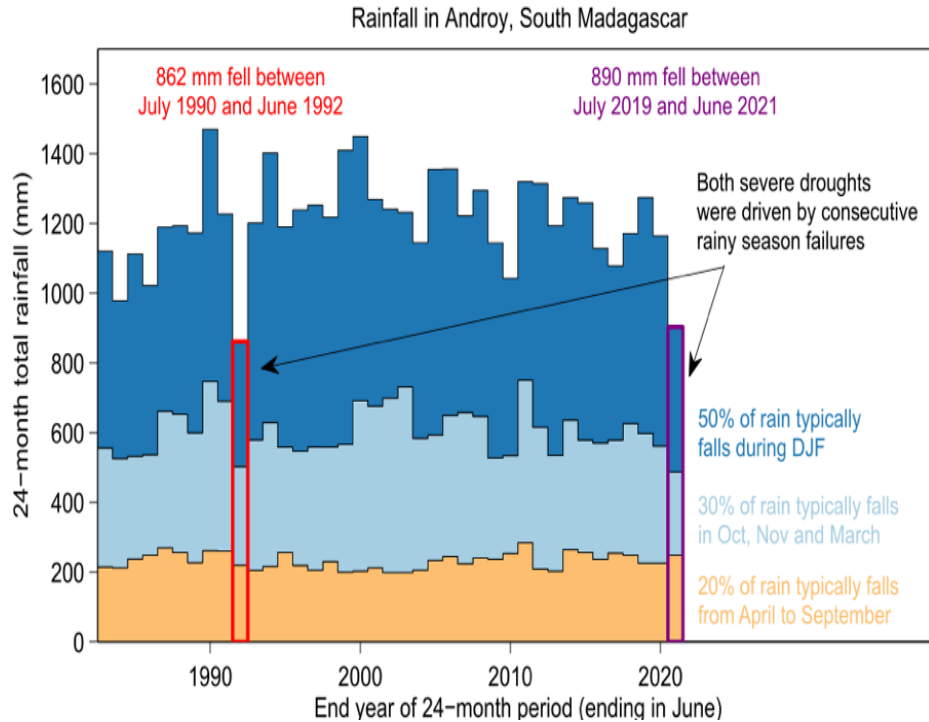
Frequency and increase in intensity of heavy 1-day precipitation event that occurred once in 10 years on average in a climate without human influence



Global trends  $\neq$  Local change

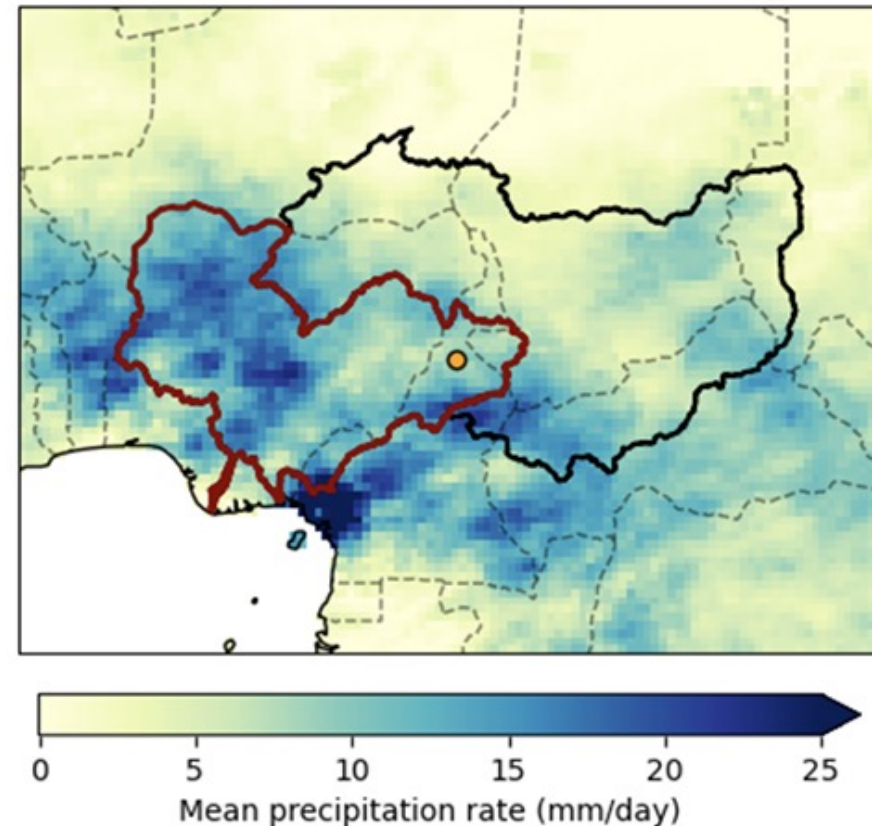
# Climate change is not the only driver of losses and damages

Factors other than climate change main drivers of recent drought in Southern Madagascar



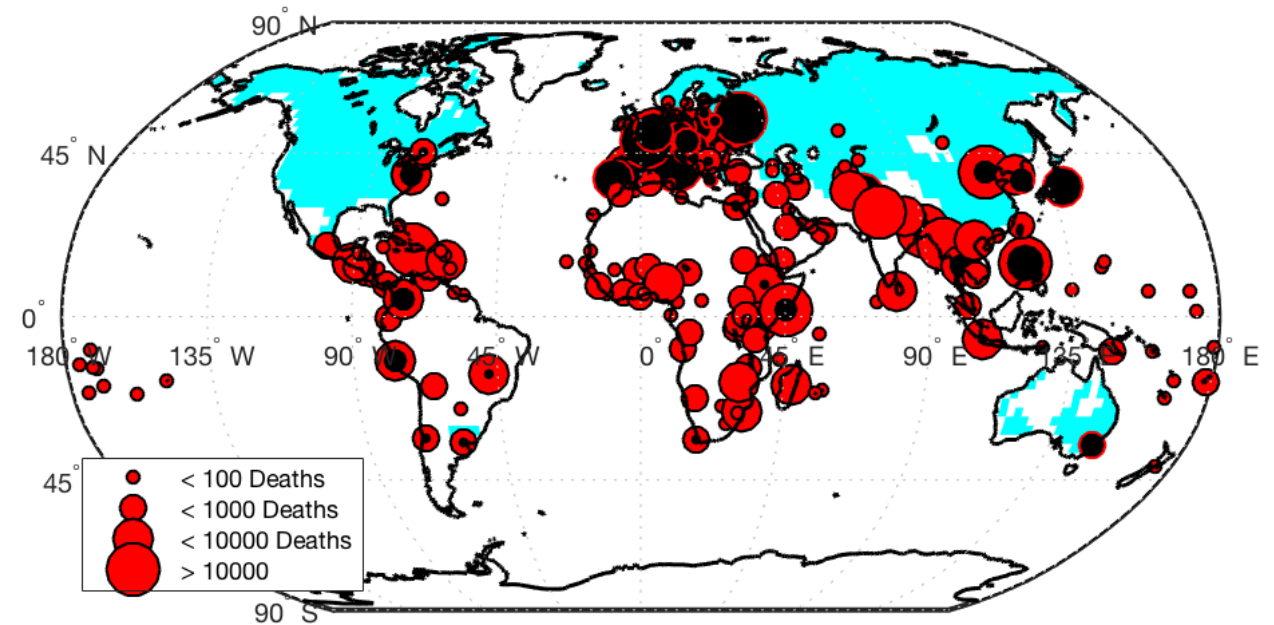
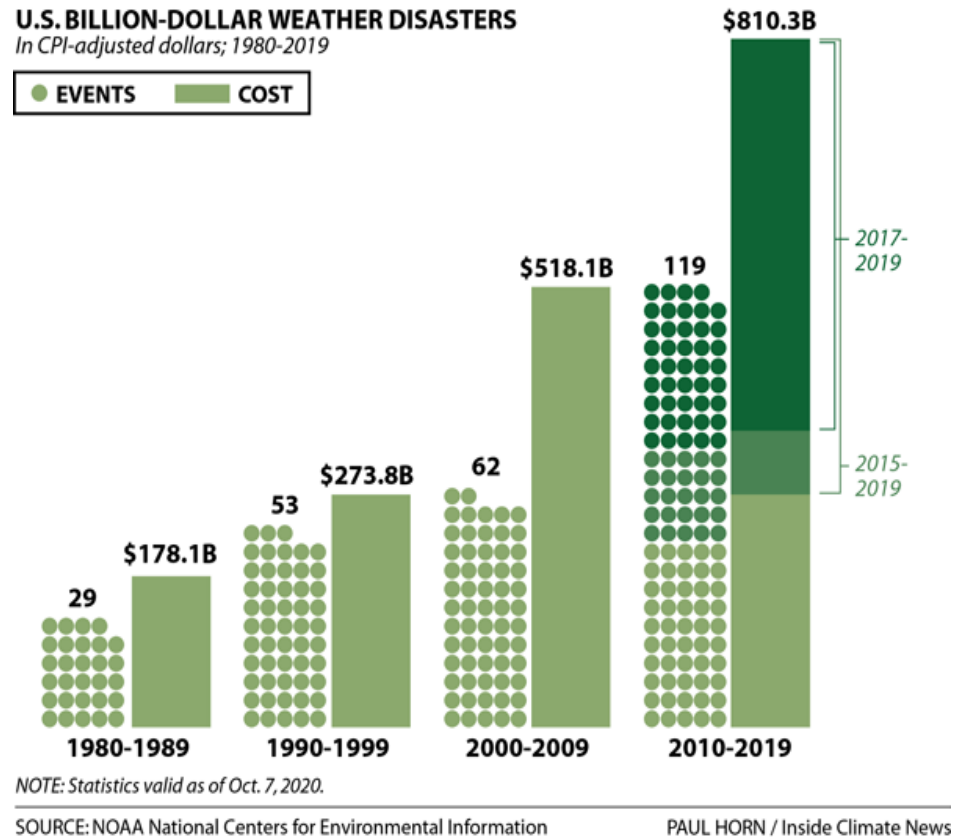
Harrington et al., 2022;

Climate change exacerbated heavy rainfall by a factor of 80 leading to large scale flooding in highly vulnerable communities in West Africa



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# We know a lot more about the impacts of climate change than just a year ago, but many gaps remain



# References

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- ◆ Harrington et al., (2022) Limited role of climate change in extreme low rainfall associated with southern Madagascar food insecurity, 2019–21. *Environ. Res.: Climate* 1 021003 DOI 10.1088/2752-5295/aca695



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