EGU22-11953
https://doi.org/10.5194/egusphere-egu22-11953
EGU General Assembly 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Linking societal impacts to changing weather

Karin van der Wiel
Royal Netherlands Meteorological Institute, De Bilt, Netherlands (wiel@knmi.nl)

The past decades have seen significant increases in the societal and natural damages from extreme weather events. Preventing or limiting evitable future damages requires climate change mitigation and adaptation measures. Societal adaptation to changing weather and climate extremes requires detailed knowledge on how these meteorological extremes are changing (understanding future hazard) and knowledge of the pathways in which weather impacts society (understanding vulnerability and exposure).

A full focus on meteorology is therefore misguided, as the impact of two similar meteorological events at different times or different locations will vary widely. This shows the need for explicit consideration of the entire chain of events, and how this chain results in potentially heavy societal impacts. Developments in large ensemble climate modelling, data science and storyline techniques help to identify the meteorological drivers of extreme impacts.

We will illustrate these developments through practical examples for varied ‘impacts’, e.g. hydrological extremes, renewable energy extremes, and agricultural extremes. We will provide insights into the promise and pitfalls of modern big data approaches, and discuss ways forward, including co-production efforts to increase the societal uptake and hence usefulness of our science.