





The fingerprint of climate change in crop losses during recent heatwaves and droughts

Jonas Jägermeyr

ISIMIP/PROCLIAS workshop

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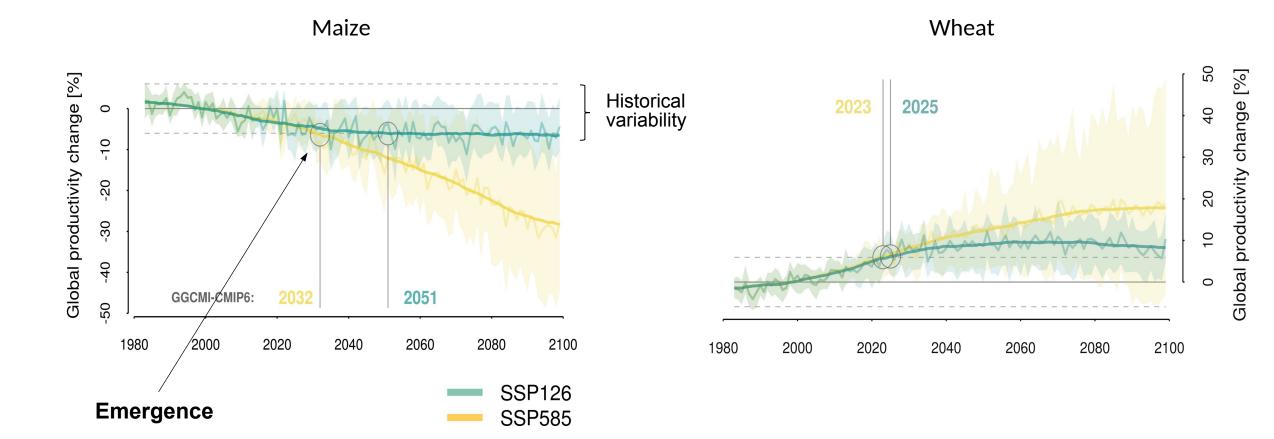




Time of Climate Impact Emergence

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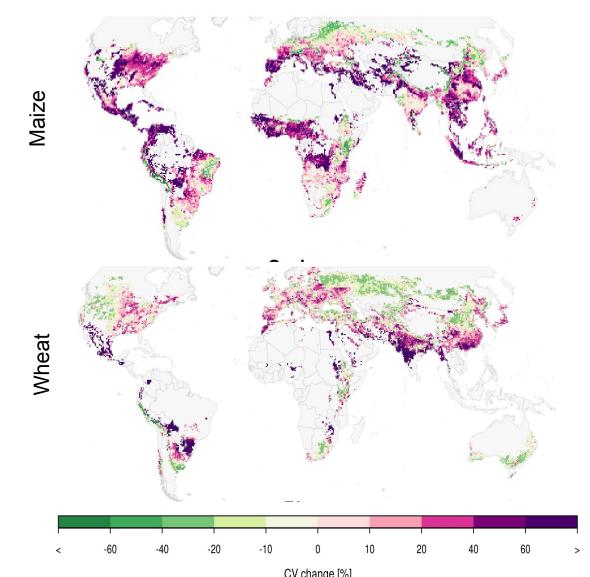


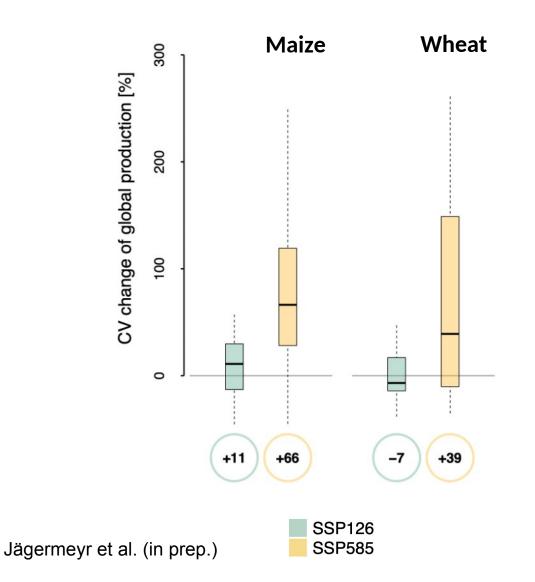
Inter-annual variability to increase

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Change in Coefficient of Variation





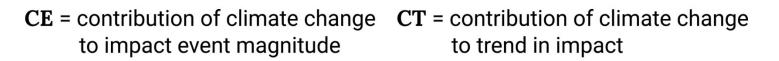
Geosci. Model Dev., 14, 5269–5284, 2021 https://doi.org/10.5194/gmd-14-5269-2021 © Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.

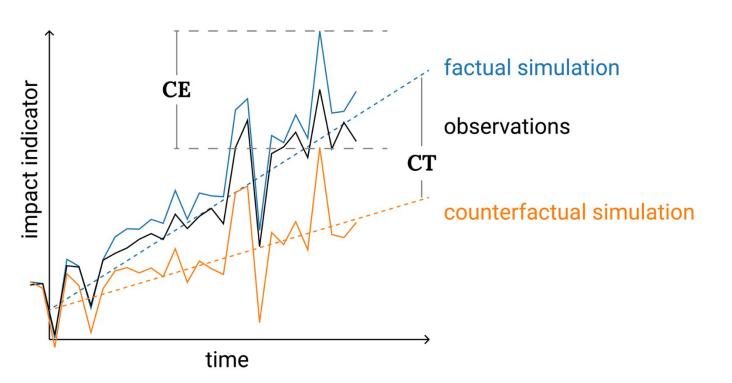


ATTRICI v1.1 – counterfactual climate for impact attribution

Matthias Mengel, Simon Treu, Stefan Lange, and Katja Frieler

Potsdam Institute for Climate Impact Research (PIK), Member of the Leibniz Association, P.O. Box 60 12 03, 14412 Potsdam, Germany



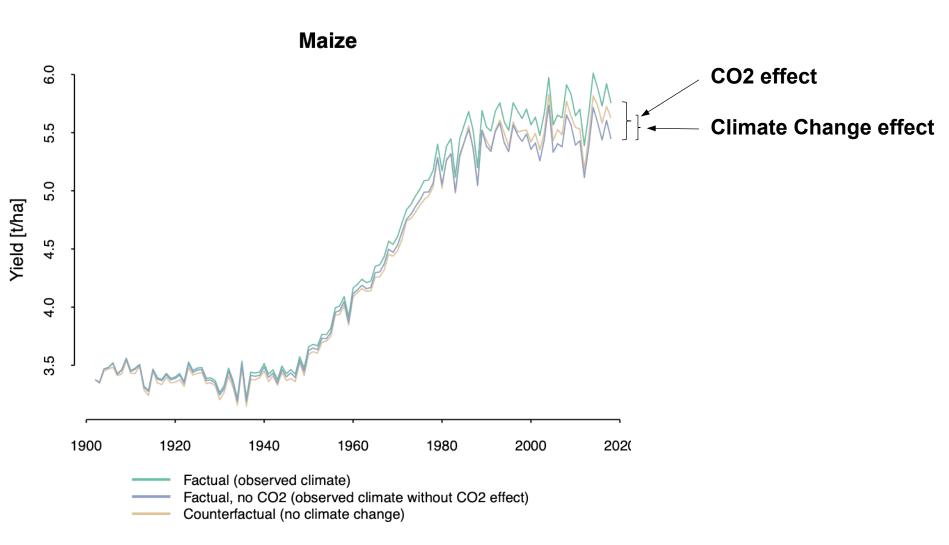


Mengel et al. (2021)

Simulated yield trends over the 20th century





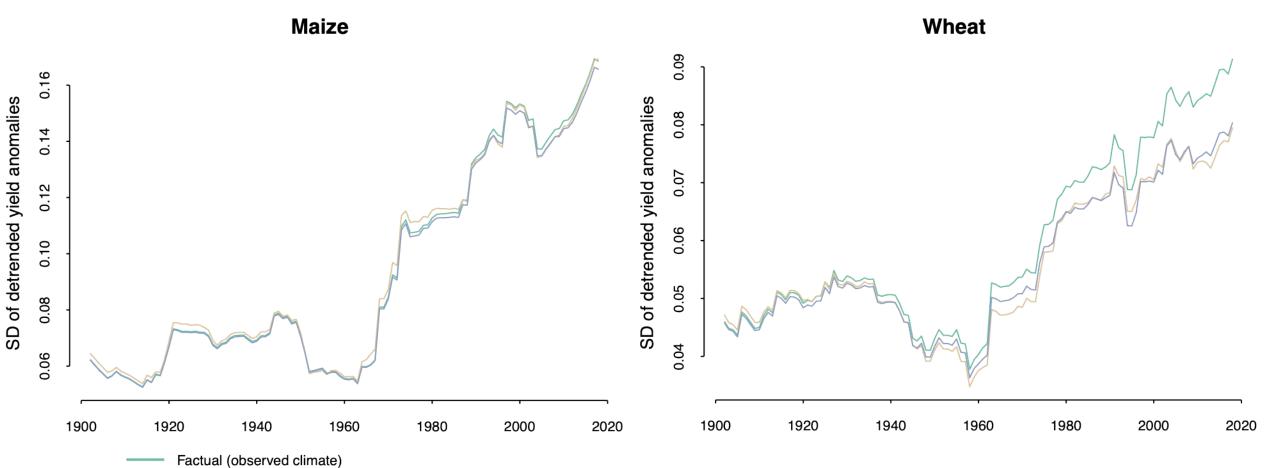


Jägermeyr et al. (in prep.)

Simulated yield standard deviation (SD)

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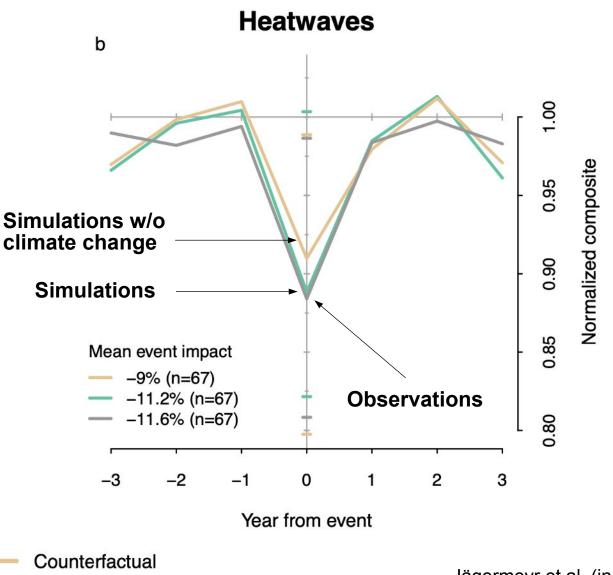
- ----- Factual, no CO2 (observed climate without CO2 effect)
- Counterfactual (no climate change)

Jägermeyr et al. (in prep.)

Historical extreme event attribution in global agriculture

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Factual

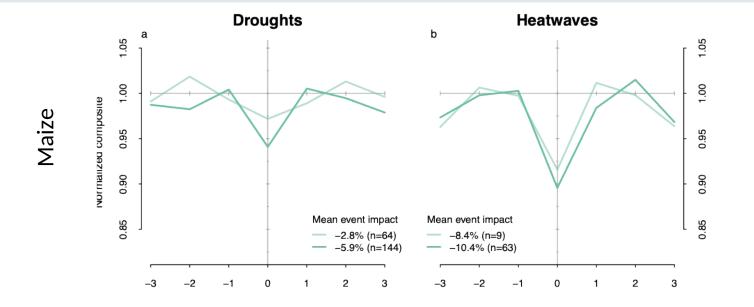
Jägermeyr et al. (in prep.)

Historical yield impacts of droughts and heat waves before and after 1990

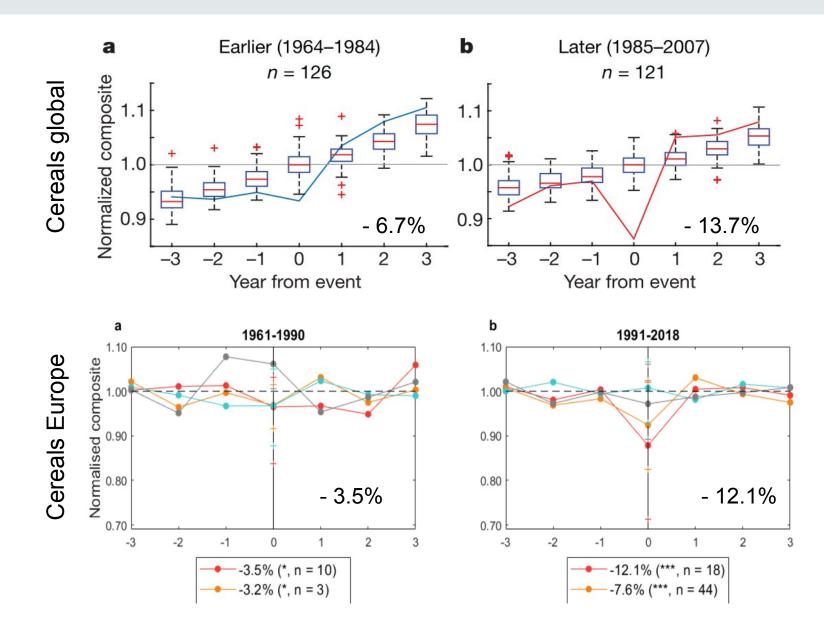


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Crop impacts of extreme weather disasters increased in observations



Lesk et al. 2016, Influence of extreme weather disasters on global crop production, *Nature*

Bras et al. 2021, Severity of drought and heatwave crop losses tripled over the last five decades in Europe, *ERL*







Thank you!

jonas.jaegermeyr@columbia.edu

@JonasJaegermeyr

