

*The views expressed in this presentation are the views of the author/s and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. The countries listed in this presentation do not imply any view on ADB's part as to sovereignty or independent status or necessarily conform to ADB's terminology.*

# Linking climate change, temperature variability, and poverty

Ida Brzezinska and Paul Jasper



**Oxford Policy  
Management**

22 March 2023



# Climate change is predicted to lead to increases in temperature variability

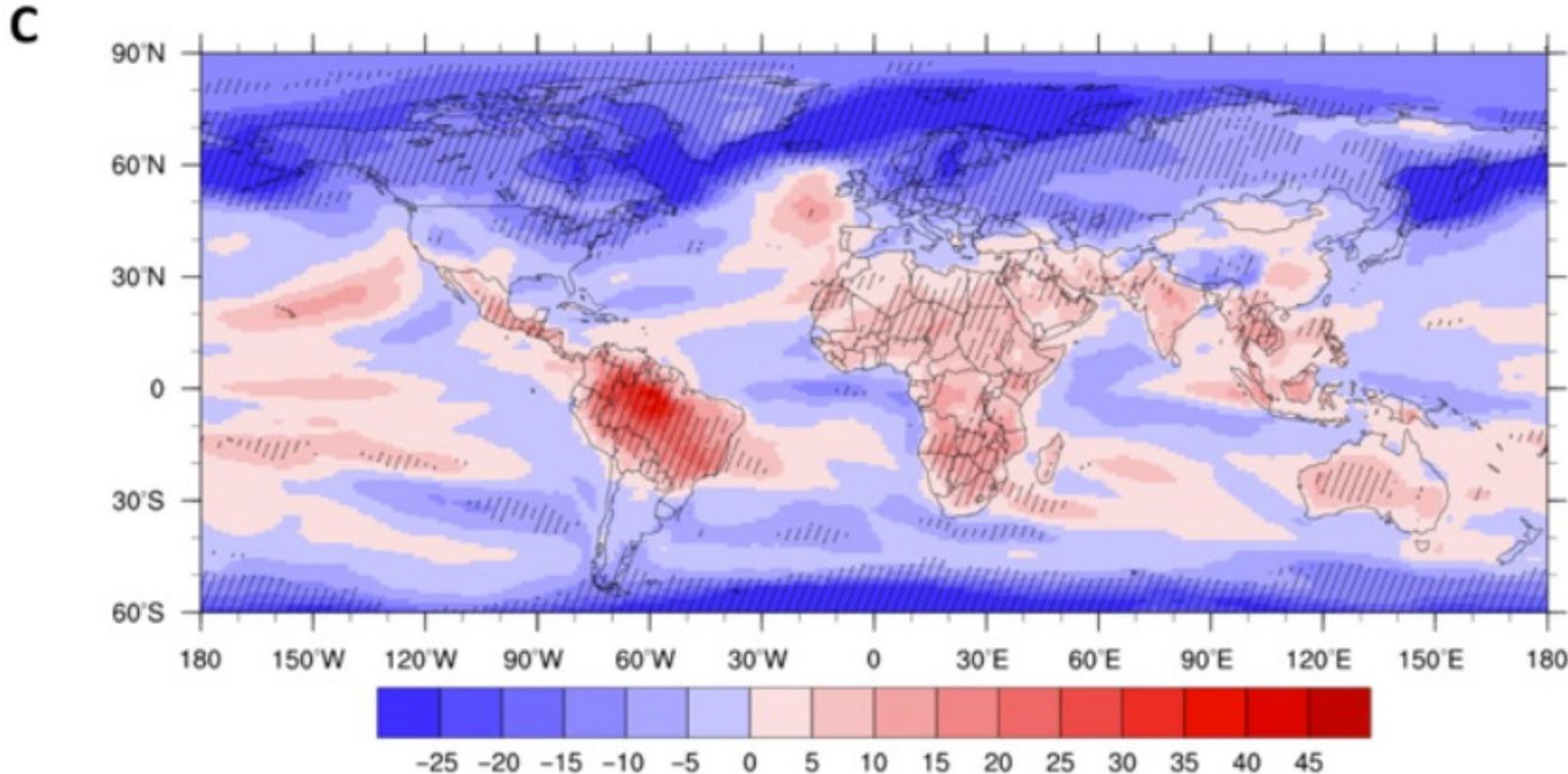


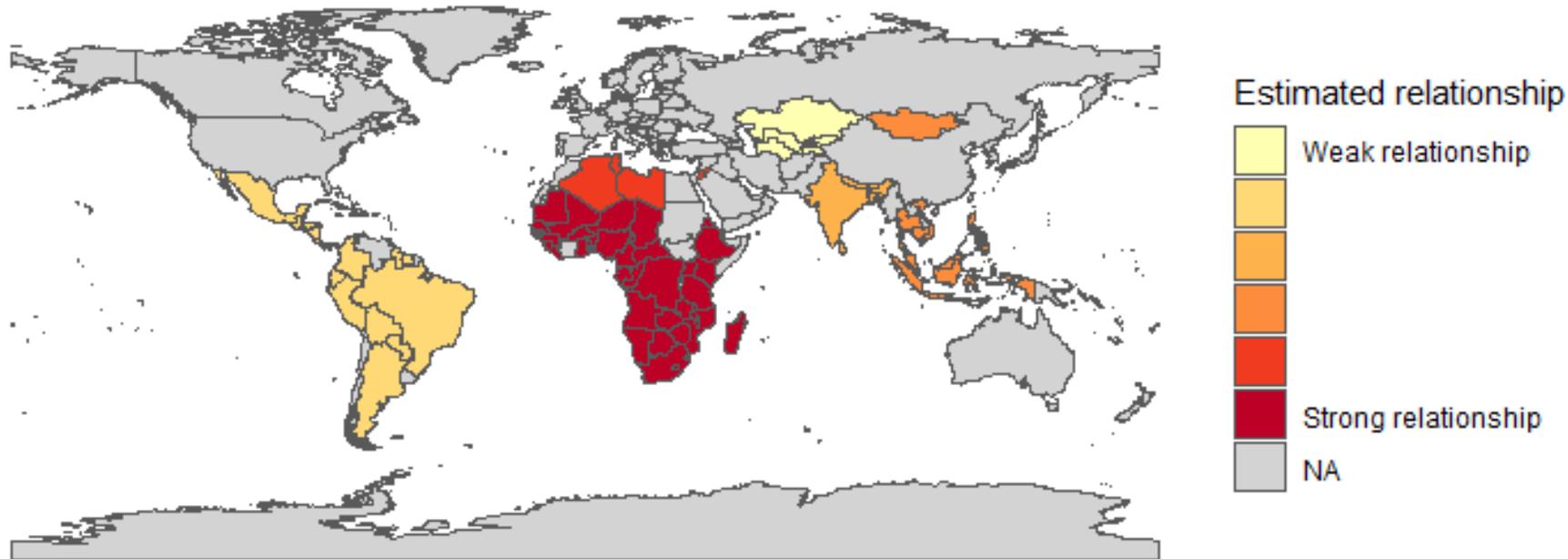
Fig. 1 Relative changes of SD of monthly temperature anomalies until the end of the 21st century.

“Poor countries are located in the (...) hotspot regions of increasing temperature variability.”

(Source: Bathiany et al., 2018)

# Higher variability is linked to poverty

Impact of temperature variability on household wealth by region  
89 countries



Using big data, we estimate significant negative effects of temperature variability on household wealth in LMIC.

# Channels are varied and complex



## Macroeconomy

- Reduction of aggregate growth
- More so in poorer countries



## Health

- Increase of mortality
- Negative effects on birth outcomes



## Agriculture

- Reduction in yields and crop income



## Productivity

- Increases in work absenteeism
- Reduction in firms' revenues and profits



## Poverty traps

- Non-linear effects of shocks might 'trap' more households in poverty



## Education

- Reduction of school participation

# Thank you

For sources and further information:



[www.opml.co.uk](http://www.opml.co.uk)

OPMglobal

