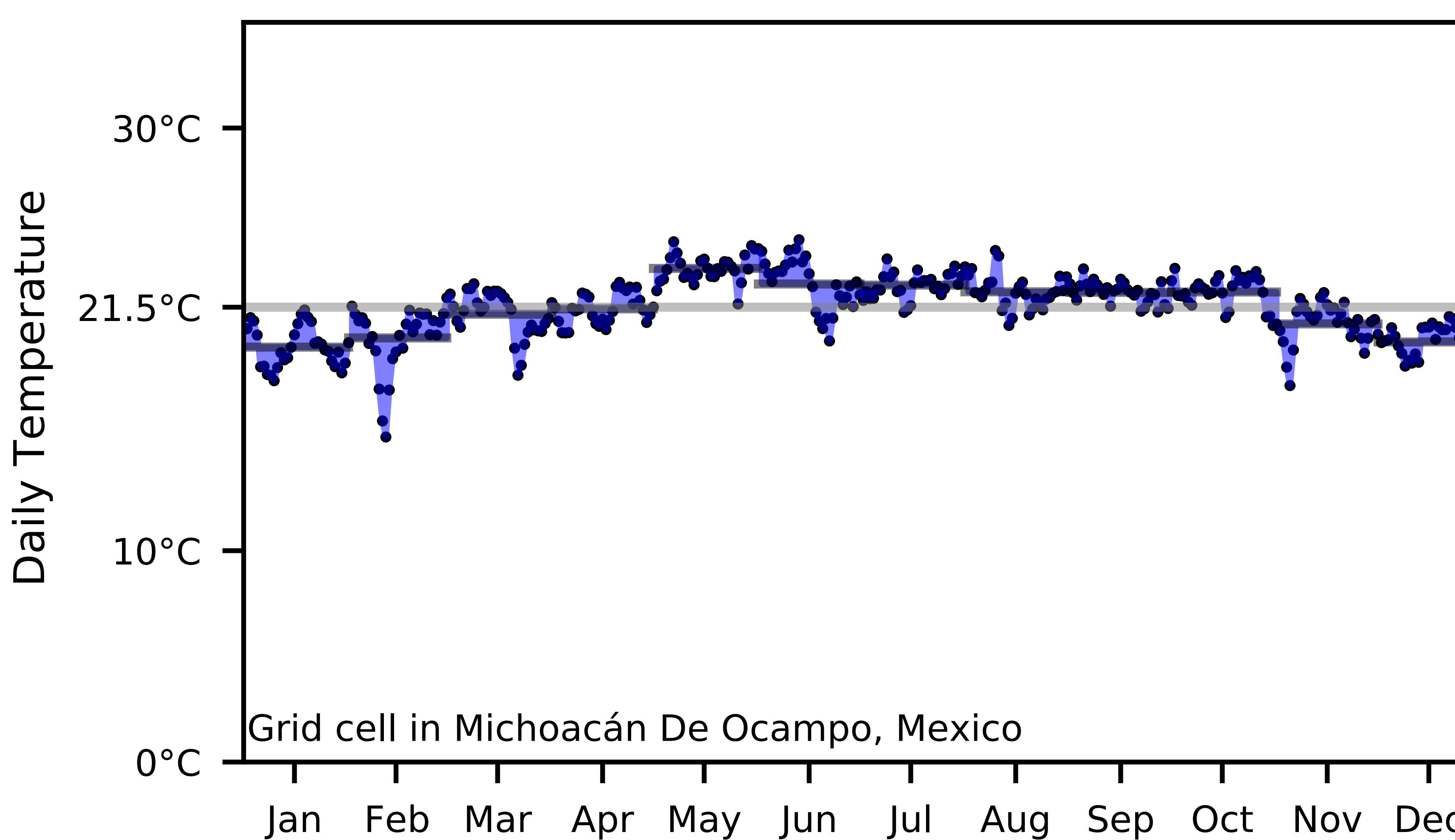
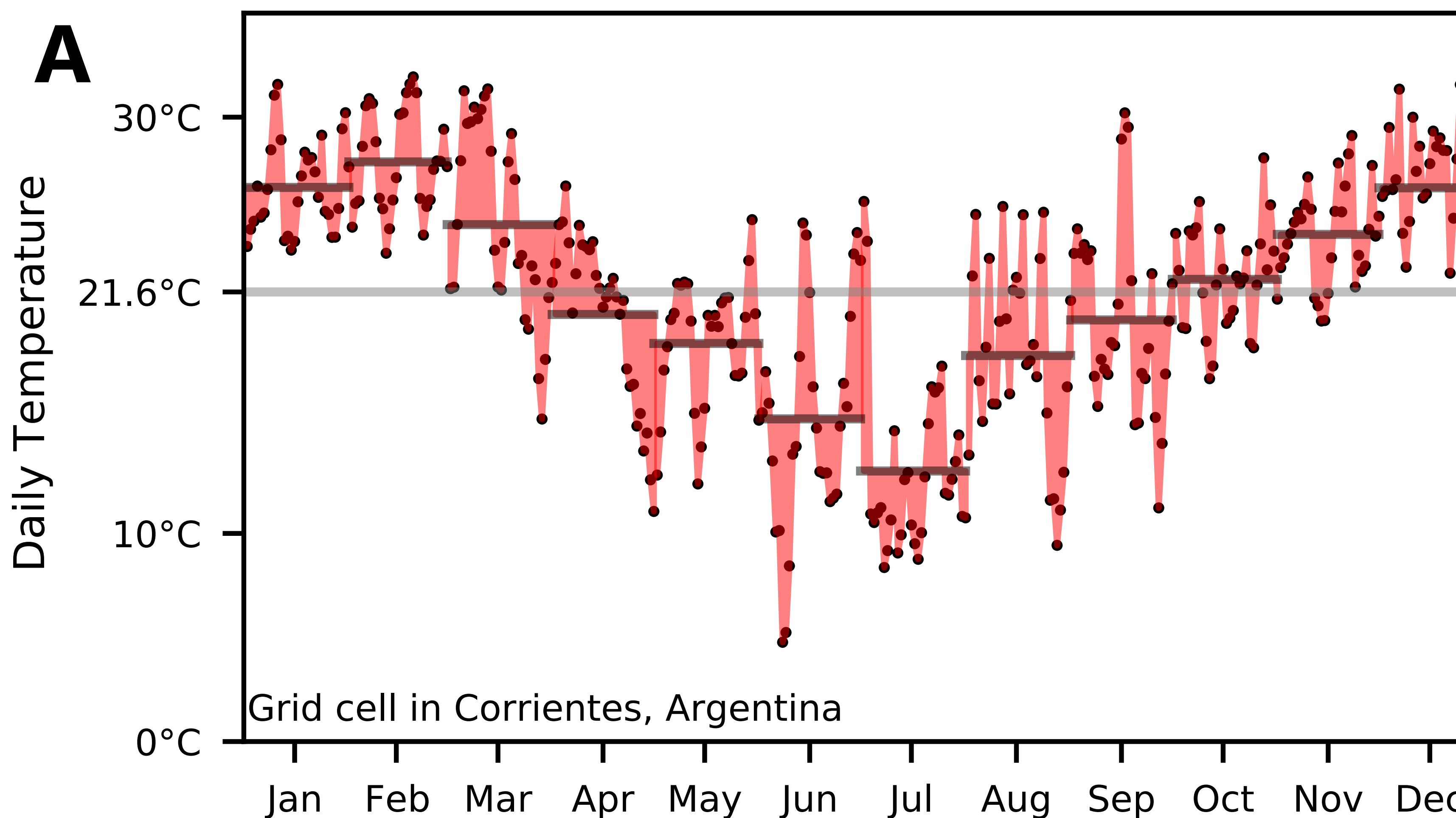


Day-to-day temperature variability reduces economic growth



Maximilian Kotz, Leonie Wenz, Annika Stechemesser, Matthias Kalkuhl, Anders Levermann



Approach

We combine...

Sub-national economic output, for:

- 1,537 sub-national regions,
- across 77 countries and
- 40 years

High resolution historical climate data.

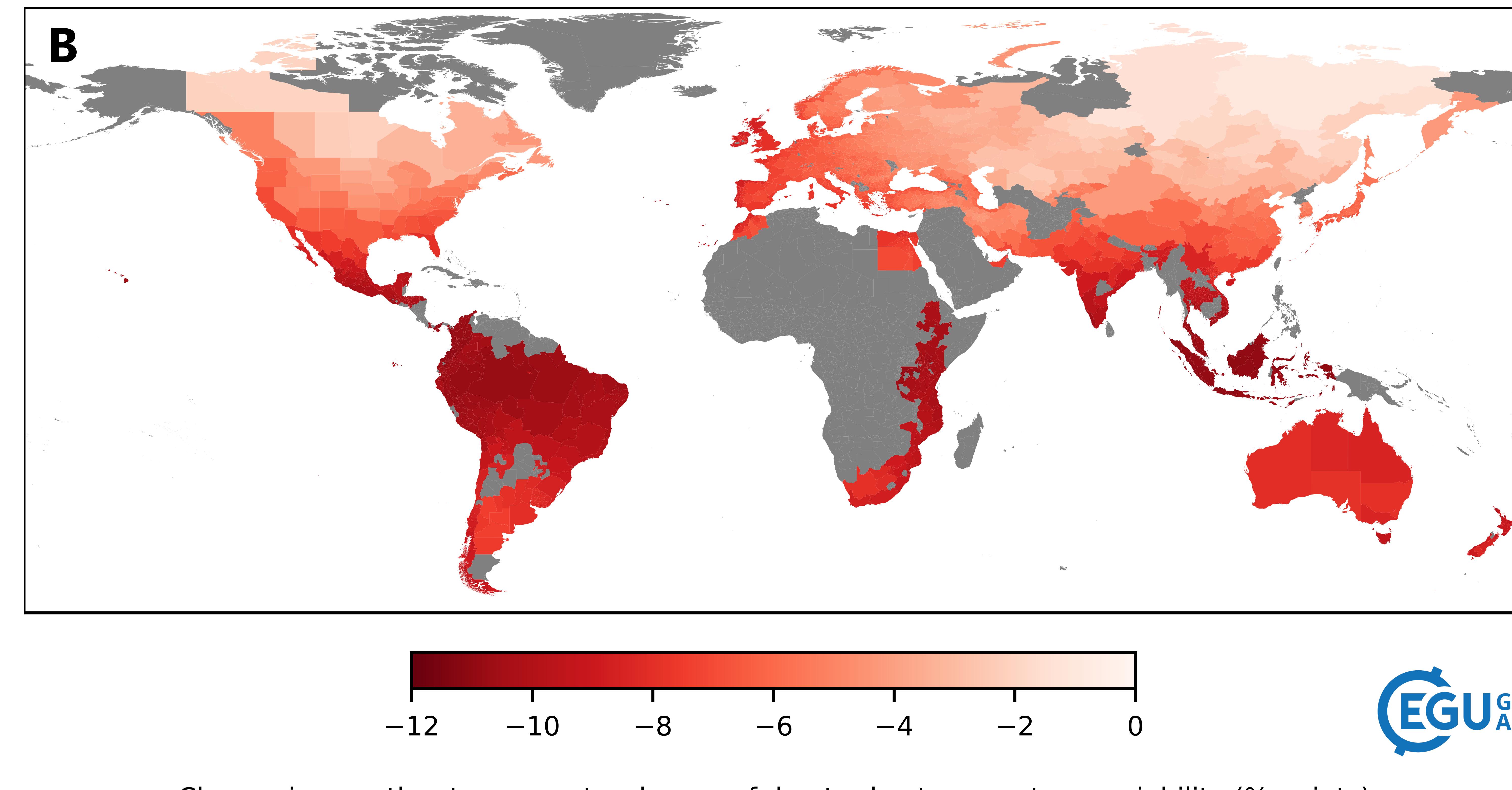
... in fixed effects panel regressions.

Economic assessments of climate change need an **empirical basis for damages...**

$$\text{Social cost of carbon} = \sum_{t=0}^{\infty} \delta^t \frac{\delta \text{Damage}}{\delta \text{Temp}_t} \frac{\delta \text{Temp}_t}{\delta \text{CO2}_t}$$

Damage Function

...to provide a **more comprehensive analysis of the social cost of carbon.**



-12 -10 -8 -6 -4 -2 0