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How uneven are the impacts of a 1.5°C world and beyond?

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In the last decade, global climate policy has galvanized around specifying thresholds of global mean temperature to avoid, so as to prevent potentially dangerous interference of the climate system. The 2009 Copenhagen Accord states that such a threshold corresponds to 2°C of global mean warming above pre-industrial levels, while an aspirational target of 1.5°C was also included in the 2015 Paris Agreement. However, denoting a singular threshold of global mean temperatures as a target for avoiding damaging climate impacts necessarily neglects regional variations in the magnitude of these projected impacts. This study introduces a simple framework to quantify the magnitude of this heterogeneity of impacts after 1.5°C of warming, using case studies of emergent increases in temperature and rainfall extremes. For example, we find the increases in extreme heat projected for low income nations after 1.5°C of warming will not be experienced for similar numbers of people from high income nations until after 3.0°C of global warming. By mapping how much warming is needed in one location to match the impacts of 1.5°C in another location, this 'Temperature of Equivalent Impacts' (TEI) metric is a flexible and easy-to-understand communication tool, bearing some resemblance to other 'spatial analogue' frameworks. However, it could also help to facilitate the comparison of regional heterogeneity across many different climate impacts under a common framework, with the potential to inform where targeted support for adaptation projects should be prioritised in a warming world.