

Supporting adaptation

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With climate change impacts increasingly being felt by more of the world's population, adaptation efforts are urgently needed. However, similar to the unequal distribution of climate change impacts, the ability of societies to adapt is also heterogeneous.

The summer of 2023 brought severe heatwaves to many parts of the world, including India, Europe and the United States. China also struggled with extreme heat, as well as flooding, while the Horn of Africa experienced an ongoing drought estimated to be the worst in the past four decades and more than 100 times more likely to have occurred due to anthropogenic climate change¹.

These events have a human cost, and any life lost to an environmental or climate impact is one too many. However, the impacts of these recent events in terms of lives affected reflects differences in both the severity of the event, as well as the ability of the impacted society to adapt and manage. Adaptation to climate change requires resources; not only financial (where adaptation efforts notoriously receive only a fraction of the funding allotted to mitigation), but societal, informational and governmental. These aspects determine a society's adaptive capacity, or ability to adapt to climate change risks and impacts. The Global South, which has and is expected to bear more of the burden of climate change, also experiences greater challenges and limitations to adaptive capacity than the Global North. Assessing and supporting adaptive capacity is of critical importance for reducing risk and exposure under climate change.

Yet adaptation is less well characterized by global models in contrast to representations of the physical manifestations of climate change, as well as the economic consequences and possibilities for policy. Poor simulation of adaptation in global models, such as climate impact models and integrated assessment models, has implications for the projection of future



societal impacts, as well as for determining where adaptation could mitigate risk.

In a [Perspective article](#) in this issue of *Nature Climate Change*, Marina Andrijevic and colleagues outline a way forward to improve the representation of adaptation in global models by integrating adaptive capacity into the Shared Socioeconomic Pathways (SSP) scenarios framework typically used by such models to explore different climate futures. They propose a range of available socioeconomic indicators that reflect the different aspects of adaptive capacity, including, among others, measures of extreme poverty, urbanization, population size, government control of corruption and gender equality. This approach would allow more realistic assessments of the impacts of climate change on societies, as well as the economic costs. Adaptation projects and funding could then be better targeted to where they are or will be most needed.

In addition to improving modelling assessments, adaptation efforts may also be supported by ensuring that affected communities have a voice in international debates, as Indigenous or local knowledge can provide important information about adaptation potential. Writing in a [Comment article](#), Carol Farbotko and colleagues posit that the ability of societies

to adapt to climate impacts such as sea-level rise is subjective. Dominant views on the future habitability of certain parts of the world, notably low-lying or atoll regions in the Global South, are heavily influenced by the narrative that much of this land will become uninhabitable. However, this narrative is not always shared by those living in affected areas, and discounting their perspective may also pre-emptively limit the possibility for adaptation in these regions.

Although adaptation is beginning to receive more attention and funding in both the research and political arenas, current impacts show that much more is required². All countries will need to adapt to a changing climate, but societies facing greater limitations to adaptation should be prioritized, especially as these societies often also face greater risk, and many have been disadvantaged by historical and current politics.

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References

1. Kimutai, J. et al. *Human-induced Climate Change Increased Drought Severity in Horn of Africa* (Grantham Institute, 2023).
2. *Adaptation Gap Report 2022. Too Little, Too Slow: Climate Adaptation Failure Puts World at Risk. Executive Summary* (United Nations Environment Programme, 2022).