

Study emphasises the human dimension of a warmer climate

May 23 2017



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New research shows how reducing carbon emissions can prevent billions of people from being exposed to unheard-of changes in climate in the coming decades.

The study, published today in *Nature Climate Change*, emphasises the human dimension of how unusual a [warmer climate](#) would appear to people living in different regions.

The research identifies a new [climate](#) as 'unfamiliar' if a year that is now normal would only have occurred once in an individual's lifetime, or as 'unknown' if it would have occurred once every few hundred years or more, on average.

"Overall, we found new climates emerge faster in inhabited areas, especially in the tropics, than in the world as a whole," explains lead author Professor Dave Frame from Victoria University of Wellington.

"People living in tropical regions, such as the South East Asian nations and the Pacific Islands, are almost certain to experience 'unfamiliar' or even 'unknown' climates by the end of this century if climate change is not slowed down. The situation is almost as stark for many tropical African countries too."

The emerging effects of climate change in the coming decades can be dramatically reduced with mitigation efforts, says co-author Dr Manoj Joshi of the University of East Anglia.

"Unknown climates might be expected before 2050 in many tropical areas, and before the end of the century in mid-latitude areas.

"However, many people alive today could reap the benefits of slowing or stopping climate change. Projections of twenty-first century climate made with significantly reduced [carbon emissions](#) show that tropical climates, especially those areas with very high populations, can avoid such emergence, staying far more 'familiar' to the people who live there."

Avoiding the emergence of unfamiliar or unknown climates helps societies to better adapt to climate change, adds co-author Dr Ed Hawkins from the University of Reading.

"Some amount of warming is inevitable. However, keeping climate within some bounds of familiarity mean that people can adapt more easily to whatever change does arrive."

Professor Frame says reducing emissions now does a huge amount to keep climates more familiar than they would otherwise become. "Many of the beneficiaries of [climate change](#) mitigation include today's young adults, people already working, paying taxes and, where institutions permit, voting. As this becomes understood, it has the potential to be a powerful motivating factor."

More information: Dave Frame et al. Population-based emergence of unfamiliar climates, *Nature Climate Change* (2017). [DOI: 10.1038/nclimate3297](#)

Provided by Victoria University

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