Global climate models for public health? Useful, but not in the way we think

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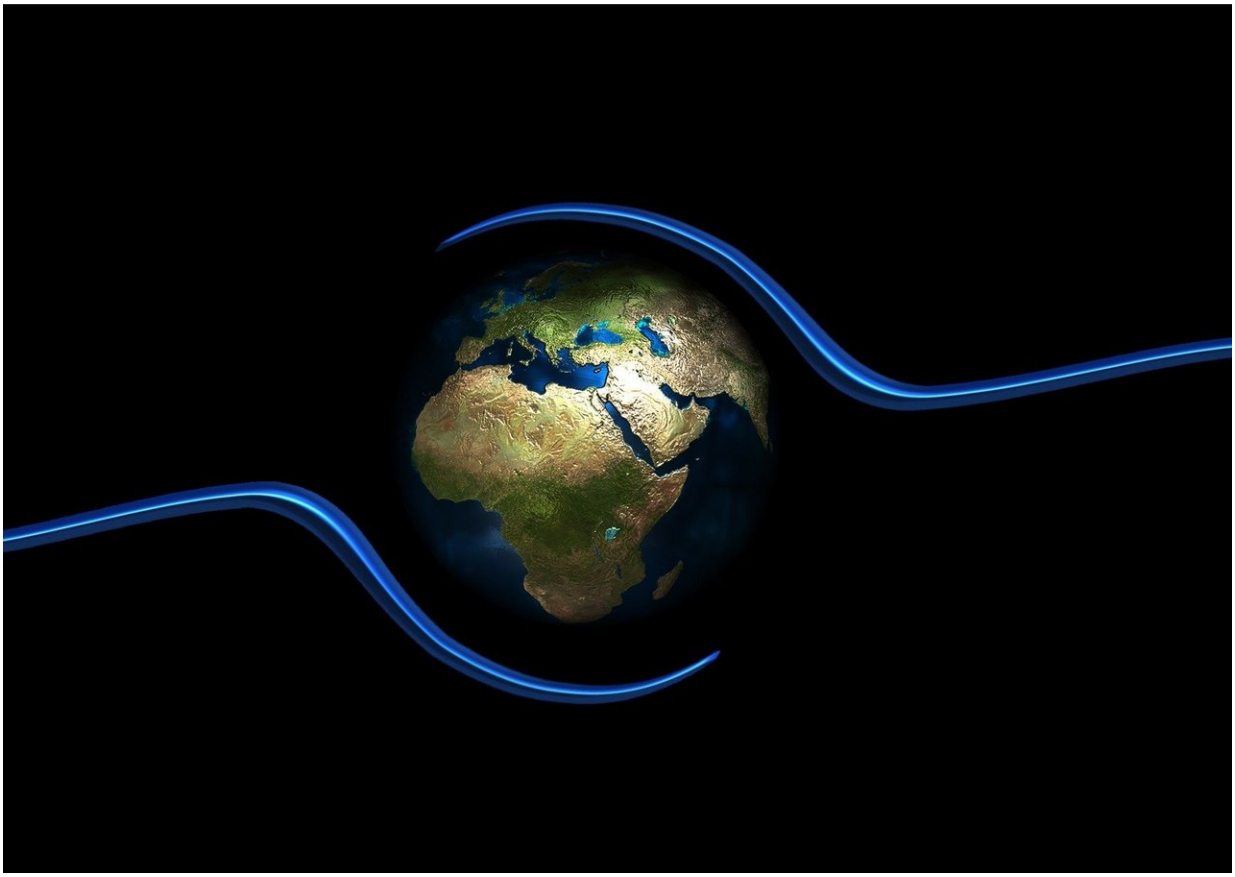

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A new paper in *PLOS Medicine* argues that climate change projections are often misused in health impact studies: they are best suited for

shaping public health policies, not for triggering operational actions on the ground.

"Recognition that climate change is already underway has led to an increasing focus on adaptation," write Hannah Nissan, from the International Research Institute for Climate and Society, and her co-author Declan Conway, from the London School of Economics and Political Science.

This recognition has led to a substantial increase in studies that project the impact of future change. But these studies typically rely on information from global climate models, which needs to be carefully interpreted.

"Outputs from these models tell us a lot about the direction of our planet's climate, but they do so in broad terms," Nissan says.

"There are many aspects of climate change about which we are confident, but we can't provide very precise information about future risks on local scales and at specific dates, which is typically what most decision makers in the health sector want to know."

That doesn't mean there's nothing we can do, Nissan adds. "Far from it."

In general, reports that project the health impacts of climate change are important because they raise the alarm about changes that are happening and that we expect will happen. They can motivate institutional change, cultural attitudes and people's determination to do something about climate change.

"However, the language used to promote these materials sometimes suggests that they can be used to guide practical decisions," Nissan says. "They can't."

Effective adaptation measures should focus on what we can accomplish today using reliable climate information that we have available.

In Ethiopia, for example, more people are at risk of getting malaria in mountainous areas because warming air temperatures have allowed conditions favorable for malaria transmission to reach higher and higher elevations.

Local temperature trends projected by global climate models have a lot of uncertainty, however, and aren't very useful for many planning decisions anyway, says Nissan.

"But we can use seasonal forecasts as a way to warn health agencies when above-normal temperatures and rainfall are expected in the months ahead, which would increase the risk of malaria transmission. This is especially useful during El Niño years, when national meteorological services have greater confidence in their forecasts."

With that information in hand, decision makers can decide if they need to be more vigilant in their malaria surveillance operations, establish temporary clinics or increase public awareness with education campaigns.

"Our main point is that we recognize the importance of studies based on information from climate models to underscore trends and expected challenges," Nissan says, "But we need to be very careful not to oversell the utility of this information when it comes to triggering actions."

More information: Hannah Nissan et al. From advocacy to action: Projecting the health impacts of climate change, *PLOS Medicine* (2018). DOI: 10.1371/journal.pmed.1002624