

Evolution & Behaviour

More than money: what do we need to adapt to climate change?

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doi.org/10.25250/thescbr.brk518

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This Break was edited by Akira Ohkubo, Scientific Editor - TheScienceBreaker

Climate change is threatening our communities across the globe, and adaptation is becoming essential. Many adaptation programs mainly invest in building assets, like savings or infrastructure. We found that a broader set of factors – such as social networks and learning – can play an important part in the actions communities end up taking.



*An atoll island in the Manus Province of Papua New Guinea
Image credits: Dean Miller*

Climate change is already threatening the daily lives of people across the globe. In response, considerable investments are being made by governments, non-governmental organizations, and development agencies to help communities build their capacity to adapt. For example, one such initiative (The Adaptation Fund) has alone allocated US\$720 billion over the past 10 years towards programs that support adaptation and build resilience.

Many adaptation programs focus on building assets, like savings or infrastructure, which can help provide a buffer against climate shocks. Yet recent research suggests that a broader set of factors affect whether and how people adapt. These factors – making up what is often referred to as ‘adaptive capacity’ – include things like whether people have the flexibility to change strategies, the opportunities to learn to recognize and respond to change, and the

power or agency to determine whether to change or not. Despite considerable interest in what constitutes adaptive capacity and ongoing investments to build it, we still lack a thorough understanding of how people are actually responding to climate impacts, and what is helping or hindering these responses.

To address this question, in this research, we studied the factors that enabled people to respond to climate change impacts on an atoll island in Papua New Guinea. This island, like many across the Pacific, is on the front line of climate change – Their coasts are being flooded; Seasons and weather are becoming less predictable; Coral reef fishes, a primary source of food and income, are getting harder to catch. Here, we sought to understand not only how people were responding to climate change,

but crucially, which aspects of adaptive capacity shaped their responses.

We asked every household in the community a series of questions about their everyday lives, livelihoods, connections with the marine environment, relationships with other households and other important actors (social networks), experiences and perceptions of climate change, and responses to climate change.

Using this information, we were able to measure different aspects of adaptive capacity. We also identified which households had made adaptive changes, defined as actions that didn't dramatically change the status quo (e.g. building sea walls to protect existing land use); and which households transformed their livelihoods in more fundamental ways (e.g. by developing alternative food and income sources away from the island's main livelihood of fishing). We thus managed to determine which aspects of the adaptive capacity made it more likely for a household to adapt, transform, or do nothing.

You may have heard the saying, "it's not what you know, it's who you know" – the underlying notion here is that social networks matter. Indeed, our results demonstrated that social networks matter for climate change adaptation. Specifically, when households were more socially connected to other households who were taking action, for example by changing parts of their livelihood, they were more

likely to do the same. This may be a situation of 'like-attracts-like', where households with particular mindsets are more socially connected to similar households (known as social selection). Another explanation is that social influence was at play – households were influencing each other to take action. We suspect it is a combination of the two.

We also found that households who felt they had more power over community decision-making were less likely to make more fundamental, or transformative changes. People may be reluctant to give up the power they have, so having a degree of power over the current situation may actually provoke resistance to fundamental change, even if such change is necessary to sustain livelihoods and ecosystems. We additionally found that the household's connection to the marine environment were important – as it may enable people to learn about ecological changes wrought by climate change and other impacts.

In summary, our study suggests that harnessing the influence of social networks, facilitating learning, and accounting for power dynamics add considerable value to current attempts to build adaptive capacity. A broader perspective on adaptive capacity can help people – from policy-makers to climate-vulnerable communities themselves – think outside the box in terms of the strengths and capacities they already have, and those they can build.