Climate Adaptation

Catching Maladaptation Before it Happens

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HEADLINE: Years of research on adaptation to climate change show that many efforts are counterproductively increasing vulnerability, rather than reducing it – known as 'maladaptation'. Now a study suggests ways forward by identifying four structural challenges that need to be overcome in adaptation implementation.

ARTICLE BODY:

Research on adaptation to climate change has sharply increased over the last decade[1] and implementation of strategies and projects is rapidly following suit, although funding lags behind that for mitigation of greenhouse gas emissions[2]. At the same time, studies indicate a lack of clarity in identifying successful[3] or effective[4] adaptation; as a result, projects are rarely able to address climate risk[5] and can introduce a host of new problems[6]. While adaptation is needed more than ever, emerging evidence shows that a non-trivial number of adaptation projects are actually leading to maladaptation, which is when the adaptation process ends up making people more, rather than less, vulnerable to climate change. Writing in *Environmental Sociology* , Amanda Bertana et al.[11] attempt to address this directly through an explicit empirical exploration of the process that leads to maladaptation in order to develop a framework for how to avoid maladaptation.

Previous studies have identified some knowledge of what leads to maladaptation; for example, when projects have a poor understanding of what causes vulnerability to climate change[7], and contributed a robust effort to classify adaptation types[8], however unpacking maladaptation remains one of the frontiers of adaptation knowledge[9]. One challenge for understanding maladaptation is how to identify it in real time, rather than ex post, which is typically when it is found and when little can be done to address it. Scholars and practitioners are in agreement that methodologies for better assessing maladaptation are sorely needed[10].

One knowledge barrier is undoubtedly that maladaptation is rarely the object of study, but rather emerges as a finding, often in a case study. The value of Bertana et al. approach is that it draws on 22 semi-structured interviews with climate change adaptation practitioners involved in some aspect of planning, implementing and evaluating projects. By focussing on the project process, rather than outcomes only, they are able to capture four structural challenges that contribute to maladaptation.

First, Bertana et al. emphasise that a focus on technological fixes emerges from a narrow and short-sighted understanding of adaptation. They describe engineering solutions that lack flexibility and can lock in undesirable development pathways. This echoes multiple empirical examples of coastal protection infrastructure around the world that causes new problems – such as in Fiji (see Figure 1) where a sea wall was built to protect from sea-level rise but designers overlooked the need to allow for stormwater drainage on the inside, thus causing floods in the settlement[12].

Second, they point to the age-old problem of attempting to distinguish between adaptation and development, which has been the focus of much scholarly lament[13]. It is a legacy of countries seeking to ensure that climate finance would be additional to official development assistance, but in reality there is no blueprint for what distinguishes the two[14]. This confusion facilitates maladaptation because development projects are often relabelled as adaptation projects without any deeper reflection about what might need to change – thus climate change risk is not the focus and consequently outcomes can undermine efforts to reduce risk.

Third, the tradition in development practice to translate qualitative information into indicators means that descriptive, contextual evidence of adaptation effectiveness is relegated to proxies that are not an accurate portrayal of reality. This echoes other calls for more effective adaptation evaluation that incorporates

learning processes and does not hang success on quantification[10]. Maladaptation emerges from this because with inaccurate indicators, we cannot ensure that projects result in adaptation.

Finally, Bertana et al. note how mainstreaming adaptation into planning processes remains an enormous challenge when other, apparently more urgent and important problems take priority. As a result, adaptation is marginalised and lack of attention makes it ineffective and subsequently it can fall to maladaptation.

While this study ultimately does not find anything that has not already been covered by recent studies, the emphasis on studying maladaptation as a process is an important contribution to advance knowledge.

Given the increasing impacts of climate change, adaptation is a must. At the same time, global warming is a very real limit to adaptation strategies. The IPCC points to growing evidence that some adaptation strategies will be useless above 1.5C average warming[2]. This means there is a limited margin for getting adaptation right. But inability to accurately predict maladaptation before it happens should not itself be seen as one of the limits to adaptation. Rather, the concept brings several necessary dimensions to the discussion. It serves as a warning that not all responses to climate risk are 'good'[15], and shows that the structural problems in development practice that have been critiqued for decades are being repeated in adaptation projects. Bertana et al. for example note how none of the interviewees were involved in each aspect of the arch of adaptation projects from conceptualisation through implementation to evaluation, resulting in a lack of holistic understanding of the process among practitioners. But above all, the utility in the concept maladaptation is how it demonstrates that when adaptation is implemented to only address the impacts of climate change (or, as Bertana et al. say, a 'buffer'), rather than the underlying drivers of what makes people vulnerable to climate change in the first place, such as gender inequity, marginalisation of certain ethnic groups, and other power inequalities, it is unlikely to be effective.

Image:

Fiji sea wall: https://www.alamy.com/stock-image-view-of-a-protective-wall-which-cannot-hold-back-the-rising-sea-water-164449924.html

Caption:

Figure 1: Protective sea wall in Fiji that also serves to retain stormwater and the waste that it collects.

Competing Interests

The author declares no competing interests.

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