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# Adaptation as a trigger for transformation pathways in remote Indigenous communities

Yihevis Taddele Maru<sup>A</sup>, Digby Race<sup>B</sup>, Ashley Sparrow<sup>C</sup> and Supriya Mathew<sup>D</sup>

<sup>A</sup>Commonwealth Scientific and Industrial Research Organisation (CSIRO), Alice Springs, NT, 0870. E: [Yihevis.Maru@csiro.au](mailto:Yihevis.Maru@csiro.au), Ph: 0889507129

<sup>B</sup>Fenner School of Environment & Society, ANU, Canberra, ACT. 0200. E: [Digby.Race@anu.edu.au](mailto:Digby.Race@anu.edu.au), M: 0419 638 406. Formerly CRC-REP and CSIRO.

<sup>C</sup>CSIRO, Floreat, Perth, WA, 6014. E: [Ashley.Sparrow@csiro.au](mailto:Ashley.Sparrow@csiro.au), Ph: 0889507129

<sup>D</sup>Charles Darwin University, Alice Springs, NT 0870. E: [Supriya.Mathew@cdu.edu.au](mailto:Supriya.Mathew@cdu.edu.au), M: 0449977317

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## Introduction

Indigenous people in remote regions of Australia are recognised as one of the most vulnerable groups to climate change (Green and Minchin, 2014). This is despite living in widely dispersed locations with exposure to a range of climate change elements and extreme events. The commonality across remote indigenous communities is chronic poor health and socio-economic disadvantage (Green et al., 2009).

In such a highly disadvantaged context, climate change vulnerability and adaptation, as they are commonly conceived and implemented, will at best maintain the current level of marginalisation, and at worst lead to its significant entrenchment. The IPCC 5<sup>th</sup> Assessment Report notes that understanding of future vulnerability of human and mixed human-natural systems to climate change remains limited due to the incomplete consideration of socio-economic dimensions (Reisinger et al., 2014). A recent comprehensive review of the concept of climate change adaptation shows it was predominantly used as an adjustment process to maintain the status quo (Bassett and Fogelman, 2013). Furthermore, development of effective adaptation strategies are constrained due to the multiple socio-economic and political stressors that typically face indigenous communities, with little evidence of the implementation of such strategies (Reisinger et al., 2014).

We argue that adaptation by Indigenous peoples in remote regions to climate change will only be successful if it simultaneously addresses the root causes of their vulnerability. We also note that the primary focus has to be using climate change challenge as a trigger to rethink strategies for transformation (Maru et al., 2012), known as transformative adaptation (Kates et al., 2012). Given the overwhelming interpretation of adaptation as an adjustment response we note that transformative adaptation sounds like an oxymoron so we will use the terminology of transformation pathways.

In this paper, first we highlight some broad vulnerability causal loops related to climate change impacts. We then introduce a framework – Vulnerability-Resilience for Transformation (VR4T) – that simultaneously acknowledges vulnerability and resilience, and thereby provides a strength-based approach for identifying strategies for desirable, and potentially transformational, change.

## A vulnerability trap

There is a trap like situation in the vulnerability of remote indigenous communities that arises because of the interaction of climate change with existing poor health and socio-economic conditions. This seems to manifest at two levels.

The first is that impacts of climate change and extremes are likely to amplify and be amplified by the marginalization of remote indigenous communities (Maru et al., 2012). Several authors (e.g. Green and Minchin, 2014; Langton et al., 2012) note that socio-economic and political disadvantage (including inadequate housing, infrastructure, health and education services, and transport), a

limited ability to influence policy decisions, and strong attachment to and dependence on natural and cultural assets will continue to make remote indigenous communities vulnerable to climate change and associated extreme events (Green et al., 2009). In turn, climate change-induced dislocation, attenuation of cultural attachment to place, and loss of agency could further disadvantage people's mental health (Fritze et al., 2008) and all socio-economic conditions exacerbating their vulnerability.

The second is the structural and behavioural factors that form interacting causal loops of current health and socio-economic conditions common among remote indigenous communities. Some authors raise external structural factors such as remoteness, historical marginalisation, and lack of effective governance as the root causes, while others argue that internal behavioural factors as core reasons for vulnerable conditions. Though often implicit, these polarised casual assumptions, have been informing different approaches to service delivery and efforts aimed at 'closing the gap' by different governments.

From a systems view, both structural and behavioural factors may have valid points although each only provides partial explanations to the current situation of disadvantage. We argue that with varying degrees of dominance in different contexts, both structural and behavioural factors form reinforcing mechanisms creating a trap like situation. Addressing both sources of vulnerability will require engaging in a transformation pathway or concerted efforts for step change out of the traps. This is consistent with calls for systemic change in remote Australia (Walker et al., 2012).

### **Climate resilient transformation**

Understanding the root causes of vulnerability is essential for exploring pathways for systemic transformation. However, excessive focus on people's vulnerability can often mean ignoring people's own agency for change, including their *desirable* or *beneficial* resilience in the face of change. Here we extend a linked vulnerability-resilience framework developed by Maru et al (2014) for developing adaptation options in remote regions, such that it incorporates transformation pathways (see Figure 1). Linking all these concepts in a single framework recognises high vulnerability among indigenous communities, but emphasises a strength- and innovation-based approach for desirable resilience and transformation. The extension applies Sen's (1999) interpretation of development as freedom, or as an expansion of capabilities, thereby focusing on investment options for indigenous communities to do and be what they value, from the starting point of what they currently have (Maru and Chewings, 2011).

This approach can assist governments and private sector actors to achieve a greater balance between:

- 1) focus on training and engagement of remote Aboriginal and Torres Strait Islander communities in "mainstream" economic activities versus increasing investment in locally valued livelihood options which are based on existing knowledge, skills, cultural and natural assets;
- 2) provision of incentives and sanctions for behavioural change within the current system versus addressing the structural causes such as distant governance and implication for long-term dependencies; and
- 3) rationalisation and efficiency in standardised service provisions to maintain the status quo versus context-sensitive dialogue and partnership with communities for truly transformative change.

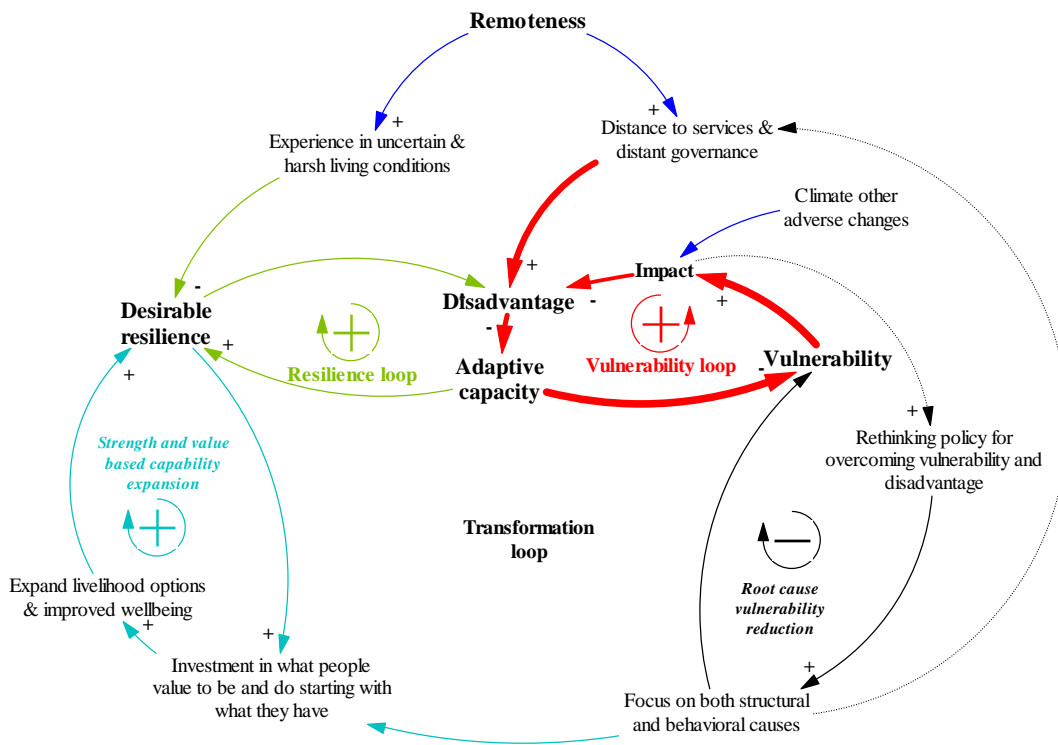


Figure 1. The Vulnerability-Resilience for Transformation framework (VT4F). Dotted lines show only a probable link

### An example

Recent research with Aboriginal communities in the regional town of Alice Springs (central Australia, a population of approximately 28,000) illustrates the concept. Many in this community are residents in social (public) housing that is not always designed for, or functioning with, high levels of energy efficiency – causing residents on low and variable incomes to be spending a relatively higher proportion of their income on energy costs, exacerbating their socio-economic vulnerability (a ‘vulnerability loop’). This vulnerability will be intensified with increasing temperature, frequency and intensity of heat waves projected for inland Australia which will interact with poor housing and health conditions of many of the residents. House air-conditioning is an immediate response that can contribute to reducing vulnerability to heatwaves. However, to address heat vulnerability installing air-conditioning has to be complemented by strategic measures to improve community health and build resilience which in turn requires a step change in a range of socio-economic and environmental conditions. Such transformation requires understanding of the reinforcing nature of structural and behavioural causal loops, and can inform policy and program development that aims to improve health and education outcomes while providing jobs that build on capacities Aboriginal and Torres Strait Islander of local people.

### Concluding remarks

Given the multiple underlying socio-economic, cultural and political stresses that many remote indigenous people face, neither addressing climate change on its own nor making slow incremental adjustment as adaptation to climate change are likely to be adequate. Traps make the relationship between efforts and outcomes nonlinear; requiring transformational change. A framework that connects elements of resilience and systemic vulnerabilities as well as promoting capability expansion offered in this paper can play an important role in guiding dialogue and design for adaptive and transformative pathways.

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