

INTRODUCTION

This book looks at the experience, expectations and perceptions of remote outer island communities in Fiji and Tonga, regarding disaster aid and climate change adaptation. It asks how similar or different these may be to the main islands, and the disaster management literature more generally, and aims to investigate how disaster responses on remote islands in Fiji and Tonga need to and are able to adapt to a changing climate. The main research questions are to identify how tropical cyclones are presently responded to in Fiji and Tonga by remote communities, aid organisations and government and; how responses might need to change in the future as climate change intensifies these events, and combines with other climate change impacts such as rising sea levels.

Climate change is bringing with it an increase in severity of natural disasters, particularly affecting small island developing states (Nurse, McLean, Agard et al., 2014; Intergovernmental Panel on Climate Change (IPCC), 2012; Deo, Ganer and Nair, 2011; Terry, 2007; Mimura, Nurse, McLean et al., 2007). This increases the need to ensure and enhance the effectiveness of responses to these disasters from all involved - governments, aid organisations, and the affected communities. While debates around the causes of climate change continue despite the strength of scientific evidence (IPCC, 2013), the impacts are not waiting for the final verdict from the politicians and policy makers. Climate change is here, and we must deal with the effects.

The costs of extreme weather events are increasing worldwide, both in terms of lives lost, and economic losses (IPCC, 2011). Sufficient evidence exists that allows us to be able to presume that disasters will increase in intensity and perhaps in frequency, over the coming years, as climate change effects such as warming ocean surface temperatures take hold (Mimura et al., 2007). Ten of the 15 most extreme weather events have occurred in the last 15 years, and disasters since 1950 have become more intense (Bettencourt, Croad, Freeman et al., 2006). Coupled with this, is the observation that natural disasters such as cyclones/hurricanes seem to be changing location and moving outside their traditional 'zones' (Oxfam International, 2007).

While the concrete scientific link between climate change and individual disaster events is controversial and difficult to establish for

extreme weather events that occur relatively infrequently and therefore have less data available in relation to them, the overall trends are becoming clear (IPCC, 2012; Anderson, 2006). Sea level rise is being measured and documented, and is making storms more hazardous as waves and storm surges come further inland. The effects of severe weather events are being felt already, and thus, there is a need to take action now. With one in five people in the world currently living in coastal areas that are and will be affected by rising sea levels and natural disasters (McAdam, 2010), this will be a significant issue for the future. The humanitarian consequences of climate change are poorly understood and this has been identified as an area of need for research (Moriniere, Taylor, Hamza and Dowling, 2009).

Disasters used to be thought of simply in terms of the actual physical event. An extreme weather event or hazard, such as a tropical cyclone, which reaches landfall only on uninhabited islands, or an inhabited coastline but without doing any damage to infrastructure or life remains a hazard, but in what sense can the impact be considered a disaster? In more recent thinking, disasters have been defined in terms of the interaction between the event and pre-existing vulnerabilities:

Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery (IPCC, 2012, p558).

An extreme weather event becomes a 'natural disaster' when the consequences it triggers overwhelm the capacity of the local response and seriously affect the social and economic development of a region (Ferris and Petz, 2011). If the same tropical cyclone as in the example above struck elsewhere in the world causing widespread damage beyond the capabilities of the local authorities to respond, then that hazard is considered to have become a disaster.

A hazard is:

The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources (IPCC, 2012, p560).

The hazard then, is the physical event that holds the potential to cause severe negative impacts, thus becoming a disaster. The extent to which

those negative impacts will occur depends on the interaction of the hazard with existing vulnerabilities of the society or community in which the hazard occurs. Where the cyclone referred to above meets strong, robust, well-designed and constructed buildings, the results will almost certainly differ from if that cyclone meets already weak and flimsy shacks in a community that lacks sound infrastructure. Similarly, where the people in an affected area have somewhere strong, safe and accessible to shelter, the results will be different compared to an area where there is no safe place to be during the storm or hazard event. These differences are contained in the concept of vulnerability, which may take many forms, including that which is economic, social and political. Vulnerability is defined as:

The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC 2014b, p.28).

Placing the definition within the context of hazards, vulnerability is “the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impacts of natural hazards” (Wisner, Blaikie, Cannon and Davis, 2004, p.11).

This refined definition of a disaster is critical, since it means that preventing disasters, or reducing the risk associated with them, becomes possible. Rather than focusing on the actual hazard event, the focus is on the underlying vulnerabilities. The definition then has meaning for the resilience and vulnerability of communities (Perry 2005). This reflects the view that disasters are social, not just natural phenomena, with humans being able to act and take decisions to reduce the likelihood of disaster or reduce the impacts (Lavell and Ginnetti, 2014). The implications of this new definition were immediately recognised as providing a guiding principle for work in this field (Quarantelli 2005).

Natural disasters may be viewed as having three phases - the evolution of vulnerability through social processes preceding the disaster, the actual disaster occurrence itself, and the response/recovery (Mutter and Barnard, 2010). For example, the construction of new dwellings on a flood plain represents the evolution of vulnerability through the social processes that led to the dwelling being constructed in a risky location. The hazard, in this case the flood, then occurs some time later, with the vulnerability meaning that for the residents the flood event may become a disaster. The final phase of the disaster is the response/recovery to the event.

This disaster response may be further divided, in temporal sequence, into emergency relief, recovery and reconstruction. Aid is provided with immediate humanitarian aid first, which may take the form of for example

food, water and temporary shelter. This is followed later by recovery of livelihoods through for example the re-planting of crops, and finally the reconstruction phase that may involve the reconstruction of dwellings. The loop is complete with the next phase of the evolution of vulnerability, which may be more, less or different to the vulnerability that existed prior to the hazard event. This circular sequence of events is often referred to as the disaster management cycle - event, response, recovery, mitigation, preparedness, event (O'Brien, O'Keefe, Gadema and Swords, 2010).

The responses to climate change are often divided into two baskets - mitigation to reduce human-induced climate change, and adaptation to adjust to climate change. Of particular relevance to this study, adaptation in this context is defined as:

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects.

Incremental adaptation: Adaptation actions where the central aim is to maintain the essence and integrity of a system or a process at a given scale.

Transformational adaptation: Adaptation that changes the fundamental attributes of a system in response to climate and its effects (IPCC 2014b, pp. 1-2).

There is a growing realisation of the connections between development and sustainability, and that one essential element will be to better align disaster risk reduction and climate change adaptation efforts, so as to lessen the likelihood that hazards or extreme weather events become disasters in the first place. Across the South Pacific, momentum is building for this alignment in policy (Bijay, Filho and Shulte, 2013). Alongside this shift though, there is the long held recognition that increases in expectations and dependence on disaster and development aid lead to a weakening, rather than a strengthening of resilience and self-reliance (United Nations Conference on Trade and Development Secretariat (UNCTAD Secretariat) and United Nations Disaster Relief Organization (UNDRO), 1983). Studies in indigenous communities including on small Pacific islands have shown the negative impact of disaster relief on self-reliance to be long lasting (Lewis, 2009).

Two possible and opposing effects of aid on disaster risk reduction have been proposed at a national level. There may be either:

- a preventive effect whereby the aid directly or indirectly improves preparedness,