

# Thick temporalities of planned relocation in Fiji

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## ABSTRACT

This paper examines the temporalities of planned relocation in response to climatic and environmental changes in Fiji. It is based on fieldwork among seven low-lying coastal villages under threat from sea-level rise and where planned relocation has been implemented, initiated or anticipated. The paper highlights how residents of these villages make sense of different temporalities and timescale: climate impacts and adaptation are understood to disrupt personal and intergenerational histories of attachment to place; climatic and environmental changes – such as sea-level rise, coastal erosion and flooding – and relocation planning and implementation are central to contemporary everyday experience; and climate impacts and relocation extend into the future in uncertain ways, albeit informed by future-oriented scientific estimates and local experience and observation. This paper argues that these temporalities are experienced as 'thick time' in which the past, present and future of climate change and relocation are palpable in the everyday.

## 1. Introduction

Human mobility and migration, including climate-related mobility, are widely viewed as spatial processes that relate to space, place, territory, sovereignty, citizenship, transnationalism, borders, mobility and scale (c.f. Bettini, 2014; Osbahr et al., 2008; Warner, 2018). While emerging literature focuses on the temporalities of mobility and migration (Griffiths et al., 2013), studies typically refer to processual temporal dimensions such as long-term versus short-term migration trends (c.f. Leyk et al., 2012), or time is taken for granted as an aspect of migration journeys. As Baldwin states, 'we should reckon with the temporalities of the climate-migration nexus' (2014: 520).

This paper examines the 'thick' temporalities of planned relocation in low-lying coastal iTaukei (Indigenous) villages in Fiji. In their discussion of bodily experiences of climate change, Neimanis and Walker (2014) refer to thick time in which different timescales interweave and interact at the level of the everyday. Thick time is heavy with a present, present-pasts and present-futures, and encompasses multiple 'might-have-been' and 'could-still-be' dimensions; "it gathers all of pasts and possible futures within itself" (Neimanis, 2014: 118). The past and possible futures are enfolded in the becoming present (Barad, 2006: 234). In climate vulnerable communities, for example, scientific discourses around future climate risks might permeate the present as they shape contemporary decisions. So while the dominant timescale of climate change discourse is future-conditional – e.g. scientific forecasts

of risk, anticipated emission trajectories – the temporal lens of thick time is attentive to past, present and future of climate change (Neimanis and Walker, 2014). The concept calls attention to the ways in which different timescales of climate change become palpable in the everyday as histories, contemporary experiences, and forecast and imagined futures coalesce and are recast in the context of a warming world.

This paper focuses on seven coastal iTaukei villages in Fiji and examines the thick temporalities of climate-related relocation. It highlights: personal and ancestral connections to place; contemporary experiences of biophysical and climatic changes – sea-level rise, coastal erosion and flooding – and planned relocation; and engagement with long-range forecasts and anticipated futures of climate risk and relocation. Informed by geographies of time and temporality (Anderson, 2010; Brace and Geoghegan, 2010; Fincher et al., 2014; Neimanis and Walker, 2014), the paper argues that environmental and climatic change and planned relocation in Fiji is experienced as 'thick time'.

The paper first considers geographical theories of time and temporality with a focus on climate-related mobility. Next it outlines the research setting and methods. It then presents local accounts of climate change and relocation among residents of low-lying villages and considers how timescales interweave and compress such that histories and imagined futures have amplified significance and shape the everyday present. The focus is on thick time across four central themes: environmental changes, place attachment, anticipated relocation and retreat, and realised relocation. Understanding the temporal dimensions

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of planned relocation from the perspective of local people can inform climate adaptation policies and practices and ensure they are locally meaningful.

## 2. Climate-related mobility, time and temporality

Climate-related mobility – both phenomenon and discourse – is temporal, albeit often future-oriented. It involves projected climate impacts that are expected to contribute to population mobility, forecasts of the magnitude of climate-related mobility at specific time-points (although few have hazarded estimates beyond 2100), and calls for urgent greenhouse gas mitigation to prevent large-scale displacement in the future. For example, it is estimated that without adaptation, and assuming a global mean sea-level rise of one metre, an estimated 67 to 187 million people will be affected by coastal flooding, surge intensification and land loss by 2100 thereby potentially requiring relocation (Brown et al., 2016; Geisler and Currens, 2017). For many low-lying small island states, relocation is positioned as an adaptive response to a ‘global vision for the future’ in which whole countries are submerged (see McNamara and Gibson, 2009; Barnett and O’Neil, 2012) or where sea-level rise increases flooding and coastal erosion, reduces arable land, affects groundwater reserves, damages infrastructure, and presents threats to human lives and well-being (de Sherbinin et al., 2011; McGranahan et al., 2007; McNamara and Jacot Des Combes, 2015; Nurse et al., 2014). There is a scientifically-informed narrative of climate-related crises contributing to future population migration, displacement and relocation.

These scientific accounts of climate risks are often based on long-range timescales (i.e. 2050, 2080, 2100) (IPCC, 2014). However, most people make decisions based on more immediate timescales and concerns and are unable to relate to long-range future climate impacts (Hulme et al., 2009). This ambivalence has been noted even in sites identified as vulnerable to climate-related mobility (c.f. Farbotko et al., 2016; Mortreux and Barnett, 2009). Fincher et al. (2014), for example, found that older residents of low-lying coastal communities in south-eastern Australia were aware of scientific projections of sea-level rise in coming decades, but were reluctant to undertake the upheaval of community relocation. And Ocherton et al. (2017) found that people living in environmentally vulnerable informal settlements in Fiji do not want to relocate away from their homes and livelihood opportunities. As Arnall and Kothari write, local populations do not regard climate impacts with the same ‘sense of urgency and inevitability’ as scientific researchers (2015: 200). Studies such as these identify disconnections between the distant futures of scientific climate forecasts and the immediacy of everyday lives and mundane concerns (Arnall and Kothari, 2015; Fincher et al., 2014).

And yet in some places climate risks are not intangible futures as referred to in scientific assessment, rather the everyday is permeated with the challenges and urgency of current and anticipated impacts of climate change. In Alaska, for example, Iñupiat people experience environmental changes that affect their subsistence and livelihoods including thinning sheet ice in the winter, drying tundra ponds, northward moving beaver populations, insect infestations that kill trees, and erosion of coastal areas. Such changes are a source of alarm, driving calls by some communities for planned relocation (Marino, 2012; Shearer, 2012). In the Marshall Islands residents describe visible local changes – hotter temperatures, rising seas, dwindling marine life, eroding shores, declining rainfall, perturbed seasonal wind patterns, and adverse alterations in crops – that are seen to confirm scientific climate forecasts (Rudiak-Gould, 2013). Yet Rudiak-Gould (2013: 148) has reported that the Marshallese, with few exceptions, reject the idea of relocation as a climate change response. In climate vulnerable contexts such as these there is widespread concern that climate impacts have arrived in the present and communities variously imagine, resist and initiate relocation.

Further, long-range scientific projections of future climate risk can

be brought into the present via anticipatory climate governance, adaptation policies and communication (Anderson, 2010; Barnett, 2017; Barnett and McMichael, 2018; Fincher et al., 2014). The future is predicted – with confidence intervals – and prepared for through policy initiatives. There are imperatives to act pre-emptively on anticipated catastrophic processes and thresholds before they occur, such as the relocation of populations away from low-lying sites where inundation is expected (see Anderson, 2010, 781). As Anderson writes, ‘geographies are made and lived in the name of pre-empting, preparing for, or preventing threats’ (2010: 777). However anticipatory initiatives based on climate forecasts can foreclose alternative adaptive responses and futures (Barnett and McMichael, 2018; Swyngedouw, 2010). Relocation, for example, seems premature in low-lying coastal sites that are vulnerable to sea-level rise but are unlikely to be inundated for several decades (Barnett, 2017). And there is the risk that projected catastrophic futures of inundation undermine the case for sustainable development in the present (Barnett and McMichael, 2018). The pragmatic question for anticipatory action based on scientific forecasts is how to protect and enhance lives and valued things in the face of futures in which climate risk and disruption is certain but the potential parameters and timescales of these threats vary (Anderson, 2010). There is a tension between acknowledging and responding to the gravity of current and forecast climate impacts and the likelihood of future climate-related mobility, and ‘admitting uncertainties, leaving room for hope and local agency, and avoiding ... speculative sensationalism’ (Rudiak-Gould, 2013: 4).

So, the temporalities and timescales of climate migration are acknowledged via: forecasts of the nature and magnitude of future climate mobilities; discussion of the tension between long-range scientific forecasts of climate risk and more temporally immediate factors that shape mobility decisions; and consideration of how projected climate risks are made present through current climate-migration governance, adaptation and communication. However, temporality has not been explicitly studied in sites where climate-related mobility has occurred. This paper focuses on planned relocation of low-lying iTaukei villages in Fiji. It suggests that local understanding and experience of the past, present and future of environmental changes, attachment to place, and relocation have heightened significance and coalesce in the everyday as ‘thick time’.

## 3. Research sites and methods

Fiji was the first country globally to ratify the Paris Agreement on Climate Change, and as President of COP23 called for implementation of the Paris Agreement to achieve net-zero global greenhouse gas emissions by 2050. The stated goal of Fiji’s National Determined Contributions (NDC) Implementation Roadmap 2017–2030 “is to provide a temporal pathway with concrete mitigation actions and financing needs to achieve the transformational change called for under the NDC” (Republic of Fiji, 2017a: 4). Yet while there are specified “temporal pathways” and milestones for national mitigation action (e.g. electricity generation from renewable energy sources to approach 100% by 2030), the timescales for climate risk and adaptation within national policies and frameworks are less certain. There is the expectation of worsening climate risk in Fiji, including higher annual mean temperature, rainfall variability, higher sea-levels, storm surges, flooding and coastal erosion (Republic of Fiji, 2014; 2017b). Fiji’s Second National Communication to the UNFCCC, for example, presents climate risk profiles – focused on extreme rainfall, air temperature, sea level and surface winds – for 2025, 2050, 2075 and 2100 timescales (Republic of Fiji, 2014). Fiji’s 2017 National Adaptation Plan Framework notes that robust climate adaptation decision-making (including relocation) requires consideration of a range of potential future scenarios (Republic of Fiji, 2017c: 9).

Fiji’s recently released Planned Relocation Guidelines (Republic of Fiji, 2018) provide guidance for planned relocation of affected

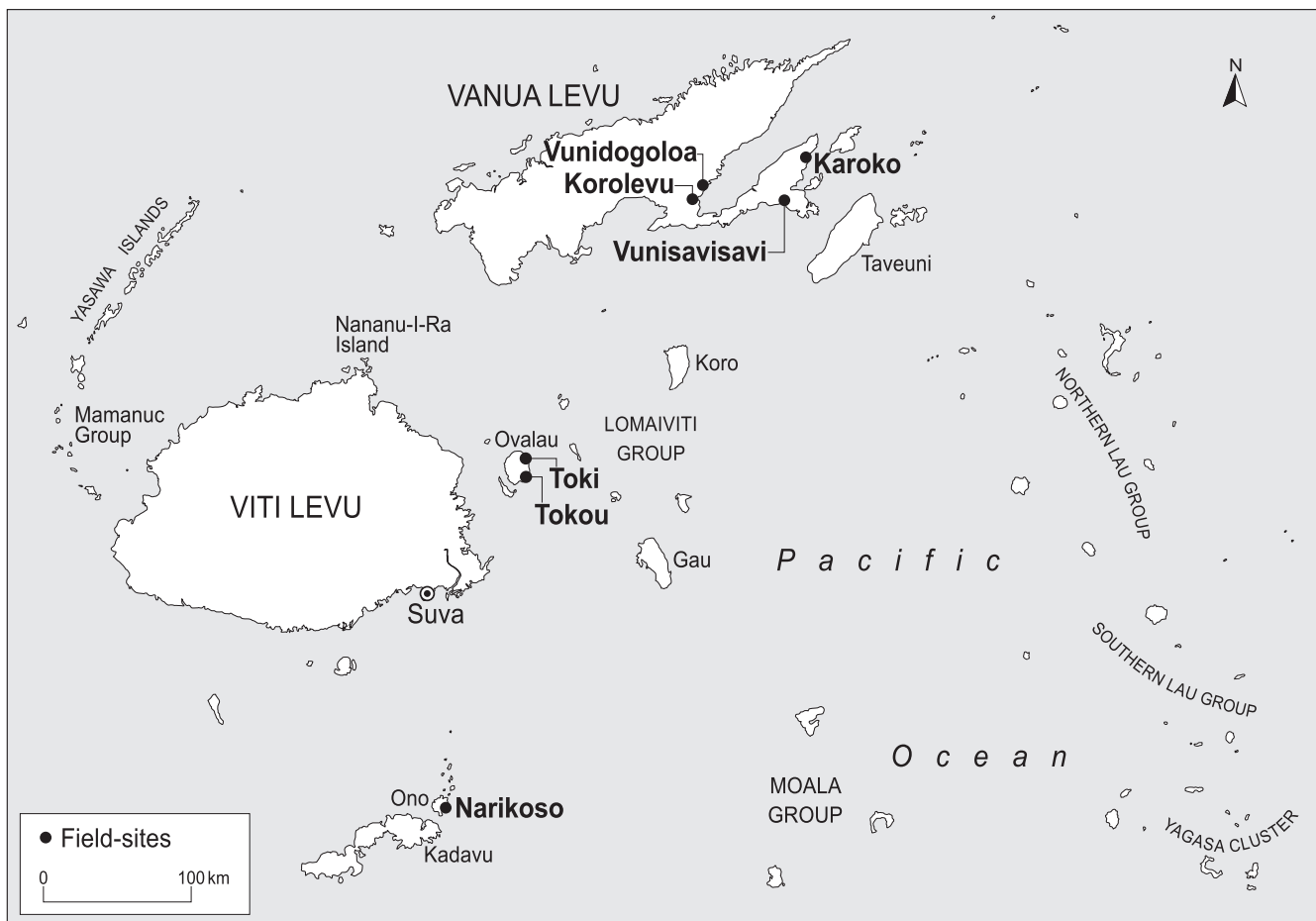


Fig. 1. Research sites (Prepared by Chandra Jayasuriya, School of Geography, The University of Melbourne).

communities in response to climate hazards. Relocation is considered appropriate where there are current adverse impacts from climate change and where other in situ adaptation measures are not feasible or have been exhausted. The Guidelines emphasise the importance of community involvement and engagement in planned relocation processes, including decision-making, site selection, development and implementation of relocation plans, and post-relocation monitoring (Republic of Fiji, 2018). The Government of Fiji has indicated that 830 vulnerable communities require relocation due to risk from climate-related impacts; 48 communities have been identified as in urgent need of relocation (Republic of Fiji, 2017b). In a few villages, relocation has been initiated or implemented.

This paper focuses on seven iTaukei coastal villages (see Fig. 1). Three villages – Vunidogoloa, Vunisavisavi, Narikoso – have implemented or initiated relocation/retreat within customary *mataqali* (clan) land:

- Vunidogoloa, Cakaudrove Province, relocated to higher land in 2014. The old village had a population of approximately 140 iTaukei people living close to the foreshore. It experienced coastal erosion, flooding and saltwater intrusion, despite previous efforts to adapt via ad hoc retreat of some households and construction of sea-walls. A new site within *mataqali* land was identified 2 km inland. The site was established (e.g. 30 new houses, alternative livelihood initiatives) with input of government Ministries, regional and international agencies, and community members. The entire village relocated in January 2014.
- Vunisavisavi, Cakaudrove Province, completed partial retreat in 2015. The village has a population of approximately 100 people.

Four households moved to newly constructed homes set back from the inundation zone (projected for 2090). Seven existing houses were upgraded with cyclone proofing work. USAID provided funding and materials, with construction work sub-contracted to Habitat for Humanity Fiji. Community members provided labour.

- Narikoso, Kadavu Province, sought government assistance in 2011 to address coastal erosion and flooding. Narikoso has a population of between 95 and 109 people. In 2012, planning and major works begun for relocation to higher land 150 m from the village and owned by two village *mataqali*. New village boundaries were agreed by villagers and demarcated by the Ministry of iTaukei Affairs. At the time of research, the plan was to relocate seven households closest to the foreshore that frequently flood. Planning and earth-works had been carried out by government stakeholders, donors and the Republic of Fiji Military Forces, and a spring-fed water-source had been established with community funding and labour, but new homes and infrastructure were not yet built.

The paper also discusses four low-lying coastal villages identified as potentially requiring relocation: Karoko and Korolevu, Cakaudrove Province; Tokou and Toki, Lomaiviti Province. In all four villages, residents themselves proposed relocation and retreat as a response to local environmental changes, and at the time of research one of the villages (Tokou) had been identified by the Government of Fiji as potentially requiring relocation:

- Karoko village (population ~300) has lost several meters of coast-land in recent years and waves reach homes and infrastructure during high tide. In 2016, the USAID Coastal Community

Adaptation Project (C-CAP) designed and constructed a 210-meter-long rock mattress revetment to protect Karoko from erosion and flooding. However, the village still floods at high-tide and water does not drain off when it rains. There are no plans for nationally-supported relocation, yet ad hoc relocation has occurred as villagers move further inland due to coastal erosion.

- Korolevu (population ~ 115) is a coastal settlement split across two sites within *mataqali* land. According to villagers, three generations ago the Chief gave villagers permission to move uphill beyond the village boundary closer to the newly built road; some households remained by the coast. There are currently nine households by the coast and fourteen by the road (a few hundred metres uphill). The coastal households reportedly experience flooding at high tide, and some are considering relocation to the higher site. There are no plans for nationally-supported relocation.
- Tokou village (130 households, population ~ 700) and Toki village (population ~ 200), on Ovalau island, are low-lying and experience coastal erosion, inundation and tidal surges. At the time of research Tokou had been identified as at ‘disaster risk’ and requiring ‘potential relocation’, and Toki had been identified as at ‘disaster risk’ (Republic of Fiji, 2014: 136–42). Both villages were subsequently devastated by Tropical Cyclone Winston in February 2016; consultations between villagers, the iTaukei Affairs Board, and the Secretariat of the Pacific Community (SPC) and geospatial investigations by the Mineral Resources Department have been conducted to identify suitable sites for relocation.

The data derive from qualitative methods including *talanoa* group discussions (the word *talanoa* derives from *tala*, meaning talking or telling stories, and *noa* meaning without concealment), semi-structured interviews, informal conversation and observation. Rather than understanding relocation as an ‘event’ at a point in time, relocation was approached as a temporally complex process (see Findlay and Li, 1999; Griffiths et al., 2013). The methods did not presuppose a temporal linearity as to when narratives of relocation might ‘begin’ and ‘end’. Data collection was conducted in English or in Fijian/local dialects by the authors, with guidance and translation provided by other local counterparts. The research aimed to examine experiences of local environmental change and planned relocation. Research permits were granted by the Fiji Government; research approvals were provided by relevant Provincial Councils and the *Turaga ni Koro* of each village (i.e. elected village administrator/head who coordinates village development and liaises with government and other actors). Participants ranged in age from 18 to 73 years. All participants were iTaukei, reflecting the ethnicity of villages. In total, 124 people (71 male; 53 female) participated in 12 *talanoa* (n = 80) or semi-structured interviews with one or two participants (n = 44). People were invited to participate with different ages, gender, and places of residence; however local custom shaped attendance at *talanoa* with the *Turaga ni Koro* calling villagers to discussions. For this paper, thematic analysis was conducted around temporalities of environmental change and relocation. Ethics approval was granted by La Trobe University; the Research Ethics Committee of University of the South Pacific approved the methods.

#### 4. Thick temporalities of environmental change and planned relocation

While past, present and future timescales of climate impacts and relocation can be partially disentangled they are not discrete temporal domains. It is through the interplay of different temporal reference points that people make sense of changing climates and planned relocation. The findings below are structured around four themes: (i) climatic and environmental change including observed impacts, recollections of place and landscape, and anticipated environmental futures; (ii) personal and ancestral histories of connection to place and their significance to contemporary relocation planning and anticipated

futures; and the complex temporalities of (iii) anticipated relocation and (iv) realised relocation.

##### 4.1. Thick time of climatic and environmental changes

It has been argued that climate is difficult to grasp because it is not the weather or seasons, but a statistical construct based on data accumulated over long timeframes (Brace and Geoghegan, 2010). Among residents of these low-lying villages, however, environmental changes were observed and attributed to climate change. People consistently spoke of personal experiences and observation of rising seas, higher tides, coastal erosion, flooding, saltwater intrusion, unpredictable rainfall and wind patterns, damaged food crops due to salination, and storm surges. They also described subtle changes in local climates and environments such as crabs encroaching into the village as the seawater came ever closer to homes. While a few older villagers indicated that these environmental threats were cyclical and had always occurred – a view often obscured in commentary on indigenous attitudes toward global warming (Rudiak-Gould, 2013) – climatic changes were understood by most to be a new threat that they were ‘walking through’. As one man from Vunidogoloa explained, ‘we understand climate change because we live climate change, we experience ... we live with it, it’s our daily lives, we walk through this’. Similarly, a woman from Vunisavisavi said, ‘we know, we experience it, we feel it, from what we’re seeing in the coastal area, the food. We can feel it’. Place-based experiences of changing climates and environments had a temporal urgency as changes and challenges were lived in the present.

Contemporary experiences of climatic and environmental change were enmeshed with everyday activities as villagers worked, for example, to clean and maintain homes affected by flooding and erosion, or to farm land affected by saltwater intrusion. One woman from Karoko explained, for example, that she regularly cleaned up debris brought in with the increasingly high tides: ‘at high tide, it comes right here, up here, under the house. There is a little stream here and it floods over. Every month, four days in a row every month, the water is high. The water comes up to the step’. And a man from Karoko described how coastal erosion destroyed his home and his household was forced to relocate: ‘My house ... was washed away four years ago. The post was being broken by water, like that. The land was washed away from under it. It happened quickly. We were living in it. We were worried. I relocated myself. My house is now on that side [pointing inland]’.

While accounts such as these highlighted the immediacy of flooding, erosion, and damage to homes, farmland and infrastructure, the nature and rate of these changes were plotted against memories of place and landscape over timescales of years or decades. Consider, for example, the memory of one woman from Vunidogoloa who compared coastal flooding at the time of their relocation with earlier conditions in the village:

*My house was near the shore, from my house it was only four steps to the sea-wall. The day we moved the kitchen was knee-deep with water. It is so unsettling when things happen like that. Before it was OK, it only flooded during the king tide. But then even the normal high tide started to flood our houses.*

And in all seven villages, it was widely assumed that climate change risks – particularly coastal erosion and flooding – would escalate in coming years. As a young man from Narikoso said, ‘the rising sea-level is the main problem, because I think in fifty years from now we will be underwater, this place right here. It is better if we just move up’. Anticipated environmental futures were based in part on local observation, but villagers also referred to scientific estimates of climate impacts. During one *talanoa* in Tokou, a resident summarised his understanding of scientific assessments of global mean sea-level rise: ‘Three millimetres a year. But in ten years’ time, that’s thirty millimetres. By the end of the century, we don’t know’. And in Vunisavisavi, long-range scientific projections of climate change – such as the village inundation zone

projected for 2090 – had permeated local understandings via media reports, local environmental impact assessments, participatory risk mapping, and visits from scientists and researchers: ‘*people start coming and visit us, researchers, they start coming then we start to hear about climate change*’.

The point is not to establish the accuracy of local understanding of the timescales of climate risk but to highlight that people understood climate impacts not only at the level of seasonal changes or the everyday, but through longer frames of reference of years and decades. These long-range perspectives drew on observations and circulation of scientific forecasts, imagined environmental futures, and recollection of earlier environmental conditions. So, recalled and recast environmental pasts and anticipated environmental futures shaped contemporary realities and understanding of environmental and climatic change. The present, past and future coalesced to produce a thick time of environmental changes.

#### 4.2. Place attachment and present pasts

*We’ve been living all our lives here, so it is hard for us to relocate. We’ve been here for three generations. If we moved I would miss the sea breeze, the fish. (Toki, man, talanoa)*

*We are thinking of moving our houses. But we all love this place here. Because we were born here, we’re happy. It’s good to run [away] every hurricane and every tsunami but we can’t leave this place. (Karoko, woman, talanoa)*

Across all seven villages, both anticipated and realised relocation brought attachments to place into sharp relief. People spoke of their villages as sites of ancestral, intergenerational and personal belonging, as places where they lived and died. The prospect of relocation raised concern about rupturing long-term connections to place. Many people, particularly older residents, said they did not want to move because they had been born, lived and worked in their village. One older woman from Vunisavisavi explained that she had lived her entire life in the village, built her own home, and had been reluctant to move even as the ‘water reached the steps’:

*I’m 64, I have 64 years in this village. I was born here, I die here. Because I was born here, I watched the waves come and go, even up to the doorstep. I said I wouldn’t move. We made our house by hand, I was involved.*

In Vunidogoloa relocation required careful negotiation of place attachment. The village head of Vunidogoloa explained that their village first started talking about relocation to a safer place in 2006, but several older residents wanted to live and die in their village:

*Some of our old parents they were not willing to move to the new site. Those who started off they have maybe three, four ancestors’ generations here. They don’t want to move, even when high tide flooding comes ... they tell me, ‘if you want to move you move, you leave me alone in my house. If I die, I die with my house on my land.*

Accordingly, they decided to ‘*let the older people die there before we ... relocate*’, a response to the rarely acknowledged temporal mismatch between future-oriented adaptation initiatives and the life expectancies and histories of attachment among those in later stages of their lives (Fincher et al., 2014: 206). Following Vunidogoloa’s move inland to higher ground, intergenerational and long-term connections to place were sustained, with many returning to the old village site to fish, farm or visit burial grounds. As one older woman explained, ‘*I am happier at the new site. But our forefathers were buried there, and my husband was buried there too. The burial ground is still at the old site ... I still feel that connection to there. I always go back to the burial ground*’. Place attachment was generated via connections built over lifetimes and it was sustained as people engaged with place through daily practices and social relations.

Beyond personal histories, villagers described historical and ancestral connections to place. Residents of Vunisavisavi, for example, explained that their village is located at the site of the original home of the Paramount Chief of Cakaudrove (*Tui Cakau*), and they have a traditional obligation to protect the ruined foundations. Place attachment to Vunisavisavi extends back generations. Walking around these ruined foundations, one man explained:

*That’s where he lived hundreds of years ago. The people from Vunisavisavi came from Taveuni. Our forefathers were sent to come and look after his place. They have traditional obligation to look after that. Tui Cakau went to Taveuni and he sent some people back to look after the place. Our great great grandfathers.*

Even in the face of encroaching shorelines and flooding, ancestral connections provided an imperative to remain in place, with retreat rather than relocation the preferred solution.

For a few, belonging to place was tied to spiritual connections to ‘god given land’. Climate change was perceived to be a reminder to ‘serve God properly’ so that God would prevent further impacts and ‘stop water from coming up’. As one man explained:

*Tokou is our god-given land. God has a sent some climate change as a warning for us to notice, but he won’t allow Tokou to go under water. We trust in God to save us.*

Place attachment, then, emerged via temporal connections established through personal, inter-generational, ancestral and spiritual experience.

Given these voiced accounts of place attachment, it is important to note that mobility in Fiji and other Pacific islands has long been a key strategy for adapting and responding to changing climatic and environmental conditions, geopolitics and globalisation (Barnett and McMichael, 2018; Campbell and Bedford, 2014). Early coastal settlement in the Fiji Islands occurred approximately 3000 years before present (BP) (Morrison et al., 2018), with some settlement in the interior by 2000 BP and fortified interior settlement in high, defensible locations by 1350 BP (Roos et al., 2016). Coastal settlements dominated until the 1400s, when climate-driven sea-level fall of 70–80 cm (following the ‘CE 1300 Event’) exposed coral-reefs, reduced water movement in nearshore lagoons, and substantially decreased coastal food resources; this led to abandonment of coastal settlements for inland fortified locations (Nunn, 2012). During the 1800s Europeans began to come to Fiji for sandalwood and *bêche de mer* (sea cucumbers), missionaries introduced Christianity, European settlers “purchased” land, and diseases were introduced (20–25% of the Fijian population died during the 1875 measles epidemic), leading to changes in Indigenous culture (Campbell, 2010; Cochrane, 2018). Many villages in the interior of Fiji relocated to coastal areas as Indigenous economies transformed to export-based plantation economies (trading sandalwood, coconut oil, cotton, copra, cocoa and sugar). Indigenous rights to land ownership were recognised under colonial rule, with the *mataqali* seen as key land controlling units and their village boundaries mapped (simplifying complex systems of land access) (Bayliss-Smith et al., 1988). So, there is a larger socio-historical context in Fiji in which mobility and settlement has long been a form of adaptation to changing social, political and environmental conditions.

While many people spoke of personal and ancestral connections to place and *mataqali* land, there were frequent references to histories of mobility in previous generations and among their ancestors. In four villages, people recalled earlier times when their ancestors had moved sites: residents of Vunidogoloa described relocation of their ancestors in response to river flooding; residents of Narikoso recounted histories of inter-family disputes within the *yavusa* (formed by one or more *mataqali*), conflict with European colonisers, and coastal erosion which led to movement to different sites on Ono island before settling in the current site several generations ago; residents of Vunisavisavi (as mentioned above) explained that their ancestors had moved to Taveuni

island, with some later returning to protect the chiefly ruins; and in Korolevu, people recalled that their families relocated uphill three generations ago to a site where their forefathers had previously lived, and to be closer to the newly built road. As one older man from the higher settlement in Korolevu explained:

*The land is from our forefathers before, and we want to stay here. We don't want to move. This, here, is a settlement; it is not in the village of Korolevu. It is our own land, but not in the village boundary. We are still on mataqali land. Our forefather used to live here in the colonial era.*

There is the possibility that narratives and knowledge of earlier village relocations might enable people to consider future relocation with less trepidation (Campbell, 2010). However, in Fiji and elsewhere in the Pacific Islands past mobility and relocation occurred in different contexts and for different reasons to those likely to necessitate current and future relocation (Campbell, 2010; Connell, 2012; Janif et al., 2016; McAdam and Ferris, 2015; Nunn, 2012; Weber, 2015).

Place attachment, then – built over time through personal, inter-generational and ancestral experience and narrative – emerged from people's histories, sustained current connection to place, and shaped possible futures. Narratives of place attachment variously provided a rationale for remaining in villages as places of belonging, a reason to maintain connection to villages following retreat and relocation, and – for those describing ancestral histories of mobility – a reason to feel connection to *mataqali* land beyond current village boundaries. Place attachment was as much about the present and potential futures as the past.

#### 4.3. Anticipated relocation and retreat

In the four villages that had not initiated relocation with government and/or donor support – Korolevu, Karoko, Tokou, Toki – relocation was widely anticipated as a response to sea-level rise, coastal erosion and flooding. In Korolevu some households close to the coast were planning to move due to flooding. As one man said, *'it is climate change. It is happening during spring tide. The people are thinking of moving. Otherwise, they might get washed away one day, washing the houses in'*. Prior to the construction of the rock-mattress revetment in Karoko, several households had already moved inland themselves in recent years to *'safe land up high'*, some people were considering relocation in response to coastal erosion and flooding with one older woman explaining that *'it is better to relocate now because it might be five or ten years' time that the shores might come inside'*, and other villagers noted that relocation would be required at some point due to rapid coastal erosion and loss of homes. One woman from Karoko said:

*It happens really fast ... the trees were washed away. The sea comes up to here [pointing past houses] ... This house the water is on their doorstep. The land was there, see there where there is that concrete [gesturing]. This house is going to go out soon.*

In Toki and Tokou villagers had been urged by the Lomaiviti Provincial Council to develop a 20-year adaptation plan and to build new houses further inland in anticipation of continuing climate impacts. In Toki, villagers explained they were already retreating from sea-level rise by building houses away from the shore. And residents of Tokou were aware the government had identified their village as potentially requiring relocation, yet there was uncertainty as to how or when this would occur or be funded. In one *talanoa* in Tokou a man said, to widespread agreement, that relocation *'up the hills'* was necessary to ensure a viable future for their children, but another villager voiced concern that *'we have heard about relocating but we have no idea how it will be done, or whether the government will help us'*. While there were differing opinions across and within villages about the timing of climate impacts and the urgency of relocation, there was a shared narrative that relocation was likely to be necessary in the future.

Anticipated relocation became the basis for contemporary action

and concern (see Anderson, 2010: 787; Beck et al., 2013). In Tokou, for example, at the time of research people considered relocation likely, whether in a few years or few decades, with one villager explaining *'the sea-level is rising, and we might have to move ... It's a good idea. We have to move up to higher ground'*. The prospect of relocation was also a source of current anxiety and concern: *'if we move some place we're going to miss it'*. Villagers had attempted to adapt to flooding – including construction of a sea-wall and plantation of mangrove seedlings – but the seedlings had washed away, and the sea-wall was covered by sand deposition. At villagers' request, the village boundary had been extended through the Ministry of iTaukei Affairs to enable retreat and relocation. Villagers had also moved their water source inland as a contribution to relocation planning and implementation, and (at the time of the research) they were awaiting government funding. As a man explained during a *talanoa*:

*We've already discussed with our government, we've moved our damn, our water source up to a higher level further inland, so that if we move to higher ground then the water pressure can be strong. That's what we've been planning for. It's in the hands of the government now. We've paid our part, and we're waiting for them to come in and start their part. They should come in and start next year because we have given them our contribution.*

With relocation an increasingly accepted likelihood, people were reluctant to invest in their homes. One man explained, *'I was thinking about renovating the house, but what's the point? In five years' time if could be filled with sea water. We need to move to higher land. It's a wise move'*.

In Tokou, the expectation of continuing environmental risk and relocation away from current sites of vulnerability became the foundation for contemporary decisions and action, including reluctance to invest in current low-lying homes, expansion of village boundaries to enable retreat, and investment in new water sources on higher land. It is notable that since this research was conducted, Tokou was severely affected by Cyclone Winston in 2016, with many homes and the primary school destroyed. Although the village had been identified by the Government of Fiji for relocation, government reconstruction efforts following the cyclone occurred in the existing village location (Pacific People's Partnership, 2017).

Castree (2013) writes that given the future is uncertain, albeit constrained by path dependencies, then it is ours to make; there are futures that scientists tell us we should expect and prepare for, but alternative futures are also imagined and possible. Similarly, Baldwin argues that we should see the future as *'a site of infinite potential rather than foreclosure'* (2014: 526). These arguments are important, to allow the possibility for alternative and more hopeful futures, to not foreclose the possibility of urgent and drastic cuts in global greenhouse emissions, and to enable consideration of alternative forms of adaptation other than relocation. And yet a future of continuing sea-level rise and relocation is widely anticipated among residents of low-lying villages in Fiji, as scientific forecasts, emerging relocation policy and planning, and material realities and trajectories of changing climates collide.

#### 4.4. Realised relocation and the significance of pasts and futures

In the three villages that had implemented and/or initiated relocation and retreat with government and donor support – Vunidogoloa, Vunisavisavi, Narikoso – relocation was consistently described as an adaptive response to climate change impacts. Residents variously referred to sea-level rise, coastal erosion, flooding, salination and loss of fruit trees and other food sources, and damage to homes. When discussing damage to his home from rising seawater, one man from Narikoso explained:

*You will see our windows and doors, the house keeps on sliding. Sometimes if you try and close the doors you can't because the house is not level, the ground is watery. You fix it and after sometimes the things*

*start again because the land keeps on shifting because of the seawater. It's unstable.*

Relocation planning and implementation had contemporary urgency as decisions were made that affected everyday lives, including: negotiation of local views around whether, when, and how to relocate; consideration of place and customary land boundaries for sites of relocation; seeking and accessing donor and government funding and support, particularly as more villages sought to relocate thereby 'competing' for limited resources; raising money and resources through village-level initiatives and fund-raisers; and sustaining and putting in place new options for food production, water sources, livelihoods, infrastructure and services in sites of relocation.

In Vunisavisavi, for example, villagers explained that the short distance retreat of some households enabled them to sustain livelihoods and traditional subsistence farming. They continued to: fish, produce root crops and kava production in nearby plantation land, and produce and sell woven mats. In Vunidogoloa, where villagers relocated two kilometres inland, they diversified food sources and livelihoods and farmed new crops (with the support of government- and donor-funded livelihood initiatives), while continuing traditional fishing and farming. As the Turaga ni Koro of Vunidogoloa explained:

*Every day we go down to the sea. The men, the women. We still get income from the sea ... But the food security that we don't have in the old site, we have that here. Vegetables, cash crops, we can't plant that because of the sea water in the old site. Salination. Now we have pineapples, tapioca, taro, bananas.*

The future-oriented nature of climate change science and discourse has been criticised because it is seen 'to empty out the present' (Arnall and Kothari, 2015). However, in these villages planned relocation represented a process of adaptation to current climatic risks, and relocation itself was navigated in the present.

Consistent with the concept of 'thick time', in these villages the past and future were tightly enmeshed with current experiences of relocation and retreat. For example, while many villagers – particularly older residents – said relocation disrupted personal and ancestral histories of attachment to place, residents often referred to their ancestors' mobility (due to inter-clan disputes, conflict with European colonisers, and flooding) and linked current relocation and retreat to these clan-based histories of mobility. And looking to the future, many villagers regarded relocation as a way to build a viable future for their village and their children in the face of continuing environmental risk. In Vunidogoloa, for example, one man explained that '*we saw the reality of the impact of climate change, and we were thinking for our future we better come up*'. And *talanoa* discussions often returned to plans for future village development, including the construction of a church, waste-water drainage, foot-paths, and a site for children to play.

Ancestral, experiential, scientific and policy timescales of climate change merged, and they disrupted histories, permeated the present, and extended into the future in uncertain ways. The temporality of relocation in these three villages became "thick" through interweaving environmental and social histories of place established over lifetimes and generations, contemporary environmental and climatic risks, emerging realities of planned relocation and retreat, and anticipated environmental futures of climatic and environmental risk.

## 5. Discussion: thick time of changing climates and relocation

Although framed in language of urgency, it is widely noted that climate change can have an abstract quality. The Intergovernmental Panel on Climate Change (IPCC) and other organisations have tended to present greenhouse gas emissions as a global problem affecting planetary climate systems (Brace and Geoghegan, 2010: 286). Melting ice caps and rising seas are perceived as spatially and temporally distant from everyday lives, particularly in Western societies (Slocum, 2004).

Given the extended timescales and global reach of the problem, Brace and Geoghegan ask 'is it even possible to speak of climate change in relation to daily life when the temporal and spatial scales under discussion are so seemingly incompatible?' (2010: 296).

The findings in this paper suggest that the timescales of climate risk are not distant and incomprehensible. Everyday experience of climatic changes and planned relocation in these low-lying iTaukei villages can be understood as thick time where histories, everyday experiences, and forecast and imagined futures coalesce. People recall long-term personal and intergenerational attachment to place, speak of contemporary climatic and environmental changes (e.g. sea-level rise, coastal erosion, flooding), navigate anticipated and realised relocation and retreat, consider long-range scientific climate forecasts, imagine their environmental futures, and reveal how anticipated environmental futures are folded into the present through relocation planning and implementation. These temporalities are grounded in place and shaped by the narratives and timescales of climate science and governance (c.f. Meeus, 2012). While noting that human mobility is never determined solely by environmental or climatic factors, climate-related mobility in these villages is not regarded as 'future-conditional' (Baldwin, 2014: 58) but rather as imminent, if not realised.

What relevance might this have for climate change policy and response? As is widely noted with urgency and often despair, the global challenge remains deep cuts in greenhouse gas emissions. This was stated explicitly by many village residents who called for '*big countries*' to '*stop all that pollution because we're suffering here*'. A recent IPCC (2018) Special Report compared the impacts of global warming of 1.5 °C and 2 °C above pre-industrial levels and explained that 2 °C of warming would result in even higher mean global temperatures, higher hot extremes, heavier precipitation in several regions, higher intensity and frequency of drought in several regions, and additional sea-level rise. It underscores the critical importance of urgently and drastically cutting global anthropogenic CO<sub>2</sub> emissions. The climate future depends on global emission trajectories, and for low-lying coastal villages of Fiji as well as other sites of climate vulnerability it is essential to achieve net-zero or net-negative carbon emissions by 2050.

But as global emissions continue to rise and given Earth's system feedbacks, relocation and other forms of mobility are adaptive responses of last resort. Understanding community perspectives on temporal dimensions of planned relocation underscores the things that people value, disruptions they are concerned with, futures they worry about and hope for, and potential disjunctures between the ways that local people view climatic changes and adaptation as compared to scientists, policy-makers, government and development practitioners. As Brace and Geoghegan write, it is important to pay attention to local understanding of real and imagined, current and projected impacts of climate change, and be attentive to '*how they understand, imagine, witness and experience weather and place changing over time*' (2010: 297). These temporal dimensions can then be accommodated in climate policy and planning processes.

The Government of Fiji intends to initiate planned relocation actions only when other adaptation options are exhausted, and with the consent and participation of communities involved. The Government's Planned Relocation Guidelines (Republic of Fiji, 2018) suggest that relocation will seek to: conserve the traditions and cultural identities of relocating communities; respond flexibly to emerging challenges and opportunities during relocation processes including site selection, land acquisition, livelihood restoration and diversification, and new economic opportunities; develop adaptation measures in case of unforeseen future hazards at the new destination; and enable climate-resilience in sites of settlement including climate-proof infrastructure and alternative green energy (Republic of Fiji, 2018). While the Standard Operation Procedures that represent the *modus operandi* for the Guidelines are not yet released, and it is not yet clear whether and when future planned relocation of villages in Fiji will occur, the Guidelines suggest sensitivity to the temporal dimensions of relocations.

Temporality is integral to practical, conceptual and political responses to global warming (see Edensor et al. this issue). Planned relocation in contexts of climate vulnerability is best understood and approached not as an event at a contained point in time, but a process that connects to people's pasts and imagined futures under climate change. In Fiji, villagers' everyday experience of climatic and environmental change and planned relocation are thick with histories of attachment to place, observation of environmental changes over time, anticipated and forecast environmental futures and risks, and hopes and concerns about the adaptive potential of relocation into the future. These findings respond to calls for empirical research into the ways that people construct and navigate 'time-scapes' and ideas of climate (Hulme et al., 2009; Fincher et al., 2014). Understanding the thick time of relocation narratives and experiences can contribute to local adaptation policies and practice that acknowledge the temporal continuities and connections that people value.

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