

Climate Finance for Renewable Energy Development in Fiji: Recognising Alternatives Amidst Troubling Solutions

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Keywords

Climate finance; Pacific Small Island Developing States (PSIDS); Fiji; Governance; Regulation; Technology; Barriers; Renewable Energy; Data Projects; Postcolonial; Racial Formation; Cognitive Justice.

Abstract

This thesis explores the lived experiences of climate finance in Fiji. Alongside its Pacific neighbours, Fiji is contending with the escalating impacts of climate change. Against this backdrop, climate finance has emerged as a global response. Despite the promises of climate finance being a ‘game changer’ for climate affected geographies, its material and epistemic effects in communities remain unclear. As such the driving question of this thesis is: how does climate finance become constituted when deployed in Fiji? As this thesis will demonstrate, climate finance is not simply comprised of hard-won financial disbursements, but also constituted by regulation, governance, technologies, and competing epistemologies.

Fiji is an international hub of climate finance activity. Despite this, Fiji specifically and the Pacific generally are underrepresented in the climate finance literature. Accordingly, little is known about how climate finance is materialising in practice among those who are at climate change’s coalface. In response, the thesis draws on ethnographic work carried out in Fiji between 2018–2022, including 79 interviews and hundreds of hours of participant observation to facilitate a better understanding of how climate finance is experienced on the ground. In doing so, it aims to recentre climate finance’s so-called targets and beneficiaries: the communities that are inheriting and navigating the unequal effects of a global climate crisis, as well as the contested financial solutions being offered to address them. The thesis deconstructs dominant knowledges and approaches that make up climate finance epistemologies and renders visible their consequences.

As a thesis by publication, the articles that comprise this work aim to reach various research audiences concerned with climate finance. It is interdisciplinary, with papers drawing from and targeting journals in the fields of Science and Technology Studies (STS), Regulatory Governance, Energy Studies, Data Studies, and Pacific Studies. In particular, the thesis responds to calls to use STS in energy studies to examine: the role of agency amongst energy transitions; various loci of marginalisation surrounding climate finance and renewable energy; and the problem-solution binary around energy

transitions. I also incorporate postcolonial and feminist technoscience analysis to highlight the situated experiences of these phenomena in Fiji.

By exploring the various barriers to climate finance in Fiji, the analysis highlights how the inflexible modalities of climate finance struggle to flow through the landscapes presented by Fiji, the Pacific, and many of climate finance's target states. To illustrate how, the thesis troubles the solutions that climate finance purports to offer—from its discursive promises, regulatory answers, and emergent data projects. In unpacking them, it becomes clear that these solutions can usher unequal relations, cement axes of marginalisation, legitimate racial schema, and mask important contestations that cross concerns of technoscience, futures, and agency of Fiji's communities.

One goal of deconstructing climate finance is to facilitate space for reconstruction. In recognition of the ongoing need for resources in climate-affected areas such as in Fiji, the thesis aims to move beyond a critique of climate finance by considering alternatives to its material and epistemic constitution. The final part of the thesis, guided by Pacific epistemologies and in partnership with Pacific collaborators, thus explores latent governance alternatives that are already enabling climate-aligned outcomes in Fiji. Further, using postcolonial and feminist technoscience to trouble some of climate finance's flawed technologies, the thesis recognises how Fijian communities are adapting, stretching, reworking, and fixing these 'solutions' in a daily practice of future making. Centring these forms of agency in Fiji, the analyses presented in this thesis by publication attest that climate finance can and must be remade.

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List of Abbreviations

CAD: Climate and Development

EFL: Energy Fiji Limited

FNPF: Fiji National Provident Fund

GCF: Green Climate Fund

GGGI: Global Green Growth Institute

IPCC: Intergovernmental Panel on Climate Change

IPP: Independent Power Producer

NDC: Nationally Determined Contribution

NGO: Non-Government Organisation

PPA: Power Purchase Agreement

PSIDS: Pacific Small Island Developing Studies

RE: Renewable Energy

SME: Small to Medium Sized Enterprise

STS: Science and Technology Studies

Statement of Contribution

This thesis is submitted as a Thesis by Compilation in accordance with https://policies.anu.edu.au/ppl/document/ANUP_003405

I declare that the research presented in this Thesis represents original work that I carried out during my candidature at the Australian National University, except for contributions to multi-author papers incorporated in the Thesis where my contributions are specified in this Statement of Contribution.

This Thesis is comprised of six papers, which constitute individual chapters. As each paper was intended to be read separately as well as part of this compilation, there is a level of unavoidable repetition. The papers have been reproduced as they appear in the journals with the exception of standardising formatting and references.

Chapter 2

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Senior author or collaborating authors endorsement: Dr. Naisilisili



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National
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Statement of Contribution

This thesis is submitted as a Thesis by Compilation in accordance with https://policies.anu.edu.au/ppl/document/ANUP_003405

I declare that the research presented in this Thesis represents original work that I carried out during my candidature at the Australian National University, except for contributions to multi-author papers incorporated in the Thesis where my contributions are specified in this Statement of Contribution.

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Signature

12 April 2023

Date

Author Declaration

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature:



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Chapter 1: Introduction

1.1 The Contradictions of Climate Finance

Leaving Suva for the first time, it was already clear to me that climate finance was a construct of deep contradictions. During that initial trip, climate finance was omnipresent in one sense: everyone, from international development officers, bankers, church missions, engineers, local and national government officials to NGO workers appeared familiar with, and in some cases, fervent about climate finance. Climate finance signified hopeful futures. Yet, it was also clear from the outset that climate finance was nowhere. For the most part, despite the discursive presence of climate finance, very few had accessed any. Climate finance was discussed as a future saviour, something out of reach, a resource that stakeholders were yet to benefit from. This paradox of hypervisibility alongside simultaneous scarcity was enabled by the fact that the boundaries of climate finance were, and still are, fluid. For those receiving climate finance, it was largely indistinguishable from the type of finance they had been receiving for decades from banks or international donors. For those promising to deliver climate finance, it was perpetually relegated to the future, forever ‘on the horizon, about to explode, just around the next corner’ (Dempsey and Suarez, 2016, p. 667).

This first visit occurred shortly after Fiji’s Presidency of COP23. In the wake of this landmark international convention, set against the visible backdrop of Pacific experiences of climate change, climate finance manifested as an acknowledgement of the disproportionate and existential effects experienced by Pacific communities despite contributing least to harmful emissions. Put differently, climate finance was a matter of justice. Yet as the research went on, it was clear that despite this framing, mitigation, as opposed to adaptation, was overwhelmingly a focus for many originators of climate finance in the Pacific. The discourses of the justice mandate echoing from COP23, as well as from numerous voices through the research, were muddled by the fact that the dissemination of climate finance was not based on constructions of justice, rather on regulatory and governance alignment, and commercial viability and financial return.

A central contradiction is the question of whether climate finance is indeed a saviouric solution or an embryonic problem. For many, climate finance is an innovative governance approach capable of engaging the complex existential threat posed by climate change: a ‘gamechanger’ (Duarte, 2016). Emerging scholarship is also painting a less optimistic picture, that ‘[climate] finance operates as an entanglement of power relations accruing rent from climate devastation and untethered from specific broad development aims that may be democratically determined’ (Perry, 2021, p. 362). The space between these two assessments of climate finance is indeed vast, and the implications of these differences, existential.

This thesis does not aim to resolve this central contradiction; it exists in this diverse and changing space between, highlighting the experiences of climate finance primarily for renewable energy in Fiji. Rather than render a pronouncement on whether climate finance is essentially a good or bad thing, the thesis unpacks the dominant knowledges and interests informing climate finance. The need to offer deep critique but also to move beyond to make way for brighter, multiple futures is convincingly argued by scholars wrestling with environmental collapse (Haraway, 2019; Boyer, 2021). This study follows in the footsteps of these scholars, who, through their critical work, highlight the ways in which ‘the established disorder of our present era is not necessary’; rather, it is a product of dominant knowledges, practices, and ways of being. By unveiling these hegemonies, they have demonstrated that we do not need to accept the futures of extinction (Dempsey 2016; Dempsey and Suarez, 2016); ecological disaster (Holleman, 2018); and apocalyptic petro-modernity (Boyer, 2021).

Grounded in the Fijian context, this thesis allows us to unsettle climate finance, revealing its constitutive threads: knowledges, histories, interests, regulations, governance, and technologies. By identifying these threads, the Fijian case deconstructs the essentialist nature of climate finance, as it is characterised on the international level, leaving space for us to recognise the potential for different, emerging futures. This is vitally important. Throughout the research the gravity and devastation of the climate crisis was expressed by participants, and the responsibility of conducting research in this area and among Pacific communities cannot be ignored. As observed by Ballesterio

(2019, p. 197): ‘...the practice of lingering over diagnoses of catastrophe and the end of times is mostly available to distant observers. People having to come to terms with dire circumstances, those that we might label anthropocenic doom, extinction, utter dispossession, or violence, seldom see their histories as already determined...’ Thus, this thesis acknowledges Fiji as a powerful site of transformation, and demonstrates the ways that climate finance is not only being unravelled but remade in Global South communities and contexts.¹ This reconstruction begins to recognise the brighter futures possible not only for Fiji, but also climate finance.

The papers comprising this interdisciplinary dissertation explore climate finance as a situated phenomenon, anthropologising it from the location of its recipients. Looking at these concerns through the lens of governance and regulation highlights the varied, unequal, and unseen realities of climate finance. In doing so, these contributions join nascent efforts aimed at delineating and defining climate finance through experiences of its recipients, in contrast to the nebulous boundaries it currently inhabits. In centring these lived experiences in the Fijian context, the thesis also explores the regulation, governance, justice, and sociotechnical experiences of renewable energy from the community to utility scale. In focusing on the areas in which climate finance is spent, the thesis aims to add descriptive substance to the spectral boundaries of climate finance. Boundaries which allow it to be both everywhere and nowhere; which allows a phenomenon that not only maintains, but strengthens the status quo (Anantharajah and Setyowati, 2022) to be heralded as transformative of social and environmental relations, among its other contradictions.

As such the driving question is what is climate finance, as a lived, experienced resource in Fiji? Accordingly, the thesis and its constitutive articles are organised around the following key research questions.

1. Are there barriers to channelling climate finance into climate-aligned projects in Fiji?

¹ The use of ‘Global South’ is a particular choice, which is discussed in more detail in 1.4.4. I argue that relegation of the Global South in climate finance knowledge production can actually be an analytic strength: power and hegemonies are most visible from the margins.

2. How is climate finance, and financed renewable energy infrastructure materialising and experienced in Fiji?
3. How effective is climate finance governance and regulation in Fiji in the eyes of those who need it?
4. Whose epistemologies and values are represented in climate finance governance and regulation?
5. Are there alternative approaches emerging?

1.2 Introduction

This interdisciplinary thesis by publication comprises six papers exploring climate finance in the Fijian context. This chapter provides background on the current climate finance and energy transition landscape in Fiji (Section 1.3) and elaborates on the research context in terms of the disciplinary orientations of the thesis, highlighting both the spaces and literatures it seeks to contribute to (Section 1.4). Section 1.5 highlights the scope of this research, identifying key gaps in the climate finance and energy literature and signposting how the contributions of this thesis respond to them. Section 1.6 outlines the research design, describing the research questions and ethnography, and Section 1.7 describes the research methodology, including the sampling and interview structure. Section 1.8 details the analysis procedures. Finally, Section 1.9 concludes with an overview of the thesis structure.

1.3 Introducing Climate Finance and Energy Transitions in Fiji

Fiji, like other Pacific neighbours, is at the coalface of climate change and its communities are already experiencing the effects of the ecological crisis, including extreme weather events, loss of arable land, rising seas, and displacement. In the words of Timoci Naulusala, a then 12-year-old advocate at Fiji's Presidency of the 23rd Convention of the Parties to the Paris Agreement (COP23): 'The sea is swallowing villages, eating away at shorelines, withering crops. Relocation of people... It's catastrophic' (UN Climate Change, 2017). Statements of climate devastation from the Pacific, such as this one, feature throughout the thesis. The point of this is not to centre

an apocalypse narrative (Ballesterio, 2019), but rather to iteratively acknowledge the various forms of grief expressed by interlocutors in the thesis. Acknowledgement of grief, as argued by Lennon (2020, p. 957), allows for humility in the ways we frame solutions such as climate finance: “as we challenge fossil fuel hegemony through the formal grievance of quantifiable carbon emissions and the enumerative ‘solutions’ of renewable energy, such reasonable efforts need not be the totality of our response to environmental precarity. We can allow grief to take [us] into a political terrain that no one can satisfy”.

Although partial renewable energy deployment may be viewed as a response to experienced climate crisis, it remains a key focus of climate finance in the Pacific. Pacific Island Nations have set ambitious climate mitigation targets, exemplified in commitments made under the Paris Agreement. Fiji, for example, has committed to transitioning to close to 100% renewable energy by 2030. Whilst contributing minimally to global emissions, these mitigation targets reflect Fiji’s moral leadership (de Águeda Corneloup and Mol, 2014), and the intention for renewable energy deployment to also have important adaptive outcomes. Finance has been highlighted as a precondition to these goals. To meet its targets in the energy sector alone, Fiji needs an estimated US\$ 2.97 billion between 2017–2030 (Ministry of Economy, Government of the Republic of Fiji, 2017). A transition towards renewable energy has the potential to increase Fiji’s resilience in certain ways. For one, as Fiji is currently reliant on imported diesel, renewable energy delinks the national economy from the strain of fluctuating international markets. Secondly, the transition is coupled with the target of entirely electrifying rural and remote areas.

At the time of research, Fiji had several high-profile climate finance achievements. Its development bank, the Fiji Development Bank, was the first to be accredited as a direct access entity with the Green Climate Fund (GCF). Secondly, Fiji was the first developing nation to launch a Sovereign Green Bond. The implications of these achievements are, however, complicated. Despite gaining GCF accreditation in 2017, to date only one project, an Agro-PV development on the island of Ovalau, has been funded. The process of ‘readiness’ or accreditation was arduous, and consumed

significant human resources over various departments and institutes. Indeed, scholars note that these readiness metrics were particularly out of step with Pacific realities (Samuwai and Hills, 2018). Moreover, the ultimate financing of the GCF project substantially comprises debt-based finance which, as will be discussed in the following section, stands in tension with certain conceptualisations of climate finance. This is in line with other Global South experiences with the GCF; in Madagascar for example, the GCF is increasingly ‘providing funding exclusively to the least risky projects that can offer secure and predictable return’ (Cholibois, 2020, p. 359). Similarly, the Green Bonds, representing US\$ 50 million, did not represent a particularly sustainable approach: as noted by one government officer, ‘it essentially represented sovereign debt’. The takeaway here is, as this collection of papers will unpack, the impact, benefits, and implications of climate finance are not as straightforward as commonly held. Rather, they are part of a complex and often frustrating process of reshaping institutions, relationships, and energy futures.

Indeed, the related energy transition in Fiji progresses slowly. A central actor in this space is Energy Fiji Limited (EFL), formerly Fiji Energy Authority. During the process of the research, this government owned electricity utility was in the process of being corporatised. EFL is responsible for the generation, transmission, distribution, and retailing of electricity in the major islands of Fiji, namely Viti Levu, Vanua Levu, Ovalau, and Taveuni. Its dominance in the energy sector is upheld in its regulatory arrangement: the monopoly utility was self-regulated, a situation that remains largely intact despite attempts at legislative disruption (Electricity Act 2017). Noting the capacity limitations of the utility in achieving the ambitious energy sector Nationally Determined Contributions (NDCs), attracting Independent Power Producers (IPPs) was central to strategic plans. Yet to date, few IPPs have entered into agreements with EFL, and the renewable energy goals have not yet materialised. For example, there is still no grid connected solar (EFL Annual Report, 2021). The governance of rural electrification is an equally important locus of Fiji’s energy transition. Here, progress is less easily quantified. Though statistics report that Fiji is almost entirely electrified with some of the highest electrification rates in the Pacific, situations of under-electrification, faulty or long defunct systems remain largely unseen. In sum, Fiji’s

energy transition is progressing slower than anticipated in the wake of ambitious COP23 goals, highlighting the existence of barriers both latent and apparent.

1.4 Research Context: Climate Finance and Energy

There are choices we make in the course of research; threads we pull together (Gibson-Graham, 2014) as well as epistemic spaces we inhabit and populate. This section lays out some of the contexts and debates underpinning the research, and highlights spaces and literatures it seeks to contribute to. It identifies key gaps in the climate finance and energy literatures and signposts how the contributions of this thesis respond to them. Section 1.4.1 attends to the disciplinary orientations of the thesis, in order to make sense of the different forms its individual articles take. This is followed by an exploration of key definitional debates underpinning two key objects of this research: climate finance (Section 1.4.2) and energy (Section 1.4.3). This is followed by a discussion of the normative choices underpinning the use of the Global North-South as a key relational construct of the thesis (Section 1.4.4).

1.4.1 Disciplines of Climate Finance

This thesis, and the articles it comprises, consciously works across disciplines. In part, this was in order to speak to the different audiences captured by each discipline. Additionally, the interdisciplinary nature of the thesis in part actions its own calls for epistemic diversity (Visvanathan, 1987; Boyer 2021). Indeed, the form of this thesis by publication allowed for a deep interdisciplinarity. As the papers went back and forth in review, they were enriched by the language, methods, concepts, and priorities of the distinct disciplines.

Three key disciplines were traversed. Firstly, the thesis is a product of Science and Technology Studies (STS). In a study exploring the connections between STS and social science energy research, Hess and Sovacool (2020, p. 14) highlight the approaches typical of STS that have bearing on energy research: ‘an appreciation for self-reflection, deconstruction, and critique; a tolerance or even celebration of diversity;

and a commitment to imagining a future world that is better than the one we currently have'. In essence, this forms the bones of the interventions made in this thesis and, as will be discussed in the following section, uses postcolonial and feminist STS to guide much of this analytic contribution. Submissions to key STS journals such as *Big Data and Society* (Anantharajah, 2021b) and *Science, Technology and Human Values* drew climate finance, and the Pacific, into conversation with STS. Secondly, the thesis is also the product of energy studies given its interrogation of climate finance for energy transitions. Several papers (Anantharajah, 2019; Anantharajah, 2021a; Anantharajah and Setyowati, 2022) speak to this discipline, and aim to fill key gaps in this space, which will be highlighted in Section 1.5. Lastly, the thesis is situated in Pacific Studies, in particular its contribution to the Contemporary Pacific. This positioning allows the thesis to contribute to the rich discussions on epistemologies and ontologies grounded in the Pacific context (Nabobo-Baba, 2008; Fa'avae et al., 2016; Smith, 2021).

1.4.2 The Contested Definitional Parameters of Climate Finance

Defining climate finance is not a cursory or straightforward exercise; rather, it engages key normative and theoretical questions. The definitional boundaries of climate finance are nebulous (Mandal, 2019); as will be highlighted below, the inclusion and exclusion of particular definitional elements are important sites of contestation. Given this definitional uncertainty, it is perhaps unsurprising that the tracking of climate finance has likewise been contested and uncertain (Jachnik and Lamhauge, 2018). This rather spectral, intangible, and evasive existence becomes particularly poignant when it is contextualised against escalating climate crisis and enduring calls for climate justice.

Climate finance has been emerging on agendas of international negotiations since 1992, yet it has risen to greater prominence in the international climate negotiations of the last decade (Grantham Research Institute on Climate Change and the Environment, 2023). Whilst the concept is often linked to said global climate negotiations, definitionally it is also generally conceived of as being significantly broader. The United Nations Framework Convention on Climate Change (UNFCCC), for example, defines it as 'local, national or transnational financing—drawn from public, private and alternative

sources of financing—that seeks to support mitigation and adaptation actions that will address climate change’. This allows for significant variance in its core relational construct (who originates and receives funds?), source (private or public?), type (concessional finance, private equity, or corporate bonds?), and the nature of the projects or destinations ultimately funded.

These junctures of variance are key sites of contestation, and of material and conceptual difference. Both explicitly and latently, notions of justice appear as catalysts for these emerging points of discord. The relational dynamic of climate finance is one locus of debate: rather than climate finance coming from ‘anywhere’ in the form of ‘local, national or transnational financing’, some see it as necessarily involving flows from the Global North to the recipient Global South (Pickering et al., 2015). This particular relational narrowing is coherent with notions of climate finance that see climate finance as a mechanism of North-South justice, a dynamic that has been grappled with in various related spheres for decades, including global environmental negotiation (Susskind, 2014). Emerging discussion on climate justice finance delineates climate finance as follows: ‘it is the portion of all transfers and funds of climate finance, as described, which should be implemented following the interpretation of principles of justice’ (Sayegh, 2019, p. 154). For the most part, these discussions of climate finance have been grounded by justice discussions that centre a binary, North-South logic, such as that of historic responsibility (Weiss, 1988; Neumayer, 2000; Schlosberg and Collins, 2014; Sayegh, 2019). This acknowledges that climate change is disproportionately affecting the Global South, which historically has contributed appreciably less to GHG emissions (Neumayer, 2000; Schlosberg and Collins, 2014; Khan et al., 2019). Additionally, the Global North has disproportionate resources and capacity to adapt and mitigate to climate change. It can be argued that these greater abilities tend to stem from the benefits derived from past emissions (Sayegh, 2019). Thus ‘affluent nations today have a duty to solve the problem of climate change and to help those that cannot do it alone’ (Sayegh, 2019, p. 12). The binary and global constructions of justice and climate finance are troubled by emerging scholarship at the sub-national (Ferdinand, 2018) and local level (Sauls, 2019; Cholibois, 2020; Setyowati, 2021), which demonstrate the inadequacy of such framings.

Broad articulations of the type of finance also encounters challenges in emerging scholarship. For one, Sayegh (2019) argues that if climate finance is meant to mobilise constructions of justice, debt finance cannot be considered climate finance. This is a powerfully disruptive contention, particularly as key climate finance organisations are indeed increasingly opting for higher proportions of debt financing in disbursements (Cholibois, 2020). Increasing studies show that the type of climate finance in operation can have material justice implications (Sauls, 2019; Sayegh, 2019; Cholibois, 2020; Bracking, 2021). For example, Bracking (2021, p. 259) argues that bonds and insurance products could ‘...act both as a firewall and fetish to protect against encroaching reality and provide a new means of providing debt-based finance to entities often already in ecological and financial deficit’. Further, scholars posit that with certain climate finance mechanisms the benefits are unjustly allocated: “frequently the ‘winners’ of financialized climate governance are neoliberal institutions, and other entities promoting market-based strategies for climate mitigation and adaptation” (Khan et al., 2019, p. 248).

As a final introductory point on the contested definitional boundaries of climate finance, it is important to explore the nature of its destination. Put differently, what is climate finance ultimately funding? The Pacific context highlights the particular tensions between the need for resources supporting adaptation as well as mitigation. Adaptation, though arguably being at the centre of climate finance justice rhetoric, still struggles to attract market finance. Other tensions emerge. India, for example, has supported a ‘development-first’ approach to climate finance (Mandal, 2019). Fiji has argued that ‘development finance is climate finance’, and has sought to position the management of climate change within the sphere of economic development (Jiwanji, 2019). On one side, this requires development finance to internalise climate risks and promote resilience; on the other, it would arguably require climate finance to yield development co-benefits. This raises a key issue in terms of climate finance in Global South contexts: the need for climate finance to yield development benefits.

The collection of articles contained herein continues to trouble the definitional parameters of climate finance. In doing so, these works engage with established and

emerging climate finance justice questions as well as introducing key justice questions, such as that of racial and cognitive (in)justice, to the climate finance debate.

1.4.3 Defining Energy

This dissertation also explores energy. Throughout the thesis this term is unsettled and blurred, exposing porous and situated boundaries. Energy is not accepted to be definable simply by reference to its characterisation as ‘pre-discursive’—‘an apolitical biophysical phenomenon governed by the laws of thermodynamics, existing irrespective of human culture’ (Lennon, 2017, p. 19); nor as ‘standardized and convertible, disembedded from the knowledge systems that they were implicated’ (Visvanathan, 2008). As we move through the papers comprising the thesis, we see how the complex ‘meshwork’ of energy is repeatedly reduced to the technical (Howe, 2019). Perspectives that highlight the situatedness of energy, in place, communities, and knowledge systems, is also notably absent from the Pacific energy literature (Michalena and Hills, 2018).

Motivated by the work of other critical energy scholars (Lennon, 2017; Howe, 2019; Boyer, 2021), the thesis consciously reanimates the notion of energy. These scholars in particular situate energy in place, history, and emotion and in doing so allow energy a messier, more powerful, and contested form. As noted by Howe (2019): ‘Energy is power materialized but it is likewise ethically charged’. The reduction and sanitation of energy to its purely technical form, in part, renders these ethical questions invisible. In response, Chapter 4 unpacks the way such regulatory discourses, which aim to remove energy from its context, latently uphold power relations. This chapter joins work from other jurisdictions that highlight the ways energy transitions and their regulation are entangled in entrenched power relations and competing interests (Brown, 2017). Further, Chapter 7 highlights the messy ‘oddkin’ of energy (Haraway, 2016), and highlights the ways ‘invisible’ actors, cognitively relegated from boundaries of the infrastructure, determine its very survival.

1.4.4 The Global North-South

The Global North-South dynamic is a key feature of this research. At the outset, it is important to attend to some of the challenges and assumptions of this conceptual categorisation, the primary being the risk of homogenisation. The binary has the capacity to diminish the vast differences between nations within each category, and indeed designating states as the unit for categorisation minimises the deep inequalities within national boundaries. Put differently, there are Norths in the South, and Souths in the North (Mahler, 2018). In the context of climate finance, this point is powerfully illustrated in the Outre-mer, a subnational jurisdiction of France. Here, national determinations make it difficult for these climate-affected communities to access climate finance, their unique context lost amid the Northern status of France, their former coloniser (Ferdinand, 2018).

Despite the deficiencies in the characterisation, the thesis uses the North-South binary (though not uncritically) for the following reasons. Firstly, it responds to the data: perspectives from the field explicitly centred or took for granted the North-South underpinning of climate finance. Whether or not this accurately reflected the materiality of climate finance in Fiji, this discursive construction could not be ignored. As highlighted previously, the North-South relationality is a key underpinning of the justice mandate of climate finance, and in some understandings is embedded in its very definition. As such, the thesis uses this terminology in order to *prima facie* explore climate finance on its own terms. Further, this thesis explores the cooperation around energy infrastructure, which again explicitly engages the North-South relationality.

Secondly, a key conceptual contribution of this thesis is evidencing the analytic utility of the ‘South’ as a fluid meta-category that connotes not only socio-economic marginality being closely related to (post-)colonial dynamics, but also a way to recognise counter-hegemonic agency and alternatives (Haug et al., 2021). The thesis will highlight the ways the empirics and epistemologies of the South provide a critical rethinking of climate finance (Visvanathan, 1987; de Sousa Santos, 2018).

1.5 Research Scope: Climate Finance and Energy Transitions in the Global South

The thesis responds to several gaps in the literature. Climate finance studies primarily focus on the Global North, meaning that studies located at the national, subnational, and particularly local level in the Global South are lacking (Section 1.5.1). The literature on energy transitions also exhibits similar gaps: sociotechnical analysis on energy transitions in the Global South is similarly absent (Section 1.5.2). The Pacific energy and climate finance literature unsurprisingly reflects both these imbalances: it is largely technical in nature, and almost exclusively relegates the Pacific to a recipient rather than agent of both energy transitions and climate finance (Section 1.5.3). Thus, through its in-depth case study in Fiji, which traverses various scales and recognises various loci of agency in Fiji's encounters with climate finance and energy, the thesis makes distinct empirical contributions (Section 1.5.4).

1.5.1 Climate Finance in the Global South

The North-South distinction provides a useful lens for highlighting broad inequalities in the literature, demonstrating the ongoing underrepresentation of Global South contexts in climate finance literature. One dated review on sustainable finance literature found that approximately 39% of studies focused on the Global North, as opposed to only 6% on the Global South (de Carvalho Ferreira et al., 2016). Despite emerging contributions (Winkler and Dubash, 2016; Samuwai and Hills, 2018; Jiwanji, 2019; Sauls, 2019; Cholibois, 2020; Setyowati, 2020b; Anantharajah, 2021a), developing contexts remain underrepresented, and analysis of the implications of climate finance at the national, subnational, and particularly local level in developing countries remains scarce (Gutiérrez and Gutiérrez, 2019). As the papers comprising this thesis highlight, this gap is problematic as nascent contributions centring southern experiences of climate finance raise important questions. In particular, these studies highlight structural barriers to climate finance including those imposed by regulatory and governance 'readiness' (Samuwai and Hills, 2018), as well as those manifesting from climate finance disbursements based on national rather than subnational contexts, vulnerabilities, and capacities (Ferdinand, 2018).

The scarcity of both empirics and analysis of local level climate finance realities of recipients in the Global South obfuscates crucial lived materialities. Given the current focus in climate finance literature away from outcomes, it is easy to overlook the fact that ‘ultimately, the climate funds architecture—and the acronyms soup that represent it—has to do with how humanity deals with the melting glaciers and ice, the deforestation process, the changing weather patterns everywhere and the impact of extreme climate-related events on people’ (Gutiérrez and Gutiérrez, 2019, p. 138). This crucial gap supports an emergent and concerning critique that climate finance provides a ‘fake solution’, that ‘because of the cultural power of money in our understanding of the world, climate finance signifies extensive action. In practice, however, it is small and delivers even less’ (Bracking 2021, p. 256). Given that climate finance comes to fruition in the Global South, knowledge production here has great potential to shape emergent understandings and concerns of climate finance in the literature.

1.5.2 Energy Transitions in the Global South

Turning to the literature on energy transitions, a twin focus of this thesis, similar lacunae are evident. Scholars note a ‘striking’ lack of sociotechnical analysis of energy transitions in the Global South (Marquardt and Delina, 2019, p. 91). Cholibois (2020, p. 350) also highlights the lacunae in studies on energy transitions in developing countries, particularly to investigate ‘the potential repercussions that different forms of financing could have on the equality of energy access in the developing world’. As noted by Marquardt and Delina (2019, p. 91): ‘In these understudied locations, energy transitions are still largely perceived as (and expected to be) top-down, government-led, private actor-driven, and/or donor-initiated interventions that highlight the technical—rather than the sociotechnical—potential of renewables and demonstrate their economic feasibility’. This pattern in the literature fails to reflect the Global South communities as agents in their own transitions; rather, they discursively relegate them to being consumers or objects of energy transitions and development.

1.5.3 Pacific Energy Transitions

These patterns are also pronounced in the Pacific, the geographic focus of this research intervention. For the most part, the literature on energy transitions is dominated by technical analysis (Dornan and Jotzo, 2015; Prasad et al., 2017; Prasad and Raturi, 2018; Prasad and Raturi, 2019). The literature makes a case for transitioning to renewable energy: as Pacific Small Island Developing States (PSIDS) rely significantly on imported fossil fuels for their energy consumption, increasing the penetration of indigenous sources will release them from vulnerability to oil price increases (Dornan and Jotzo, 2015; Michalena and Hills, 2018). These studies model various implications of different generation scenarios at various levels of analysis: regional (Dornan and Jotzo, 2015); national (Prasad et al., 2017; Prasad and Raturi, 2019); and subnational (Sharma and Ahmed, 2016). The literature on Pacific energy transitions is vital in communicating the unique nature of technical energy challenges in the Pacific, and stands as evidence against ‘cookie cutter’ approaches (Dornan, 2014a; Dornan, 2014b; Dornan and Jotzo, 2015; Sharma and Ahmed, 2016; Timilsina and Shah, 2016; Wolf et al., 2016; Keeley, 2017; Cole and Banks, 2017; Hills et al., 2018; Dornan, 2011, 2018; Michalena and Hills, 2018).

Studies that have contributed more than technical perspectives have raised important questions. A study by Cole and Banks (2017), for example, adds an important counter argument to the generally accepted notion that shifting from importing diesel to renewable resources such as solar energy and wind will lead to less dependency in the Pacific. These scholars make the compelling argument that import dependency is simply replaced with technical dependency, as the technical expertise to design, install, and operate these renewable technologies is often thin locally and this demand ends up being met by foreign stakeholders. This, and other studies (Dornan, 2014a, 2018; Hills et al., 2018) give due weight to some of the social and political factors that affect energy sector reform, raising a range of questions. How has political crisis influenced energy policy in Fiji (Dornan, 2014b)? What social factors in SIDS energy markets lead to regulatory capture (Dornan, 2018)? How can a social licence be built between PSIDS communities and renewable electrification projects (Michalena and Hills, 2018)?

Yet, more work is needed that presents the multiplicity of social factors involved in governance as ‘renewable energy governance might block the technically feasible’ (Michalena and Hills, 2013, 2018). The beginnings of a more sociotechnical perspective on energy transitions in the Pacific are perceptible in the work of Michalena and Hills (2018, p. 350), which argues “failure to put RE into a local context, to emphasise local resilience building and to move the rhetoric from a secular nature to one which encompasses the ‘sense of place’ and spiritual-nature of traditional Pacific communities, all help to block further community engagement towards RE”. Notwithstanding this, sociotechnical understandings of energy transitions remain thin, furthering the conceptual practice of designating Pacific Communities as the object, rather than the subject, of its own energy transitions.

Again, these conceptual practices evident in the literature have material implications. Perhaps one of the most illuminating examples of the material consequences is the framing around ‘readiness’ in the climate finance and energy literature. A lack of ‘readiness’ has, for example, for several years almost entirely precluded PSIDS from accessing climate finance from the Global Climate Fund. The definition of readiness varies across institutions; however, it consistently involves a series of benchmarks that ‘destinations’ for finance must reach. The concept of readiness is also a central theme in the academic literature. For example, studies interrogate: the various hardware, software, and ‘orgware’ preconditions for energy transitions in the Pacific (Taibi et al., 2016); ‘preparedness’ for renewables of PSIDS according to a range of governance, market, and progress benchmarks (Michalena and Hills, 2018); and the political, institutional, and technological conditions necessary for attracting donor funding (Keeley, 2017). This particular framing is simultaneously challenged in the literature in a few key ways. Firstly, despite the preoccupation with the ideal conditions or ‘readiness’ for energy transitions, analysis has found that progress in these areas led to only a small increase in renewable energy penetration (Michalena and Hills, 2018). Further, in their exploration of climate finance readiness in the Pacific, Samuwai and Hills (2018) argue that the feasibility of PSIDS ever achieving ‘a readiness status similar to their Asian counterparts is highly unlikely’, highlighting *prima facie* inequalities emanating from readiness criteria in the Asia-Pacific region.

It is important to recognise that there is considerably less literature, however, that shifts the onus of ‘readiness’ from the destination or recipient of the intervention to those who are attempting to intervene. An important question for the literature to answer is whether or not climate finance is appropriately adapted to achieve its ends in the Pacific. This is but one example of a broader trend in the Global South and in the Pacific that locates it as an object or recipient rather than an agent in technological change and energy transitions. This is indeed a profound gap in both the literature and practice surrounding climate finance in the Pacific. Pivoting between the subject-object influences the resultant knowledge production and indeed as argued in Chapter 2, actual climate finance outcomes. In its own praxis, this collection of papers demonstrates the significance of the subject object positioning: whilst the first paper (Chapter 2) follows the trend of placing the Pacific as the object of climate finance, the following papers, to various degrees, aim to subvert, invert, and muddy this relationship in order to generate alternative insights.

1.5.4 Key Contributions

The distinct contributions contained in this thesis aim to flow into the gaps outlined above. The thesis highlights the ‘demand’ side of climate finance as opposed to the dynamics around its origination. It centres Pacific experiences of climate finance and energy transitions, a region that is both critically vital to our understandings of both phenomena yet underrepresented in the literature, and does so in a way that recognises more than technical understandings. Further, the thesis draws the discussion of climate finance from the national and international level to the sub-national and local level, loci of its ultimate fruition. Beyond responding to the gaps in the literature, the thesis offers an epistemic critique of the \ hierarchies that have underpinned this unequal accretion of knowledge in this space.

This thesis joins a nascent group of studies exploring climate finance realities in the Global South, and does so by intervening in various fields including Energy Studies, Regulation and Governance, Data Studies, and Pacific Studies. These interventions

produce critical, tangible knowledge about climate finance, a phenomenon that thus far has been hard to pin down. The sum of these steps forward is a better understanding of the knowledges and powers that are currently shaping climate finance that leads to it being experienced as a spectral, disappointing, and unjust phenomenon. The converse of this is a recognition of the more hopeful futures that climate finance and its recipients may inhabit if enlivened by epistemic alternatives.

1.6 Research Design

This section provides an overview of the theoretical considerations of this research (Section 1.6.1), the choice of Fiji as a case study (Section 1.6.2), ethnography (Section 1.6.3), and self-reflexivity (Section 1.6.4).

1.6.1 Theoretical Considerations: Postcolonial Analysis

The thesis draws on postcolonial, feminist, and indigenous epistemologies, and brings this analysis into different fields; fields where these traditions are conspicuously underrepresented, but are nonetheless enormously useful. These traditions flow into Energy Studies, Data Studies, and Regulation and Governance, intervening to engage climate finance in critical and creative ways.

The design of this thesis is primarily influenced by postcolonial analysis. A postcolonial analytical endeavour aims, in its design, to understand the complex, latent, and seemingly omnipresent ways the reconfigured empire displaces and erases alternative ways of knowing and being. Put differently, postcolonial analysis offers potential for radical exploration, beyond dominant understandings. This thesis primarily seeks to explore, through the Fijian case, climate finance in its real, messy manifestations. Postcolonial analysis facilitated this in several ways. Firstly, as highlighted in the preceding section, Global South experiences of climate finance and sociotechnical energy transitions have been marginalised in terms of knowledge production. Postcolonial analysis allows this relegation to be transformed into an analytic strength ‘as, a post-colonial perspective draws on the idea that the structures of power and

knowledges are more visible from the margins’ (de Sousa Santos, 2007, p. 34). Power and knowledge, as manifesting in climate finance regulation, governance, and technologies, are indeed key preoccupations of this thesis. Secondly, as has been made evident, there is an inescapable North-South dynamic surrounding climate finance, not least in its definitional construct. Using postcolonial analysis allows us to explicitly map onto this dynamic, and joins other postcolonial science and technology studies (STS) scholars in grappling with conceptual pathways for positive scientific North-South collaboration. Lastly, as articulated by Anderson (2015, p. 652): ‘the imperial gaze sees smooth, inescapable global flows; postcolonial critics instead see messy, uneven politics and diverse, contending agents amid the historical debris’. The exploratory work of this thesis, in aiming to move beyond understandings of climate finance as a decontextualised abstract phenomenon, prioritised ontologies that could preserve contradictions and messiness.

The influence of feminist ontologies on the thesis must also be highlighted at the outset, as a key framework that seeks to recognise this messiness. The research concerns itself with brighter futures, with just mitigation and adaptation to ecological crisis. Put differently, a recurrent theme throughout the work is hope, even where it seems fleeting or incongruous (Haraway, 2016). Feminist ontologies provide the analytical tools for recognising the radical potential for transformation, for emancipation from the shackles of power (and energy) relations. Inherent in certain feminist theories is the ontological position that the ‘world we have created can in fact be remade’ (Maruska, 2010, p. 3).

Indigenous ontology deeply influences both traditions. The thesis directly draws from Pacific ontologies in two ways. Firstly, through the use of Talanoa, a Pacific methodology grounded in empathy (see Section 1.7.3 for more detail), and secondly, through the explicit use of the ‘Iluvatu framework, to recognise alternative forms of governance in Chapter 6.

1.6.2 Fiji as a Case Study for Examining Climate Finance for Energy Transitions

Fiji was chosen as a case study because even superficially, it was clear that climate finance was discursively and materially manifesting here: as noted earlier in this chapter, Fiji has had several high-profile climate finance ‘wins’. Further, Suva is a Pacific hub for various international development, regional organisation, government, and NGO climate finance operations. Fiji as an in-depth case study provides critical opportunity here. It allows us to explore these central and somewhat elite climate finance spaces, but it provides greater analytic opportunity. Despite its visibility as a leader in climate negotiations, alongside its escalating climate vulnerability, it has been sidelined as an analytical site for climate finance, and sociotechnical understandings of energy transitions. Fiji provides us a view from the margins, allowing us to view the unfolding knowledge and power relations that accompany climate finance’s actual and discursive arrival (Santos, 2008). The diversity within Fiji is vast, facilitating the exploratory aims of this thesis. The designation of core and periphery is also pronounced in the context of energy transitions in Fiji: the thesis inhabits these margins by paying a particular focus on rural electrification. Focusing on the subnational ‘many hands of the state’ (Morgan and Orloff, 2017) and the local levels of analysis provides important balance to the current state of climate finance knowledge production, which prioritises international and systems level analysis (Gutiérrez and Gutiérrez, 2019). This was key to accessing the messiness lying beneath conceptualisations of climate finance as ‘smooth, inescapable global flows’ (Anderson, 2015).

1.6.3 Ethnography

The thesis is situated at the intersection of some powerful theoretical and ideological phenomena, two of which are capitalism and development. Indeed, climate finance, an approach born from the notion that the market can correct the ecological crisis stemming from uneven development, which maps roughly onto colonial geographies, is almost their direct by-product. There is existentially critical work that unpacks this relationship, resulting in, amongst other things, the financialisation of nature (Bakker, 2010; Dempsey and Suarez, 2016; Perry, 2021; Dempsey et al., 2022). The power of these phenomena, however, has the potential to displace the alternative understandings and messiness that the thesis aims to preserve.

For example, as I presented my findings at conferences and seminars, participants directed me towards the development literature as an appropriate ‘home’ for this inquiry. Besides the influence of post, and critical, development scholars (Escobar, 1992; Hau‘ofa, 1993; Pailey, 2019), development is conspicuous in its absence in this thesis. This was primarily due to the issue of performance; put differently, what power systems were being reinscribed by exploring the Pacific Fiji through a lens of development? Moreover, what realities are displaced by this framing? (Hau‘ofa, 1993).

The descriptive power of ethnographic work was particularly important in mitigating the performance, and thus the strengthening, of the dominance of capitalism (Gibson-Graham 2008), and indeed development.

Although formal interviews (n=79) form much of the material cited in the thesis, ethnographic work including participants was a key part of the research design. This is because the dissertation aims to find its place in embodied and situated accounts of truth and agency (Haraway, 1988), a process that is enabled in part through the process of ethnographic work. There is a radical potential for knowledge generated from the recognition of standpoints and the inclusion of diverse perspectives (Harding, 1993).

1.6.4 Self-Reflexivity

The feminist practice of self-reflexivity, particularly that of situating the researcher, aids in highlighting the fact that the research is indeed generated from someplace, that it is a product of our historical subjectivity and embodied agency (Haraway, 1988), and that the researcher indeed chooses which ‘strings to pull’ (Gibson-Graham, 2014). My situation vis-à-vis my research site was multifaceted and fluid. In Hau‘ofa’s (1993) seminal essay, *Our Sea of Islands*, itself a powerful declaration of a Pacific ontology, he makes an interesting distinction about two levels of ‘operation’ in the Pacific. The first is one of visible historic and epistemic agency and power ‘in which the present and future of Pacific Island states and territories are planned and decided’. Given my role at an Australian university, and with Australian Department of Foreign Affairs and

Trade funding, I quickly slotted into this first level of operation, and indeed despite the methodological mitigation, I was in my positionality re-inscribing and preforming both capitalist and development logics. I moved in the vast network of multilateral finance institutes, government, international organisations, bilateral development partners, and international consultants that constituted the development complex in Fiji, concerned with Pacific energy futures. Whilst Hau‘ofa’s (1993) dichotomy cannot (and arguably does not purport to) capture the diversities of Pacific stakeholders, Hau‘ofa (1993) provides a powerful critique on the subject and object positions that have historically emerged in the region. Importantly, he deconstructs the invisibility of the latter:

The other level is that of ordinary people, tend to plan and make decisions about their lives independently, sometimes with surprising and dramatic results that go unnoticed or ignored at the top. Moreover, academic and consultancy experts tend to overlook or misinterpret grassroots activities because they do not fit with prevailing views about the nature of society and its development. (Hau‘ofa, 1993, p. 148)

As an outsider, and an ethnographer, it was important to understand the partial connections I had with ‘ordinary people’. As a Tamil woman, I shared heritage with the descendants of Fijian indentured workers from India during the colonial period, who now constitute a significant proportion of Fiji’s citizenry. In appearance to many, I was an ‘ordinary person’. This dynamic speaks to another theme explored in the thesis, that of racial formation, which interacts with these levels of operation. As will be explored in Chapter 5, Whiteness can operate as a credential, one that allows for eased membership in Hau‘ofa’s primary level of operation. This small thread, this partial community, allowed for a ‘seeing together’ without claiming to be another.

It is from this standpoint that Indigenous ontologies also influence this study. This appears latently throughout the thesis, in the influence that concepts drawn from indigenous worldviews like relationality have on feminist thought, as well as explicitly in the use of the ‘Iluvatu framework in Chapter 6 and the core role of Talanoa as a relational Pacific methodology.

1.7 Research Methodology

This section outlines the multi-sited fieldwork (Section 1.7.1), sampling strategies (Section 1.7.2), and participant engagement (Section 1.7.3) employed in this thesis.

1.7.1 Multi-Sited Fieldwork

The STS prioritisation of native knowledge production sites has translated to the use of multi-sited fieldwork, which is responsive to the ‘unwieldy’ nature of the object of inquiry, in this case climate finance (Anderson, 2017). Conceptualised in the abstract, deployed and largely negotiated from the North, deployed to the South, and at times destined for the grassroots, climate finance transcends and moves between scales of analysis. The responsive nature of multi-sited fieldwork is particularly adapted to examining processes that do not ‘map neatly on to global, national or local levels’ (Henne, 2017, p. 98). Here, given both the international quality of climate finance coupled with its localised materialities, multi-sited fieldwork allowed me to engage this phenomenon more wholistically.

Suva, the site that occupied the most time in the field, was a particularly strategic location from which to centre the multi-sited analysis and a telling example of the scalar complexity of this research. Suva is the hub of international development in Fiji and for Oceania more broadly; bilateral development partners, international development agencies, multilateral development banks, international NGOs, and treaty based inter-governmental organisations have offices in downtown Suva. In some cases, the offices of these international actors are separated from key Fijian government departments by a corridor and they regularly interact and collaborate on key climate finance policy, which exemplifies the point that the stratification between levels of analysis is often nebulous. Other key sites in Fiji were located in Ovalau in the Lomaiviti Group, and Island ‘X’ a small, rural island. Internationally, interviews and participant observation also occurred in the boardrooms and offices of Sydney and Canberra. Whilst the purpose of the thesis was not to trace the flows of finance itself, it followed the diverse spaces climate finance inhabited to capture the material and epistemic struggles that surrounded it.

1.7.2 Sampling Strategies, Recruitment, and Access

Whilst the individual methods employed for the data analysis in each of the papers diverge, common scaffolding, particularly with regards to the data collection, will be laid out here. The research was conducted between 2018–2022 and draws significantly from interviews (n=79). Participants were selected based on their current or past involvement in climate finance, climate change, and renewable energy projects. Sampling occurred through the snowball technique, which was particularly effective in this close-knit, relational space. Participants would often volunteer to connect me with other stakeholders, and if not, I would ask for a few participant recommendations at the end of the interview. Snowball sampling underpinned the recruitment of most participants engaged in this project. That said, after this was exhausted, I noticed certain gaps present. For one, snowball sampling did not lead me to any actual communities or local community leaders who were experiencing climate finance projects. Secondly, snowballing failed to provide access to certain more ‘closed door’ organisations that were critical stakeholders. Thus I also employed maximum variation sampling to build a richer case study, and to capture contending perspectives (Creswell, 2013).

Potential participants were approached in different ways. Most commonly, I would follow on from an email introduction from a previous participant. In Fiji, it was common to directly call a potential participant, and often the interview would be set on the same day. Access was also a key issue. With community groups, for example, access was granted through a government department representative, who would accompany me to site. I would be required to provide the *sevusevu* and a bunch of kava, which protocol dictates is presented as a gift to the community leader or chief. The government official accompanying me performed all the necessary protocols on my behalf.

Oral consent was preferred over written consent. Firstly, it was more consistent with the oral, relational protocols in Fiji. Secondly, many participants felt uncomfortable with the idea of written consent, feeling as though they were committed to something

beyond participating in the research. All the participants were offered anonymity, being mentioned only by their sector. Given the small size of the community, Island X was also anonymised.

1.7.3 Differentiated Participant Engagement

The idea of ‘interviews’ is an inadequate descriptor for the interactions with participants. With some participants from banks, donor organisations, high-level government officials, powerful international consultants and financiers (*inter alia*) elite interviewing techniques were the primary mode of interaction (Harvey, 2010). These participants would usually elect to meet in their offices, or a more neutral location such as at a café or bar. The interviews would be semi-structured, allowing for the interview to follow the participant’s own expertise.

Where culturally appropriate and with many participants from provincial and local government, community leaders, NGOs, academics, and cultural leaders, Talanoa provided the scaffolding for engagement. Talanoa is a cultural discursive practice recognised in the Cook Islands, Fiji, Hawai’i, Samoa, Tonga, the Solomon Islands, and Niue (Farrelly and Nabobo-Baba, 2014). Whilst there are many different understandings of Talanoa, including its literal translation of ‘talking about nothing in particular’ and ‘offloading’, it arguably has a consistent underpinning: a shared emotionality and a strong sense of empathy. One academic described Talanoa as ‘intermingling the researchers’ and participants’ emotions, knowledge, experiences, and spirits’ (Vaiolleti, 2006, p. 24). Taking the time to build trust and interpersonal relationships are a precursor to ‘emotionally embedded reciprocal exchange between researcher and participants’ (Farrelly and Nabobo-Baba 2014, p. 321).

Talanoa mobilised various parts of the research design. It provided a way of acknowledging subjectivities and positionality of the researcher: a key aspect was the researcher disclosing their own interests, as well as their opinions or feelings about a particular matter. More formal Talanoa occurred according to protocol, including sevusevu and a kava ceremony as part of the welcome rituals. Part of these discussions were in English, which were for my ears, but some was not: I respected this by not

asking for translations. Less formal Talanoa could occur over coffee, or while walking through a community or site. One aspect of Talanoa was that they were often lengthy, and could take up to five hours. These ‘interviews’ can be broken into stakeholder groups as reflected in Table 1.1.

Table 1.1: Interview Summary

Stakeholders	Interviews
Technical/policy consultants	16
Government representatives	11
Regional/international organisation representatives	13
NGO activists/academics	8
Community representatives	6
Financial actors/regulators	5
Utility representatives	4
International financial institutions	7
Private sector representatives	9
Total	79

Participant observation was also an important aspect of the research. Over the research period, I lived in Fiji for a cumulative period of 7 months where I was a visitor at the University of the South Pacific. Participant observation was one way of acknowledging the researcher’s need to unlearn our own objectivities (de Sousa Santos, 2018): ‘It makes us recognize that our theoretical conceptions of the world come from a particular historical, social, and spatial location’ (Shah, 2017, p. 49). Participant observation requires, to varying degrees, participation in the contexts being studied (Mac an Ghaill, 1996). As highlighted earlier, I was deeply enmeshed in the Fijian climate finance arena as a practitioner.² Beyond research, my role also involved facilitating capacity building

² See: <https://regnet.anu.edu.au/research/research-projects/details/7547/climate-finance-initiative>

and policy dialogues with Fijian institutes including the Department of Energy and the Reserve Bank of Fiji as well as regional organisations such as the Pacific Island Forum Secretariat (PIFS). This often made consent a constant praxis, and indeed some of the experiences I had as a practitioner could not be translated into data for research purposes because consent could not be clearly obtained (Roulet et al., 2017).

Participation observation was recorded in field notes, pictures, and voice notes and this contributed to the ‘thick’ description (Lavanchy, 2014; Gibson-Graham, 2014). Often, I could not make notes in real time, for example, during a Talanoa, as this would be deeply disrespectful. Thus, I would make handwritten notes following an event. These would include notes on emotions (mine and those of participants). Other field materials were collected, including policy documents and reports shared by participants.

Entering and leaving the field are two critical steps to consider in ethnographic work. The former was relatively unproblematic for me, given the access I was granted based on my role as a practitioner. The latter was more fraught (Lavanchy, 2014; Franco and Yang, 2021). My last period in the field occurred in 2020, and I returned to Australia the day before national borders were closed due to the COVID-19 pandemic. Various collaborations at this point were prematurely concluded, as the various crises born from the pandemic hit Fiji particularly hard.

1.8 Data Analysis

This section details the analysis procedure, including triangulation (Section 1.8.1), mechanics (Section 1.8.2), inductive and abductive analysis (Section 1.8.3), and theorising and generalisability (Section 1.8.4).

1.8.1 Triangulation

Whilst various particularities of data analysis vary across the papers presented in this thesis, the common foundations will be laid out here. The analysis of the data was a continuous process, beginning with the very first interviews. The data was triangulated

in various ways. For one, due to the extended amount of time I spent in the field, over a period of three years, I was able to explore the same phenomena at various points in time (Denzin, 1970). Further, when exploring a particular project, I aimed to collect data from various participants, from those who designed it, funded it, as well as the intended beneficiaries. The latter group were often marginalised in some respect, usually due to being located in remote geographies: and indeed, the voices of these groups had a powerfully corrective effect on the data, often presenting a different reality to descriptions emanating from the centre. Triangulation also occurred across space (Denzin, 1970). As noted previously, the fieldwork was multi-sited, traversing Sydney, Canberra, Suva, Ovalau, and Island X. There was a multiplicity of experience with climate finance based on these various sites, and the power imbedded in these locations (Patton, 1999). The ultimate endeavour here was perhaps crystallisation, as opposed to triangulation. Rather than confirming ‘truth,’ crystallisation, through multiple forms of analysis, produces thick, and complex interpretation (Ellingson, 2009; Denzin, 2012). The twin principles of diversity and reflexivity are operationalised in this thesis to generate a strong objectivity that aims to preserve realities of messy and uneven politics of climate finance, rather than the generation of a smooth narrative (Harding, 1993).

1.8.2 Mechanics

I used NVivo, a computer software, to store and code the interview data as well as to code the data. Often I would begin by coding transcripts, field notes, and documents manually to facilitate deeper immersion in the data, and then I would code using the software for organisational purposes and clarity (Lavanchy, 2014; Franco and Yang, 2021).

1.8.3 Inductive and Abductive Analysis

As already noted, the process of data analysis occurred as part of the data collection. A key turning point in the analytic approach occurred after the publication of the first paper. At the beginning of the research, I used grounded methods and inductive reasoning (Glaser and Strauss, 1967; Charmaz, 2008). Part One of the thesis, *Reconfiguring the Governance ‘Problem’*, is a product of this approach. This part

largely focused on Research Question 1, namely are there barriers to channelling climate finance into climate-aligned projects in Fiji?

Here, I generated detailed first order codes from the first stage of the interviews, from which I subsequently gleaned higher order thematic codes that spoke to barriers to climate finance in Fiji. This form of analysis had some fundamental limitations. For one, it offered no pathways for deconstructing my own ontological and epistemological assumptions. As such it led me, unintentionally, to frame Fiji as a problematic object of climate finance, continuing uneven practices of knowledge creation.

Theory was critical in mitigating this, and indeed was vital in a process of unlearning. The use of theory in data analysis is an acknowledgement that often help is needed in broadening our vision beyond an abyssal line (de Sousa Santos, 2018). Put differently, theory can assist in creating thicker descriptions than our epistemic dispositions allow for (c.f Gibson-Graham, 2014). As such, Parts Two and Three of the thesis relied on abductive approaches that operationalised a postcolonial analytic logic. Broadly, this had two constitutive elements: the need for deconstruction and reconstruction (de Sousa Santos, 2007).

The former acknowledges that dominant epistemologies, manifesting in regulation, governance, and technologies, may be displacing alternatives. Highlighting the ways these are dominant rather than universal understandings was key to the deconstructive process. This was mobilised in the data analysis, largely through using theory to ‘trouble’ climate finance (McDonald and Sterling, 2020), and contextualise its various understandings and judgments that were taken as universal truths. These discourses were also unsettled by the triangulation with more marginalised yet simultaneously central voices such as community beneficiaries. Part Two, *Troubling Solutions*, operationalised this deconstructive approach to the data analysis, and its three papers interrogate Research Questions 2–4, namely how is climate finance, and financed renewable energy infrastructure, materialising and experienced in Fiji? (RQ2); how effective is climate finance governance and regulation in Fiji? (RQ3); and whose epistemologies and values are represented in climate finance governance and

regulation? (RQ4). These papers draw on various theories, which in conversation with the data, generated codes and then categories. Whose epistemologies and values are represented in climate finance governance and regulation? These three papers use different forms of analysis in their deconstructive endeavours, which will be laid out in the papers themselves. In part this has to do with the audiences each was speaking to.

The second element of the postcolonial approach used in this project is reconstruction: the development of cognitive tools through which we can recognise the alternatives that already exist. This was operationalised by more deductive analysis organised around the postcolonial principle of cognitive justice. Cognitive justice is an active recognition of the need for alternatives: ‘it recognises the right of different forms of knowledge to co-exist, but adds that this plurality needs to go beyond tolerance or liberalism to an active recognition of the need for diversity... In this sense knowledge is not something to be abstracted from a culture as a life form; it is connected to livelihood, a life cycle, a lifestyle; it determines life chances’ (Vishvanathan, 2009). In mobilising this in analysis, alternative epistemologies, such as the Fijian Indigenous epistemology of ‘Iluvatu, actively formed the lens for data analysis, as will be elaborated on in the individual papers.

1.8.4 Theorising and Generalisability

This thesis has an uneasy relationship with the notion of generalisability, even though it does not strive to generalise. On the one hand, it does not seek to generate universal truths, acknowledging that the knowledge produced may only be partial (Haraway, 1988). On the other hand, it simultaneously makes the rather ambitious claim of being part of climate finance’s unmaking and re-making, metaphors which indeed have performative as well as documentary significance (Kearnes, Kuch, and Johnston 2018). This in-depth single case study ‘generates, local knowledge from which can be derived unique understanding of causal processes and mechanisms that respects their situated complexity’ (Bazeley, 2013, p. 410). Fiji’s experience with climate finance, while unique, allows us to see climate finance not as it purports to be but as it is. From the abstract level of analysis, climate finance’s boundaries remain persistently nebulous,

yet in the context of the Southern case study, its characteristics, epistemologies, discourses, and technologies become clear. As the processes of climate finance meet Southern realities exemplified by the Fijian case, we begin to feel its edges, perceive its motivations, and understand its limits. The space where these two ideas can coexist is in the recognition of alternatives. In centring marginal ways of governing climate finance, and understanding energy infrastructure, the project acknowledges that climate finance is not fixed; it can be and is in the process of being remade in innumerable seemingly unimportant ways and places (Haraway, 1988).

1.9 Thesis Overview: Organisation of Papers and Authorship

The thesis is divided into three substantive sections, or parts, which reflect the deconstructive-reconstructive analytical process of this study.

The first part, *Reconfiguring the Governance 'Problem'*, explores the context and barriers of climate finance in Fiji. It comprises one paper (or chapter): *Governing Climate Finance in Fiji: Barriers, Complexity and Interconnectedness* (Anantharajah, 2019). This paper primarily explores Research Questions 1 and 2 (see Section 1.1) and functions to orientate the reader with the unique research context of Fiji: its institutions, geographies, policy frameworks, and relationships with climate finance.

The second part, entitled *Troubling Solutions*, plays on the problem-solution binary laid out in the preceding section and explores Research Questions 2–4 (see Section 1.1). In three papers, the notion of ‘solution’ to the ecological crisis is unsettled, highlighting the false distinction and artifice in the binary. The first paper in this section, *Beyond Promises: Realities of Climate Finance Justice and Energy Transitions in Asia and the Pacific* (Anantharajah and Setyowati, 2022), troubles climate finance at the discursive level, drawing on empirics from the Indonesian context alongside the Fijian case study. As the lead author on this paper, I led the research design, analysis, and drafting. The collaboration enriched the thesis, as it allowed for a comparison of two Global South countries with climate finance, highlighting crucial areas of commonality in the ways climate finance is both being experienced and defined in the Global South.

The second paper in this part, *‘But Our Lights Were Still on’: Decolonising Energy Futures Emerging from Climate Finance Regulation in Fiji* (Anantharajah, 2021a) interrogates regulation as a solution enabling flows of climate finance to Fiji. This paper focuses on key regulatory artifacts and agendas emerging in Fiji and troubles their in situ effects. Finally, *Racial Formation, Coloniality, and Climate Finance Organisations: Implications for Emergent Data Projects in the Pacific* (Anantharajah, 2021b) narrows in on a particular technological ‘technofix’ and unpacks some of the ways climate finance solutions may be racially mediated.

Lastly, the third part, entitled *Recognising Alternatives*, explores the existence of alternatives emerging in understanding climate finance and renewable energy transitions, primarily responding to Research Questions 4 and 5. Alternatives traversing the problem-solution binary are highlighted, the central preoccupation being with the recognition rather than the development of alternatives (de Sousa Santos, 2018). The first paper: *Hopeful Futures and Loving Technologies? Reconstructions of Climate Finance in Fiji* (Anantharajah, 2023, in review), proposes alternative recognitions of agency in infrastructure, and highlights the implications of this epistemic shift. Finally, *Towards Cognitive Justice: Reconstructions of Climate Finance Governance in Fiji* (Anantharajah and Naisilisili, 2023) draws on the Indigenous epistemologies of ‘Iluvatu and Talanoa to propose alternative governance principles for climate finance in Fiji. As the lead author in this paper, I led the design, analysis, and drafting. Dr. Naisilisili’s expertise in Indigenous epistemology of ‘Iluvatu allowed us to co-create a paper that I could not have done alone.

Part One: Reconfiguring the Governance ‘Problem’

Chapter 2: Governing Climate Finance in Fiji: Barriers, Complexity and Interconnectedness

2.1 Abstract

Pacific Island Countries are most vulnerable to the disastrous impacts of climate change; they also, however, manifest some of the most ambitious international climate commitments. Fiji, for one, has sought to respond to the escalating threat by setting highly ambitious climate mitigation targets, specifically in the energy sector. Finance is key to the realisation of these goals: governors must attract and meaningfully invest vast sums to support these mitigation targets. This chapter, through qualitative, empirical, and inductive methods, reveals that a complex landscape of barriers stands between governors and the translation of finance into positive climate outcomes. The chapter categorises barriers into four different planes of deepening entrenchment: Level One barriers are the most tractable, whereas Level Four barriers are immovable. These barriers interrelate between levels, creating complex chains of entrenchment. A superficially tractable issue may be rendered less so by being rooted in a more entrenched issue. Empirically, this chapter delineates the complex landscape of challenges, or ‘context’, that Fijian climate governors must understand in order to deliver effective governance solutions. Beyond this, this research offers a framework of broader application through which climate governors may conceptualise complex barriers.

2.2 Introduction

The 2018 Intergovernmental Panel on Climate Change (IPCC) report foreshadowed the potentially cataclysmic consequences of untrammelled climate change. In the Pacific, however, these consequences have already been felt with extreme weather events, loss, destruction, threatened food security, sinking islands, and displacement. The need to

mitigate and adapt to climate change is thus, unsurprisingly, at the core of Pacific development agendas.

Pacific Small Island Developing States (PSIDS) contribute negligibly to global emissions. Yet, under the Paris Agreement, PSIDS have submitted highly ambitious Nationally Determined Contributions (NDCs); Fiji, for one, has conditionally committed to generating 100% of its electricity from renewables and to curbing overall emissions from the energy sector by 30% by 2030. The symbolic significance of meeting (or going close to meeting) these targets is immense, notwithstanding Fiji's minimal contribution to climate change. Specifically, these targets are a means by which Fiji is endeavouring to influence global behaviour. As articulated by Fiji's Prime Minister, Frank Bainimarama, 'Why [have such ambitious mitigation goals]? Particularly when we contribute so little to the warming that threatens our planet? Because we are determined to do what we are asking others to do and to lead by example' (Bainimarama, 2018).

Achieving these goals will also have a powerful impact on Fiji's development domestically. Firstly, increasing renewable energy (RE) penetration in Fiji is both a means of mitigation and adaptation. Mobilising towards Fiji's NDCs will expand reliable energy access to remote communities, increasing their resilience and performing an important adaptive function. A transition to a greater share of renewables in generation capacity may also increase national economic resilience. Fiji imports all its diesel, so transitioning to clean energy (Sustainable Development Goals 7 and 13) will release the nation from fossil fuel dependence and, thus, its vulnerability to external oil price shocks. Finally, the pursuit of these goals could, and indeed should, enliven local industry, innovation, and a local private sector (Sustainable Development Goals 8 and 9).

Realising these ambitious development goals will, however, require unprecedented levels of finance to rapidly be mobilised and channelled into sustainable projects. Meeting national emissions reduction targets in the energy sector alone in Fiji, the central focus of this paper, will require an estimated US\$ 2.97 billion between 2017–

2030 (Ministry of Economy, Government of the Republic of Fiji, 2017), an amount which will need to flow from both private and public sources.

The financing challenge facing Fiji and the region, however, is not simply one of mobilising this level of funding (though that is an immense challenge in its own right); rather, it encompasses the need for a pipeline of sustainable projects to invest in, as well as the assurance of the ongoing longevity of the projects. Yet all too often, accounts of the financing gap tacitly assume that these ‘secondary’ conditions are unproblematic, ignoring the enormous challenges they present in national and subnational contexts.

In response to this status quo, this study interrogates: what are the barriers to mobilising, investing, and absorbing climate finance, and reaping subsequent climate outcomes in Fiji?

This paper engages with this question, by ‘deep diving’ into the challenge of financing Fiji’s climate mitigation targets in the energy sector, focusing particularly on the electricity subsector. Given the level of finance needed, this will necessarily focus largely on the mobilisation of mixed and private sources of finance, and the inclusion of private actors. The analysis will be targeted at the national and subnational level, or put differently, at the ‘many hands of the state’ level (Morgan and Orloff, 2017), which encompasses the diverse range of governing actors.

This paper will be organised as follows. First, the methodology used in this study will be outlined. Second, the analytical context and the framework developed will be introduced. The findings and discussion will follow. Here, the paper will explore the barriers to climate finance in Fiji on four levels, ascending on the basis of entrenchment. This paper explores the complexity arising from the interlinking of barriers between levels, demonstrating how relationships between superficially tractable barriers could be rendered less so by being rooted in a less tractable challenge. At this point, we will begin to see barriers as part of complex chains, and opposed to contained barriers that can be resolved in isolation. This conceptual approach, though developed from the

Fijian context, has great potential in analysing complex climate governance challenges in other Pacific nations, small island developing states, and developing nations.

2.3 Methodology

This study is based primarily on empirical data informed by three months of fieldwork conducted in Suva, Fiji in conjunction with policy reports, existing academic literature, roadmaps, and briefs. Interviews with consultants and other international stakeholders were also conducted in Canberra and Sydney, Australia. The Pacific methodology of Talanoa was used where possible (Farrelly and Nabobo-Baba, 2014; Fa'avae et al., 2016). Talanoa is a cultural discursive practice recognised in many Pacific nations. It was popularised as a research method in the Pacific following its application as a dispute resolution tactic by Sitiveni Halapua in the aftermath of Fiji's 2000 coup (Farrelly and Nabobo-Baba, 2014). Whilst there are many different understandings of Talanoa, including its literal translation of 'talking about nothing in particular' and 'offloading', it arguably has a consistent underpinning: a shared emotionality and a strong sense of empathy (Farrelly and Nabobo-Baba, 2014). Taking the time to build trust and interpersonal relationships are a precursor to 'emotionally embedded reciprocal exchange between researcher and participants' (Farrelly and Nabobo-Baba, 2014). This prioritises empathetic, unhurried communication that is respectful of context.

The research reported is qualitative in nature, and is aimed at the production of grounded theory (Korstjens and Moser, 2017). It aims not to test a theory, but rather, to enable an in-depth and rich understanding of the context that governors in Fiji must navigate. Thus, the inductive processes involved in grounded theory were deemed suitable. It is also compatible with Talanoa, which requires researchers to approach questions openly, without a desire to test a particular theory.

The data collection involved some 40 semi-structured interviews and Talanoa dialogues with various governors including multilateral developmental organisations, bilateral aid partners, regional organisations, national and provincial government, financial

institutions, private consultants, NGOs, and local private companies who are involved in sustainable development and renewable energy in Fiji.

In terms of case selection, there are many reasons to focus on Fiji, not least that it displays the most promise amongst PSIDS in terms of transitioning to a low-carbon economy: it has ample renewable energy resource availability; it has some of the highest electrification rates in the region; its electricity utility, recently corporatised, is one of the region's most functional and best performing; it boasts one of the most active private sectors with key, highly regarded local renewable energy companies that operate regionally; and Fiji's government has acted as a regional leader in climate change diplomacy and demonstrates clear vision towards ambitious climate change mitigation targets and adaptation outcomes. The latter point has manifested in Fiji taking on the Presidency of COP23; the government's issuance of a Green Bond valued at 50 million USD, the first developing country to do so; and Fiji's Development Bank achieved accreditation with the Green Climate Fund, again a regional first.

Yet, beneath its highly visible successes, Fiji, like others in the region faces deep seated and complex challenges that, without attention and targeted intervention, have the potential to stymie the financing and realisation of the country's green growth aspirations (Samuwai and Hills, 2018).

2.4 Analytical Context and Framework

The concept of climate finance (and the broader green finance) has gained traction globally over the last decade, manifest in the increasing volume of high-level reports of various international organisation and development agencies (Carrozza, 2015; UNEP, 2015; Biswas, 2016; Forstater et al., 2016; Mehta et al., 2017). Much of this discussion, however, focuses on the availability or mobilisation of climate finance, neglecting, for the most part, a meaningful engagement with more national and subnational issues of absorbing climate finance and steering toward climate outcomes. Another asymmetry in this body of reports is that, when national level analysis occurs, great emphasis is placed on a certain type of barrier: misaligned policy (Deutsche

Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2014). This focus, also manifest in roadmaps produced in Fiji, often fails to adequately address more deep-seated barriers.

Climate finance for renewable energy in Fiji remains an understudied area; Atteridge and Canales (2017), for example, note a dearth of synthesised data on climate finance in the Pacific region. Whilst there is still limited literature specifically on climate finance in Fiji, some analyses of the discrete elements that pertain to it have been published. There is, for example, a growing body of high-quality studies surrounding renewable energy in Fiji. Some of this contributes technical analysis and financial modelling (see Dornan and Jotzo, 2015; Sharma and Ahmed, 2016; Prasad et al., 2017). However, the challenge of climate finance stretches beyond the technical. As Michalena and Hills (2013) point out: ‘renewable energy governance might block the technically feasible’ (see also Hills et al., 2018). The literature has reflected this by engaging with important aspects of renewable energy governance in Fiji and the region (Dornan, 2011, 2014; Timilsina and Shah, 2016; Michalena and Hills, 2018).

The academic literature does, however, manifest critical gaps. The literature has grappled with many of the barriers or lacunae in conditions enabling climate aligned development, specifically renewable energy uptake in PSIDS (Taibi et al., 2016; Keely, 2017; Michalena and Hills, 2018). However, there is yet to be a holistic examination of the complex landscape of challenges, in particular, one that takes into account planes of entrenchment of individual barriers and how they interact with other barriers. A study by Eisenack et al. (2014) on climate change adaptation identified a similar gap in the adaptation literature; that is, a lack of deep engagement with barriers. Eisenack et al. (2014) goes on to identify a three-pronged research agenda: identifying, explaining, and overcoming barriers to adaptation. Based on the gaps identified in the production of knowledge surrounding climate finance in Fiji, it is evident that this agenda is pressing here also.

This study aims to translate and action this agenda in the study of climate finance, particularly within the context of achieving renewable energy targets in the Fijian

energy sector. It contributes an identification and explanation of complex barriers to mobilising, investing, and absorbing climate finance, and reaping subsequent climate outcomes in Fiji.

Why focus on barriers and not governance solutions? This question harks back to the wisdom shared by provincial-level governors for this study. They saw a root of governance dysfunction as the failure to do ‘ground work’ and engage with local context. In grappling with barriers, this paper contributes that ground work. Empirically engaging with and representing this complexity, the contribution made by this paper, lays the vital groundwork for effective governance interventions. Without clearly identifying and analysing barriers and the interlinkages between them, it is unlikely that credible policy can be developed through which they might best be overcome, managed, reduced or avoided (Eisenack et al., 2014).

The theoretical contribution of this paper is to propose a new framework of understanding barriers to climate finance. This analysis involves two novel approaches to the climate financing challenge in the Pacific. First, based on substantial empirical work, barriers are classified by considerations of entrenchment: are they capable of resolution? Are they fixed limits? Second, the relationships between barriers on different levels will be explored. Doing so, it will be argued, will encourage more holistic understandings of the climate financing challenges, and result in more grounded and well adapted governance approaches.

Four ‘levels’ of barriers to financing sustainable development will be explored. It will be argued that the ‘entrenchment’ of the barriers in each level increases with each ascending level. Level One (L1) involves barriers posed by lacunae in the regulatory and policy framework, and gaps in strategic planning. The second level (L2) involves various underlying conditions that stymie the financing, development, and sustainability of projects. These include: an underdeveloped private sector, limits to financial opportunity, limited opportunity for private participation in the energy markets, and limited bureaucratic capacity. Amelioration of these barriers requires mid to long term intervention and support for resolution. The third level (L3) involves barriers presented

by powerful international forces operating in Fiji: the donor community. Level Four (L4) barriers are immovable and intrinsic aspects of Fiji's circumstances. They include: geography, distance and scale; land and custom; and the social embeddedness of 'deals'. These matters cannot be 'resolved' and rather, must be understood and adapted to.

This paper then explores the complexity arising from the interlinking of barriers between levels, demonstrating how relationships between superficially tractable barriers could be rendered less so by being rooted in a less tractable challenge (see Figure 2.1). Here, we begin to see barriers as part of complex chains and opposed to contained barriers that can be resolved in isolation.

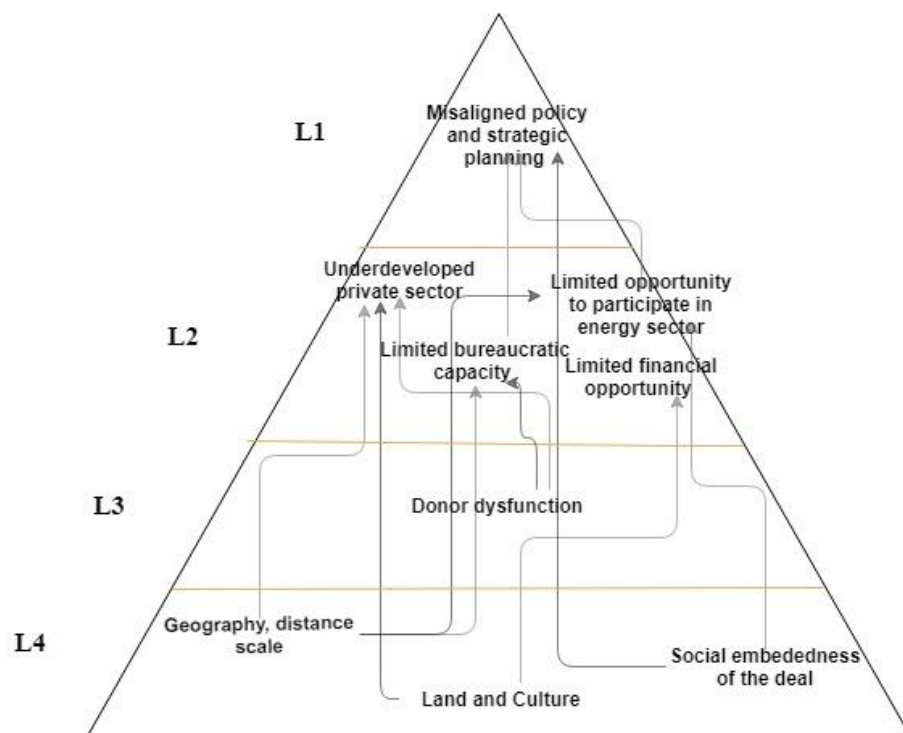


Figure 2.1: Interlinking of Barriers. Source: by Author.

2.5 Findings and Discussion

2.5.1 Level 1: Superficially Tractable Challenges

Investment and subsequent deployment of renewable energy relies on a supportive policy environment. Timilsina and Shah (2016) assert large-scale deployment of renewable energy, including the kind Fiji requires to meet its targets, is policy driven. A lack of supportive policy and regulatory frameworks in Fiji was cited as a significant barrier in interviews across stakeholder groups, a barrier salient across the region (Keeley, 2017). This barrier is categorised as L1 because they are superficially tractable: they are capable, theoretically at least, of resolution by the creation and realignment of policy. Indeed, much of the necessary reforms have already been ‘road-mapped’ by Fiji’s development community. Yet, as will be argued in the second part of the study, the chasm between policy proposals and ‘on the ground’ implementation, and the prevalent lethargy at the latter level, suggest that L1 challenges are much more complex than immediately apparent.

2.5.1.1 *Strategic Planning*

Fiji has set highly ambitious green goals; under the Paris Agreement, Fiji submitted a NDC conditionally committing to generating 100% of its electricity from renewables, and curbing overall emissions from the energy sector by 30% by 2030. The pathways to achieving these goals, however, have been less clear. One government respondent noted that bureaucracies were under significant time pressures in submitting their NDCs, which resulted in Fiji announcing these goals prior to engaging in strategic planning. The Global Green Growth Institute (GGGI) in conjunction with the Ministry of Economy released a NDC Roadmap in 2018, which aimed to bridge the gap between commitments and outcomes. As will be explored in the following section, the translation of these high level NDCS beyond ‘road mapping’ has lagged.

2.5.1.2 Policy Alignment towards Realisation of Energy Sector NDCs: Failure to Encourage Renewable Energy Generation or IPP Participation

Fiji's ability to mitigate its energy sector emissions will depend on its capacity to rapidly scale up renewable energy generation. This invariably requires private sector participation due to the limited fiscal and technical capacity of the state and the electricity utility to invest in new, clean generation. The need to rapidly develop renewable capacity and subsequently, to involve independent power producers (IPPs) in generation have been articulated both in high-level statements by the Fijian government as well as in the NDC Roadmap. These ambitions, however, are not reflected in Fiji's legislative and regulatory framework, within which numerous lacunae frustrate the development of renewables and private participation.

Interviews and data supplied by respondents reveal various legislation and regulatory gaps, with some of the holes that have been identified being remarkably large. The 2017 Electricity Act, for example, does not support or incentivise renewable energy, being, as one participant put it, 'technology neutral' (donor agency respondent). This is surprising as the Act was developed around the same time as Fiji was committing to 100% renewable energy generation at COP23, yet the Act's 'neutrality' actually operates to entrench the status quo and is fundamentally at odds with Fiji's ambitions.

The Act does, however, contemplate the provision of independent regulation rather than self-regulation, which is an important shift from the status quo of Energy Fiji Limited (EFL; FEA before corporatisation) engaging entirely in the latter. While it is indeed a positive that the energy sector will, in principle, gain an external regulator, the Act is silent on the nature of this regulator. The issue of tariff setting was raised repeatedly by stakeholders. Prices in Fiji are set at 33 c/KWh (ex VAT); a uniform tariff that does not represent the full cost of generation, with the result that EFL lacks the capital necessary to reinvest in new generation. Respondents noted that the price setting in the electricity sector is politically charged. Whilst there have been minimal changes over the past several decades, 2010 saw an increase in tariff to be largely reflective of costs (Dornan, 2014a); however, three years later, the government reduced tariffs by 5% (Prasad et al., 2017). Previous studies have also drawn the independence and capabilities of regulators

such as the Commerce Commission into question (Dornan, 2014a, p. 709). Respondents in the present study also expressed concern that this commission lacks the requisite skill and expertise to perform broader regulatory functions within the energy market.

This regulatory challenge is exacerbated by the fact that there is little in the Act to guide the new regulator in steering Fiji's energy markets towards the country's high-level green goals; renewable energy is neither defined or incentivised, and Fiji's NDCs are absent from the Act's objectives (technical respondent). The lack of legislative guidance regarding incentivising renewable energy does little to compel the Regulator to ameliorate the status quo of fossil fuel dependence. The lack of incentives, such as an attractive feed in tariff and net metering, was raised in interviews by a range of stakeholders, though frustration was particularly pronounced in the private sector. Indeed, in remaining silent on renewables in a context of an economy tilted in favour of diesel generation, the 'technology neutral' Act can more accurately be described as an instrument in danger of entrenching fossil fuel dependence.

A key gap in the enabling environment is the lack of supports for engaging actors beyond the utility in renewable power production, and specifically Independent Power Producers (IPPs). The utility itself does not have the capacity, either in the sense of budget or technical capacity, to invest and operate on the scale of renewable power generation required to meet Fiji's NDCs. Currently, while EFL's generation mix has a significant proportion of hydropower, it has extremely limited grid connected solar. Thus whether or not Fiji has the potential to achieve its green goals depends heavily on its ability to include renewable IPPs in power generation. Thus far, there are only two IPPs operating in Fiji, and one is in fact state owned (Prasad and Raturi, 2019). This speaks to the adverse climate for private participation in generation. Private sector respondents cited a lack of policy supports such as standardised Power Purchase as barriers to their participation. One official (government respondent) noted that the new Act does little to encourage inclusion.

Multiple other lacunae in Fiji's legal and regulatory framework have been identified in a variety of reports and roadmaps (Asian Development Bank, 2013; IT Power, 2014;

International Renewable Energy Agency, 2015; Taibi et al., 2016; International Finance Corporation, 2018). Yet these issues persist. This is suggestive of another theme that emerged from stakeholder interviews: consultants and private sector actors expressed deep frustration and cynicism about the state's ability to implement reform. For example, there have been numerous road-mapping exercises suggesting reform towards a more enabling environment, yet these have overwhelmingly not been actioned; these exercises are then reproduced, as will be discussed in the next section, despite the failure of their predecessors to make an impact. The glut of roadmaps and reports that 'grow dusty on ministerial shelves' (development community respondent) is a manifestation of chronic and serious implementation dysfunction.

2.5.2 Level 2: Reasonably Entrenched Challenges

The barriers discussed here are 'reasonably entrenched', that is, they are largely incapable of short-term solution, and will require medium to long-term support and intervention for their amelioration. L2 'reasonably entrenched' challenges to financing climate change mitigation include: an underdeveloped private sector; limited financial opportunity; limited opportunity to participate in the energy market; and limited state capacity.

2.5.2.1 *Underdeveloped Local Private Sector*

Fiji acknowledges that it will make little progress towards its green goals without the mobilisation of its local private sector, especially its small to medium-sized enterprises (SMEs) (Wolf et al., 2016). Yet such mobilisation is a considerable challenge. One of the most significant barriers to investment in Fiji is a lack of deal flow, or in other words the existence of projects or business opportunities to invest in.

The importance of a 'local' as opposed to imported expertise is another important distinction. Various stakeholders in this study emphasised the need for the workforce to be local; and asserted that a profound understanding of Pacific and Fijian conditions is key to the success of projects. One participant noted that consultants with limited

Pacific experience, despite palpable good intentions, often deliver poor results: ‘they don’t understand the environment—if you haven’t lived through a pacific cyclone you don’t understand cyclones’ (former energy sector governor discussing the resilience of solar infrastructure). Furthermore, the concern articulated by Cole and Banks (2017) that certain renewable programs will replace fossil fuel dependency with dependence on external technical assistance can be assuaged if this capacity could be sourced locally.

In Fiji, SMEs comprise a large portion of the private sector. This remains the case with the renewable energy industry, and SMEs operating in this sector have both modest human resources and assets. Yet such companies have had a remarkably large impact in Fiji, and have an operational history of taking on and successfully completing very large projects, suggesting the need to harness such companies more fully, and allowing for more such enterprises to grow into maturity, which in turn implies identifying and overcoming barriers to their growth.

The empirical research found that the overwhelming barrier to the growth of renewable energy SMEs was limited access to finance. Most SMEs are reliant on banks for finance, and difficulties in securing bank loans was consistently reported by private sector interviewees. Notwithstanding banks in Fiji having high liquidity, they have been described by a wide spectrum of stakeholders as risk averse and lacking understanding about renewable energy economics and business. This is manifest in an unavailability of loans and crippling lending terms.

Another area of dysfunction reported by stakeholders concerned collateral requirements of commercial banks, required in the traditional yet ill-adapted form of land. Requiring this form of collateral is particularly problematic in Fiji for several reasons. Firstly, most SMEs would not own their own premises, especially when starting out; thus, their inability to provide traditional collateral renders them ineligible for financing. Beyond this, in Fiji most land is customarily owned (to be discussed in L4) and thus not well adapted to being put up as collateral, as the rights to customarily owned land are inalienable. Yet commercial banks have showed little flexibility in their preference for

land as collateral. For some Fijian companies, this has meant that management has had to put their own homes up as security in order to obtain the working capital to complete a project.

The findings of the present study join others (Wolf et al., 2016; Michalena and Hills, 2018) in identifying the development of a local, green private sector as a vital prerequisite to Fiji and PSIDS generally achieving their green energy goals. Indeed, some scholars go so far as to assert, ‘one of the most pressing regional issues is to strengthen the involvement of the private sector in RE penetration’ (Wolf et al., 2016; Michalena and Hills, 2018). Enhancing access to finance for SMEs is a crucial step.

2.5.2.2 Limits to Financial Opportunity

A closely related issue is the limits to financial opportunity. The financial landscape of Fiji, though one of the most sophisticated in the Pacific, is not *prima facie* well placed to support Fiji’s sustainable development needs in general and those of climate finance in particular. The space is dominated by the commercial banking sector, followed by the Fiji National Provident Fund (FNPF). Local green energy companies are primarily reliant on the former for finance which, as we have previously established, has yielded poor results. Moreover, Fiji’s capital markets are small, there are few listed companies on the South Pacific Stock Exchange, and there is no corporate bond market: ‘the lack of capital markets are things we are really struggling with. Right now there is no infrastructure’, as stated by one regulator. The result of the above is that there are limited opportunities to access climate finance and as a result, to translate the ‘ring of wealth around the Pacific’ into positive climate outcomes in Fiji (financial sector respondent).

The launch of Fiji’s Green Bond valued at US\$ 50 million, however, was one such opportunity. This successful financial innovation brought in diverse domestic and foreign investors. Fiji’s green bond was oversubscribed more than twice over, which is testament to potential investment appetite, subject to the right financing vehicle and opportunity. Whether such a mechanism can continue to be replicated to respond to

increasing investor demand is less certain. As another government official noted: ‘Fiji’s green bonds were global news. But we need to be mindful of the fiscal side of things; bonds are after all debt instruments. We have essentially got sovereign debt, which is not sustainable’.

Building the confidence and infrastructure for a commercial bond market might be one way toward more sustainable (in both the economic and environmental sense) finance; however, this is a medium to long-term aspiration. At present, however, it is clear that more must be done to link investors with sustainable opportunities, and green companies and projects with finance.

2.5.2.3 Limited Energy Market Opportunity

Fiji’s population, and therefore its customer base, is small; thus the size of the commercial opportunity of renewable energy projects to potential developers is also limited. Beyond this, the particular landscape of the energy market presents further obstacles to both renewable energy penetration and private participation. Participants in this study identified various elements of an ‘ideal’ regulatory and operative model. These elements were broadly consistent with ‘second generation reform’ as outlined by Dornan (2018), which has three objectives: firstly, that retail electricity prices reflect the cost of supply; secondly, that feed in tariffs are sufficiently high to attract IPPs; and finally, that regulatory mechanisms incentivise private engagement with electrification.

Conversely, the barriers to increased penetration of clean energy in Fiji’s generation described by participants ultimately reflect a failure of these second wave reforms. The tariff dysfunction, noted in L1, is one such failure. Indeed, the consequential fiscal constraints of EFL, which preclude them from investing in new renewable generation capacity, intensifies the need to include third parties to achieve Fiji’s NDCs. Moving to the second element, Fiji’s policymakers have expressed the intent of steering their energy sector towards the ‘monopsony’ model, whereby IPPs sell power to a dominant utility that is responsible for most power generation and all transmission, distribution, and retail. EFL however, is more accurately described as definitionally lying

somewhere between a monopoly and a monopsony. Dornan (2018) citing Gatwick and Eberhard describes this operational and regulatory grey area, present in many developing countries, as ‘a confused and contested policy and institutional space that arises from the fact that the incumbent state-owned utility remains intact and dominant, but where IPPs are also invited into the market, often with less than enthusiastic support from the incumbent’. Indeed, the 2017 Electricity Act, which attempts to corporatise EFL and attract IPPs is confused in the latter objective, as noted in L1. As noted by one consultant ‘FEA [EFL] is difficult and are often unwilling to work with IPPs because they essentially want to control the type of contract. That’s why the PPA standardisations aren’t being implemented. They put huge storage requirements in which makes the feasibility for IPPs low’. Furthermore, tariffs offered to IPPs by EFL, negotiated on a case-by-case basis, have been too low to make generation a commercially viable option (Michalena and Hills, 2018). This is where the lack of transparency is particularly problematic. Real cost of generation for EFL, according to one participant, is not made transparent and thus potential IPPs must navigate this relationship without highly relevant market information. Further, the general lack of reverse auctions in EFL means that IPPs cannot use successful or unsuccessful bids as benchmarks or pricing guidelines.

Empirical findings showed that EFL, partly due to the fiscal reasons stated above and demonstrated by the opposition it has manifested to IPPs, at the time of writing could be described as ambivalent towards renewables. For Fiji to transition towards a sustainable economy, EFL’s buy-in is paramount. The influence and power wielded by EFL in determining Fiji’s green goals was a recurrent acknowledgement in interviews (the social conditions that protect this influence will be further explored in L4). Despite this, EFL’s hesitance towards renewables is often oversimplified and their internal challenges are overlooked. The primary research grounded a more nuanced understanding of EFL’s concerns with renewables; interviews broadly revealed four sources of this hesitance.

Firstly, some participants assert that EFL was not particularly well consulted in the process of developing these ambitious targets despite the fact that they monopolise the

sector which requires the most substantial reform if Fiji is to achieve its NDCs. The second source of EFL's uncertainty is its lack of technical capacity; its staff has little experience in solar energy and reviewing tenders which could engage IPPs. As articulated by one respondent (donor organisation), "No one is making the case 'what's in it for the utilities.' You have to show them what's in it. Nobody spoke to the utility about retraining staff".

Thirdly, there is an element of 'technology-ideology' in EFL's decision-making processes. EFL having extensive experience with both hydro and diesel generation have a clear preference for 24/7 generation methods. Solar, though being easily the most feasible and financeable source of renewable energy in Fiji (Dornan, 2015) is stochastic in nature (Michalena and Hills, 2018) and this is a significant barrier for EFL. Though again, this stems from limited understanding about how to manage intermittent power in the network, in the past it has led to an almost ideological rejection of solar as it is not '24/7'. As noted by one respondent, '[EFL] want to guarantee 24h power from solar. They are old fashion and are used to hydro, they are not interested in adapting' (former energy official). This is reflected in rates offered to IPPs which are only applicable to those that can sell power to the grid '24/7/365' (Prasad and Raturi, 2019). Renewable energy initiatives thus far have been, in their terms, geared towards hydro. This is problematic, as a diverse mix of renewable energy sources must be deployed to meet growing demand and avoid greater diesel dependence. Prasad and Raturi (2019) found that without implementing further energy efficiency methods, to meet the projected demand of 2040 with renewables the following mix will be needed: 210MW of biomass, 186MW of Solar PV, 181MW of hydro, 81MW of wind, and 6MW of geothermal.

The conservative and risk averse culture within EFL is the fourth theme revealed in interviews and is indicative of a regional trend (Michalena and Hills, 2018). Its rigidly top-down internal management was also noted; to quote one former energy sector governor, 'management runs EFL like a 1960s style utility'. EFL's resistance to renewable generation and the bona fide inclusion of IPPs essentially turns on the inclinations of top tier management, in tandem with an extreme risk aversion that is

best understood within the context of Pacific utilities. EFL is the most successful utility, with most others frequently operating at a loss. Thus, its conservative *modus operandi* has served it well in terms of running a profit-making utility. Though not being beholden to fluctuating oil prices would mean greater energy security for Fiji and a greater level of fiscal certainty, for the reasons stipulated above, EFL perceives this not as opportunity, but almost exclusively in terms of risk.

These findings join other studies that characterise institutional cultures of electrical utilities across the globe. Sovacool (2009, p. 295) for example explored utilities recalcitrance to ‘intermittent’ renewables in the United States of America, and found that utility and operator objections to [renewables] may be less about technical limitations and more about tradition, familiarity, and arranging social and political order.

2.5.2.4 Limited State Capacity

The importance of functioning institutions in renewable energy deployment is established in the literature (Timilsina and Shah, 2016; Taibi et al., 2016). Overstretched government capacity in PSIDS is a well-documented challenge to sustainable development; indeed, some Pacific energy offices comprise only one or two individuals (Taibi et al., 2016). The issue of limited bureaucratic capacity is, however, more complex and nuanced than human resource strictures. Indeed, while Fiji has greater human resources in government than most of its neighbours, limited bureaucratic capacity was one of most represented themes in the primary research. Interviews revealed that the limited capacity of Fiji’s bureaucracy to manage, absorb, spend, and account for public climate finance as well as the state’s capacity to implement and enact the requisite reforms are significant barriers to the realisation of Fiji’s development goals. The empirical findings highlighted the following elements of limited government capacity.

The first challenge is that the limits in government capacity have negative outcomes for creating a business-friendly climate of accountability and transparency. Fiji’s

Independent Commission Against Corruption (FICAC), for example, receives some 10,000 reports of corruption, mismanagement or abuse of power per year; but FICAC only has the capacity to respond to around 5%, and so barely getting below the surface of accountability and corruption challenges (Boussalis et al., 2018). Issues of transparency and accountability have been significant barriers to investment in the nation, as indicated by Fiji's Doing Business ranking.

Closely related, the second challenge is the ability of the state to absorb and spend climate finance that it receives from external sources; indeed some report that availability of finance significantly outweighs the state's spending capabilities. 'People think that the issue is money—it's not. The money and financing is there. The issue is accessing it and spending it' (respondent from donor organisation making a regional generalisation).

The third challenge was that there are signs that skills and confidence to perform traditional bureaucratic functions are in decline. For one, interviewees noted that data, the bedrock for successful policy design, is being collected less frequently. A loss of institutional knowledge and analytical capabilities within certain government departments has also occurred; for multifaceted reasons which include the use of external consultants and the merging of departments. Commonly too, skill and knowledge are concentrated in the highest echelons of the department, with little confidence or capability within middle and lower bureaucratic rungs, notwithstanding that many decisions are taken at the latter levels. The lack of systematic training entrenches this status quo.

The fourth theme evident in the interviews was inconsistent collaboration between departments and with private sector actors. Collaboration between the private sector and government is at best, ad hoc. This has manifested in a disconnect: while the state cites private sector collaboration as an important goal, policy makers and regulators have displayed a lack of understanding about the actual challenges that face this sector.

2.5.3 Level 3: International Forces

2.5.3.1 *Aid Dependence*

The donor sector has had a profound impact on the governance of sustainable development and its financing in Fiji. The nature of donor engagement, whilst channelling much needed support, adds a level of complexity to the development challenge, and can in certain ways be dysfunctional. The primary research revealed three types of donor dysfunction.

Firstly, interviewees noted an inundation of roadmaps and scoping studies in Fiji, which often do not lead to implementation. The overproduction of this type of developmental support has resulted in much frustration on the part of those contracted to develop roadmaps as well as their recipients, borne of the fact that these instruments are so frequently ignored once they have been developed.

A second and related issue is a pattern of different donor agencies replicating elements or entire projects and studies that had previously been undertaken by other agencies, adding little or nothing of substance. Several factors were noted to contribute to this repetition. One is a lack of bona fide collaboration among separate donor agencies: whilst there have indeed been examples of successful collaborative initiatives, participants noted that collaborative groups set up to cooperate on certain matters were not in reality meeting with each other. Competition between donor agencies was noted as a salient factor driving this pattern of behaviour. Competition and repetition are arguably aided by a culture of secrecy in some quarters. For example, reports of communal value are not made publicly available and information concerning projects being developed is tightly guarded until ready to launch.

The final challenge posed by the relationship Fiji has with its donors is that it sometimes subverts the state from setting its own development priorities. The tendency for the state to tailor requests according to donor agendas was well documented and indeed these requests may not be consistent with Fiji's most pressing needs.

2.5.4 Level 4: Unchangeable Characteristics

The fourth level of analysis considers aspects of the climate financing challenge in the Pacific and in Fiji that set it apart from most other regions of the world. It will be argued that these barriers cannot be wholly overcome, and must be internalised into business and policy plans; in other words, the ongoing effects of L4 issues on projects must be reflected in responsive costing, design, planning, and engagement. Here we suggest the appropriate response is not necessarily to overcome these issues, rather, to understand them so policy makers and private developers can better work with and accommodate, rather than work against, these unchangeable characteristics.

2.5.4.1 *Geography, Distance, and Scale*

Fiji has a population of 884,887, which inhabits approximately 110 of its 330 islands; it is one of the most remote countries in the world. Both population (representing potential customers) and the remote islands characteristic of Fiji translates to small-scale projects, which, some argue, are of limited interest to investors.

The challenge inherent in Fiji's geography is best illustrated by logistical difficulties in rural electrification. As noted by one respondent with experience in remote projects, getting to remote outer islands is the first logistical challenge. Given the heavy equipment required by technicians, remote islands can only be reached by sea and ferry schedules can be inconsistent and unreliable. Once on island, the infrastructure such as roads or ports can be very rudimentary, making the transportation of equipment to site a serious challenge. If these logistical challenges are not properly understood and accurately factored into costing, projects can blow out significantly. This highlights the importance of local companies being involved in project development and delivery. The remote location also causes serious operation and maintenance challenges; it is often unfeasible for technicians based in Suva to service remote systems due to the distance. Training local technicians from the community has been a solution which has had mixed results, including system failure due to the migration of local technicians, as well as challenges imbedded in the communities' social hierarchy, which will be explored below.

2.5.4.2 *Land and Culture*

Sustainable development infrastructure projects are contingent on acquiring rights to land. In Fiji, dealings with land are both sensitive and complex.

Fiji is comprised 6% of freehold lands, 4% of state lands, and approximately 90% of iTaukei lands. iTaukei land is communally owned and governed by custom; ownership of these lands cannot be transferred to developers. Developers thus must obtain a lease to use iTaukei lands by negotiating with the iTaukei Land Trust Board (TLTB) which acts on behalf of the customary owners (iTaukei Land Trust Board, 2018). One participant in local government noted that this process could take approximately a year. These lengthy processes have reportedly caused some developers and even donors to attempt to subvert some of the necessary processes in order to expedite processes. This is often done by offering certain land owners further funds directly. Whilst this perhaps speeds up project initiation, the disregard for customary processes invariably leads to short project lifespans and ultimate failure.

Community engagement and inclusion in RE development is essential, especially given the ‘inherent distributed nature of renewable energies, together with the modularity of those technologies, and the development of innovative business models and financial mechanisms, are factors triggering and facilitating a more active participation of citizens in grass root RE community projects’ (Lucas et al., 2017, p. 47). However, the primary research shows a disconnect between the need for community acceptance and the rollout of both donor and private sector projects. As an example, the primary research found that there were instances of training being conducted in English, which beyond being futile in communities who have little English proficiency, was seen by local authorities as a sign of disrespect. As noted by one former energy official, ‘Training is often problematic because most of it is in English. It’s not the local language so what do you expect’.

This resonates with the conclusions drawn by Michalena and Hills (2018, p. 350): “the failure to put RE into a local context, to emphasize local resilience building and to move

the rhetoric from a secular nature to one which encompasses the ‘sense of place’ and spiritual-nature of traditional Pacific communities, all help to block further community engagement towards RE.”

2.5.4.3 Social Embeddedness of Commercial Endeavours and Public Policy

Interviewees noted that business and ‘deals’ in Fiji are deeply socially imbedded; progress and agreement is based on social networks, on ‘who you know.’ Business in Fiji cannot be anonymous or faceless, it requires the building of interpersonal connections and trust, and this is true not only of the business community but also of public agencies. In this study, this status quo was referred to both positively, as a continuation of the communitarian values of Fiji, and negatively, as a barrier to transparency and accountability.

At its worst this social ‘embeddedness’ can be likened to the political clientelism described by Dornan (2014b) which has, in Fiji’s past, operated to both motivate and stymie reform in the energy sector. It can indeed affect the independence of regulation.

2.5.5 Analysing Complexity through Interlinkages

The stratification of barriers, as was undertaken above, is the first step to understanding the landscape of complexity in Fijian climate finance; however, if the analysis were to conclude here it would leave one with an incomplete picture. The second aspect of mapping complexity looks at the interlinkages between barriers on different levels (see Figure 2.1). These interactions are significant for the following reasons. A tractable issue on L1 may be rendered less so by links with more entrenched issues. Furthermore, these interactions evidence the larger point that barriers to financing sustainable and climate aligned development cannot be fully understood in isolation, and that root challenges must also be accounted for. The following section will highlight the relational dynamics between barriers discussed above.

2.5.5.1 How L2 Entrenches the Lack of Supportive Policy (L1)

As noted in L1, implementation failure with regard to roadmaps and policy recommendations remains a significant challenge in Fiji. Many consultants developing such deliverables expressed frustration, and sometimes dysphoria, at this pattern of inaction. ‘There is no current national energy policy. The 2013 draft energy policy was a good one. There was a lot of time spent in public consultation and some great consultants put a lot of time in. And then—nothing happened with this policy. It just sat there. It was never endorsed by parliament. It was never implemented’ (former energy official). Interviews reveal a disconnect between high-level ambitions such as those made during Fiji’s COP23 presidency, and follow through, as evidenced by a failure to implement reforms requisite to meet agreed goals. To understand this disconnect, the L1 issue of policy alignment must be viewed in light of its links with other levels.

Reformative lethargy is in part rooted in government capacity challenges discussed in L2. The state lacks the resources, for the reasons stated previously, to implement much of the policy reform suggested. It also highlights the fact that policy support cannot simply occur at the design or development stage, such as through ‘roadmapping’. Positive examples of efficient implementation and reform, such as the Green Bond Initiative, reflected external support not only in the reformative design process but also across the implementation phases.

As noted previously, Fiji’s power utility, like most in the Pacific, is a powerful political force. Elements apparent in EFL’s institutional culture, such as a recalcitrance towards both renewables and IPP involvement, have been manifest also in Fiji’s new Electricity Act analysed in the previous section. Lacunae in supportive policy (L1), was perceived by stakeholders to be rooted in the utility’s lack of commitment to Fiji’s NDCs (L2): ‘the utility hasn’t seen the benefit in it, so there is no progress. Take the lack of a PPA framework, if the utility wanted it, it would happen’ (respondent, consultant).

2.5.5.2 How Donor Dysfunction (L3) Entrenches Bureaucratic Capacity and Private Sector Development (L2)

Donor dysfunction has the potential to weaken government capacity, which is a significant barrier to sustainable development outcomes. The requirement that the Fiji government not only meet the needs of its dispersed and remote populations, but also, at times, the overly burdensome requirements of its donor community, is a salient driver of the nation's capacity constraints. Donor requirements monopolise much of government resources, especially at the mid to higher levels. Beyond reporting and complying with each individual donor's slew of requirements, high level bureaucrats spent a large share of their time in a near constant parade of donor meetings. Indeed 'consultant fatigue' was a clear theme apparent in interviews. As one consultant noted: 'There is fatigue. You send in consultants, you do roundtables. You say [to public officials] we're working on this. They aren't even interested, you're just another face on the conveyor belt. It's not in fact country driven, or focusing on investors—it's just geared towards aid'. Another consultant noted that the influence of external donor partners has distorted the traditional functions of government; and the increasing outsourcing of various functions to consultants and donors has contributed to the fraying institutional knowledge within Fiji's public sector.

The primary research also revealed that private sector actors perceived that donor projects of a certain design displaced private sector investment and distorted the growth of certain sectors. Indeed, private sector participants note how certain public electrification programs have distorted the market by creating community expectations 'Why would we pay for PV if we were going to get it for free?' (private sector respondent). For example, when remote systems were financed entirely publicly, it removed incentives to purchase systems or pay for their use. A positive response would be for the donor community to consider how their interventions could leverage and support private sector actors where appropriate. As noted by Michalena and Hills (2018, p. 350), the current status quo lacks organically grown sustainable opportunity: 'Development partners and financial support act as a prerequisite for RE progress rather than an auxiliary RE leverage tool'.

2.5.5.3 How Immutable Barriers of Geography, Society, and Culture (L4) Root Those in More Tractable Levels

Limited government capacity, for example, in part stems from immutable geographic factors. Capacity constraints are perpetuated by the challenges inherent in governing a nation comprised of small, dispersed, and remote islands. The task of rural electrification, the purview of the Department of Energy, and the mixed results yielded thus far, illustrates this point. In some cases, the Department has taken years to respond to reports of solar home system malfunction, leaving homes reported to be ‘electrified’ in official statistics without power for inordinate periods. It is overly simplistic to cite negligence as the core of the issue when one considers the process and resource investment required in managing remote systems. Firstly, the repair request must be channelled from the outer islands to the administrative centre. Once received and queued, a technician must be sent to diagnose the issue, and then later to administer a solution. Some islands are only accessible by ship, which have infrequent and unreliable schedules. Simply to identify the issue in one system, a technician may need to commit months of human resources and expenses before they can consider the repairs, which may or may not be (depending on the ownership and maintenance model) fiscally feasible.

Geographical factors of scale also root the L2 challenge of underdeveloped private sector and limited energy market opportunity; the remote island characteristic as well as population of Fiji means that energy projects are small and often fragmented. That the inherently small scale of the energy market translates to limited commercial interest and avenues for competition is a common feature across Small Island Developing States globally (Dornan and Shah, 2016). In Fiji, rural electrification theoretically provides opportunity for private companies outside of EFL’s monopoly. But logistically, the challenges inherent in the scale and distance have limited the ability for rural electrification to prove a profitable expansion of market opportunity. The research shows that the issue of land access (L4) also has affected the development of the private sector. It forms a crucial barrier to SMEs accessing finance, as land ownership is still required as collateral.

Both issues of social embeddedness and scale (discussed in L4) have impacts on regulatory functions. Dornan (2018, p. 322), for example, notes (citing Stern) that regulatory capture is a real risk in small countries under 3 million. This phenomenon plays out in both a community level and a national level. Participants noted this in the experience of training local technicians in a remote community for operation, maintenance, and fee collection for electricity. Here, the trained individual was of a lower social standing in the community, and thus, by community standards could not demand payment from nor disconnect the power of higher-ranking individuals.

On a state level this phenomenon is also perceptible. In Fiji, the political, economic, and social elite are closely connected and frequently interactive (L4), and this has consequences not only for regulatory integrity (L1), but also for the openness of opportunities for new participants, such as IPPs, as is evidenced in the energy sector (L2). Indeed, the tariff dysfunction noted by participants also reflects the core issue of regulatory challenges in small jurisdictions.

2.5.6 Why Conceptualise the Climate Finance Challenge in Terms of Stratified Interlinking Barriers?

The findings of this research demonstrate the climate financing challenge in Fiji is complex, and is made up of distinct barriers interlinking across levels of entrenchment (see Figure 2.1). Grasping and responding to this complexity is important; fractured and limited perspectives as to the nature of the challenge have unsurprisingly yielded mixed results in terms of outcomes and implementation.

The stratification of barriers is helpful for multiple reasons. L1 barriers are, *prima facie*, most tractable, whereas L4 consist of immovable limits with ascending levels of entrenchment between them. This delineation equips governors with tools to understand their agency by representing the structures which may constrain them. By delineating entrenchment, the framework has the potential to guide governors in assessing the feasibility of certain approaches. For example, programs that have worked in other regions such as Asia that rely on a thriving private sector and financial market

infrastructure may not be translatable to Fiji in the short term, as these corresponding L2 barriers are reasonably entrenched. To provide another example, a financier may be looking to invest in rural electrification yet have failed to consider L4 factors, wrongly assuming that land negotiations and community engagement are processes that can be subverted or challenges that can be overcome. The frustration of these expectations may lead to a blowout of project costs or even to complete project failure.

Another benefit of the stratification framework is that it allows one to see at what level programs and support have been targeted. As noted previously, respondents indicated that developmental support was concentrated at L1, which has been marred by significant repetition of outputs, such as roadmaps. It is indeed understandable that international development partners are engaging at L1 as the lack of supportive policy is one of the most present barriers stymying the uptake of renewables. However, the repeated failure (or at best, mixed results) of L1 initiatives to deliver intended policy outcomes suggests a level of policy myopia and a failure to learn from past experience. The difficulty many stakeholders have experienced in their attempts to ameliorate this L1 policy dysfunction becomes more explicable when one considers its roots: bureaucracy with limited capacity and often limited confidence to implement reforms; donor dysfunction; a politically influential utility; as well as a climate of heightened influence of the social, political, and economic elite all operate to entrench the challenge of aligning Fiji's policy towards its mitigation goals. As noted by Eisenack et al. (2014, p. 869): 'understanding the interdependencies of barriers is central for explaining their occurrence, persistence and resolution'. In short, engaging with barriers in isolation and overlooking complex interlinkages with other levels, generates widespread policy failure.

Policy myopia not only represents an inefficient use of public and developmental funds, but is also a waste of an equally precious resource in Fiji and the Pacific: time. Fiji's development has already been seriously affected by climate change, and the need for near-term, effective climate strategies is critical when facing this kind of challenge.

2.6 Conclusion

For Fiji to reach its emissions reduction target in the energy sector, approximately US\$ 2.97 billion must be invested over the next eleven years. Yet, to effectively participate in financing climate related projects in Fiji, both public and private sector stakeholders must navigate various challenges. As this paper has demonstrated, distinct barriers of varying levels of entrenchment stand between the climate finance governor and climate outcomes. Beyond this, these barriers interlink, resulting in further entrenchment. The landscape through which finance must traverse to result in climate outcomes is complex.

Arguably, a failure to engage with complexity is a key factor in both unsuccessful attempts at attracting and effectively investing climate finance. Accordingly, through dedicated fieldwork, grounded and inductive research, this paper has aimed to foster a deeper understanding of the complexity of the climate financing challenge in Fiji. In so doing, this paper aims to provide governors with essential building blocks with which to formulate governance interventions that are not myopic to the complexity of challenges faced.

There are certain limitations to this study. Firstly, the analysis herein represents the barriers most represented in the data. This study does not purport to have been an exhaustive review. Secondly, the study omitted exploration of how barriers at the top of the pyramid exacerbate issues further down. Take for example, how a lack of regulatory incentives for IPPs (L1) maintain the status quo of an underdeveloped private sector and the exclusivity of the energy market (L2). These were not included, as this type of thinking and analysis has already grounded much work in this space, including the proliferation of roadmaps and policy advice centred at L1. Another limitation is that this study has not explored how issues on the same level interact; for example, the close links between the underdeveloped private sector (L2) and limited financial opportunity (L2).

A resonant theme in the research was the vital need for governors to respond to ‘context.’ But what is this context? Various contextual understandings can empower governors; indeed, the barriers presented today add form to the nebulous space of the ‘context’ that is so vital to governors. The methods employed in delineating these barriers, of grounded inductive construction of knowledge, were key in doing so. This deeper understanding of barriers, generated from the empirics and the subsequent development of an analytical framework capable of encapsulating complexity, is a vital first step to exploring how these barriers may be responded to.

Such governance responses, however, must be left to a subsequent paper. The present study lays a foundation for this further research. Pressing questions to be explored include: how have Fijian governors successfully navigated this complex landscape of barriers? Can these successful governance responses be replicated, adapted or scaled?

Part Two: Troubling Solutions

Chapter 3: Beyond Promises: Realities of Climate Finance Justice and Energy Transitions in Asia and the Pacific

3.1 Abstract

Climate change is already having substantial adverse impacts across the globe, and these are projected to worsen dramatically in years to come without rapid and far-reaching measures to transition to low carbon development. Crucially, massive financial investment will be necessary to fast track a low carbon transition and the level of finance required will arguably be well beyond the resources and capability of public finance alone. With a focus on climate finance in Asia and the Pacific and drawing empirical evidence from our work in Fiji and Indonesia, this chapter investigates complex realities of climate finance as it flows to the recipient countries. This study reveals how existing structures and power relations impact the outcomes of financing transitions to low carbon energy. The findings suggest that climate finance flows primarily to the most bankable, lowest risk, highest return, and often the largest scale projects. Moreover, the prioritisation of large-scale projects tends to result in preference for on-grid as opposed to off-grid renewable infrastructures, the reinforcement of technological preferences of powerful stakeholders, and the exclusion of smaller projects and developers. Consequently, it could exacerbate rather than ameliorate existing inequalities with the most vulnerable groups gaining little if any benefits from such finance. This chapter concludes by highlighting the importance of designing climate finance governance and financial products that could mitigate multi-scalar inequalities and design the mechanisms that internalise the need for critical, intersectional co-benefit delivery.

3.2 Introduction

As cautioned by recent Intergovernmental Panel on Climate Change reports, there is barely a decade for taking far-reaching action to avert a climate change catastrophe with

existential consequences (IPCC, 2018). Representations of transformative climate action have moved from centring on international treaties and national ambitions to financing the transition to a low carbon, resilient future (UNEP, 2015). Indeed, climate finance is increasingly generating optimism as a ‘game changer’ (Duarte, 2016).

In the global policy debates on climate finance, questions of justice have been particularly prominent. These revolve around the moral obligations of the Global North vis-a-vis the Global South. The former, it is pointed out, has long benefitted from a high carbon economy and has better capacities to withstand climate change. Accordingly, it is argued that they are morally obligated to assist countries in the Global South that have been disproportionately affected by climate change impacts (Climate Finance Justice Editorial, 2020). Such policy discourses have manifested in various global initiatives to facilitate the flow of climate finance from developed countries to the developing world. For instance, the ‘Roadmap to US\$ 100 billion’—a global pledge to mobilise at least US\$ 100 billion per year in climate finance for developing countries by 2020—was explicitly concerned with addressing climate justice and mitigating the disparities between the developing and the developed world (UNFCCC, 2016). Similarly, the Reducing Emissions from Deforestation and Forest Degradation (REDD+) initiative is a global mechanism that allows developed countries to pay developing countries based on their performance in reducing emissions from deforestation and in enhancing carbon stocks through sustainable forest management and conservation (Setyowati, 2020a).

Yet, there remains a dearth of studies on the link between climate finance and justice, prompting a call for critical analysis and empirical investigation of how climate finance might best serve as a mechanism to address climate (in)justices (Cholibois, 2020; Climate Finance Justice Editorial, 2020). Calls for such studies and for consequent action to mitigate climate injustice have particular resonance in the Asia-Pacific, a region with more than its share of developing or undeveloped economies and one that is particularly vulnerable to climate-change impacts. With extensive coastlines, many archipelagic nations and low-lying territories, the region is highly susceptible to climate related disasters (Eckstein et al., 2020). Moreover, many countries within the region

have limited resources and inadequate infrastructure that leave them ill-equipped to address climate change impacts (Asian Development Bank, 2017). Therefore, if appropriately constructed and harnessed, climate finance could facilitate the region's rapid transition to low carbon development and could do so in a way that takes account of the importance of justice. The paper thus embarks on critical exploration of climate finance and its premises, through the lived experiences of climate finance in two developing countries in the Asia Pacific region, Fiji and Indonesia.

It is important at the outset to acknowledge that the definitional parameters of climate finance are contested and blurred (Mandal, 2019) as are methods of tracking and quantifying its flows (Jachnik and Lamhauge, 2018). Broader articulations of climate finance conceptualise it as 'the realm of all investments that target climate change mitigation, adaptation or geoengineering projects' (Sayegh, 2019, p. 154). Areas of definitional narrowing approaches see climate finance connoting a particular relational dynamic, for example, as flows of finance from industrialised to developing countries (Pickering et al., 2015). Sayegh (2019, p. 154) proposes a more narrowly defined conception of climate finance, one which internalises the notion of justice: 'it is the portion of all transfers and funds of climate finance, as described, which should be implemented following the interpretation of principles of justice'.

The nebulous boundaries and rhetorical homogenisation of climate finance without distinguishing its various sources is problematic for several reasons. For one, an increasing number of studies show that the type of climate finance in operation can have material justice implications (Sauls, 2019; Sayegh, 2019; Cholibois, 2020; Bracking, 2021). For example, Bracking (2021, p. 259) argues that bonds and insurance products could '...act both as a firewall and fetish to protect against encroaching reality and provide a new means of providing debt-based finance to entities often already in ecological and financial deficit.' Further, scholars posit that with certain climate finance mechanisms the benefits are unjustly allocated: "frequently the 'winners' of financialized climate governance are neoliberal institutions, and other entities promoting market-based strategies for climate mitigation and adaptation" (Climate Finance Justice Editorial, 2020, p. 248). In this paper, we explore climate finance

primarily in two manifestations most salient in the case countries. First, we look at private finance largely as bank finance for climate related projects. Second, we interrogate disbursements from climate funds such as the Green Climate Fund (GCF). We acknowledge that within these sources there is still significant financial diversity; for example, the GCF funding structures may include both grants and concessional loans.

Against this backdrop, this article examines the complex realities of climate finance when it flows into recipient countries using the case studies in Fiji and Indonesia. Both countries confront complex dilemmas and inequalities with the arrival of climate finance, and aspects of their experiences are likely to resonate across multiple other countries in the region as key recipients of climate finance. Our empirical exploration not only examines multi-scalar experiences of climate finance at the national, subnational, and local level but also interrogates various justice implications of the mobilisation of climate finance to deliver low carbon energy. In doing so, the study further investigates how the high-level claims of climate finance's character and benefits are manifesting in practice.

The article aims to make empirical and theoretical contributions. Empirically, through sustained fieldwork in both Fiji and Indonesia, the study contributes grounded empirics to a region where the effects of climate finance remain understudied. Theoretically, the article aims to contribute to the emerging literature on climate justice finance through a bottom-up approach in investigating the deployment of climate finance in the Global South, particularly with regards to renewable energy development. Through these contributions, the paper also raises policy implications with a view towards steering climate finance towards more socially just operation in the Asia-Pacific region.

This article is organised as follows. Section 3.3 frames our research by setting out the key analytical framework through which we explore the intersections of climate finance, its premises, and justice. It is followed in Section 3.4 by an overview of the empirical context of climate finance and transition to low carbon energy in Fiji and Indonesia. Section 3.5 describes our data collection methods, and Section 3.6 provides

our key findings in Fiji and Indonesia. Drawing on these findings, the article discusses key implications on contemporary issues and debates on climate finance justice in Section 3.7. Section 3.8 concludes.

3.3 Analytical Frameworks

3.3.1 Climate Finance and Energy Transitions in the Global South

This article engages two processes. Firstly, key propositions of climate finance will be ‘reality checked’. This analytic intervention has already begun in the literature at the systems level of analysis, yielding concerning insights on the efficacy of climate finance (Bracking, 2015, 2021). In contrast to these studies, our process will use grounded ethnographic research in two Global South countries to unsettle claims regarding the purported benefits of climate finance. Secondly, we analyse the experiences of these two countries against grounded, emergent notions of justice. Using justice as a framework further enables a piecing together of the material effects of climate finance on the ground. These processes aim to facilitate understandings of Global South experiences of climate finance, unmuddled by illusory promises.

A key element of our approach is centring the empirical findings from the Global South in both analytic processes employed in this paper. As highlighted previously, relational conceptions of climate finance situate developing nations as key recipients of financing (Pickering et al., 2015). While the discursive politics surrounding climate change, climate justice, and energy transitions have been highlighted in the developing country context (Bulkeley et al., 2013), the Global South remains underrepresented in climate finance literature, despite emerging contributions (Bracking, 2015; de Carvalho Ferreira et al., 2016; Winkler and Dubash, 2016; Jiwanji, 2019; Sauls, 2019; Cholibois, 2020; Setyowati, 2020b; Anantharajah, 2021). For example, a review on sustainable finance literature found that approximately 39% of studies focused on the Global North as opposed to only 6% on the Global South (de Carvalho Ferreira et al., 2016). Beyond these broad disparities, analysis of the implications of climate finance at the national, subnational, and local level in developing countries remains scarce. Turning to energy, the other loci of analysis in the paper, scholars note a ‘striking’ lack of sociotechnical

analysis of energy transitions in the Global South (Marquardt and Delina, 2019, p. 91). Cholibois (2020, p. 350) also highlights the lacunae in studies on energy transitions in developing countries, particularly to investigate ‘the potential repercussions that different forms of financing could have on the equality of energy access in the developing world’. Addressing these pressing gaps is key to interrogating the efficacy of climate financing.

3.3.2 Climate Finance Promises and Global South Realities

In order to ‘reality check’ climate finance, we must lay out its promise, that is, what it purports to deliver. The need to unpack the premises and promises of climate finance is validated by emergent work highlighting discord between climate finance and its proposed benefits. In a recent contribution, Bracking (2021) investigates the efficacy of climate finance by unsettling some key climate finance propositions including claims of public good, accountability, and innovation. Our paper further unpacks additional premises of climate finance that have particular salience on a subnational and local level. These premises were noted as particularly salient due to the synergies identified between the knowledge production of key climate finance organisations such as multilateral development banks, and climate finance actors operating in both case countries.

Firstly, climate finance is presented as a driver of considerable economic opportunity, opening up new markets for the private sector. The International Finance Corporation (IFC), for example, estimates that the Nationally Determined Contributions (NDC) of 21 emerging market economies alone represent US\$ 23 trillion by 2030 in investment opportunities. Secondly, climate finance and investment are presented as congruent with mainstream commercial logic that could generate attractive investment returns. In terms of local benefits, climate finance purports to deliver various social benefits alongside climate mitigation and adaptation. Indeed, the third claim is that local job creation is a key co-benefit in tandem with climate change mitigation. Fourthly, climate finance broadly asserts its capacity to reduce the impact of climate change on the poor (IFC, 2016).

This paper will centre the experiences of two Global South countries, Indonesia and Fiji, in unsettling these key premises. This bottom-up approach to climate finance is also paramount to developing grounded understandings of climate finance (Gutierrez and Gutierrez, 2019) and, in particular, highlighting issues of equity and justice emergent in a subnational and local, rather than an international, level. Until the benefits of climate finance, especially in terms of equity and justice, can be empirically grounded in the developing world context, the discursive claims of high-level climate finance agents will remain unchecked, and the lived implications of climate finance will remain nebulous.

3.3.3 Emerging Issues of Justice and Climate Finance in the Global South

After determining whether climate finance's premises are found illusionary on the ground, we aim to piece together and highlight some of its key effects experienced in Fiji and Indonesia. In particular, we are interested in highlighting the ways various forms of (in)justices are manifesting surrounding climate finance and energy transitions. Justice is used as a key analytic here due to its salience in the relational underpinnings of climate finance. In guiding these analytic endeavours, we will draw from notions of justice that are enlivened in our case studies, particularly the notion of climate justice finance.

Climate justice finance is an emergent concept linked to but distinct from the established literature on climate justice. One aspect of the associated debate on climate justice finance reflects the problem of 'historical responsibility' (Weiss, 1988; Neumayer, 2000; Schlosberg and Collins, 2014; Sayegh, 2019). This acknowledges that climate change is disproportionately affecting the Global South, which also historically has contributed significantly less to GHG emissions (Neumayer, 2000; Schlosberg and Collins, 2014; Khan et al., 2020). The further relevant argument raised by climate justice finance is that of capacity. Scholars argue that countries have differentiated abilities to adapt and mitigate to climate change and further posit that greater abilities here tend to stem from the benefits derived from past emissions (Sayegh, 2019). Thus 'affluent nations today have a duty to solve the problem of

climate change and to help those that cannot do it alone’ (Sayegh, 2019, p. 156). In the case of Small Island Developing States (SIDS), for example, scholars find that domestic resources fall short of meeting climate adaptation and mitigation needs, and thus SIDS are reliant on foreign markets and finance (Scandurra et al., 2020).

In this way, the ‘justice’ groundings of climate justice finance raise important questions. For one, both foundations highlight the need for the availability of climate finance in the Global South (Sayegh, 2019; Khan et al., 2019). A regional study of the Asia Pacific region’s access to funds such as the GCF, however, highlights perversions of climate justice finance, in that some of the most vulnerable nations of the Pacific face immutable barriers to access (Samuwai and Hills, 2018). In our study, we draw the question of availability from the global level of analysis into the sub-national and local level, interrogating dynamics surrounding access to climate finance in Fiji and Indonesia. Secondly, current work on climate justice finance highlights the discordance with particular sources and principles of justice; for example, scholars argue that debt-based climate finance is in tension with moral rationales, grounded in historic responsibility (Sayegh, 2019; Perry, 2021). These issues will guide our explorations of the data.

Further, emerging work on the implications of climate finance in developing countries illuminates important grounded questions of justice and equity that have not been captured in high-level climate finance discourses (Jakob et al., 2015; Sauls, 2019; Anantharajah, 2021; Setyowati, 2021; Cholibois, 2020). While some have explored the risk of climate finance maldevelopment in a macroeconomic sense (Scandurra et al., 2020), country level analysis will generate a more nuanced understanding on relational dynamics that can reveal key loci of inequality. For example, Cholibois (2020) highlights how certain modes of financing may exclude the majority of Madagascar’s rural population from the benefits of electrification. Sauls’ (2019) study on climate finance justice in Mesoamerica reveals how the requirements for legibility—becoming ‘fundable’—may hamper transformative pathways to justice. This issue of becoming ‘fundable’ or ‘ready’ has been a particular issue in the Pacific where ‘readiness’ for climate finance and renewable energy deployment has subverted or justified limited

access to renewable energy infrastructure and finance (Winkler and Dubash, 2016; Morita and Pak, 2018). In exploring financialisation and low carbon pathways in both developed and developing nations, Sovacool et al. (2019) note how existing inequalities, exclusion, and injustice may be perpetuated. Further, scholars use the principle of intersectionality to interrogate the way energy development may map on to existing marginalisations (Sovacool et al., 2017).

Evolving case studies at this level highlight various critical dynamics enlivened by climate finance, including the interaction between climate finance and existing power structures, and the resultant ramifications for social equity and ecosystems (e.g., Tashmin, 2016; Setyowati, 2021). Further, such studies can de-homogenise climate finance claims by highlighting the social implications of various forms of climate finance (Hall et al., 2016; Cholibois, 2020). Issues of scale, technological preferences, and mutually reinforcing barriers emerge as transformative issues, findings which also guide our explorations of the data (Anantharajah, 2019; Cholibois, 2020). These partial, messy, and emergent justice questions rooted in climate, climate finance, and energy justice literature will inform the reconstructive analytical approach. Through this analysis we interrogate whether, in what ways, and in which spaces climate finance is enlivening (in)justice.

3.4 Climate Finance in Fiji and Indonesia

The climate crisis has already arrived in Pacific Small Island Developing States. It manifests in rising seas, extreme weather events, loss of arable lands, and sinking islands (Palmer, 2017). In response to these lived experiences with climate change, Pacific leaders, including those of Fiji, have committed to ambitious climate goals under the Paris Agreement. A particular locus of transformation has been in Pacific energy sectors; Fiji, for one, has committed to nearing 100% renewables by 2030 (Ministry of Economy, Government of the Republic of Fiji, 2017). These goals, however, have been contingent on finance. Climate finance has thus been a regional priority; Fiji drew the issue of financing into central focus in its Presidency of COP23. However, acquiring finance of the scale and type necessary to address the climate crisis

has been problematic at best. Securing accreditation to access funds under the GCF, for example, was an enormously challenging process (Samuwai and Hills, 2018).

Like Fiji, Indonesia has also been impacted by climate change with more frequent extreme weather events, heat waves, floods, and prolonged droughts. The country is frequently swept by forest fires, making it one of the world's biggest contributors of carbon emissions from the forest and land use-based sector (Edwards et al., 2020). Under the Paris Agreement, Indonesia has committed to address climate change with its Nationally Determined Commitment (NDC) for greenhouse gas emissions of 29% by 2030 or 41% conditional on international support (Government of Indonesia, 2020). In the energy sector, Indonesia has committed to achieving a 23% renewable energy mix by 2025. These commitments, if they are to have any chance of being delivered on, must be underpinned by the mobilisation of climate finance from international sources. The country needs an estimated US\$ 247 billion by 2030 to meet its NDC target of reducing greenhouse gas emissions, much of which will come from private climate finance. However, recent research reveals that only about US\$ 13.2 billion in private climate finance has been mobilised during 2015–2018 (Climate Policy Initiative, 2019). Although Indonesia receives a relatively large proportion of climate mitigation fund financing, the funding is likely to make little more than minimal contribution to the country's transition to low carbon development.

3.5 Methods

In response to calls for 'human centric' methods in energy studies research (Sovacool, 2014; Ryder, 2018; Sovacool et al., 2018) this paper is informed by empirical data drawn from multi-sited ethnographies from local to national scale in Fiji and in Indonesia. The exploratory, qualitative work is guided by some features of the Eisenhardt method for multi-case theory-building: this allows for not only the contribution of empirical experiences of climate finance, but also the development of theory on the nature of climate finance emerging from the findings in the Global South (Glaser and Strauss, 2017; Eisenhardt, 2021). As a start, the paper explores two research questions: firstly, to what extent are climate finance's premises retaining

validity in the Global South? Secondly, what forms of (in)justices are enlivened through the operation of climate finance in the Global South? These questions are conducive to theory building, as they are ones without an obvious answer (Eisenhardt, 2021); this is due to the underrepresentation of developing nation perspectives on climate finance and energy transitions in the literature (Sovacool et al., 2017; Cholibois, 2020).

In mobilising this analysis, careful case selection is critical. The motivation for the theoretical sampling is exploratory, in which Indonesia and Fiji cases have been selected as polar types (Eisenhardt, 2021). Similar to Seawright and Gerring's (2008) rationale, polar types are chosen for their extremes, while remaining consistent in various respects. Here Fiji and Indonesia share many similar aspects, including both being archipelagic, developing nations in Asia and the Pacific, and both having the challenge of reaching and electrifying remote communities. Further the salience of monopolistic electricity utilities was clear in both case countries. A key divergence between both cases is particularly on the scale of population and economy: Indonesia is far more populous, the biggest economy of the Southeast Asia region with a much larger private sector than Fiji. Given the focus of climate finance on market potential, this divergence is a key variable. Due to the demands of ethnographic work, we have confined the case selection to two as have others who have applied the multi-case theory building approach (McDonald and Gao, 2019; Eisenhardt, 2021).

In collecting the data, we employed two methods: first, we carried out interviews with various key informants in Fiji and Indonesia (see Table 3.1 for stakeholder breakdown) and field observation. In Fiji, cumulatively 6 months were spent in the field, with 79 interviews conducted between August 2018 – March 2020. Participants were selected based on their current or past involvement in climate finance and renewable energy projects and recruitment occurred through the snowball technique. Field observation, semi-structured interviews, and Talanoa were conducted with various stakeholders at three key sites in Fiji: Suva, Ovalau and Island X as well as in Canberra and Sydney, Australia. The Pacific methodology of Talanoa was used where appropriate: Talanoa is a relational methodology, and a cultural discursive practice, which requires a shared emotionality and a strong sense of empathy (Farrelly and Nabobo-Baba, 2014). In

Indonesia, interviews were carried out in Jakarta and two selected study sites with 64 participants who have been directly or indirectly involved in policy and projects on climate finance (with a focus on renewable energy) at national and sub-national levels during March 2019 – February 2020. We also carried out field observations on renewable energy projects in Sumba Island, Nusa Tenggara Timur Province, and Sidenreng Rappang District, South Sulawesi Province. Both cases are located in the eastern part of Indonesia, which are among areas with the lowest electrification rate.

Second, the qualitative interviews were complemented by a detailed analysis of government documents, including policy and regulations, media and other articles on renewable energy and climate finance in Indonesia and Fiji. Documents were mainly accessed through web searches, and some were shared or suggested by interviewees. The collected data sets were analysed using content and discourse analysis (Hajer and Versteeg, 2005). The data from interviews and documents were coded and analysed to identify emerging themes and key ideas particularly related to climate finance justice and to explore their connections, (in)consistencies, and contradictions (Tavory and Timmermans, 2014). Some key emerging themes include: access to finance, on-grid vs. off-grid, preference of scale and technological hierarchies, and co-benefits. These developing themes guide us when carrying out the process of exploring the manifestations of (in)justice that emerge from the findings. Credibility, trustworthiness, and reliability of the data collected were ensured through triangulation, which includes using several types of data collection (secondary and primary data) and relying on multiple interviewees to address similar questions.

Table 3.1: Stakeholder Interview Lists for Fiji (Panel A) and Indonesia (Panel B).

Panel A: Fiji

Stakeholders	Interviews
Technical/policy consultants	16
Government representatives	11
Regional/international organisation representatives	13
NGO activists/academics	8
Community representatives	6
Financial actors/regulators	5
Utility representatives	4
International financial institutions	7
Private sector representatives	9
Total	79

Panel B: Indonesia

Stakeholders	Interviews
Technical/policy consultants	16
National/subnational policy makers	15
Utility representatives	3
Banking/finance institutions	17
Renewable energy developers	10
NGOs/research institutions/community	19
Total	64

3.6 Findings

3.6.1 Access to Finance

In both countries, access to climate funds has proven to be challenging. Fiji, lacking robust capital markets, largely relies on the commercial banking sector for finance. Interactions between private sector renewable energy actors in Fiji and commercial banks have been fraught: participants note both serious barriers to accessing finance and high capital costs. One board member of a renewable energy start-up noted, ‘Banks saw us as risky’ (August 2018). These difficulties in securing commercial finance from banks were consistently reported across private sector participants. Requirements for collateral were recorded to be discordant with profiles of renewable energy companies in Fiji: ‘Here, a small business can take on huge projects. What happens is the size of the projects is greater than the equity of the company which can be an issue for the commercial banks’ (representative of renewable energy company, August 2018).

In response to this challenge, The Reserve Bank of Fiji implemented a 2% mandatory minimum loan disbursement requirement to benefit renewable energy, yet various participants suspect that this has generated poor compliance. The participant perspectives demonstrate that both incentives and mandates have had mixed results in compelling the banking sector to support Fiji’s energy transition.

Further, access to climate funds such as the Green Climate Fund (GCF) has proven difficult for Pacific nations. The Fiji Development Bank (FDB) was the first national entity in the Pacific region to be accredited for direct access to the GCF in 2017, and was approved for ‘micro’ access, which provides for projected project costs up to US\$ 10 million. The process of accreditation was noted to be difficult. ‘[FDB] started the accreditation process in 2015. It was a lengthy and cumbersome process. Ready for climate finance is a huge challenge. There’s financial challenges, policy, governance, rules, legislation to prepare on the readiness side’ (government representative, August 2018). A further dimension for consideration is a preference for the provision of loans rather than grants. Participants noted this trend in the GCF; one representative from an international finance institute (MFI) pointed out that the GCF was ‘happy to loan, as

opposed to grant' (August 2018). This puts the practice of the GCF in line with that of other international financial institutes operating in Fiji. Indeed, the US\$ 5 million the GCF has approved for Ovalau's Agro Photovoltaic project, its first national project, constitutes US\$ 3.9 million in loan financing and only US\$ 1.1 million in grant finance (Green Climate Fund, 2020).

Access to climate finance was perceived to be out of reach of smaller companies, both in terms of the scale of the finance available, and the administrative process of access. One representative of a private sector peak body noted (November 2018):

The private companies know that they have absolutely no hope of getting climate finance. But the biggest issue is that the minimum that can be applied for is a million; this is way too much for SMEs [Small and Medium Enterprises] here. It's impossible for most members to apply for this....And they generally have to recruit someone external to do this paperwork for you.

Further, participants noted that important players, such as NGOs and communities, did not have pathways of accessing climate finance: 'it is the communities that are the most vulnerable and they have no opportunity to tap into some of this funding' (representative from Regional Organisation, October 2019). Overall, participants across sectors perceived climate finance funds to be generally inaccessible, and unlikely to be a tangible reality in their operations in the near future.

In Indonesia, gaining access to available funding sources is also challenging despite the plethora of funding options from loans and international development grants (Volz, 2015). In practice, there are very few funding options. As in Fiji, the Indonesian financial market is dominated by the banking sector comprising approximately 79.8% of total assets (Volz, 2015). The Indonesia banking sector typically relies on short-term deposits and sets an average loan tenor of only 8 years. However, renewable energy investment generally requires funding over a much longer term, manifesting a key area of discord. Interviews with financial institutions also suggest that banks remain reluctant to provide longer loan tenors due to the perception of high risks in investing

in renewable energy projects, likely attributable to a lack of capacity and experience in financing such projects. The adverse risk perception is reinforced by the uncertain regulatory environment in the renewable energy sector and multiple misaligned government policies (Schmidt et al., 2013; Anantharajah, 2021).

Indonesia also experiences difficulties accessing finance from international sources such as the GCF. Currently, there is only one GCF accredited national institution in Indonesia, PT SMI, the state-owned infrastructure company. As of 2020, Indonesia has received GCF funding for three climate mitigation projects with a total value of US\$ 212.9 million that include a geothermal project, REDD+, and blended finance for renewable energy infrastructure. With the exception of the REDD+ initiatives funded through grants, the other projects are largely co-financed with debt and equity instruments. Participants contend that accessing the fund requires long and arduous processes. An interview with an international organisation representative sums up key challenges for accessing GCF funding (January 2020):

Accessing GCF fund could take a very long time, 2–3 years or longer, because it needs to fit the format required by GCF. It is often not viable for many project developers as they expect to kick off projects in the second year. Moreover, many local institutions do not have the capacity to fulfil the rigid requirements that are hard to comply. Another layer of obstacles is that only accredited institutions could access the fund.

The statement above illustrates how the mechanisms for accessing climate finance have favoured national and international accredited institutions while creating significant obstacles for local organisations and project developers.

3.6.2 On-Grid vs. Off-Grid

In Fiji, a key finding in the data is a preference on the part of financiers and developers for on-grid as opposed to off-grid opportunities. One private sector actor noted this dynamic: ‘the focus is currently on on-grid’ (private sector representative, August 2018). There are social implications of this imbalance. Given Fiji’s remote island geography, grid connected electricity supply is concentrated in urban centres whereas

grid extension is unfeasible in more rural and remote areas. In this way, off-grid projects in Fiji are linked to the important social agenda of rural electrification. Traditionally in Fiji, rural electrification has primarily been carried out through public and development administration and finance. The private sector has been involved at various junctures, particularly through the energy service company (ESCO) model. This program, however, reportedly yielded mixed results.

Interviews across stakeholder groups highlighted the importance of rural electrification projects having a ‘commercial aspect’. A rationale provided for this was the importance of linking the payment of fees to the maintenance of infrastructure:

If you talk to communities about their electrification and they get electricity to support an income, they will pay for the system. The private sector is important, because making these systems commercial is important. If the systems are commercial, people will be more likely to take care of the systems. It also has the added benefit of moving us away from a donor driven economy (Energy sector consultant, August 2018).

Private investment in off-grid opportunities, however, is dis-incentivised by various factors. For example, logistical challenges of shipping expertise and materials to remote locations raise initial capital costs. Further, the lengthy dealings surrounding customary land and consultation practices can also raise up-front costs.

Participants, however, noted unique challenges linked to on-grid investment and private sector participation that are mitigated in off-grid projects. For one, potential Independent Power Producers (IPPs) have noted the difficulty in negotiating with the state utility company (Energy Fiji Limited/EFL) currently in the process of being corporatised. At the time of research, there was only one truly independent IPP signed in Fiji (two others were with state owned companies), a biomass plant in Nabou. Due to feedstock issues, however, this plant was not operational during the research period. The finding reveals significant private investment interest in on-grid renewable generation that is extinguished by these political and institutional barriers. In Fiji, the

utility does not have jurisdiction over rural areas, and thus off-grid generation opportunities potentially offer smoother pathways for negotiation.

As an archipelagic nation with 17,000 islands, Indonesia needs multiple approaches to provide electricity to its population, which could include various combinations of on-grid and off-grid solutions. In the places where logistical problems and a sparsely distributed population preclude grid-based solutions, small scale, off-grid, and distributed renewable technologies offer a cost-effective means to provide access to energy with low climate impacts (Ministry of Energy and Mineral Resources, Indonesia, 2018; Anantharajah, 2021). Yet, the data shows persistent modes of centralised electrification that prioritise on-grid rather than off-grid solutions (Setyowati, 2021). Small-scale and off-grid renewable energy systems installed remain minimal compared to that of on-grid renewables (Ministry of Energy and Mineral Resources, Indonesia, 2018).

The existing regulatory frameworks make it hard to establish off-grid power plants. The electricity law 30/2009 stipulates that the market jurisdiction (*wilayah bisnis*) of the state-owned electricity company, Perusahaan Listrik Negara (PLN), covers the entire country. All private entities who wish to establish off-grid plants will be required to obtain a permit from the government in coordination with PLN, which will require PLN to release a particular area from its market jurisdiction. Some cases show that persuading PLN to release areas from its market jurisdiction proves to be challenging. For example, an off-grid rural electrification initiative in Sumba Island involved protracted negotiations between the project proponents and PLN to convince the company to release the area for an off-grid solar plant. According to a local government representative (March 2019):

We chose the location for establishing an off-grid plant powered by solar covering five villages because it was not a priority area for PLN's electrification project. However, it changed after the national government set a target for PLN on rural electrification that made PLN refused to release those villages [from its market jurisdiction]. It was a long and difficult negotiation. PLN finally released some parts of these areas, and a

private company has built the solar power plant. But you see, other areas targeted by PLN remain without electricity to date.

Due to substantial challenges to establish off-grid renewables, only a handful of them have been granted the permit so far, and those approved are mostly from large-scale industries.

3.6.3 Preference in Scale and Technological Hierarchies

The findings suggest that there is preference in scale of the projects and renewable technologies. In Fiji, private investment is key to the attainment of mitigation goals in the energy sector; financing needs are estimated at US\$ 2.97 billion from 2017 to 2030 (Ministry of Economy, Government of the Republic of Fiji, 2017). However, challenges of scale, in terms of the size of the investment opportunity, are also important. Both in Fiji and elsewhere in the Pacific, issues of investment scale are invariably cited as barriers to attracting private sector investment: ‘At the moment, the private sector sees the Pacific as too small, too risky. They need things like sovereign guarantees. And not every government is able to provide it’ (regional energy association representative, October 2018). One financial sector actor also noted the issue of scale: ‘A lot of projects are small. So, you either need a warehouse facility to bundle them together, or you need a cookie cutter mould to project planning and delivery’ (Development Bank representative, August 2018). Participants with extensive Pacific experience, caution against the latter strategy. The ‘cookie cutter’ approach is ill-adapted to the Fijian context because of the need to consult with diverse communities, the various protocols surrounding customary land, and various social, cultural, and economic needs across the nation.

Several participants raised the suggestion for regional scaling to address small-scale opportunities within national boundaries: ‘Regional projects are more attractive than national scale’ (impact investor, December 2019). Yet, participants also note that despite the theoretical opportunities regional scaling may provide, in practice

navigating regional politics, regulatory differences, and other complexities would be difficult (Regional Organisation, October 2019):

[The utility] is difficult and are often unwilling to work with IPPs because they essentially want to control the type of contract... They put huge storage requirements in—which makes the feasibility for IPPs low. They want to guarantee 24 hours power from solar.

In Indonesia, interviews reveal that private climate finance sources currently flow to large-scale projects that enable the project developers to generate reasonable investment returns. One of the reasons is the current regulatory framework (MEMR 50/2017) that stipulates a geographically differentiated price structure and price cap in renewable energy sources (except for hydro and geothermal). Consequently, only those who wish to develop renewable projects at a significant scale are likely to be capable of bringing the cost under the regulated price and make a reasonable investment return. Project developers also favour large-scale projects. As one developer describes, ‘everything is good for us as long as we have big scale projects...we need scale for investment return’ (March 2019). The current regulatory regime imposes substantial obstacles on SMEs seeking investment for small and medium scale renewable energy projects by making them too costly to be feasible and by cutting off viable sources of finance. This is evidenced in the Power Purchase Agreements (PPAs) negotiations between PLN and project developers during 2017–2018, in which only 27 out of 78 PPAs could reach financial close. The majority of those that could not meet financial close were mini-hydro projects accounting for 23 PPAs (Institute for Essential Services Reform, Indonesia, 2019).

An interview with a financial institution championing blended finance reveals that despite the opportunity to combine the different financial sources for financing a variety of project scales, the institution still favours funding large scale projects:

We are talking from the perspective of commercial lenders. We want to help small and medium enterprises for smaller scale projects. But we need to remember, the costs for due diligence for such projects are quite similar [to that of large-scale projects], and they are not cheap. Therefore, we need to prioritise which projects to choose.

Prioritising large-scale projects could help us achieving our spending target for lending (Financial institution representative, April 2019).

This finding reaffirms previous studies that show that a purely market-based approach results in often insurmountable funding gaps for small-scale projects (Hall et al., 2016; Cholibois, 2020).

The current trend of climate finance flowing to large-scale projects results in a disparity of electrification between urban and rural areas. The large scale and on-grid power plants are often located in areas with a high-density population and in urban settings. It is not surprising that most of the areas remaining without electricity are located in rural areas and outlying islands.

Clear technological preferences on the part of the utility are also evidenced in Indonesia. Despite the government's ambition to increase the renewable energy mix target, the government's procurement plans reveal that the installed capacity of coal plants in the country is expected to nearly double from the current 28 GW (PLN, 2019). Coal will remain dominant in the energy mix at 55% by 2025. This situation can be attributed to PLN's deep commitment to fossil fuel-based power generation and resistance to change as well as vested interests and rent seeking in fossil fuel industries that continue shaping the country's energy decisions (Bridle et al., 2018). This situation is exacerbated by the dominant perception among the financial institutions that still consider coal the 'cheapest' energy source, hence increasing the perception of bankability of the coal power plant projects (Setyowati, 2020b).

In terms of renewable energy technologies, the interviews in Indonesia reveal that large hydropower and geothermal projects are prioritised to the disadvantage of the other renewable energy sources. While solar and wind hold significant potential as renewable energy sources, key participants in the state-owned electricity company suggest that these renewable technologies remain disadvantaged because of their perceived high costs per kwh (compared to coal) and intermittence. They also argued that PLN's

obsolete grid infrastructure, particularly in the eastern part of Indonesia, results in the grid being incapable of accommodating intermittent renewable energy sources (group interview, April 2019).

3.6.4 Co-Benefits

A key potential co-benefit of climate finance for renewable energy development was that rural electrification had the potential to enliven local economies. At one field site in Fiji, we observed a community's experience with electrification. Here, the community received a level of electrification that was too low to power freezers. As a key industry on this island is diving for seafood, freezers would have allowed the divers to transport their products to more competitive markets. The community was thus disappointed with the lack of electrification received, which failed to enliven local economic aspirations (community representatives, March 2020). This finding observed at a field site was reinforced by participants who noted patterns of low or inconsistent electrification in rural areas in Fiji.

The interviews also revealed the complex relationship between climate finance and local job growth. For one, a practice of relying on external, international consultants to meet new sectoral needs, such as climate finance reporting, policy, and project development, was noted. The creation of new skilled work around renewable energy infrastructure was often hampered by poor training and knowledge transfer. This was particularly relevant in rural areas where the poor training of local technicians was highlighted as a key issue. In Fiji, training local technicians to operate and maintain the systems is by far the most cost effective and sustainable option. While this is increasingly acknowledged, practices of training have been inconsistent. One community technician responsible for the operation and maintenance of the entire community's energy infrastructure noted that his training had lasted 'fifteen, twenty minutes' (community technician, March 2020). In sum, climate finance has not consistently led to increased knowledge transfers or increased economic activity in Fiji.

As in Fiji, there is a widely held assumption that there are co-benefits in mobilising climate finance for renewable energy, namely that doing so will facilitate not just electricity provision but also local economic development in Indonesia. For renewable rural electrification, for instance, one study suggests that it should be considered as an initiative that improves local development rather than one purely concerned with electricity provision (Setyowati, 2020b). Harnessing new economic opportunities could increase communities' capacity to pay for electricity, with such an assurance serving to enhance the viability of the renewable energy investment. Yet, participants suggest that such an assumption may be incorrect, because renewable rural electrification would not immediately yield economic development without providing necessary supports to improve local economic activities. As a representative of a development aid organisation puts it (April 2019):

One of the premises for financing renewable electrification is for improving local development, alleviating poverty, etc. For this to happen, the communities need to use electricity not only for consumption but also for productive activities. Such productive activities will enable communities to pay the electricity bills. At the same time, access to electricity is key for particular productive activities. However, this situation is like the chicken and egg problem. It is hard to choose which one needs to come first because they are all interconnected.

To generate local economic opportunities and employment, the Indonesian government has attempted to boost local renewable enterprises by stipulating protectionist policies. For instance, it has set up a 5 percent tariff on imported solar panels and requires around 40% of goods and service inputs to grid-connected solar PV projects to be locally sourced local content (Burke et al., 2019). However, interviews reveal that there is a mismatch between the ambition to support local enterprises and available supports to enable local renewable energy industries to fulfil such demands. Moreover, the current procurement and bidding processes for renewable energy projects require all companies to be listed in a registry established by PLN through lengthy and unclear screening processes (Setyowati, 2021). These processes have excluded domestic and small-scale project developers with limited financial resources and experience in implementing

renewable energy projects, although some have the technical capacities and qualifications to carry out such work.

3.7 Discussion

3.7.1 The Definition of Climate Justice Finance is Challenged in Developing Contexts

The work on climate justice finance speaks primarily about relationalities on a global scale rather than subnational or locally. The emergent concept draws on the rationale of the historic responsibility and capacity of Northern vis-a-vis Southern countries. The findings from both case countries problematise the notion of climate justice finance in two ways: firstly, through the type of finance being offered; secondly, through the actual (rather than promised) mobilisation of finance from the North to South.

As to the former issue, the type of finance mobilised in both nations' GCF projects consisted largely of debt finance. This correlates with the climate finance experience in Madagascar, where the "GCF, originally mandated to provide financing to those countries without the means to obtain it elsewhere, is increasingly employing a 'banker's logic', ... providing funding exclusively to the least risky projects that can offer secure and predictable returns" (Cholibois, 2020, p. 359). Materially, if this funding source is indeed shifting towards prioritising commercially viable projects, critical non-bankable projects may be deprioritised. Here, the developing context has direct epistemic ramifications on high-level discussions on climate finance's character. Sayegh (2019, p. 159), for example, argues that loans cannot constitute climate justice finance as they 'do not serve the purpose of justice following the basic principles of historical responsibility and capacity'. As to the second issue of actual availability, very few nationally accredited GCF renewable energy projects have been approved. The limits of GCF disbursements in both countries prompt a question on the articulations of global climate finance justice premised on the actual flows from the Global North to South (Sayegh, 2019). The injustice of the limited disbursement is further exacerbated by the resources and time spent in both countries in pursuing access.

In sum, there is significant discord between the experience of developing nations with climate funds and the emerging definitional concept of climate justice finance. That said, we argue that this concept itself mobilises a too narrow exploration of justice, one located between states, manifesting within a binary North-South relationality (Pickering et al., 2015; Sayegh, 2019). Emerging work on climate finance located on a subnational level and local level contributes to a deeper understanding of the notion of justice and we call for further empirical and theoretical work in this space (Sauls, 2019; Cholibois, 2020; Setyowati, 2021).

3.7.2 The Premises of Climate Finance are Largely Illusory When Tested in a Developing Context

We have explored the realities of key sources of climate finance, including climate funds (e.g., the GCF, bank finance) in Fiji and Indonesia. Four premises of climate finance were investigated. Firstly, in both cases, climate finance fell short of opening up ‘considerable economic opportunities’ (IFC, 2016) due to the tensions between the prerequisites and motivations of financing streams and the realities of renewable energy development in the context of developing countries. The access requirements of the GCF barred various stakeholders and hindered the flow of climate finance into both countries. The risk tolerances and preferences for large scale investments on the part of both banks and other private investors also conflicted with the profiles of the opportunities offered in both nations, again leading to barriers to access rather than openings of financial opportunity. Contrary to the second premise, the case studies demonstrated how climate finance is, in many ways, incongruent with mainstream commercial logic (IFC, 2016). This discord stems from the mismatch in commercial lending tenors with renewable energy developments, perceptions of risk augmented by regulatory environments, and the preference for large scale investments rather than small scale investments, particularly that of discrete distributed systems necessary for electrifying remote archipelagic nations.

Given these barriers, it is perhaps unsurprising that climate finance is not having a transformative effect on job creation, the third premise. As both case studies

demonstrate, climate finance's promise to stimulate local economies is more complex and contested. In Indonesia, regulatory efforts to support local renewable enterprises have been hampered by a lack of accompanying support mechanisms. In Fiji, the new sectoral opportunities opened up by climate finance, including the labour involved in accessing funds, is often outsourced, in particular to international consultants. SMEs are also deprioritised through constructions of risk, in favour of bigger players. This has serious implications for the health of this sector and draws into question high-level climate finance claims of job creation. Indeed, co-benefits are not inherent in climate finance. Rather, they must be prioritised and built in. Climate finance has also not had the promised effect on the 'poor' (IFC, 2016). In both countries, already marginalised rural communities often fell out of scope for climate finance's benefits due to the risk and lack of profit they reflected.

3.7.3 The Operation of Climate Finance can Perpetuate Existing Marginalisation, Exclusions, and Injustices

The case studies have highlighted the way in which climate finance may reinforce a lack of recognition and exclusions. Indeed, issues of justice and exclusion are salient in the experience of both case countries with access to climate funds, particularly the GCF. Yet, as with the exclusions highlighted by Cholibois (2020) in Madagascar's experience with private climate finance, exclusions in Fiji and Indonesia continue to materialise subnational and locally. The analysis of both case studies reveals limited and unbalanced access to climate funds such as the GCF, with some groups and projects experiencing systemic disadvantage. In the Indonesia case, local organisations and project developers experienced high levels of exclusion. In Fiji, climate finance for SMEs is out of reach, while access pathways for communities and NGOs remain minimal or blocked entirely.

Our study shows that off-grid renewable rural electrification could be a site of potential inequity and marginalisation. Both case studies demonstrate off-grid rural electrification often falls outside bankable parameters; thus, matching such projects with willing finance is difficult as climate finance is increasingly prioritising

commercial viability. This is exacerbated by the ramifications of scale: the small scale of rural electrification opportunities often draws it outside the scope of various climate finance opportunities. Access to appropriate finance is vital to the success of rural electrification. The Fijian case can be distinguished from other studies (e.g., Cholibois, 2020) in finding that a level of private participation in rural electrification is key to positive and sustainable energy outcomes. The findings in both cases support the contention that the type of climate finance matters in delivering socially equitable outcomes (Hall et al., 2016; Cholibois, 2020).

The lack of appropriate pathways by which communities may gain access to climate funds has important implications for issues of equity and justice, particularly of participation. As communities in both countries are at the coalface of climate change, a lack of direct access to finance places their fates in the hands of ‘fundable’ stakeholders, including donors. A recent study shows that communities’ connection with climate finance may be a site of important, more nuanced visions of participatory justice contended on the grounds of ‘past injustices, ongoing threats, and a simple right to exist’ (Sauls, 2019, p. 321). Further, the purview of powerful entities over rural areas may block the flows of climate finance, resulting in exclusion and deprivation, as highlighted in the Indonesian rural communities which have not been released from PLN’s market jurisdiction, yet remain without electricity access. These exclusions resonate with processes noted in the energy justice literature which highlight the victims of renewable transitions (Sovacool, 2021). Finally, key co-benefits envisioned by both high-level climate finance discourse and national hopes, are reality checked in rural areas. Climate finance does not necessarily help the energy poor. Further, both countries revealed practices of rural electrification that indeed do not support communities’ economic aspirations, particularly through the provision of unreliable electricity.

This raises important justice issues, particularly that of recognition (Sovacool et al., 2017; Sauls, 2019; Setyowati, 2021). Here, the operation of climate fundability considerations is in tension with those of equity, self-determination, and recognition (Sauls, 2019). Sauls’ (2019, p. 320) study on REDD+ in Mesoamerica highlights that

although certain climate finance mechanisms had made progress vis-a-vis their recognition praxis and relationalities with indigenous and local communities, these efforts require the communities to conform to ‘specific behaviours and legal forms’ that represent an ongoing imposition. In the case studies, communities are often positioned as objects of energy transitions as opposed to agents (Anantharajah, 2021); without direct access to funds, they must wait to be recipients of projects administered by external actors deemed fundable. The energy justice literature also has resonances here. The conceptualisation of and intersectional principle of energy justice, an expansion of recognition justice, aptly speaks to the way energy may interact with existing fault lines of marginalisation (Sovacool et al., 2017). The intersectional implications of climate finance may manifest across various axes: the issue of outsourcing green jobs and the acknowledgement of climate finance expertise in Fiji, for example, intersects with issues of racial formation (Anantharaja, 2021). The extent to which women are benefiting from climate finance must also be considered (Wong, 2016). This idea of intersectionality of energy and climate finance concerns is a cornerstone of our argument: current conditions of subjugation and marginality are key determinants of the lived effects of climate finance in the Global South.

3.7.4 Climate Finance is Mediated Through Existing Power Structures

The findings from both case studies highlight that climate finance operates within, rather than disrupts, existing power structures. The banking sector is dominant in the financial landscape of both countries, generating flow-on effects for the financing of renewable energy. In both cases, disbursement of climate finance is filtered through this sector’s risk and return calculus. Scale also manifests as a critical issue for this sector, where smaller scale projects and applicants are perceived as high risk and low return. Uncertain regulatory frameworks augment the perceptions of risk in Indonesia; in Fiji, perceptions of risk have endured despite efforts of incentive and regulation. Here, discourses of risk indeed have material implications, and tie into issues of scale (Kennedy, 2018; Anantharajah, 2021). Beyond the effects on risk and return, Baker et al. (2021, p. 103) argues that large scale renewable developments rely on centrally maintained grids, which in turn links to loci of existing power such as ‘state actors and structures and institutions of incumbency’. The experience of both countries appears to

reflect a prioritisation noted in the literature of ‘big networks, big infrastructure and big capital’ (Platt et al., 2014 cited in Baker et al., 2021, p. 103). Our findings resonate with that of Sovacool et al. (2019, p. 11) that shows the significance of elite processes in constructing low-carbon transitions as ‘conduits of capital’ rather than reducing carbon emissions or building human capacity to climate change.

Further loci of power dynamics in both countries were the state electricity utilities, PLN and EFL. Here, the outcomes of climate finance are mediated through existing technological preferences. In Indonesia, the PLN’s reliance on coal has created a barrier to robust climate finance outcomes. Moreover, both utility companies have demonstrated recalcitrance over intermittent renewable sources such as solar and wind; climate finance does little to shift these preferences. The dominance of utilities in urban centres also proves a challenge for participation and renewable energy development, though the number of IPPs in Indonesia vastly outnumbers that of Fiji. In rural areas, PLN’s dominance remains, through its discretionary, thus limited release of business area. In Fiji, rural areas fall outside EFL’s business jurisdiction, and this raises participatory opportunity for the private sector. Cholibois (2020) notes several justice dilemmas in external actors potentially ‘leapfrogging’ national systems and structures: for one, this jeopardises principles of ownership and inclusivity.

In both cases, the issue of scale proves salient in determining financing success. Large-scale projects are considered more likely to generate the necessary return and are thus prioritised. This exacerbates the prioritisation of on-grid as opposed to off-grid projects. An interesting point of difference arises from the preferences of scale in both countries. In Indonesia, necessary scale could be met within national boundaries; in Fiji, some developers argued that attractive scale could only be found regionally. This demonstrates that climate finance may generate serious inequities by which SMEs and small projects are excluded from climate finance participation, and indeed, that the issues of scale may be so salient as to render an entire national market unattractive. Scale may also reinforce the practices and processes of the powerful (Platt et al., 2014). Large hydropower projects’ ability to absorb vast capital, for example, renders such projects highly bankable, reaffirming utility preferences and steering climate finance

towards focus on capital gain rather than social and environmental justice (Ahlers, 2020). Indeed, climate finance does not *prima facie* enliven participatory pathways. Rather, it is mediated through existing power structures, which may stymie participation and could jeopardise the likelihood that the energy transition benefits will flow on to environmentally and socially just outcomes.

3.8 Conclusion

The article contributes to and advances the emerging body of literature on climate finance justice (e.g., Sauls, 2019; Sayegh, 2019; Climate Finance Justice Editorial, 2020; Setyowati, 2021) particularly in Asia and the Pacific, an area that remains underexplored. By critically interrogating multi-scalar experiences of climate finance in Fiji and Indonesia, the article contests high-level delineations of climate finance's characteristics and benefits (see also Bracking, 2015, 2021) by providing a 'reality check' to claims of climate finance's ability to open up new markets for the private sector and the *prima facie* amenability of mainstream commercial logic to climate investments. The article also deconstructs assertions of social benefit resultant from climate finance flows. In doing so, we make space for grounded issues of justice and equity arising in the context of climate finance in the Global South. Further, we find that rather than being a 'game changer' (Duarte, 2016), climate finance has caused little disruption to the status quo in both countries. This lack of disruption, coupled with the uneven power relations and access to resources conferred by climate finance, has meant that climate finance has mapped onto, reinforced, and, in some cases, exacerbated existing marginalisation, power inequalities, and injustices. As such, this paper joins emerging literature critically examining climate finance, highlighting its limits as a driver of the transformation necessitated by escalating climate crisis (Bracking, 2015, 2021; Perry, 2021).

Responding to the call for examining the (in)justice outcomes of climate finance (Climate Finance Justice Editorial, 2020), we identify some key forms of (in)justices in both countries. These include the following: first, accessing the climate funds (e.g., GCF) involves long and arduous processes and actual finance approved remains

limited. Moreover, the flows and outcomes of climate finance are mediated through existing power structures. In both countries, loci of power include the dominant state-owned utility companies and the commercial banking sector, which limits the potential benefits and beneficiaries of climate finance. Second, the prioritisation of large-scale projects also tends to result in a preference for on-grid as opposed to off-grid, the reinforcement of technological preferences of powerful stakeholders, and the exclusion of smaller projects and developers. The findings have salience in the context of electrification, where the prioritisation of large scale in turn reinforces spatial inequalities of electricity access between urban and rural communities. Third, our study also reveals that communities have limited pathways to accessing climate finance. Finally, the co-benefits of climate finance, such as the enlivening of local economies, knowledge sharing, and job creation, which are key in ensuring socially just outcomes, are by no means inherent in climate finance's flows. The failure to build-in co-benefits to rural electrification results in the economic aspirations of communities being neglected. In sum, the findings from Indonesia and Fiji have elucidated that aspirational visions of climate finance as a justice mechanism and a game changer are fundamentally challenged in the Global South contexts.

While this article is based on the empirics in Fiji and Indonesia, the findings and policy implications might resonate with other developing countries aiming to access climate finance for the transition to low carbon energy futures. We highlight key policy implications: first, to ensure the social justice outcomes of climate finance, climate funds need to develop mechanisms to mitigate the multi-scalar exclusions experienced in developing countries, particularly in the Asia Pacific region. Further, as scale was a profound issue in both cases, a priority must be developing financial products and governance innovation that can respond to and mitigate potential scalar inequalities. Finally, the targeted financial mechanisms, which are inclusive of key stakeholders, must be developed for the purpose of rural electrification. The design of these mechanisms should internalise the need for critical, intersectional co-benefit delivery.

This study bears several limitations. Given the presence of intersectionality as a theme of this research, it is unfortunate that the data from both countries did not support further

analysis on the implications of gender. Therefore, future studies that explicitly address the question of gender in climate finance justice will be particularly helpful to gain deeper insights on this issue. This study calls for others with the goal of generating greater focus and understanding on how climate finance justice and equity manifests and is compromised in developing countries.

Chapter 4: ‘But Our Lights Were Still On’: Decolonising Energy Futures Emerging From Climate Finance Regulation in Fiji

4.1 Abstract

The arrival of climate finance on global agendas has spurred the drive towards renewable energy fuelled technofutures in Fiji and the Pacific region. The climate finance phenomenon has also generated significant discursive focus on matters of regulation. Yet despite this salience, there has been little critical examination of regulatory material-discursive practices surrounding energy infrastructure and its financing. In responding to this gap, this chapter utilises an important Science and Technology Studies (STS) perspective, postcolonial science studies, to unpack opaque material-discursive practices surrounding renewable energy and climate finance regulation in Fiji. Drawing on multi-sited ethnographic data, the paper argues that knowledge, relational, and material practices surrounding renewable energy regulation and climate finance are opaquely shaping potentially unequal futures in Fiji. The chapter highlights material effects of such regulatory practice in Fiji, including the sourcing of labour, expertise, and agency externally; poor compliance by international financial institutions with regard to regulation aimed at supporting local economies and energy transitions; and conditions of under electrification in rural communities. Beneath dominant regulatory discourses and practices, however, there are also important contestations for certain socio-technical futures emerging in Fiji. The application of critical perspectives to renewable energy and climate finance regulatory practices is vital in making these lived material consequences, and emerging, contested futures in Fiji visible, to allow for their clearer, and more equitable navigation.

4.2 Introduction

Fiji, like other Pacific neighbours, encounters some of the most severe impacts of climate change, including extreme weather events, loss of arable land, rising seas, and displacement. In response, Pacific Island Nations have set ambitious climate mitigation targets, exemplified in commitments made under the Paris Agreement. Fiji, for example, has committed to transitioning to close to 100% renewable energy by 2030 (Ministry of Economy, Government of the Republic of Fiji, 2017). Whilst contributing minimally to global emissions, these mitigation targets reflect Fiji's moral leadership, and the intention for renewable energy deployment to also have important adaptive outcomes (de Águeda Corneloup and Mol, 2014). 'Climate finance' has been a precondition to Pacific nations achieving their aspired to radical shifts; renewable energy targets call on unprecedented levels of resources, argued to be well outside public and aid capacity (Vandeweerd et al., 2012). The promise of funding, however, is often contingent on Pacific nations demonstrating, in part through regulatory reform, that they are 'ready' to receive renewable technologies (Taibi et al., 2016); and finance flows (Keeley, 2017; Morita and Pak, 2018).

Climate finance, a term that has increased in prominence over the past decade, particularly through international climate negotiations, is notoriously difficult to define, and contestations over definitions have material implications (Pickering et al., 2015). The working definition of climate finance used here encompasses the movement of finance from the Global North to the Global South (Pickering et al., 2015) from both private and public sectors (UNEP, 2015), to support projects which yield climate aligned benefits. This broad definition embodies diverse conceptualisations of climate finance reflected in the fieldwork. This particular definition connotes certain relationalities, assumptions, and material consequences. Firstly, as we will see from the body of this paper, the flow of finance (and the attached regulatory discourse) from the Global North to South has particular significances. Secondly, the characterisation of recipients connects climate finance to the politics of development (Escobar, 1984). Thirdly, private sector participation in this financing has become a central theme of climate financing, underpinned by the rationale that the cost of responding to a changing climate far exceeds public and development capacity. This triggers certain

material consequences, such as the prioritisation of climate finance of mitigation over adaptation investments (Robinson and Dornan, 2017), in part because the former yields greater potential for profit generation (Maclellan and Meads, 2016).

The arrival of climate finance on regional and global agendas and projections towards renewable fuelled techno-futures in the Pacific has resulted in a significant discursive focus on regulation. Discourse, in this sense, reflects knowledge processes: Escobar (reading of Foucault for the Third World) argues that discourses are the intersections of knowledge and power, and are upheld by systematic, foundational structures, as well as elements and relationship that must be ‘uncovered’ (Escobar, 1984). These knowledge processes manifest as regulatory best practices that are ‘stocktaked’ in reports or pursued by regulatory actors (DFAT, 2016). The push is towards ‘regulatory alignment’ (Morita and Pak, 2018). This evokes broader material and relational dynamics in certain energy infrastructure collaborations: scholars note that there is pressure placed on Southern countries by Northern partners to ‘close the regulatory gap’ that this, to ‘follow the European path, implicitly taken as more rational than their Southern counterparts’ (de Souza et al., 2018, p. 97). Such regulatory knowledge processes have material implications in the Pacific region. At the international level, for example, climate finance funds demanding arduous ‘readiness’ accreditation has precluded much of the region from accessing finance (Samuwai and Hills, 2018).

Yet despite these potential material effects, regulatory knowledge practices, how they are developed, contested, sustained, and disseminated, surrounding critical energy infrastructure and its financing have remained relatively uninterrogated. Without this interrogation, latent knowledges and interests can shape futures, wellbeing, and development trajectories (Escobar, 1984). Thus the purpose of this paper is to make visible, and then to deconstruct the underlying knowledges and assumptions driving conceptual and material practices around renewable energy and climate finance regulation. This process makes visible important contestations over socio-technical futures. In operationalising this aim, the paper uses postcolonial science and technology studies (STS) analysis.

The paper makes key empirical and theoretical contributions. The paper offers important research on Pacific experiences with climate finance, a global phenomenon that has the potential to yield vast benefit (or generate harm) in the Pacific region. To date, there is little work critically exploring the Pacific or Fijian lived experiences of climate finance for renewable energy at subnational or local level (c.f Samuwai and Hills, 2018) guided by human centric methods (Sovacool, 2014), and almost no critical exploration of the regulatory discourses that surround it. In response to this gap, this multi-scalar exploration examines three key sites of regulatory tension in Fiji: regulation of negotiations for private participation in energy generation, financial sector regulation of green loans, and the regulation of operation and maintenance of community infrastructure.

A further contribution of this paper is in bringing energy social science and science and technology studies (STS) into discussion, to contribute to an interdisciplinary practice of analysing ‘matters that are both social and technical and which otherwise might be consigned to the black box of uninspected exogenous factors’ (Hess and Sovacool, 2020, p. 2). STS approaches are particularly valuable in drawing out relational dynamics: applied in the context of energy social science, it can facilitate empirical and theoretic explorations of how societies, their technoscience, and epistemologies such as energy, mutually shape each other (Subramaniam et al., 2016). In particular the paper seeks to bring postcolonial STS analytical perspectives into conversation with energy studies. In doing so, the paper adds to the contributions of a contained but vital body of literature that employs critical, postcolonial analysis to energy social science (Mavhunga and Trischler, 2014; Lennon, 2017; de Souza et al., 2018). Specifically, it reaffirms the present relevance of postcolonial theories in the analysis of energy infrastructure projects (de Souza et al., 2018). Harding (2008) highlights the importance of this agenda in arguing that postcolonial STS research should indeed pursue conceptual pathways for positive scientific North South collaboration; this is also acknowledged in energy studies (de Souza et al., 2018). The salience of this agenda is manifestly clear in the context of climate finance for critical energy infrastructure in the Pacific, a phenomenon conceptually built on the North-South relational dynamic. The Global South has indeed been understudied in terms of energy transitions; here, as

some scholars argue, important contestations are obfuscated by the expectation of top-down and externally led processes (Marquardt and Delina, 2019).

In applying postcolonial STS approaches to climate finance, currently lacking these critical analyses, and renewable energy, the paper offers ways of theorising emerging issues and ethical concerns. It does so through a focus on inequalities generated from hidden hierarchies, which application of postcolonial perspectives aims to uncover. Indeed, addressing these emergent inequalities must be a key priority for climate finance and renewable energy regulators and stakeholders.

The paper aims to create space for the imagining, nurturing, and building of alternative futures (McDonald and Sterling, 2022). The technological changes that climate finance aims to compel will have material impacts in Fiji. A transition in the energy sector may indeed have far reaching development and adaptive benefits. For example, a low carbon transition in the electricity sector may build economic resilience by reducing fossil fuel dependency nationally and on a community level, reduce energy poverty, and create opportunities for rural electrification. This may contribute to rural empowerment and economic opportunity. Further, as Fiji and other Pacific nations are at the coalface of climate change, manifesting in rising seas, loss of arable lands, and extreme weather events, lowering emissions and increasing resilience will have profound meaning. However, there is also the potential for maldevelopment (Escobar, 2011), expropriation and disempowerment (de Souza et al., 2018), and disconnection (Michalena and Hills, 2018). Conceptual and material practices surrounding regulation appear at the pivot of these different futures. The purpose of this paper is not to point to the likelihood of a certain one emerging; rather, to problematise obfuscated material-discursive dynamics so that pathways to these futures can be more clearly navigated (Delina and Janetos, 2018).

Organisationally, the paper is structured as follows. Firstly, the background of this study, a contextual understanding of Fiji's broad interactions with climate finance, renewable energy, and regulatory discourse, will be briefly laid out in Section 4.3. The methodological approach, grounded in multi-sited methods, is highlighted in Section

4.4. A discussion of the theoretical framework, which draws on critical postcolonial STS perspectives, is presented in Section 4.5. Through these conceptual tools, Section 4.6 presents and analyses the data gathered from three key sites of regulatory tension. Finally, Section 4.7 concludes.

The ultimate purpose of this is to make way for and ‘nurture’ alternatives: bringing critical perspectives to practices surrounding renewable energy and climate finance regulation, to interrogate how they are made, sustained, and performed is a vital practice for future making, or at least, for securing future chances (Haraway, 1988). For communities of Fiji and the Pacific, located at the precipice of shifting ecological and technological futures, bringing critical perspectives to the forces that purport to ‘steer’ towards such futures is arguably a timely and critical endeavour.

4.3 Background

4.3.1 Fiji’s Energy Sector

Through the NDC process, Fiji has ambitiously aimed to reach 100% renewable energy generation, paired with nearing 100% rural electrification. This will require significant inflows of finance. To meet Fiji’s energy sector goals, US\$ 2.97 billion will need to be mobilised by 2030 (Ministry of Economy, Government of the Republic of Fiji, 2017); meeting the 100% renewable energy target in Fiji’s largest island, Viti Levu, will require US\$ 1.3 billion. Fiji’s GDP is FJ\$ 6.71 billion (Prasad and Raturi, 2018). Fiji thus aims to mobilise significant levels of climate finance in attaining these goals.

Fiji is an island nation in the Pacific region, with 110 of its 330 islands inhabited. Given this island geography, electricity is provided to households by both on-grid and off-grid systems. In Fiji, 78% of households have grid-connected access, and 17% are connected to off-grid systems. Census data from 2017 shows that 4% of households remain without access to electricity (Prasad and Raturi, 2018); placing Fiji’s levels of electrification as the highest in Melanesia (Energy Fiji Limited, 2019). These statistics however, have to be interrogated, as they do not take into account a lack of access due

to defunct systems, which interviews highlighted to be an endemic issue in Fiji. Further, they do not reflect situations of under electrification which may leave communities with low and intermittent energy supply.

The provision of on-grid and off-grid electricity is subject to different institutional arrangements. The state owned utility, Energy Fiji Limited (EFL) currently in the process of being corporatised, provides on-grid electricity supply, with 199,020 customers. Energy demand in 2019 was 945.5 billion kWh of energy/electricity, a 0.9% increase from 2018. EFL, a vertically integrated utility, is responsible for the generation, transmission, distribution, and retail of electricity. They operate in Fiji's four main islands, Viti Levu, Vanua Levu, Ovalau, and as of 2017, Taveuni. EFL's generation fleet comprises approximately 53% hydro, 42% diesel, and 0.25% wind. EFL claims that over 4.6% comes from IPP generation (Energy Fiji Limited, 2019). This generation mix has remained largely consistent over the last decade (International Renewable Energy Agency, 2015; Energy Fiji Limited, 2019). Fiji's Department of Energy (DoE) supplies off-grid households. Solar PV is now the DoE's prioritised mode of electrification (International Renewable Energy Agency, 2015).

4.3.2 Regulation

In Fiji, the energy sector is largely regulated by the Fijian Competition and Consumer Commission (FCCC) and EFL. Though FCCC was appointed as Regulator of the energy sector in the 2017 Electricity Act, EFL through a Memorandum of Understanding, with FCCC continues to carry out a majority of regulatory functions (Energy Fiji Limited, 2019). This reflects little change from the former status quo where EFL both dominantly constituted and regulated the energy sector. Cited 'ideal' regulatory incentives in Fiji's energy sector include capital cost subsidies or Power Purchase Agreements (PPAs), inter alia. In practice, a much broader sectoral regulation has salience in Fiji's energy sector, including financial sector regulation steering commercial finance towards renewable energy. Further, what constitutes regulation is broad: Parker (2008) expresses the breadth of regulatory diversity, with definitions of regulation ranging from 'a type of legal instrument' to 'process of controlling behaviour

with reference to some standard or purpose'. These broader manifestations of regulation and regulatory tools may include knowledge sharing and training. The paper explores sites and discourses of regulation as generously defined.

The progress towards attainment of Fiji's goals towards an energy transition is often couched in terms of regulation. Regulation is presented as a barrier, a loci of needed change or alignment, or a sign of 'readiness' (see e.g., Morita and Pak, 2018). Regulation features most prominently in discussions of whether or not particular Pacific jurisdictions, such as Fiji, have in place the requisite legal rules to compel a transition to a sustainable economy, and particularly to attract international climate finance (Morita and Pak, 2018). Such reforms must be understood in terms of the unequal power relations between funders and recipients (Winkler and Dubash, 2016): the 'necessary' regulatory reforms often coincide with the market and institution conditions of the Global North, a key source of funding.

4.4 Methodological Approach

This study responds to the need for human centric research in energy studies (Sovacool, 2014) with reliance on ethnographic data culminating from over 70 interviews, field observation, and 6 cumulative months in the field in Fiji (between August 2018 – March 2020), in the islands of Viti Levu, Ovalau, and 'Island X', as well as in Canberra and Sydney, Australia (see Table 4.1).

Participants were chosen based on their current or past involvement in climate finance and renewable energy projects, governance, regulation or knowledge production. Recruitment occurred through the snowball technique; as the climate finance and renewable energy stakeholder community in Fiji was relatively contained and highly relational, this was an effective recruitment method.

Table 4.1: Interview/Talanoa Breakdown

Stakeholders	Interviews
Technical/ policy consultant	16
Government representative	11
Regional organisation	7
International organisation	6
NGO	5
Financial sector including regulator	5
Community leader	5
International financial institution/ Fund	7
Utility	4
Academic	3
Private sector	9
Community technician	1
Total interviews/Talanoa	79

This reflects the STS preference for methods involving face-to-face interactions with research participants in their own knowledge production sites (Fuller, 2006). These interactions involved semi-structured interview and Talanoa. Talanoa is a cultural discursive practice and research methodology recognised in certain Pacific states including Fiji (Farrelly and Nabobo-Baba, 2014). Whilst there are many different understandings of Talanoa, it arguably requires the researcher to approach the research openly, without a theoretical agenda, with a shared emotionality and a strong sense of empathy (Farrelly and Nabobo-Baba, 2014). Talanoa is coherent with qualitative social science methods such as semi-structured interviews, as the latter is ‘inductive and exploratory by nature, seeking to access a particular perspective in depth, rather than to test a specific hypothesis’ (Sovacool et al., 2018, p. 18).

Interviews, Talanoa, and field observation were complemented by a detailed analysis of government and development documents, including policy roadmaps, consultant reports, regulations, media, and articles on renewable energy and climate finance in Fiji.

As noted by Henne (2017, p. 98), ‘regulation makes for an unwieldy and unpredictable object of inquiry’. The path that such analysis must follow, especially when tracking regulation that originates in some form in the global, and that is ultimately destined for the local, is not linear. As such, the study employs multi-sited fieldwork to explore multi-scalar manifestations of climate finance regulation. The responsive nature of multi-sited fieldwork is particularly adapted to examining regulatory processes that do not ‘map neatly on to global, national or local levels’ (Henne, 2017, p. 104). The movement between sites, scales, actors, and jurisdictions is compelled by real or expected flows of capital. Put differently, the study ‘follows the money’ through various sites of climate finance and energy regulations. The journey follows newly emerging, fragmental, and plural climate finance regulatory regimes at various points of the sometimes convoluted journey of capital and regulatory discourse.

Suva, the site that occupied the most time in the field, was a particularly strategic location to centre the multi-sited analysis. Suva is the hub of international development in Fiji and for Oceania more broadly; bilateral development partners, international development agencies, multilateral development banks, international NGOs, and treaty based inter-governmental organisations have offices in downtown Suva. In some cases, the offices of these international actors are separated from key Fijian government departments by a corridor and they regularly interact and collaborate on key climate finance policy, which exemplifies the point that the stratification between levels of analysis is often nebulous.

The data was coded to identify key areas of regulatory challenges that have the potential to either stymie or enable the flow of climate finance. Regulation was conceived broadly here, as a process of controlling behaviour with reference to some purpose (Parker, 2008). This multi-scalar exploration presented in this paper focuses on three key sites

of regulatory tension in Fiji: standardisation of PPAs; central banking sustainable finance regulation; and the regulation of operation and maintenance of community infrastructure. These cases were chosen for exploratory potential (Seawright and Gerring, 2008): the diversity in regulatory actors and scale in the three distinct yet related regulatory sites, illuminates a variety of regulatory relationships, dynamics, and asymmetries. These three sites were chosen in order to draw out material-discursive dynamics, and the need for critical practice, at multiple scales of renewable energy and climate finance regulation. The data was analysed to identify discursive elements, relational practices underpinning them, and material consequences.

The study *prima facie* acknowledges certain limitations. Firstly, the study does not provide universal generalisations. A qualitative study, the paper draws on diverse and subjective perspectives. The knowledge produced is thus partial and situated (Haraway, 1988). As such the positionality of the researcher must also be acknowledged. I conducted this research as an outsider, as part of a climate finance research and capacity building project funded by the Australian government (Haraway, 1988), which had implications for access in certain spaces. Lastly, as quantitative analysis was not used in conjunction with qualitative methods, findings on actual quantum of climate finance owing into the areas studied are not provided.

4.5 Conceptual Framework

The article will draw on STS perspectives, a discipline that has concerned itself with the processes of scientific and technological construction, and the exploration of ‘the mutual shaping, co-constitution, or coproduction of science and technology with society and the natural environment’ (Hess and Sovacool, 2020, p. 1). In bringing energy social science and STS into conversation, the paper contributes to a drawing together of ‘two streams of inquiry [that] have largely remained epistemically, methodologically and geographically separate’ (Hess and Sovacool, 2020, p. 1). In particular, the paper will draw on postcolonial STS approaches. Facilitating a conversation between these two literatures through this study yields key contributions. Firstly, the use of postcolonial STS in this study links to and informs important energy

social science debates on energy, climate finance, and climate justice in developing nations (Ferdinand, 2018; Sauls, 2019; Cholibois, 2020). Application of postcolonial STS is synergistic with emerging postcolonial scholarship that troubles binary notions of climate finance justice (Ferdinand, 2018; Sauls, 2019) and highly situated studies that explore localised and complex experiences of climate finance and renewable energy deployment (Cholibois, 2020). More broadly, postcolonial STS contributes to a challenging of traditional energy paradigms within mainstream energy literature. Here, formulations of energy are often neutralised; stripped of culture, context, and history (Mavhunga and Trischler, 2014). Bringing critical perspectives into contact with energy research, as some scholars have done (Frigo, 2017; Lennon, 2017; de Souza et al., 2018), is a vital contribution to both literatures as, some contend, traditional energy paradigms are based on hegemonic yet narrow knowledges (Frigo, 2017).

The term ‘postcolonial’ often generates certain confusion, in large part due to connoting both a temporality (after the colonial) and an analytical framework. These understandings are not necessarily consistent either, the postcolonial analytic ‘suggests the persistence of the complexly refigured colonial’ beyond a particular temporality (Anderson, 2015, p. 652). Postcolonial STS as an analysis: contests the hegemony and centrality of privileged, Northern technological, science, and knowledge processes; situates and thereby dismantles global or universal claims; clears space for, and recognises alternative knowledges (Anderson, 2015; de Sousa Santos, 2018). In applying postcolonial STS, this study aims to unpack contested knowledge and discursive practices mobilised through climate finance and renewable energy regulation, and explore subsequent material implications manifesting in Fiji.

Whilst postcolonial perspectives have been emerging in STS since the 1980s, its presence is often latent or denied (Anderson, 2015). Yet the postcolonial perspective can contribute something to energy research and social science beyond that of mainstream STS, in highlighting refigured colonial dynamics. Whilst STS also seeks to make visible, unpack, and problematise, scholars argue that standard reason in STS can mask ‘abiding alterity and mute plurivocality’ (Anderson, 2017, p. 230). This particularly arises when complex colonial re-articulations and relationalities exist but

are not named. Various aspects of this study call for application of a critical, postcolonial conceptualisation. The issue of climate finance for renewable energy development in the South, for one, evokes postcolonial rearticulations in its ‘flows’. Material flows of climate finance from the North to the South, brings with it flows of technological and knowledge construction that requires unmasking. Postcolonial analysis allows these smooth, opaque flows to be troubled, revealing ‘messy, uneven politics and diverse codes’ (Anderson, 2015, p. 652). Indeed a central focus of this paper, regulatory knowledge processes in Fiji, also justifies the use of a postcolonial STS analytic lens. Indeed, the question of regulatory alignment was one of the foundational areas of problematisation for STS postcolonial theorists, aiming to ensure that the practices of aid agencies did not only manifest the desires of former colonial powers that were primary funders of such programs (Harding, 2011).

This history of postcolonial STS’s engagement with regulation highlights the central question of this paper: how are policies, institutions, environments, households, peoples, infrastructures, lives, and futures in Fiji being shaped by dominant and climate finance and renewable energy regulatory knowledges? How are these contested? Indeed, analysis of knowledge practices is necessary for the simple rationale that ‘conceptual practices have material effects’ (Harding, 2008, pp. 119–120). This has been demonstrated in Lennon’s work on the intersections between renewable energy development and the Black Lives Matter movement. They trace the ways in which industrialised energy expansion based on certain conceptions of energy has been predicated on a de-mattering of black lives currently manifesting in ‘placement of black communities by coal-fire power plants or the relegation of U.S. prisoners to assembly lines producing solar panels’ (Lennon, 2017, p. 27). Further, a postcolonial study of the Desertec Project, which sought to make use of the vast solar thermal resources in the Sahara for power export to Europe, explored how ‘distortions provoked by Eurocentric representations of North-South cooperation projects in the area of energy infrastructure’ could lead to extractive relational arrangements (de Souza et al., 2018, p. 92). These materialities extend to the ‘future’ element of this study; glimmers of what the future can be, indeed drives action, such as regulatory action, in the present (Delina, 2018). Contestations marginalised beneath dominant regulatory discourse also reveal struggles for alternative socio-technical futures (Marquardt and Delina, 2019).

‘Peeking’ at these futures, and exploring the way they are, often opaquely, being mobilised in the present, and the ways they are being contested allows for clearer lenses for making choices (Delina and Janetos, 2018). The contribution of the present study is to draw this growing discussion explicitly into the Pacific region, and into the discussion of climate finance. As such an objective of this paper is to highlight ‘the contested ways in which sociotechnical and material futures are imagined and strategically deployed’ in Fiji (Hess and Sovacool, 2020, p. 7) through climate finance and renewable energy knowledge, discourse, and material practices.

4.6 Results and Discussion

The following explorations of the data are situated at three sites of regulatory tension. Analysis will be guided by key research questions stemming from the conceptual approach: What dominant discourses and conceptual practices are manifesting at sites of climate finance and renewable energy regulation? How are these shaping relational, socio-technical, and material inequalities? How are they contested? How are they shaping Fijian futures?

4.6.1 Standardised Power Purchase Agreements (PPAs)

4.6.1.1 Background to Standardised PPAs

The Fijian Government has declared the intention of attracting private sector participation in a transition towards renewable energy generation through Independent Power Producers. To operate, Independent Power Producers must negotiate a PPA with EFL. Decision makers in this utility, however, despite government signalling, have thus far proven less inclined to engage with Independent Power Producers, and without regulatory compulsion or incentive have failed to sign on hoped for private partners. As one participant from an energy division of a regional organisation noted: ‘[the utility] are making it difficult for Independent Power Producers to come to Fiji’ (Interview, October 2019). Though in its 2019 annual report, EFL claims that 4.6% of its power generation mix comes from three biomass Independent Power Producers, Tropic Wood Industries Limited, Fiji Sugar Corporation, and Nabou Green Energy, this

can be challenged. Firstly, the former two co-generators are largely government owned, and thus cannot wholly be classified as ‘independent.’ At the time of research, Nabou Green Energy had not been operational. Interviews revealed that this was due to significant feedstock issues (Energy Fiji Limited, 2019).

Based on this status quo, a key area of regulatory reform has been to ‘standardise’ PPAs so that individual terms of each need not be negotiated with the utility through processes which have been criticised in interviews as lacking transparency (Interview, representative from international organisation, August 2018). This thrust towards standardised PPAs, which has been put to Fiji as a vital enabling regulatory reform (e.g., IT Power, 2015), has not been implemented or welcomed by the utility. Postcolonial perspectives can be helpful here in highlighting how power and inequality feature in relationships negotiating technology and society, through deconstructing relational and knowledge practices reflected in standardised PPAs (Harding, 2011). This process illuminates some of the material implications of the strategic deployment of these interests.

4.6.1.2 Standardised PPAs Represent Relational Shifts and Power Imbalances

Indeed, the debate surrounding standardisation in Fiji traversed important concerns of power, control, and expertise. Interviews with international energy developers and consultants, for example, invariably construct the utility as a roadblock to progress and see standardised PPAs as a means of balancing the asymmetry negotiating power. The resultant technological changes brought on by standardisation, however, may create new asymmetries. A particular point of relational tension is divergent technological preferences on the part of the utility and proposed Independent Power Producers. As noted by one participant ‘look they [EFL] have a preoccupation with 24/7. They struggle to manage intermittency’ (Interview, policy and technical consultant, May 2019). As a consequence of this, the utility prefers supply such as hydro and biomass, whereas energy developers interviewed expressed staunch preference for solar. Participants and the literature indeed make compelling cases for utility connected solar being a necessary part of Fiji’s energy transition, not least because large scale hydro

potential, as some contend, is exhausted (Dornan, 2015; Ministry of Economy, Government of the Republic of Fiji, 2018). Reasons for the utility preference for hydro include grid stability and in-house expertise. The tension between these technologies and their proponents reflect relational asymmetries around control and expertise. The standardisation of PPAs would elevate the commercial position of certain renewable technologies, and in doing so go some way to overriding the utility's preference for the grid as well as their expertise in grid management. As noted by one participant: 'they [the utility] essentially want to control the type of contract. That's why the PPA standardisations aren't being implemented' (Energy sector consultant, October 2018). Here, we can see that the process of standardisation represents a relational shift, whereby a level of internal control and expertise is challenged.

4.6.1.3 Standardised PPAs Strategically Construct Fiji and its Energy Sector

The regulatory discourse surrounding PPA standardisation is particularly illuminating in its discursive construction of Fiji, and its utility, as a destination for investment. The push towards standardisation simultaneously 'problematizes' Fiji as 'risky' and presents standardisation as a solution towards modernity. The notion of risk was repeatedly raised by development partners, consultants, and private developers as a bar to investment in the energy sector. This too can be historically unpacked; the interconnectedness between discursive shaping of a 'problem' and the justification of a solution has been engaged with by postcolonial and post-development thinkers (see e.g., Cesaire, 1972; Escobar, 1984). As to the problem, one representative from a renewable energy company noted that a bar to investment in renewable energy was the various commercial risks posed: 'Another risk is the country risk. They [investors] want a guarantee for off taker risk. A standardised PPA would largely mitigate these risks' (Interview, August 2018). Indeed, interviews revealed that discourse surrounding standardisation is intrinsically linked to the construction of risk. The description of Fiji as an investment 'frontier' (Interview, representative of international investment fund, November 2019) that must be 'de-risked,' must be unpacked. The description of a frontier is epistemically loaded, connoting colonial experiences describing perhaps the edge of civilisation, an 'abyssal line' (de Sousa Santos, 2018). This conceptual practice has material outcomes (Harding, 2008). Scholars highlight 'risk' in renewable energy

infrastructure projects as a form of ‘institutional orientalism’, which characterises Southern institutions as deficient, and subsequently promotes assimilation with Northern interests and regulatory landscapes (de Souza et al., 2018, p. 96).

Further, in Fiji, the technological preferences of the utility are discursively framed in terms of modernity or, rather, backwardness. Preference for hydro is presented as regressive by energy sector consultants and developers: ‘They want to guarantee 24 h power from solar. They are old fashion, and are used to hydro’ (Interview, energy consultant, October 2018). Here, the discursive operationalising of ‘modernity’ is used to construct particular technological and regulatory agendas (Harding, 2008).

4.6.1.4 Standardisation Constructs Energy as Neutral

The research found that the discourse of standardisation mobilised particular understandings of energy. Participants saw the ultimate aim of standardised PPAs as the removal of the need for lengthy, ‘individual’ negotiations and surrounding the energy infrastructure (Government representative, August 2018). By stipulating key legal and commercial terms and providing for supplementary schedules for technical specificities (see IT Power, 2015), this device purports to cover all vital bases. The need for discussion and engagement over the various issues is removed, denying the political quality of energy; moreover, operationalising the central aim of minimising discussion, negotiation, and interaction. The reduction of the energy question to technical, legal, and commercial delineations removes the social, cultural, spiritual, and historic context of energy, leaving behind only its technological ‘neutral’ form. Indeed, the neutral construction of energy furthered by PPA standardisation results in ‘shallowly historicized’ attention to energy (Mavhunga and Trischler, 2014). In the case of Fiji, energy histories are key to contemporary energy preferences: participants noted that the Fijian utility’s early investment in large-scale hydro has contributed to the utility’s strong financial position vis-a-vis other utilities operating in the region, which is influential in its current preference.

Further the energy neutrality furthered by PPA standardisation in Fiji obscures the maintenance of certain hierarchies and ‘their attendant structural inequalities’ (Lennon, 2017, p. 119). In Fiji, these structural inequalities may manifest in material effects such as deeper reliance on international consultants and concentration of expertise externally due to the limited experience of solar within the utility; indeed as noted by one energy sector consultant, ‘no one spoke to the utility about retraining staff’ in the context of technological change (interview, August 2018). Deconstructing neutral formulations of energy may also highlight the ways energy affects everyday lives, such as the lived consequences of grid stability issues where technicians lack experience with managing stochastic power.

Applications of postcolonial deconstructive analysis uncovers how, in Fiji, certain understandings of energy are furthered through discourse surrounding PPA standardisation.

4.6.1.5 Interests Served by Standardisation

The data showed that standardisation was a key preoccupation for large-scale investors and developers. In an interview with one potential investment fund manager with interest in ‘frontier’ economies, they spoke of the necessary conditions to developing energy infrastructure in Fiji. He saw the need for ‘standardisation’ to go well beyond a PPA: ‘For a infrastructure project like this there are dozens of contracts creating the framework, we would hope to have the whole lot standardised not just the PPA’ (September 2018). Here, a controllable ‘docile’ legal and regulatory environment was seen as a precursor for market-based development in Fiji’s energy sector. This perspective on the importance of standardisation to commercial development can be unpacked. Indeed, in the tradition of postcolonial STS, it is important to interrogate the interests being served through this material-discursive arrangement, which in part involved historicisation. The push towards PPA standardisation can be located as part of the history of capitalism: Foucault saw the process of ‘normalization’ or ‘standardization’ (Foucault, 1984, p. 17) of bodies as a precursor to capitalist development or expansion. As the preceding analysis has demonstrated, the hegemonic

pursuit of these interests may obfuscate important relational and material outcomes for Fiji.

In sum, deconstructing discourse of standardisation of PPAs in Fiji reveals important contestations over future relationalities and material asymmetries. Interests of commercial development are furthered through knowledge practices that hegemonically construct Fiji as risky, and energy as a purely technical phenomenon. Present and future material consequences of this include the externalisation of technological control and expertise.

4.6.2 Financial Sector Regulation: Mandatory Minimum Loan Disbursements

4.6.2.1 *Background on Financial Sector Regulation*

In Fiji, the financial landscape is dominated by the banking sector, thus a key climate finance regulatory aim has been to steer Fiji's banking sector towards climate aligned investment. In particular, the Reserve Bank of Fiji has attempted to regulate the commercial banking sector towards financing renewable energy and Small and Medium Enterprises (SMEs) and has set a mandatory minimum amount of 2% of loans to be allocated to renewable energy. In Fiji, this regulation is not underpinned by any particular enforcement strategies, with the Reserve Bank relying on 'moral suasion' as a chief strategy for compelling compliance (Interview, financial sector representative, August 2018). Internationally, discourse surrounding financial sector regulation such as minimum loan disbursements has been one of enabling and steering financial institutes to take up 'opportunity'. Climate aligned goals and commercial rationales are often presented as being synergistic; indeed, funding climate aligned goals has been described as 'the greatest commercial opportunity of our time' (Farand, 2020). Yet, tensions lying beneath the discourse of opportunity are evident in Fiji's experience with this regulatory initiative. Exploring relational dynamics surrounding this particular regulation reveals how discourses of 'smallness' are having manifest impacts. Thus, unpacking the colonial epistemic manifestations in this space, highlighting their material impacts, and the social and political material structures that shape them is key.

4.6.2.2 *Compliance and Colonial Relationalities*

Colonial relationalities are reflected by poor regulatory compliance with minimum loan disbursements, which in turn is underpinned by colonial discourse. In the Pacific, most finance for renewables will originate from the banking sector. In Fiji, commercial banks dominate the financial sector constituting 42.3% of the financial system; the other key player is the provident fund representing 31% (The Reserve Bank of Fiji, 2019). Among the commercial banks, the two largest banks claim 80% of the market share: the Australian headquartered ANZ and Westpac (Commonwealth of Nations, Banking and Financial Services, 2020). Participants contend that compliance among the commercial banking sector with Fiji's minimum loan disbursements has been relatively disappointing. Energy sector participants posited that the conservative target of 2% was not being met. One account manager informed a renewable energy company that their account represented 60% of their total disbursements to the sector; this proportionally represented far less than was mandated (Interview, renewable energy company, August 2018). The data revealed that rather than seeing 'opportunity', again, commercial banks perceived risk.

One participant in the financial sector, when discussing the regulatory challenges in the region, stated 'with [commercial banks] you have to ask yourself, how long are they going to be here? They sold out of PNG—they don't want to be here. There's no reason why here should be any different' (Interview, August 2018). The status quo results in asymmetric power relations whereby commercial banks extract value from their Pacific markets, without investing in national priorities. Indeed, one stakeholder from the development finance sector articulated the difference between commercial and development banks as rooted in the fact that the former does not concern itself with 'nation building' (Interview, August 2018). These participant perspectives highlight broad colonial relationalities manifesting between this sector and local markets, which are predicated on the extraction of value.

4.6.2.3 Compliance and Colonial Discourses

One participant saw the small business opportunities offered by Pacific economies to commercial banks to significantly narrow the available ‘sticks’ to underpin regulation (Interview, financial sector representative, August 2018). Here, we can see how the colonial relationalities between the commercial banking sector and local economies mobilised through discursive constructions of smallness. The discursive power of ‘smallness’ has particularly strong roots in the Pacific. Hau‘ofa (2008, p. 38) highlights a history of smallness discourse strategically mobilised for the pursuit of other interests in the Pacific:

The explanation seems clear: one way or another, they or nearly all of them are involved directly or indirectly in the fields of aided development and Pacific rim geopolitics, for whose purposes it is necessary to portray our huge world in tiny, needy bits. To acknowledge the larger reality would be to undermine the prevailing view and to frustrate certain agendas and goals of powerful interests. These perpetrators are therefore participants, as I was, in the belittlement of Oceania, and in the perpetuation of the neocolonial relationships...

The material effects of smallness discourse are evident in a further key finding of the research; the commercial banking sector was failing to channel finance to renewable SMEs. This was reported by participants to be rooted in institutional perceptions that both the SME and renewable energy sector represent high risk, low return prospects. For one, it was contended that the commercial banks have predominantly chosen to discharge this obligation by lending to large scale projects, as opposed to managing small ‘risky’ accounts. This practice is open knowledge in the SME and renewable sector. As one participant stated ‘The Reserve Bank has some requirements of the commercial banks—that they must have a small disbursement [2%] for renewables... It has no effect for smaller chaps. It’s discretionary’ (Interview, representative from renewable SME, August 2018).

Thus SMEs, primarily barred from access to finance, struggle to initiate and thrive. This issue is at the centre of the complex web of climate finance dysfunction in Fiji.

Throughout the research, investors and other originators consistently cited a lack of ‘project pipeline’, or in other words, bankable projects with local partners to invest in, as a key reason as to why their investment fails to travel to the Pacific. This fetter on local SMEs contributes to the ultimate migration of climate finance out of the region. Instead of stimulating local economies, contracts and work may flow out of it to a complex of international experts, technicians, and consultants representing colonial patterns of extraction and asymmetry.

4.6.2.4 *Contesting Colonial Discourses*

The perception of Fiji’s SMEs as risky minor players obscures some of the actual interactions and impacts of this sector. Deconstructing these colonial narratives creates spaces for innovation and alternatives to be recognised (de Sousa Santos, 2018). Indeed, data revealed that the work carried out by Fiji’s handful of renewable energy SMEs cannot be classified as minor, given they have been key deliverers of large contracts, and rolled out critical infrastructure, delivering techno-futures across the Pacific, despite barriers. As noted by one participant: ‘Here, a small business can take on huge projects. What happens is the size of the projects is greater than the equity of the company....’ (Representative of renewable energy company, August 2018). As evidenced by this participant, the focus on smallness obfuscates the significant, future making impacts of this sector. Hau‘ofa (2008, p. 30) argues that the deterministic narrow view of the Pacific as small relegates important social and economic activities, overlooking the:

...world enlargement that is carried out by tens of thousands of ordinary Pacific Islanders right across the ocean—from east to west and north to south, under the very noses of academic and consultancy experts, regional and international development agencies, bureaucratic planners and their advisers, and customs and immigration officials—making nonsense of all national and economic boundaries...

Deconstructing hegemonic notions of smallness allows for the recognition of the transformative potential of Fiji’s SME sector (Anderson, 2015).

In sum, deconstructions at this site of financial sector regulation reveals an asymmetric relationship between commercial banks and regulators, resulting in material consequences for both the renewable energy and SME sector. Technological futures driven by local expertise and economies are potentially challenged by continuations of colonial discourse and subsequent unequal, extractive practices.

4.6.3 Regulating Community Infrastructure Operation and Maintenance: Social Struggle and Technological Change

4.6.3.1 *Background on Rural Electrification and Regulation of Infrastructure Operation and Maintenance*

The third site of regulatory contestation surrounds financed off-grid infrastructure in rural and remote communities. The roll-out of electrification systems in Fiji has had a history of mixed results, with communities experiencing unreliable access to power due to outages (Dornan, 2014a) and systems failing well before end of life (Interview, renewable energy consultant, October 2018). The data revealed that a key aspect of these disappointing results in rural areas was challenges in operation and maintenance of these systems. The regulatory problems identified in the data include: ensuring that the maintenance of infrastructure occurs; compelling payment for energy use; and ensuring household energy consumption remains within the regulated quota.

4.6.3.2 *Social Struggle for Infrastructure Knowledge Transfers: Problematisation of Communities and the Externalisation of Solutions*

One key finding of the data was the discursive attribution of infrastructure dysfunction to communities. This is captured in the explicit declaration of one energy sector consultant: ‘community maintenance as a rule does not work’ (Interview, October 2018). This participant was reflecting on a track record of poor infrastructure outcomes in the region. Indeed, one report noted that ‘most’ of the existing mini-grid diesel generation capacity is non-operational or underperforming, partly because of poor maintenance (International Renewable Energy Agency, 2015). The rationale provided for this dysfunction was decontextualised ‘community’ mismanagement.

Postcolonial scholarship highlights the ways in which particular constructions of problems elicit certain solutions (Cesaire, 1972; Escobar, 2011). The deployment of such solutions was evident in further relational and conceptual practice noted from the research: the location of expertise for operation and maintenance outside of the community. Deconstructing this expertise reveals contestations: the negotiation of who would have the knowledge to use and repair the infrastructure is an embedded element of social struggle catalysed by technological change (Harding, 2008). Interviews revealed that training local technicians is increasingly acknowledged to be of vital importance in making the project ‘bankable’. When private technical consultants or public experts were contracted to perform repairs in Fiji, costs of maintenance would significantly increase, as technicians from urban centres had to make long and often expensive journeys to outer islands. Yet the data shows that capacity building, including training local technicians, has not been sufficiently materialising. In Fiji, cases of training being carried out in a meaningful way have been thin. One community technician noted that the training they received to operate a complex distributive system that the whole community relied on lasted ‘fifteen, twenty minutes’ (Interview, February 2020). Capacity building is often framed as a disruption to patterns of locating expertise and channelling resources outside rural areas, and outside the Pacific, yet the poor implementation of this results in little disruption to the status quo. Indeed, the poor knowledge transfer, and resultant limited local participation, may lead to asymmetrical infrastructure relations into the future (de Souza et al., 2018).

4.6.3.3 Neutral Constructions of Energy Obfuscate Social Struggle for Design, Voice, and Meaning

In one site visited, ‘Island X’, the issue of design was a key point of tension. At this site, a small island that was recently electrified, the infrastructure design led to disappointing levels of electrification. This manifested in regulatory challenges: the community member in charge of collecting payment struggled to compel compliance as users were disappointed with the level of electrification they were receiving. Here, the generation capacity exhibited disconnect from community priorities: the level of electrification provided, the product of technological and cost calculations, was too low to support some of the community’s social and economic needs and aspirations.

Community X's experience with rural electrification reflects a particular conception of energy infrastructure noted in Section 4.6.1.4; one that sees the infrastructure as purely hardware, neutral, distinct from social, cultural, political, and spiritual meaning. Postcolonial analysis allows us to deconstruct these conceptualisations, revealing important social and relational dynamics. Harding (2008) argues that one key element obscuring projections of neutrality is the potential for technological change to be a site of important social struggle (Barad, 2007). The data revealed two key areas of social struggle from a deconstruction of neutral conceptions of energy: a struggle for a voice in design choices, and a struggle for meaning. Both had implications in terms of infrastructure ownership.

The social and economic practices and relationships of one group in Community X highlights this disconnect. A large proportion of young men in this community are divers, and would night-dive for various seafood including lobster. Because of the lack of refrigeration, the divers were forced to sell the goods to 'middle men' for low prices at the wharf of the industrial centre; if they could freeze their catch, they could take it to the hotels themselves for a significantly higher price. Here we can see the technological change becoming a site of social struggle (Harding, 2008). The intra-actions between technologies such as freezers and community energy users opens up possibilities for new economic and power dynamics. A freezer could allow for greater economic freedom, allowing the divers to subvert the exploitation they were vulnerable to due to their rural location, their position on the margins. Again, this represents applications of hegemonic, neutral constructions of energy; here, energy is removed from its social significance (Frigo, 2017). This represents not only a process of colonisation through the maintenance of hegemonies of energy discourse, but also colonial effects by which energy is expropriated from communities through this social disconnect (Frigo, 2017, p. 8).

Consultations surrounding the energy needs for this community, however, were arguably robust. In Fiji, the importance of the practice of consultation is indeed increasingly understood to be linked to maintenance outcomes. One energy consultant noted: 'The role of consultation is important in system maintenance. For example lots

of systems fail from being overloaded—as energy requirements increase. Systems aren’t designed to cope with the higher usage. So aspirational energy needs must be discussed to avoid failure’ (Interview, August 2018). In Community X, however, the results of the consultation did not materialise in the design. Postcolonial technoscience allows us to analyse how some humans, such as Indigenous peoples, are discursively impacted: barred from subject positions, they have historically been relegated to being consumers or objects (Harding, 2011; Demos and Segal, 2015). This erasure from design in Community X is significant in constructing communities as objects, as consumers of resources, the content of which was decided by technical parameters (Harding, 2008). The relegation of the community from visibility here further expropriates ownership away from communities.

A further discursive practice noted by participants was that community consultation, in the large part, focuses on technological, rather than spiritual, cultural or developmental implications of renewable infrastructure. As noted by one NGO representative:

Most people don’t consult with communities. They say, do you want this thing? This development? The community will either say yes or no. If they say yes, they won’t know about managing this resource and it will be broken in a couple of years. If they say no the resource is gone. What needs to be done is training communities in what types of development benefit them (Interview, October 2018).

In part, this narrow mode of consultation treats the energy infrastructure as though it was purely an artifact, uninterrupted matter, as though they were ‘value neutral chunks of hardware’ (Harding, 2008, p. 180). Whilst a shift in practices particularly involving NGOs as consultation partners was perceptible in Fiji, consultation around energy still often centres around the technical aspects of the infrastructure, stripping the discussion of important cultural and political questions. This characterisation obscures again the fact that technological change can be a site of social struggle; here the struggle invoked is one of meaning (Harding, 2008). As some scholars have argued “failure to put RE into a local context, to emphasise local resilience building and to move the rhetoric from a secular nature to one which encompasses the ‘sense of place’ and spiritual nature of traditional Pacific communities, all help to block further community engagement

towards RE”” (Michalena and Hills, 2018, p. 350). The centring of Northern knowledge displaces the opportunity for epistemic ownership of renewable infrastructure and subsequently, on positive material operation and maintenance outcomes (Barad, 2007).

4.6.3.4 *Technological Change and Potential for Colonial Relationalities*

The data also highlighted the ways in which technological change in rural areas may facilitate colonial relationalities. The location of sites of rural electrification in Fiji at the periphery is indeed an element of operation and maintenance concerns that results in material conditions and asymmetrical relationships. This is revealed in new technological arrangements emerging in remote and rural electrification system design in Fiji, particularly the push for growing use of cloud-based remote operating and monitoring systems as an operation and maintenance, but also a regulatory, tool. Such devices allow community consumption to be monitored from the urban centre; engineers in offices in Suva may also perform minor fixes, restart, and turn off power. Technological innovation interacts with the politics of space, expertise, and ownership in these newly formed relationships between rural communities and central engineers. These relationships perform surveillance, and can indeed perform deprivation, in remotely cutting power. In Fiji, the engineers at ‘the other end of these systems’ largely saw the remote control as a way of supporting communities efficiently with technical challenges and concerned themselves with the responsibility of safeguarding consistent access to power. Lennon (2017, p. 26) noted a similar ethos amongst renewable energy white-collar workers in the US. The potential for exploitation embedded in the remote control technology, however, became manifestly apparent at one site, a solar shop in Suva. Here, the expatriate business owner proposed the following plan, which he intended to pitch to certain bilateral development partners:

It’s about geopolitics, if [x] government could say to Fijian villages we will fund electrification. All these systems, could be controlled remotely and owned by [x country]. Someone always ends up controlling this big tech; power can be concentrated in one location. You can turn these systems on and off (Interview, May 2019).

The contrast between these different positions highlights the way in which relationships may co-construct material technologies, like the solar remote control device opening up the possibility for different futures: in one scenario a material effect could be consistent power supply enjoyed in the community; the other could transform communities into strategic, colonial objects through deprivation. This highlights the future facing relevance of postcolonial analysis: ‘the yet-to-come can inaugurate new forms of ... colonization’ (Baldwin, 2017).

4.6.3.5 Contesting Object Positions: Potential for Transformations

Remote locations at the periphery of business and administrative activity, however, can also be seen as vital sites of innovation. Where these dynamics of place intersect with technological change, potential for transformation materialises. This potential manifests in the gender struggle at these sites: whilst a low representation of women was observed in utilities, energy offices, and engineering firms in Suva, women were increasingly visible as agents of technological power and knowledge at rural sites. In some rural areas, we can see women moving from positionings as objects and consumers of technology, to subjects and agents of technological change (Harding, 2011). Returning to Community X, the tariff collection officer, a woman, played a significant regulatory role in ensuring payment was made. She was responsible for the financial, and thus technological, well-being of the system. Another example of rural women occupying positions of energy expertise traditionally reserved for men is the Solar Mamas initiative, where ‘grandmothers’ receive technological training over six months in India. When they return, they use their training and hardware supplied by the program to electrify villages. They then further the program by training younger women in their communities in operation and maintenance. Further, one solar company based in Suva noted that they have an informal practice of selecting women for training in operation and maintenance, as ‘they take better notes’ than men, and they are less likely to migrate (Interview, August 2018). Despite the emergence of women as custodians of solar technological knowledge and regulatory knowledge in some rural communities in Fiji, opposition and challenges persist. The community tariff collection officer, for example, experienced various obstacles to the performance of her role, a role which at times made her ‘feel sad’.

The data also reveals ways technological change can potentially co-construct new energy futures. This was particularly clear in the electrification of Island X: ‘Island X’ is a small island, deemed remote, though from it at night you can see the glimmering lights of the industrialised centre of the neighbouring island. This centre was developed early, the site of a colonial sugar refinery, and the area saw the arrival of significant labour during colonial times. Some migrating workers began to settle on ‘Island X’ and now strong kinship ties exist in the community. The industrial centre was one of the first places in Fiji to be connected to the electricity grid as the power was needed to run the sugar mills. Yet, the community of Island X remained unelectrified until last year, when the decentralised system was installed. Early this year, a blackout caused the main grid to fail, and in the evening, across the narrow stretch of ocean, the community of Island X saw the industrial centre shrouded in darkness. The community solar technician of Island X laughs as he recounts witnessing this phenomenon: ‘but our lights were still on’.

Here, in Island X, we see technological change as an impetus for the reversal of historic relational asymmetries, driven by colonial development, between the core and the periphery. This literal and symbolic reversal of the power dynamic lasted briefly, only for a night. Lennon (2017, p. 26) also envisions a future where technological change through decentralised solar can be a driver of deep transformation:

on a technological level, we can continue to prioritize the development of decentralized energy systems such as microgrids and shared solar—systems, in other words, that connect neighbors together, empowering us to collectively own and operate the mechanized transformations of matter that are integral to modern existence. The totality of these endeavors can disrupt the forms of systematic alienation through which (neo-)colonial powers de-matter myriad beings.

These futures, however, are insecure, moving, and fragile. As the preceding analysis has highlighted, these futures are jeopardised at various junctures by concealed regulatory discourse-material emerging in Fiji. As noted previously, the realisation of long-lived empowerment in Island X, through the mitigation of exploitative economic relations between Island X divers and the ‘middle men’ at the industrial centre, was

precluded by the low levels of electrification delivered to the community. This material condition was the product of knowledge practices that construct Pacific communities as objects, not owners of energy development, and that disconnect energy from its diverse social, cultural, and historic meaning.

In conclusion, conceptual and material practices falsely problematising rural communities as the source of dysfunction, and traditional energy paradigms which construct energy as neutral, obscure various social struggles that are being borne out in the wake of technological change. These centre around regulatory struggles for ownership, for the knowledge to use and maintain infrastructure, for agency in design and for meaning. These struggles delineate and foreshadow shifting energy futures, futures that may involve local ownership, economic and social transformations, or which may be built on further expropriation and relational exploitation.

4.7 Conclusion

Fiji, like its Pacific neighbours, is at the forefront of climate change and is facing changing and uncertain ecological, social, economic, and technological futures. This paper has demonstrated how various obfuscated knowledges and practices surrounding regulation of energy and climate finance are, often uninterrogated, navigating towards certain material and relational conditions, towards certain presents and futures.

The research has highlighted how futures may emerge from regulatory arrangements that lead to sourcing labour, expertise, and agency externally, or international financial institutions exhibiting poor compliance with regulation aimed at supporting local economies and energy transitions. Discursive tools constructing these material conditions involve characterising Pacific nations, markets, and people as consumers, objects, as ‘small’ and ‘risky.’ The paper has also shown how technological change, such as through community electrification, may spark important loci of social struggles.

The purpose of the deconstructive approach operationalised in this study was to make visible the futures enlivened by present regulatory choices and discourses. In light of this, the paper makes three broad policy recommendations in response to the findings. Given that neutral constructions of energy proved a problematic regulatory practice, energy should be contextualised in terms of its social, historic, cultural, and political meaning. This may manifest, for example, in models of electrification that support social struggles for greater voice in design, economic mobility, and grounding technological expertise locally. Secondly, climate finance and renewable energy regulation must be evaluated in terms of the relationalities that it enlivens. For example, one central question that must be asked is whether regulation directs climate finance and renewable energy benefits towards local economies, or externally. A key aim of climate finance regulation must thus be supporting the transformative potential of Fiji's SME sector, and pairing technological change with real knowledge transfers where needed. Lastly, the paper recommends interrogation of regulatory approaches that are grounded in constructions of the Pacific as 'risky' or 'small'. Moving beyond these constructions may allow for climate finance regulation to tap in to important endemic sources of transformation and innovation.

Postcolonial analysis, an underutilised and under-acknowledged STS approach, provided the conceptual framework through which we could deconstruct the 'neutral' and hegemonic, to reveal obscured relational, semiotic, and material inequalities (Anderson, 2015). The theoretical contribution of this article is the empirically grounded validation of the contemporary value of postcolonial analysis in deconstructing sources and vehicles of inequality and highlighting important contestations in renewable energy and climate finance. This finding is particularly generalisable in the context of the Global South, where energy transitions are expected to be driven in a top-down or external manner (Marquardt and Delina, 2019). Further, it demonstrates the value of using postcolonial analysis not only to explore the past and the present, its traditional scope, but also to 'peek' at future temporalities (Delina and Janetos, 2018). Thus, the study calls for postcolonial 'problematization' to have greater salience in fields engaging with energy, climate finance, infrastructure cooperation, and regulation. A constant deconstructive reflexivity or practice is necessitated by a world that is always contested, and in a time when clear and equitable navigation of socio-

technical futures becomes ever the more urgent due to a changing climate (Sovacool, 2014). The need for practice can be illustrated in the electrification of Island X: bright futures can emerge and disappear in an instant.

Chapter 5: Racial Formation, Coloniality, and Climate Finance Organisations: Implications for Emergent Data Projects in the Pacific

5.1 Abstract

This chapter explores the potential consequence of latent racial formation in emergent climate finance data projects and draws from ethnographic research on climate finance governance conducted in Fiji. Climate finance data projects emerging in the Pacific aim to ease the flow of finance from the Global North to the South. These emergent data projects, such as renewable energy resource availability and investment mapping, are imbedded in the climate finance organisations that fund, develop, and use them. Thus, the commentary explores climate finance organisations through the lens of Ray's (2019) theory of racial organisations, highlighting the ways in which important climate-related resources are mediated through racial and colonial schemas. The racial mediation of two key resources are spotlighted in this discussion: the finance itself and knowledge. Given that the Pacific region is at the coalface of climate change's existential effects, the just allocation of resources is imperative. In interrogating the ways in which emergent data projects may deny these resources based on hidden racial schemas, the paper cautions against new and old forms of colonisation that may be mobilised through even well-meaning techno-benevolent fixes (Benjamin, 2019).

5.2 Introduction

Early racial formations, as colonially constructed schemas, allowed key 'imperial activities to be launched and organized' (Winant, 2001, p. 23). Racial formation was central in both the logic and mobilisation of colonial power through conquest and slavery (Winant, 2001). As observed by Ruha Benjamin (2016, p. 2227): 'Explicit racial references, previously fixed on to the exterior of racist devices, are no longer

practical. Instead, innovators find ways to embed racism deep in to the operating system'. Data, increasingly preferred across the world as a means of bedding down and representing knowledge, is one such pathway that innovators contribute to racial formation whilst maintaining a veneer of postracial neutrality. Postracialism, as Benjamin (2016, p. 2227) argues, is the new 'killer application, deadly and disenfranchizing, minimalist and minimizing, and always one step ahead'.

Data, racial formation, and colonial epistemological praxis draw their power, in part, from claims of neutrality; this compatibility offers potentially productive intersections of inquiry, particularly when considering central questions of data in this purportedly postracial moment. This commentary explores the instrumental role of data as a tool of colonisation in the context of developmental projects in the Pacific, particularly the way in which data may be used to withhold resources. Data provides basis and legitimation for the launching and organising of development projects; as such, these resultant logics may have deep implications for communities and (eco)systems subject to development interventions. Given what is at stake, neutral representational posturing of data characteristics of postracial paradigms must be deconstructed. Examining data colonisation offers a pathway for doing so: data colonisation explores inter alia, new forms of colonisation through data grounded in symbolic constructions, and material infrastructures that maintain the practice of colonisation (Ricaurte, 2019).

Data can be a contemporary tool of colonisation and a product of older forms of colonisation, one that not only connotes structures of power and economic dominance, but also racial formation:

data and digital colonialism should take into account the process of colonization that reproduces injustice within and across countries and enacts violence on gendered and racialized bodies, ... so that technology can continue to operate as a renewed form of oppression (Ricaurte, 2019, p. 353).

The racial element, however, is not always visible in discussions of data colonisation. Without this explicit visibility, data colonisation as a concept runs the risk of reinforcing postracial logic.

The relationship between data and racial formation has been most explicitly discussed in the North American context. As such, there is a need to situate and generate forms of knowledge about data colonisation as they manifest in other parts of the world, which have had diverse histories and presents of colonisation and racial formation, and encounters with various forms of data projects.

This commentary thus locates conversations of data and racial formation in the Pacific region. It does so by reflecting on ethnographic research, including field observations and over 70 interviews, I conducted in Fiji on climate finance over the course of three years (2017–2020) (for description of methodology see Anantharajah, 2021). In particular, the commentary posits climate finance organisations as important sites of racial formation. As these climate finance organisations are deeply entangled with emergent data projects in the region, they are integral actors within the processes of discussing, designing, and negotiating data projects in the Pacific. These data projects are not *sui generis*; they are embedded in the institutions and organisations that fund, develop, and use them:

To understand how this World Bank-led push towards renewable energy mapping and investment will affect who claims, uses, and controls rural lands and resources, and who stands to win or lose within these new visions for development, accumulation, and ‘sustainability,’ it is essential to examine closely the technical details, decisions, and operations of the ... projects as part of the latest reconfiguration and expansion of the Bank-centered ‘knowledge empire’ (McCarthy and Thatcher, 2019, p. 243).

Emergent data projects, being born from institutions, are potential conduits of the schemas or ‘beliefs’ of these organisations. These mapping projects seek to package and categorise potential renewable energy projects in the region (and beyond) for commercial consumption. Webber (2017, p. 90), in her exploration of the

commercialisation of climate services in the Pacific, highlights the ‘conflict between packaging services for consumption and providing objective science’. While commercialisation is a key element of this knowledge empire, this commentary explores another aspect of these institutional beliefs, those that underwrite racial formation.

While it is arguably too early to fully analyse the effects of these nascent data projects, this commentary aims to provide context by interrogating racial formation in the institutions and organisations within which they are embedded. Indeed, the attention to racial formation, a key analytic, is almost entirely lacking from discussions on climate finance justice (Sayegh, 2019). Hidden beneath North-South logics, the entanglements of climate finance and racial formation in climate finance organisations are rendered invisible. As such, this discussion problematises the so-called neutral allocation of climate finance resources and investment, highlighting the ways in which they are racially mediated through institutions and organisations. In doing so, I draw attention to how data projects and organisations are linked: In the case of Fiji, making visible the schematic-resource couplings manifesting in climate finance organisations offers an opportunity to problematise them in nascent renewable energy and investment data projects. This process reveals how racial organisations are central to the two domains of climate finance in ways that have colonising effects: the allocation of finance and claims to knowledge.

5.3 Climate Finance and Racial Organisations

In response to escalating ecological crisis caused by a warming climate, finance for climate change mitigation and adaptation outcomes, namely climate finance, is increasingly pressing. Pacific Small Island Developing States (PSIDS) are at the coalface of this ecological crisis, already experiencing climate change’s existential effects (Palmer, 2017). Correspondingly, the climate finance needs of these nations are significant. In Fiji, for example, financing transitions in the energy sector alone between 2017 and 2030 will require an investment of US\$ 2.97 billion (Ministry of Economy, Government of the Republic of Fiji, 2017). As such, attracting climate investment and finance has been a central focus in both PSIDS and climate finance organisations.

This commentary is targeted at this organisational level of analysis. Here, Victor Ray's (2019) conceptualisation of racial organisations offers an important unpacking and articulation of the race reification process, which sees racist ideologies begetting racist action, creating 'tractable sources of racial inequality' (Sewell, 2016, p. 405). Ray (2019) argues that the creation of durable racial structures occurs at the connection of racial 'schemas' to the control of resources; schematic-resource coupling creates racial structures, which are then justified and fortified by racial ideology. The issue of racially mediated resources is key to climate finance data projects in the Pacific as such projects purport to steer the allocation of resources. Here, the instrumental role of data emerges: data, in this case, information or assessments on market size, resource availability, and compliance with regulatory 'best practice' inter alia, steers the allocation of climate resources (Anantharajah, 2021). Racial schemas, or individual prejudices and assumptions, de-linked from any resources would, Ray (2019) argues, do little harm. Conversely, the interrogation of the resources yielded or withheld through coupling with racial schemas is critical in illuminating potential harms.

In the case of climate finance, two key resources are evident sources of racial contestation. First, there is the climate finance itself: the capital, access to loans, and global climate funds. Second, there is that of human resources: in this case, knowledge, expertise, 'capacity', and skill. Once these racial structures are in place, explicitly racist ideologies are operationalised to reinforce the underlying schema, contributing to the unjust and unequal distribution of resources.

Existing conceptualisations of racial organisations facilitate an unpacking of climate finance organisations operating in the Pacific and aids in tracing how racial formation may be generating material social and environmental consequences. The material inequalities are inherent in the operation of racial organisations, as they legitimate the unequal distribution of resources (Ray, 2019, p. 38). This is evidenced in two key areas of racial formation in climate finance organisations: the schema-resource coupling surrounding the allocation of finance itself, and the benefits derived from validation of knowledge. In applying Ray's (2019) framework to the international level of analysis,

however, postcolonial perspectives are useful infusions, given the historic internationalisation inherent in colonial racial formations. Colonialism was a racial project: it involved externalising a racial Other, managing heterogeneity, dealing with difference through imposition and restriction, regulation, and repression (Goldberg, 2002). Despite the ‘post’ of postcolonial analysis, relationalities and structures that characterised the colonial period have persisted and adapted, living on in the present and also threatening futures (Baldwin, 2017).

5.4 Racially Mediated Climate Resources: Finance

At the international (and international institutional) level of climate finance, the resource—that is, the finance itself—emerges as a locus of racial schema-resource coupling, demonstrated in Pacific experiences of accessing international multilateral funds, and attracting private investment. Pacific Island Nations have faced significant challenges accessing climate funds, an observation that is particularly pronounced with the region’s experience with the Green Climate Fund (GCF) (Samuwai and Hills, 2018). To access funds, national entities have to become accredited, they must prove ‘readiness’. The process of readiness is time-consuming, and often diverts significant resources in often already overstretched bureaucracies to the gaining of accreditation. Various development organisations are then financed to support Pacific partners with ‘readiness’. The process of readiness requires Southern countries to close the regulatory gap, or rather to follow Northern trajectories ‘implicitly taken as more rational than their Southern counterparts’ (de Souza et al., 2018). Such examples of ‘institutional orientalism’ have been studied in the context of large-scale renewable energy infrastructure collaborations between Northern and Southern partners (de Souza et al., 2018).

In applying Ray’s conceptual framework here, the elements of racial structures are evident. The racial schema at play is the implicit irrationality of the Southern governance and regulatory systems, and the celebration of a formal White ideal (Pailey, 2019). The resource being controlled, in this case deprived, is pledged finance that would be a lifeblood in Pacific communities facing an escalating ecological crisis. The

ideology justifying the system of exclusion and deprivation is the notion that unaccredited, Southern nations are unable to account for and meaningfully use the resources withheld. This dynamic of ideology in reinforcing racial structures (Ray, 2019) is well documented by postcolonial scholars (e.g., Cesaire, 1972, p. 32). Pacific scholar Epeli Hau'ofa (1993, p. 38), for example, reflects on those:

whose purposes it is necessary to portray our huge world in tiny, needy bits. To acknowledge the larger reality would be to undermine the prevailing view and to frustrate certain agendas and goals of powerful interests. These perpetrators are therefore participants, as I was, in the belittlement of Oceania, and in the perpetuation of the neocolonial relationships.

As highlighted here, the schema-resource coupling theorised by Ray (2019) on an organisational level has also long enlivened colonial and neocolonial relationalities on an international and systems level.

Beyond international climate funds, climate finance aims to channel investment from private and financial sector investment, particularly from the Global North, to the Pacific region. Yet, private investment in even climate finance's most attractive and profitable project destinations, renewable energy, has not been forthcoming (Samuwai et al., 2019). A key reason cited in the research for this dysfunction was the perception of sovereign risk on the part of institutional investors. Investing in the Pacific has been considered to be risky, and without sovereign guarantees, risk perceptions prove an immutable barrier (Interview, renewable energy company representative, August 2018). Previous studies have highlighted the ways in which 'risk' can function as a schema and ideology justifying resource deprivation: 'institutional orientalism reproduces mutatis mutandis the colonial mechanisms of wealth transfer from Southern to Northern countries because it legitimizes subjective risk narratives that make Southern countries' access to international finance significantly more difficult and expensive' (de Souza et al., 2018, p. 97).

In response to the slow flow of finance to the region, various nascent data projects seeking to quantify, categorise, and represent climate finance opportunity in the Global South for the purpose of easing and encouraging investment decisions by the Global North are being rolled out. A key climate finance data project pursued by institutions such as the World Bank, International Renewable Energy Agency, and REN21 (*inter alia*) has been large-scale renewable energy resource and investment mapping, providing spatially represented assessments of investable resources (McCarthy and Thatcher, 2019).

Can these data projects ameliorate the condition of unequal climate resource allocation? Benjamin (2019) cautions against techno-benevolent fixes. On the one hand, she argues that they are often developed for issues without sufficient awareness of the particular predicaments they create and maintain. This critique is applicable to the investment mapping projects; they are built on a notion of justice that erases key dimensions of inequality. In the case of climate finance in the Pacific, data projects are aimed at channelling and scaling up much-needed finance to the Global South, a relational dynamic at the core of the climate finance rationale. In fact, some definitions argue that climate finance is the flow of public and private finance from the Global North to the South (Pickering et al., 2015). This binary framing of resource allocation obscures the issue of racial formation and the unique, situated colonial legacies enlivened therein. The challenges experienced by the French Outre Mer provide a particularly stark example of this potential obfuscation (Ferdinand, 2018). These former colonial territories both contribute significantly less and face heightened vulnerability to climate change than mainland France. Yet, due to its status as overseas territories of France, it falls outside the scope of climate finance from sources such as the GCF. Here, the legacy of colonial relations operates to deprive the Outre Mer of much-needed climate resources (Ferdinand, 2018).

Indeed, risk and readiness, important climate finance standards which may well be translated to climate finance data projects, are contextually and historically tied to the racial schema, which, in turn, manifests materially through resource allocation. Thus, without explicit attention to racial formation, techno-benevolence may in fact entrench

the postracial logic of climate finance, a point upon which Benjamin (2019, p. 157) elaborates:

The denial of racial–ethnic categories may very well lead to some of the most sinister and systemic forms of racism, with very little recourse. This is especially the case when people refuse to acknowledge and to challenge how such logics structure the development and deployment of technoscience and, by extension, access to resources and the rights associated with such initiatives.

While climate finance data projects may simplify the process of channelling finance to climate vulnerable areas, such simplification risks the entrenchment of racial formations as potentially enduring loci of inequality and injustice.

5.5 Racially Mediated Climate Resources: Knowledge

A further key climate finance resource is knowledge: whose knowledges determine climate finance governance? And, what do they mean for future renewable energy and investment data projects? Exploring the racial mediation of knowledge foreshadows potential effects of these data projects by interrogating benefits and critical exclusions. Put another way, it justifies an interrogation of whose knowledge is rendered visible in such projects, and, in the case of subsequent financial mobilisation, who stands to benefit.

Many postcolonial and feminist scholars have highlighted how underlying, arguably racial, schemas can devalue the resource of diverse knowledges (e.g., Visvanathan, 1987; Harding, 2011; de Sousa Santos, 2018). For example, knowledge may be devalued to the extent of invisibility, falling to one side of an ‘abyssal line’: here, ‘there is no real knowledge; there are beliefs, opinions, intuitive or subjective understandings, which, at the most, may become objects or raw materials for scientific inquiry’ (de Sousa Santos, 2007, p. 47). They may also be displaced by hierarchies lauding ‘value-neutral scientific rationality’ (Harding, 2011, p. 2). These dynamics of visibility and invisibility materialise in renewable energy and investment data mapping projects rolled out in the Global South. One study, for example, showed that issues such as

social acceptability were displaced from the final map, which instead focused on quantifications of resource availability (McCarthy and Thatcher, 2019). It serves as but one example of how data can indeed reflect epistemic hierarchies maintained by ‘infrastructures of knowledge production... situated mainly in Western countries’ (Ricaurte, 2019, p. 351).

A further way climate finance knowledge is racially mediated in the Pacific is through the coding of what becomes understood as capacity. Omi and Winant (1994) set out a history of using code words—that is, non-racial rhetoric used to disguise racial issues. This history calls for an unpacking of seemingly innocuous rationales for underlying racial schemas. Issues framed as concerning capacity in the Pacific have been mobilised in relation to resource allocation in the Pacific. Limited bureaucratic capacity to carry out reforms justifies the funding of networks of international organisations and consultants. On a community level, limited ‘technological capacity’ legitimises placing ownership of renewable infrastructure outside of communities. The racial schema attached to these codes in some cases appears close to the surface. In a report, no longer publicly available, international consultants and a key international climate finance organisation describe Fiji’s young labour force, which would service a growing green economy, in the following way: ‘Entrepreneurial skills are poor. Shortcomings in generic workplace skills include communications, English proficiency, professionalism, attitude, punctuality, and attire. One consequence is the employment of foreign workers in skill shortage areas’ (Personal communication).

Knowledge-based resources, such as employment opportunities, the conferral and acknowledgement of expertise, are subject to schema-resource coupling.

One interviewee working in climate finance overtly commented on the racial formation of climate finance organisations in Fiji: ‘I mean you go there and look around. There are so many White people’ (interview, NGO officer, May 2019). Sara Ahmed (2007, p. 158) argues that an organisation’s recruitment practices, evidenced by the bodies in the room, can speak to the character of an organisation. Recruitment creates the ego ideal of the institution, what it imagines as the ideal that working at the institution means working toward or even what it imagines expresses its character. The inclusion of some

occurs at the exclusion of others. Whiteness, like property, is conceptually grounded in the right to exclude: ‘White’ was defined and constructed in ways that increased its value by reinforcing its exclusivity. Indeed, just as whiteness as property embraced the right to exclude, whiteness as a theoretical construct has evolved for the very purpose of racial exclusion (Harris, 1993, p. 1737).

In the context of climate finance in the Pacific, it is important to be wary of racial formation that maintains whiteness as a credential. Ray (2019, p. 41) argues that ‘Whiteness is a credential providing access to organizational resources, legitimizing work hierarchies, and expanding White agency’. Co-benefits of climate finance include local job creation. After unpacking the way knowledge, expertise, and employment can be racially mediated in climate finance organisations, a real risk of data projects is the unequal disbursement of such co-benefits. Here, as particular knowledges and expertise are translated and mobilised through emergent climate finance data projects, the dynamic nature of whiteness as property may be observable. The spillover effects of data and its shaping of priorities and ‘readiness’ may mediate the allocation and deprivation of vital climate resources.

5.6 Conclusion

Climate finance organisations and emergent data projects are intertwined. In the case of Fiji, making visible the schematic-resource couplings manifesting from these organisations offers an opportunity to recognise and problematise them in nascent renewable energy and investment projects. This is critical, as racial organisations obfuscate unequal resource allocation through structures that are purportedly neutral and postracial. Furthermore, this kind of interrogation is vital, given that analysing organisational racial formation highlights critical loci of injustice and inequity that are the products of durable structures (Ray, 2019). These structures of inequality may have dire implications on a region at the forefront of climate change, urgently requiring the just allocation of resources to mitigate and adapt to the worst effects of ecological crisis. This argument stems from the Pacific context, from Fiji, and its history and present of colonialities and racial formation. Given the importance of climate finance throughout the Global South, this particular issue is by no means confined to the region,

augmenting the need to unpack the relationships between climate resources and racial schemas within organisations.

Without acknowledgement of the racial structures mediating climate finance, well-intended emergent data projects may embed postracial logics while streamlining racial and colonial effects. Correspondingly, when climate finance data projects are debated and designed, there remains opportunity to decouple racial schema from the allocation of vital climate recourses. As this analysis precedes the large-scale dissemination of renewable energy and investment data projects, it may serve as a caution, as the ‘the yet-to-come can ... inaugurate new forms of categorization, domestication, and colonization’ (Baldwin, 2017, p. 295).

Part Three: Recognising Alternatives

Chapter 6: Hopeful Futures and Loving Technologies? Reconstructions of Climate Finance in Fiji

6.1 Introduction

Various technologies, including finance, are being deployed offering solutions to the world's most climate affected areas. Yet the benefits of climate finance, as it is currently manifesting, are increasingly contested (Khan et al., 2020; Bracking, 2021; Perry, 2021). Through Fijian empirics, in this chapter I trouble climate finance with the help of insights from postcolonial and feminist science and technology studies (STS). The purpose is to not only offer critique but to offer grounded re-imaginings of more hopeful and helpful futures for climate finance.

Climate finance has, from its inception, been presented in terms of varying degrees of saviourhood (Duarte, 2016). However, significant systemic critique has found climate finance to be disappointing, and in some cases, nefarious (Khan et al., 2020; Bracking, 2021; Perry, 2021). Further critique has also emanated from grounded studies in the Global South (Sauls, 2019; Cholibois, 2020; Setyowati, 2021). In acknowledging the significant material consequences of these climate finance failures, this paper aims to move beyond these important critiques. In moving beyond, the paper tracks the reappropriating of these failures by the future making of the local communities themselves.

Indeed, in Fiji the space between the present moment and future of ecological crisis is blurred. In the words of Timoci Naulusala, a then 12-year-old advocate at Fiji's Presidency of the 23rd Convention of the Parties to the Paris Agreement (COP23): 'The sea is swallowing villages, eating away at shorelines, withering crops. Relocation of people... It's catastrophic' (UN Climate Change, 2017). Climate finance has been positioned as a solution to Fiji's experience with ecological crisis, in part through

supporting its infrastructural needs. Fiji has committed to ambitious technological targets: in terms of renewable energy infrastructure, for example, Fiji aims to go close to 100% renewable by 2030 (Ministry of Economy, Republic of Fiji, 2017). Yet, Fiji has thus far had mixed success with its energy transition on a grid connected scale. Rural electrification projects in Fiji have also historically been plagued by financial and technological challenges.

This paper embeds itself in this failure almost viscerally; this ethnographic account is situated at the crumbling, the inadequate, and the ostentatiously defunct manifestations of climate finance infrastructure in Fiji. Put differently, this study operationalises the postcolonial assertion that power is most visible from the margins. The margins inhabited by this paper are the temporal margins, exploring infrastructures after the technicians have left, and in some cases, after rupture (de Sousa Santos, 2007). Defunct hardware can be a source of embarrassment for various stakeholders, and it is partially for this reason that the point of rupture can also signify the infrastructures' descent into invisibility. In Fiji, this obscured visibility was enabled by short term development aid cycles and remote island geographies. Yet beyond the point of rupture, these climate related infrastructures still have much to share (Star, 1999).

Thus, in this paper we revisit infrastructures that, in some quarters at least, would rather be forgotten: a biomass plant in Nadroga, Viti Levu; a hybrid mini-grid in Island X; and a seawall in Levuka, Ovalau. And we visit to *trouble* them, to unsettle the endpoint in their stories, and further, to counter hegemonic climate finance and infrastructural epistemologies by demonstrating the critical knowledge production and praxis that goes on in the Global South whether or not it is recognised. Feminist and postcolonial technoscience guide our 'pulling of strings' (Gibson-Graham, 2014) at the three sites, exploring the way hegemonic visions for climate finance unravel, and recognising the ways in which they are remade.

The paper responds to the call to move beyond critique towards an opening up for 'possibilities glimmering' (Young, 2000, p. 10), for what 'might yet be' (Haraway, 2019). Often unseen, future making is a daily praxis for Pacific communities at the

forefront of climate change's present and escalating impacts. These communities 'seldom see their histories as already determined' (Ballesterio, 2019, p. 197), but rather are situated and involved in its constant co-construction often at the intersection of technological struggles (Harding, 2008; Lennon, 2020). The paper aims to centre these experiences, asking, how can climate finance be remade? How can it be of help?

The paper argues that it is through real engagement with these geographies, such as the Pacific, that the sterility of climate finance approaches may be displaced with more grounded and hopeful schemas, such as loving technologies (de Laet and Mol, 2000; Visvanathan, 2008). In doing so, the paper demonstrates to the discipline of STS the benefits of engaging these routinely marginalised geographies in the process of future-making.

6.2 Conceptual Framework

This study synthesises postcolonial and feminist STS with Pacific empirics in order to engage climate finance, exploring its potential for being a more helpful and hopeful technology. Following in the footsteps of other scholars that play with the notion of remaking (Haraway, 2019; Boyer, 2021) and regeneration through rupture (Mahanty et al., 2023), the paper explores three Fijian cases to interrogate how climate finance can be transformed.

In doing so, the paper in turn makes key contributions to the field of STS: namely, it illustrates the importance of both postcolonial analysis and Pacific empirics in meeting the challenges of the present global crisis. Using postcolonial STS and its tools to unpack Fijian experience with climate finance and infrastructure underscores its analytic power in engaging ongoing power dynamics in the Global South, despite the fact that its relevance is frequently hidden or denied (Anderson, 2015). It further highlights the benefits to responding to the underrepresentation of the Pacific empirics in STS. With its communities and ecosystems at the forefront of climate change's existential impact, Pacific realities and knowledges offer valuable contributions to the

STS agenda of building hopeful futures (Haraway, 2016; Hess and Sovacool, 2020; Sovacool et al., 2020; Boyer, 2021).

6.3 Troubling Climate Finance from the Margins

This paper engages climate finance from the margins. It is here, as recognised by postcolonial perspectives, that structures of power and knowledge are most visible (de Sousa Santos, 2018). The paper inhabits the margins in a few respects. For one, despite the *prima facie* relevance of its experiences with climate resources, the Pacific (as is the Global South more generally) is under-represented in the literature on climate finance. More purposefully, however, the paper situates itself in the temporal margins. The ethnographic work engaged with these infrastructures after the planning, after the build, after the technicians have left, and most significantly, after the point of rupture. It is at this point that we perhaps have the opportunity to recognise various components of this infrastructure: the rupture making visible relegated human and non-human actors (Star and Ruhleder, 1996) as well as their agency (Mahanty et al., 2023).

Thus, the three infrastructures are troubled to reveal critical relationalities and demonstrate their agential significance in infrastructure development. Troubling is an analytic process allowing us to make visible the dominant understandings of climate finance, unpack them and in doing so, make way for alternatives (McDonald and Sterling, 2020). The purpose of this is not to do away with these understandings, but rather, to highlight the existence of other ways of knowing (de Sousa Santos, 2018); and critically in this piece, the participation and role of other, unseen, agents in the fruition of infrastructures. This process allows us to see climate infrastructures as a part of complex intra-relations (Barad, 2007), involving unexpected configurations of human and non-human agents, or *oddkin* (Haraway, 2016). This relational approach is reflective of key Fijian worldviews and knowledges (Nabobo-Baba, 2008; Naisilisili, 2012; Nanau, 2017).

6.4 What Can Pacific Empirics do for STS?

Relatedly, there is a key role here for Pacific experiences to speak to STS, in particular the corpus which interrogates temporalities of ecological crisis. As noted by Ballesterro (2019, p. 197):

...the practice of lingering over diagnoses of catastrophe and the end of times is mostly available to distant observers. People having to come to terms with dire circumstances, those that we might label anthropocenic doom, extinction, utter dispossession, or violence, seldom see their histories as already determined...

In contemplating remaking climate finance, there is significant value in centring the experiences of those who are already in its thrall; those, such as Pacific communities, who are living the present-day realities of future making. As such, this paper explores three sites of climate infrastructure, in three separate communities, in order to see climate finance as it comes into fruition: that is to say beyond its negotiation and disbursal, to explore its actual on-ground role in infrastructural relations. Using a postcolonial and feminist STS lens on communities' relations with and through the infrastructure, we are then able to imagine more hopeful futures at these sites, considering ways that climate finance may be remade. For example, one helpful lens that is woven through the analysis is the idea of loving technology, drawn from postcolonial (Visvanathan, 2008) and feminist STS (de Laet and Mol, 2000). Through synthesis of these traditions with the Pacific empirics, we begin to see glimmers of climate finance's potential future as a loving technology, characterised as non-hegemonic in nature, inclusive, and supportive of long-term relationships.

6.5 Methodological Approach

This study responds to the need for human centric research in energy studies (Sovacool, 2014) with reliance on ethnographic data culminating from 79 interviews, field observation, and 6 cumulative months in the field in Fiji (between August 2018 –

March 2020), on the islands of Viti Levu, Ovalau, and 'Island X',³ as well as in Canberra and Sydney, Australia.

Participants were chosen based on their current or past involvement in climate finance and climate infrastructure. Recruitment occurred through the snowball technique; as the climate finance and renewable energy stakeholder community in Fiji was relatively contained and highly relational, this was an effective recruitment method.

This reflects the STS preference for methods involving face-to-face interactions with research participants in their own knowledge production sites (Fuller, 2006). These interactions involved semi-structured interviews and Talanoa. Talanoa is a cultural discursive practice and research methodology recognised in certain Pacific states including Fiji (Farrelly and Nabobo-Baba, 2014). Whilst there are many different understandings of Talanoa, it arguably requires the researcher to approach the research openly, without a theoretical agenda, with a shared emotionality and a strong sense of empathy (Farrelly and Nabobo-Baba, 2014). Talanoa is coherent with qualitative social science methods, such as semi-structured interviews, as the latter is 'inductive and exploratory by nature, seeking to access a particular perspective in depth, rather than to test a specific hypothesis' (Sovacool et al., 2018, p. 18).

Interviews, Talanoa, and field observation were complemented by a detailed analysis of government and development documents, including policy roadmaps, consultant reports, regulations, media, and articles on renewable energy and climate finance in Fiji.

The study presents three sites for analysis, drawn from field observations. These sites centre around three climate related infrastructures: a biomass plant in Nadroga; a diesel-solar community hybrid system in Island X; and a seawall in Levuka, Ovalau. The ethnographies conducted at these sites aim to reveal entwinements and intra-actions of

³ Given the population size of this community, the name has been withheld to protect the anonymity of participants.

infrastructure, communities, and nature, revealing key issues of equity and power dynamics (Barad, 2007; Gibson-Graham, 2014). The knowledge produced is thus partial and situated (Haraway, 1988), and also shaped by the positionality of the researcher. I conducted this research as an outsider, as part of a climate finance research and capacity building project funded by the Australian government, which had implications for access in certain spaces.

6.6 Nabou Biomass Without Feedstock

The first site is a biomass plant in Nadroga, Viti Levu. This was heralded as a key Independent Power Producer (IPP) project, run by Korean companies GIMCO Korea Limited, GS Power Company Limited, and Mirae Asset Daewoo Limited, the financier (Chambers, 2019). Given the risk profile, further finance was sought from Korea. The 12MW biomass plant was intended to power 40,000 households and at the time of research was completely non-operational (Green Industrial Management, 2017).

In Nadroga, Fiji, a large structure stands at odds with the verdant vegetation characteristic of Viti Levu's western coastline. The structure is characterised by its status as *defunct*, and indeed has become more visible due to its rupture (Star, 1999). If the Nabou Green Energy Limited power plant had been functional, perhaps its visibility would be lessened. Perhaps it would appear less in the media (Wanshika, 2021); it would be an accepted part of the landscape; it might quietly go on to provide Nadi, Fiji's third largest city, with the projected 12MW of electricity. Indeed, the choice of generation source of this plant, biomass, was selected as it did not break from Fiji's technological dispositions. Historically, Fiji's energy mix has relied heavily on hydropower. It was noted that the practiced difficulty including renewable energies like solar and wind in Fiji's generation mix, despite policy plans, was derived from the stochastic nature of these sources. Concerns were raised that utility technicians had limited experience in managing 'intermittent' sources on the grid, preferring '24/7' sources of energy. Given these technological preferences in certain quarters, it is perhaps unsurprising that Fiji's first IPP was projected to be biomass. Nabou was arguably meant to be a safe bet: further, to create 200 jobs, and have a lifecycle of 25

years (GIMCO, 2022). Yet, the US\$ 90 million plant initiated in 2017 (Nasiko, 2017) is now closed, and FJ\$ 45,000 in rents are contended to be unpaid to the landowners in Nadroga (Elbourne Ilaitia Ravuwai, 2020).

Existing in this point of rupture of Nabou, can potentially reveal critical dynamics, hierarchies, and relationalities. One consultant highlighted the root of Nabou's dysfunction:

But also a biomass plant by this Korean company, a private company near Sigatoka. However this issue is that they didn't do a proper feasibility study and they had the technology, like the burners and all that, but they didn't know where the feed stock was coming from. As such there were problems with the supply chain and then there was little to be done. It's still shut I think.

This challenge of 'supply' illustrates the quality of energy as fundamentally relational. Biomass in Nabou was dependent on ongoing relationalities with ecosystems and communities for its survival. Whilst biomass may have provided the most straightforward solution to the technical questions, its embeddedness in social and ecological relations asserts a sociotechnical quality which is undeniable, and complex, ignorance of which ultimately led to rupture. cursory feasibility studies arguably stem from this idea that energy is self-sufficient and neutral (Lennon, 2017) without due consideration of how infrastructure may be reliant on the agential interactions of other humans, and nonhumans.

A key agent in Nabou's projected energy generation was the African Tulip (*Spathodea campanulata*). The African Tulip was introduced to Fiji in 1936 as an ornamental garden plant, and today its 'showy red flowers' dot vast swathes of Fijian *vanua* (land). The plant is an invasive species and was one of the key sources of biomass to be consumed at Nabou. This was perceived to be a sustainable choice, as removing the invasive species would allow for the return of 'invaded land back to farmers' (Green Industrial Management, 2017). In the case of Nabou, however, there seemed to be little understanding and information on how the African Tulip was to be extracted.

As noted by one community member:

The Korean biomass plant have been approaching the community to see if they can harvest the African tulip plant. But the issue with that is, the worry in the how will you extract these from the other trees that are not invasive species. Look around, they are in amongst all these other trees... And they say we plant the trees back. But how long will it take for them to mature?

Here, the functional configuration between the African Tulip and the Nabou plant did not materialise, due to the lack of relational ties with the surrounding communities.

The dark side of this relational breakdown was highlighted by a business leader from a neighbouring community, cautioning that the demand for African Tulip may lead to the cultivation of the invasive species:

And essentially this is encouraging a form of monoculture too. And you are paid by tonne—and it's instant money.

Here, despite the focus on sustainable development ingrained in the biomass project, manifest in a renewable technology processing an invasive species, threats of deeply unsustainable consequences are apparent. These threats arguably emerged from an overreliance on both technological and finance perspectives in the governance of Nabou. As noted by McDonald and Stirling (2020) in their *troubling* of Rio de Janeiro's polluted waters:

While technological perspectives are helpful in many cases, an uncritical embrace such as that offered via discourses and practices of sustainable development actually 'proceed[s] with the presumption that human agency, technology and master plans will get things under control'. This viewpoint ignores questions of scale as well as 'the often unintended effects of human activity, and its interactions with other forces.'

The technological fix may, as was the case in Nabou, displace recognition of critical intra-relationalities. Further, in this case we can perhaps see the resonance of oddkin,

the unexpected collaborations which ultimately determine survival (Haraway, 2016). Here, the energy aspirations of Viti Levu's west could not materialise and the Nabou biomass plant could not *become* without the agential dynamics of the African Tulip and the communities surrounding it.

The power and politics of these relationships are also evidenced in the defunct, or at least dormant, state of this power plant. The community, though proving themselves to be key in the relational dynamic, are left with this non-functional infrastructure. The colonial overtones are clear here: when the potential for extraction expires, investment, attention, and visibility also dissipate. The troubles are left: powerless infrastructure, broken promises, and subverted energy futures. Looking at Nabou, we see climate finance lose its sterile quality, its appearance as comprised of equity, debt, and grant finance. It appears as entangled with various agents, including the African Tulip. Indeed, it is the agential dynamics of these non-traditional agents of climate finance that were determinative in its fate.

Postcolonial scholars help us glimpse the energy futures that failed to materialise in Nabou. First of all, it is interesting to contrast the large 12MW corporately owned plant in Fiji to different scales of energy generation. Vishvanathan (2008), for example, discusses the smaller-scale use of biomass in India. Here, he lays out an alternative epistemology that may be ushered in by this technology. He highlights the ways biomass is seen as a relegated technology, falling outside a sterilised image of the industrial and the modern. Yet biomass, he argues, is an embodiment of civil society, of resistance and democracy (Visvanathan, 2008). In applying this to the Fijian context, biomass could have similarly been a meaningful technology. The displacement of fossil fuels in Fiji is powerful idea: it delinks Fiji from international oil markets and centres indigenous resources. Further, the use of an invasive species, a colonial legacy, to fuel the plant is described by Vishwanathan (2008) as a unique counter to the notion of linear development. Yet, Nabou, partly due to scale, represented a vastly different technofuture. In Fiji, scale is indeed emerging as a driver of climate finance inequity, and it is perhaps worth revisiting the futures that could materialise from technologies at different scales. Arguably, the enormity of Fiji's technological and infrastructural

goals calls for big solutions, large scale finance and infrastructures, yet the experience of Nabou asks us to examine the futures that are foreclosed by climate finance's preoccupation with scale.

In their seminal work on the Zimbabwean bush pump, de Laet and Mol (2000) highlight technology as an object of 'love'. They are purposeful in their use of 'love' in highlighting the ways we may be shaped and 'moved' by technology. Viswanathan (2008) speaks to the other side of the coin here: of the potential for technologies, like biomass, to be 'an act of love'. Both studies highlight fluidity: the ability for the technologies to be easily constructed, repaired, and adapted, and their ability to serve. It is this lack of fluidity that characterises the experience in Nabou and forestalled the ability of this infrastructure to be both an act of love and beloved.

6.7 Undersized Mini-Grid in Island X with a Faulty AutoStart Function

Island X was a key site for a climate finance rural electrification project.⁴ The mini-grid installed was part of a broader energy cooperative plan, that received its initial funding from philanthropic sources.

Island X remained entirely un-electrified until 2019, when a hybrid mini-grid was installed, intending to supply electricity to the approximately 40 households in the community. From Island X, an industrial centre in one of Fiji's larger islands is visible. This industrial centre was a key site in the colonial economy in Fiji and was home to one of the Colonial Sugar Refinery's (CSR) largest mills. In speaking about the unique vulnerabilities of Island X, one NGO officer highlighted the fact that the island was settled through migrating workers who had relocated there to provide labour to CSR's wharf. As such, the families of Island X did not own the land. In the present day, the community of Island X are predominantly reliant on fishing and diving for their income.

⁴ Further specificities withheld to maintain anonymity.

The electrification of Island X came significantly after that of the industrial town, despite being only a few minutes away by boat. When the hybrid mini-grid did arrive, it was located in a central part of the Island X community and surrounded by a locked high wire fence. Only a few in the community had keys; one key was held by the community operator/technician. On that particular day, the autostart function on the generator was not working. This meant that the generator had to be manually started to charge the batteries if/when there was not enough solar to keep them charged, or the loads were too high:

so the operator had to be on his toes monitoring the system very frequently to keep it operational; and if he doesn't, the batteries will degrade within months rather than years and the system will stop functioning altogether...

The community operator's primary job was boat building, and when he was asked about his training to take on the community's electricity management, he replied that he had only received '15, 20 minutes'. Despite these hardware and *orgware* failures (Taibi et al., 2016), the operator had to position themselves in constant tending to the energy system, responding to the messiness of weather fluctuations, community consumption, and seemingly inexplicable technological fluctuations. The system, designed to support a community, become vulnerable without the care of the operator. While the autostart was off, the two became especially relational, and without this intra-relation the technology would not survive.

The vigilance of the operator at Island X was particularly necessary when the system came under stress when loads were too high: 'which occurred quite frequently given the system was undersized'. When electricity arrived in the form of a hybrid mini-grid, its effects were mixed. For one, it became clear that the system would not support community freezers. For the people of Island X, this was a significant blow. Many young men in this community worked as divers, diving for lobster at night. Without a freezer, they would sell their catch to 'middle men' at the wharfs who would then sell the lobsters for a much higher price at the hotels. The ability to power a freezer would have opened up wider market opportunities for the community.

Significant consultations with communities were a key part of this rural electrification program, yet the community aspirations were not ultimately factored into the design. This was because the techno-financial considerations took precedence. This resulted in a highly perceptible limit to what the system could enliven in the community. Would more be enlivened if the system could be seen as intra-relational with the divers, the lobster, and the mainland? Would weighty questions like levels of electrification embrace its inherent messiness, and difference across spaces and communities? Aiming for relatively consistent levels of electrification across rural communities indeed appeals to certain conceptions of equality, but also for financial and logistical practicality. Nonetheless, ‘the differences matter—in ecologies, economies, species, lives’ (Haraway, 2016, p. 29). If we compare this small-scale energy infrastructure to that of large scale Nabou, we see that scale is not the silver bullet. What we do see is the dominance of financial logics, even in the context of a philanthropy funded community system, which in effect override the community’s own aspirations. The key to a ‘loving technology’ here may be less about scale, but rather its non-hegemonic nature. Is it a helpful technology, allowing space for it to be augmented and added to? Or does it purport to be the entire solution?

One way that hegemony manifested is through the binary conception of electrification—communities either have or do not have electricity. Messiness and critical materialities surrounding energy needs are reduced through this binary. For example, a study in Vunivao, Vanua Levu (Fiji’s second largest island) on the rollout of a novel rural electrification project scheme showed that the initiative was marred with frequent power outages. In this community, the average length of the longest power outage was 497.19 days (Dornan, 2011). Indeed, in the electrification program in Island X, communities were only deemed eligible for this program if they were completely unelectrified. In the case of Island X, though they received a level of energy, it fell short of what was needed to enliven a transformation. Yet Island X’s new status as ‘electrified’ indeed reduced its visibility, and potentially removes it from consideration of certain future programs. The aspirations of this community are lost in the electrification binary, and this may have material effects on Island X’s ability to benefit from climate finance and infrastructure development.

Postcolonial analysis adds important context to key relationalities and power dynamics emerging around Island X's mini-grid. Firstly, there is the stark fact that Island X's electrification arrived generations after that of the nearby industrial hub. Island X continuously remained unlit, whilst the lights of the neighbouring island have been visible to the community for decades. These politics of visibility and invisibility are rooted in colonial histories. Yet, this question of visibility is complicated by the geographies of Fiji. Where rupture of an energy systems occurs on a remote island, this may remain 'invisible' to technical experts for years due to the challenges of energy governance over remote, archipelagic jurisdictions (Anantharajah, 2019). These complex relationships between the core and the periphery are evidenced at Island X. The nearby industrial centre has operated as a 'core' due to its status as an early colonial hub. The lack of geographic rationale behind Island X's designation as 'periphery' is partly explained by this colonial history, and concerningly, its ongoing salience in the inadequacy of the resources made available to Island X.

Further, against this context we can interrogate the range of choices that was afforded the community through this techno-fix. As argued by Langdon (1980, p. 125), there are two kinds of choices that shape the 'power, authority and privilege in a community'. Beyond the question of whether or not to adopt a certain technology, there are choices surrounding its design. These 'mask social choices of profound significance' (Langdon, 1980, p. 127). In Island X, they were offered the option of electrification or refusal. However, the parameters of design were already set by the financial limitations of the project, which were determined before consultation. This had the material effect of continuing patterns of relative exploitation and marginalisation at CSR's wharf.

In sum, climate finance flows into communities in a manner that is situated in histories and presents of various inequality. Climate finance hegemony was enacted through the design and limitations of this mini-grid, and curtailed its ability to provide the community with the help it needed. As with the lobster divers, these communities are making their own plans, envisioning their own futures. Island X exemplifies the fact that if climate finance was to be remade, was to be loving, it needs to be flexible and

adaptable; otherwise, its own priorities displace those of the communities it purports to help.

6.8 Crumbling Seawall in Ovalau

The final climate related infrastructure was a seawall in Ovalau, which was substantially financed by bilateral aid (Embassy of Japan in the Republic of Fiji Islands, 2004). The town of Levuka, the former colonial capital of Fiji, is located on the island of Ovalau, in the Lomaiviti archipelago. The town, once a hub of European trade, missions, and whaling is now much quieter; the main source of employment of its residents is now PAFCO, the tuna processing plant. As you walk down the main street of Levuka on a weekday, the smell of tuna oil is perceptible; this is coupled with the constant, and for those in close contact, slightly deafening hum of the diesel power station at the centre of town.

The town, and indeed the entire Island of Ovalau is largely protected by a seawall, principally financed by development aid. The wall, at various sections, has crumbled following ‘around 18 months since construction’. There is no fund available for repairs. The funders and managers, having deployed their solution, had left. One official interviewed noted occasions of flooding, when the sea had indeed burst its banks several weeks past. The town’s experience with climate infrastructure indeed reflected an approach to the delivery of aid which relies solely on techno-fixes, that is the idea that ‘technology will somehow come to the rescue’ (Haraway, 2016, p. 3).

In Levuka however, the fix, or rather the constant process of fixing was found in a more complex oddkin than the temporally isolated infrastructural fix of the seawall. The community, managed by a key leader, would repurpose waste, the disused aluminium packing crates from the tuna processing plant, and patch vulnerable sections of the wall.

We do it ourselves. The leftover bins from PAFCO—we fill with soil from the creek. Here there are small rocks used. There’s no protection from the reef. So just gets buffered by the waves.

In Levuka, the community members had a spatio-temporal connection to the seawall; they were in a constant relationship with incursions of the sea, the further erosions of the wall, and the operation of the tuna plant. They were entwined with place, the natural fluctuations of the sea, and the trouble of climate change because Levuka, situated right on the waters' edge, was reliant on the community situating themselves in the heart of these messy intersections for its survival. This constant tending indeed relates again to the notion of love in technology in its routine interactions 'like cooking or prayer' (Visvanathan, 2008, p. 202).

This can be contrasted with the project relationships around the original seawall construction, which were far less entwined, and temporarily severable into short term funding and project cycles. This provided shelter for only 18 months; yet in its fallen sections, oddkin have connected to consistently tend, to survive. The blunt imposition of the seawall speaks to layers of temporal, financial, and technological privilege on the part of the donors. It speaks to the immense gaps between the 'fixes' deployed in visitations to climate affected areas and being mired in the long-term ramifications of said solutions. It highlights those who are left in daily contact with the climate crisis as well as with the troubles of crumbling technofixes. Yet, the community leadership of Levuka reveals the hopeful possibilities and power, possibilities out of reach for the visitors bearing technofixes.

Reflecting on the community's relationship with the seawall, Haraway's (2016, p. 1) articulation of 'staying with the trouble' resonates, in that the community was in a constant struggle for their present futures: 'staying with the trouble requires learning to be truly present, not as a vanishing pivot between awful or edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings'. The experience at both Ovalau and Island X also highlights the importance of perspectives of those communities who, due to their position at the forefront of ecological crisis, are locked in relation with the 'troubles'. Here, again we can hear the postcolonial affirmation that there is much to be gained from recognition of the margins. Indeed, communities of colour have long engaged with modern technology through an ingenuity that both acknowledges and derives from

our constrained positionality and sobering circumstances, ‘pushing it, stretching it, redefining it, and usually getting it to do much more than it was ever meant to do’ (Nelson et al., 2001, p. 89 cited in Lennon, 2020).

6.9 Conclusion

It matters what stories make worlds, what worlds make stories (Haraway, 2016, p. 12).

Conquerors come, conquerors go, the ocean remains, mother only to her children. This mother has a big heart though; she adopts any one who loves her...The world of Oceania is neither tiny nor deficient in resources. It was so only as a condition of the colonial confinement that lasted less than a century in a history of millennia (Hau‘ofa, 1993, pp. 155–56).

The troubling of three climate finance infrastructures, namely a biomass plant, hybrid mini-grid, and sea wall, provides certain cautions as we move into the future, one characterised, unequally, by the effects of escalating climate crisis. For one, the sites of these less than functional or ruptured infrastructures, and the affected communities within which they are embedded, call for new or changed ways of deploying technologies such as climate finance. The perils of financial ‘techno-fixes’ are pronounced, where the technologies’ potential for saviourhood only retain integrity in the narrowest of temporal frames, if at all.

Given its potential for highlighting epistemic alternatives and contextualising experiences of power and marginalisation, feminist and postcolonial technoscience guided our ‘pulling of strings’ (Gibson-Graham, 2014) at the three sites. These analytics primarily encouraged an expansive epistemology of climate finance, and highlighted that the relationships that comprise these infrastructures exist in a ‘contact zone’ and in a history of unequal power relations (Anderson, 2015; Pratt, 2007). The purpose of these processes was to aid in the recognition of different futures for climate finance, futures that are arguably already emerging, being determined by climate finance’s so-

called objects. In doing so, the Pacific empirics here speak to their important role in expanding and deepening of STS's conversations of future building and ecological crisis.

The driving question motivating climate finance's remaking is how can climate finance be a loving and helpful technology?

Firstly, climate finance must internalise an expansive notion of who/what matters and has agency in infrastructural becoming. At Nadroga, we saw a biomass plant assert that it was, *prima facie* relational, a socio-technical matter. Further, we saw that the relationality extended beyond financiers, developers, energy plant, and community. More radically, the African Tulip in relation with the community proved itself to be a powerful agent. This insight invites us to think inclusively, and expansively, of what and who matter. Highlighting the role of the non-human (in the form of the African Tulip, the lobsters, and the tuna packing) is antithetical to the sterile logics of climate finance, the hegemony of which it troubles. Further, as was the case in Island X and the disappointed voice in the design of the mini-grid, it is imperative that in deconstructing this sterility we see the politics and situated histories of the agency that is facilitated or denied. Put differently, if climate finance remains a sterile concept, unable to grasp and interact with the multitude of realities experienced by the communities it arrives in, its benefits may, like in Nabou, Island X, and Levuka, fall devastatingly short of yielding security or transformation.

Secondly, temporality emerges as a key lesson. The past, in all three sites, reveals itself as significant in shaping the present becoming of technologies, where manifestations of colonial differences are reinscribed. The sites also revealed the politics and relations of brief visitations to long-term relationalities surrounding infrastructure. In Island X, rupture of a component in the hybrid mini-grid led to the community operator needing to be in constant relation to the system. In Ovalau, the creeping erosion of the sea meant that the community had to be constantly vigilant to mend fractures in the seawall. For climate finance to stay with the trouble, it must invest time. In both cases in Ovalau and Island X, the initial investment of time to train, build, and finance infrastructure was

confined, distinct, and short term. The resultant cracks and dysfunction were mitigated by long-term relationalities, and arguably, love.

Thirdly, the experiences at Nabou can be contrasted with that in Island X and Ovalau. For one, we can see fluidity emerge as a transformative issue; in Nabou, scale certainly contributed to the lack of fluidity. In Ovalau and Island X, we see openings for oddkin: the technologies, following rupture, offer some potential for ‘fixes’ through participation, fluidity, and love. In reimagining climate finance, we must rupture the image of smooth, large, flows of finance and see openings for small scale, differential, and messy disbursements.

In all, the agency of those who have inherited not only escalating ecological crisis, but deeply troubled techno-solutions, highlights an important lesson for climate finance. Futures are already being built, shored up, fought for, and imagined by climate finance’s objects, its recipients. As we see from Ovalau and Island X, futures are being stretched, repaired, and imagined from the rubble of climate finance’s purported solutions. Recognising this may help to unravel the hegemonic approach of financial logics, and allow climate finance to humbly, and with love, offer help.

Chapter 7: Towards Cognitive Justice: Reconstructions of Climate Finance Governance in Fiji

7.1 Abstract

Climate change is having devastating impacts on Pacific nations such as Fiji. In response to this escalating ecological crisis, climate finance, that is the flow of public and private funds towards climate-aligned investment, has been presented as a promising solution. Climate finance, however, has had mixed results in delivering positive climate-aligned development benefits. This chapter explores the climate finance governance around Fiji's energy sector using postcolonial analytical tools. Postcolonial thinking allows us to explore some of the asymmetries playing out in climate finance, and offer some alternatives. The chapter argues that climate finance dysfunction is, in part, derived from the application of hegemonic knowledges in climate finance governance. The study aims to deconstruct these knowledge practices, and subsequently through the analysis of empirical, ethnographic data to reconstruct governance alternatives which provide for epistemic inclusivity. The study demonstrates how indigenous approaches such as Talanoa and 'Iluvatu can facilitate recognition of governance innovation. In doing so, the article explores the potential of cognitive justice, which calls for epistemic inclusivity, within the context of climate finance governance. The chapter concludes by noting that including cognitive justice in climate finance governance can indeed enliven better climate-aligned development benefits in Fiji and beyond.

7.2 Introduction

Climate change has arrived in the Pacific region. In the words of Timoci Naulusala, a then 12-year-old advocate at Fiji's Presidency of the 23rd Convention of the Parties to the Paris Agreement (COP23): 'The sea is swallowing villages, eating away at shorelines, withering crops. Relocation of people... It's catastrophic' (UN Climate

Change, 2017). Various climate governance strategies have been developed to assist Pacific Small Island Developing States (PSIDS) in adapting to climate change's worst effects, mitigating its escalation and achieving national goals. Climate finance, the object of study here, is one such approach that seeks to channel funds from both private and public sources towards projects with positive climate mitigation and adaption outcomes. It has generated significant excitement globally as a 'game changer' for attaining climate targets (Duarte 2016) and is indeed vital for supporting the region's climate aligned development (CAD) needs (Pareti, 2019). Yet, on the whole, climate finance is failing to deliver its promised benefits in the Pacific. At one end of the spectrum, the quantum of climate funds committed globally has fallen short of expectations (Hall, 2019). At the other end, PSIDS have faced impassable obstacles in accessing resources (Samuwai and Hills, 2018), while deployed resources are in fact yielding mixed CAD outcomes.

Why has climate finance, thus far, been dysfunctional? And is there scope for transformation? We frame these questions through the lens of governance; by which we mean the steering of events within a social system that may be performed by both state and non-state actors. Given the existential threat posed by a changing climate coupled with the regional and global expectation for climate finance to present a solution (Reece, 2019), these interrogations are indeed crucial.

This article uses a postcolonial analytical lens to examine climate finance governance and to critically consider whether and how its operationalisation in our case, Fiji's energy sector, is yielding promised benefits or generating harm. Postcolonial thinking has particular purchase as it helps us understand the nature of some of the asymmetries playing out in climate finance, and offers alternatives that its proponents argue are 'grounded in more realistic understandings of knowledge production processes, are more comprehensive, and can better serve the peoples for whom [it] speaks' (Harding, 2011, p. 12).

A 'clearing' of space occupied by dominant knowledges is an essential aspect of the postcolonial analytical method, and indeed is necessary groundwork to facilitate the

emergence of alternatives (Naisilisili, 2012). Applied here, the postcolonial analytical frame aims to deconstruct the existing dominant hierarchy of knowledge evident in climate finance governance, which places the positivist, technical, and quantifiable at the apex of knowing. It is this dominant knowledge system that has arguably been accepted as the cognitive norm within governance of climate finance. This epistemic hierarchy is not new; rather it is the manifestation of the Enlightenment born belief that social progress was contingent on objective scientific reason and technical expertise (Harding, 2011, p. 2); social progress, that is, being firmly aligned with the goal of colonial advancement (see Haraway, 1988). This epistemic monoculture can be conceptualised as part of a further issue at play, the ‘white gaze’ of development, described as ‘colonising epistemological order’ (Zezeza, 2009, p. 131 cited in Pailey, 2020, p. 5). It is also more than this; it also contrives Southern ‘political, socio-economic and cultural processes’ as inherently deficient (Pailey, 2020, p. 5). These asymmetries and erasures, caused by epistemic monoculture and development’s ‘white gaze’, as the article will argue, potentially suppress robust outcomes from climate finance governance.

The norm of cognitive justice offers a potential avenue forward here. This normative principle was the product of decolonial theory that advocated for flourishing interactions across diverse knowledge systems. It calls for a shift away from reliance on hegemonic knowledge bases which create a condition of epistemic monoculture (Coolsaet, 2016). Cognitive justice advocates for epistemic inclusivity, not only compelled by the rationale of justice, but because, as Visvanathan (2009) argues, epistemic diversity has the potential to yield better development outcomes; outcomes which are much needed in climate finance governance in the Pacific. Indeed Shiva’s (2009, p. 22) argument that ‘...the solution to the climate crisis begins with the cultures and communities who have not contributed to it’ resonates in the Pacific’s minimal contribution to emissions.

We argue that the governance of climate finance must reflect the principle of cognitive justice and enliven epistemic inclusion; doing so, we argue, can yield positive governance results. In making this argument we interrogate whether and in what ways

inclusion of diverse epistemologies in climate finance governance are linked to the delivery of CAD benefits. In grounding research and analysis in Fijian epistemologies, we see new perspectives and narratives surrounding barriers and solutions to climate finance governance emerging in the interview data. Including these will be vital for climate finance, as well as the CAD it brings with it, to have meaning in Fiji and the region in general.

The organisation of this chapter proceeds as follows. Section 7.3 provides a brief background on climate finance in Fiji, and Section 7.4 outlines the conceptual framework of this study. Section 7.5 delineates the research methodology, drawing on the climate finance literature to engage with how it reflects certain knowledges yet renders others less visible. Section 7.6 presents the analysis of the data collected from interviews with Fiji's CAD stakeholders in a deconstructive and reconstructive endeavour, which will offer the contribution of recommendations of pathways forward derived from a sociology of emergences approach (de Sousa Santos 2018). Interviews reveal lived experiences and manifestations of knowledge hierarchies in climate finance governance. Analysis of interviews also highlights the ways alternative knowledges are, at times latently, linked to positive governance results in Fiji. Based on these findings we assert that cognitive justice has great potential to invigorate climate finance governance. Through contributing empirical data, this study fleshes out the notion of cognitive justice by delineating what its existence or lack thereof in climate finance governance might mean for Fijian communities, and their enjoyment of CAD benefits. By drawing this theoretical concept into the 'living' world so to say, the paper makes a case for what is at stake in the practice of maintaining existent knowledge hierarchies in climate finance. Moreover, through the combination of Indigenous epistemologies with the empirical data, the paper highlights the ways cognitive justice is already manifesting in climate finance governance in Fiji. In doing so, the paper highlights the value of empathy, interlacing, the 'straight path', and contextualisation as vital governance principles. Finally, Section 7.7 concludes the chapter.

7.3 Background: Climate Finance in Fiji

Beyond the pressing need for adaptation to the climate crisis, Pacific leaders have committed to extensive mitigation targets in an expression of moral leadership (de Águeda Corneloup and Mol, 2014). Fiji, for example, has committed to transforming its energy sector, aiming to go 100% renewable by 2030. Meeting Fiji's emission reduction goals in the energy sector will require approximately US\$ 2.97 billion to be invested (Ministry of Economy, Republic of Fiji, 2017). The research primarily focuses on climate finance for renewable energy development, in reflection of both these high-level state targets and the core rationale behind climate finance: the promise of financial return. This return is established in the case of the energy sector, and is yet to be proven in the case of adaptation (MacLellan and Meads, 2016). The issue of resourcing Fiji's energy sector reforms has understandably been a central concern for Pacific leaders as well as development partners. Financing these CAD needs will indeed require an unprecedented level of investment that is well beyond the public budget and aid disbursements; financial resources will need to increasingly flow from non-traditional sources, including the private sector. In principle, this climate finance should enliven the mitigation and adaptation goals of PSIDS and deliver real CAD benefits to Pacific communities.

However, lower-than-expected climate finance flows and difficult to access funds are potentially undermining the efficient delivery of these benefits (Samuwai and Hills, 2018). This article chiefly explores challenges at a different locus of the climate financing cycle: the translation of climate finance and investment to tangible outcomes. The particular juncture where governance intersects with CAD outcomes has largely been overlooked in climate finance discourse in the Pacific. This is by no means a unique oversight; Mosse (2004) for one, argues that despite the vast amounts of money and time deployed in development policy, there is surprisingly little attention paid to the effects produced by these models. In Fiji, this interrogation is crucial; reflecting on the outcomes of CAD governance is, as our methodology will demonstrate, critical in identifying sources of disappointment, but also areas of success.

7.4 Conceptual Framework: Deconstruction and Reconstruction in Climate Finance Governance

Two broad analytical processes inform the postcolonial approach used in this article: processes of deconstruction and reconstruction at the epistemic level are vital in allowing for diverse knowledges to flow into the intervention (in this article defined as CAD governance). The processes used in this article are primarily informed by de Sousa Santos' (2018) deconstructive and reconstructive endeavours. The 'abyssal line' analogy used by de Sousa Santos is helpful in illustrating the need for such processes. He compels the interrogation of what is, on one side, afforded visibility and what is, on the other side, rendered invisible. Deconstructing the privileges, hegemonies, and hierarchies of the former is the first necessary analytical step. Reconstruction is the next; it seeks to, in this newly cleared space, include diverse epistemologies in climate finance governance norms and principles. These two conceptual processes will guide our exploration into climate finance in Fiji, and the pursuit for governance alternatives.

7.4.1 Deconstruction

Postcolonial critiques often argue that in order to make room for epistemic diversity, space currently occupied by dominant and hegemonic knowledge must be interrogated and reconfigured. Here, part of this process involves exploring epistemic universalities that underpin climate finance governance.

The deconstructive project, according to de Sousa Santos (2018), involves inquiry into ways colonialism, capitalism, and patriarchy perpetuate exclusion. This inquiry, or deconstruction, requires identifying the operation of certain Eurocentric monocultures including 'valid' knowledge, and the 'universal' and the global. Indeed, postcolonial scholars have illuminated the various hierarchies and hegemonies that create invisibility or relegate epistemic diversity. Diverse knowledges may, for example, be removed from recognition through designation as beliefs and opinions (de Sousa Santos, 2007). Further, Harding (2011, p. 2) notes how the notion of 'modernization' was conditioned on the displacement of diverse knowledges by 'value-neutral scientific rationality'. Gibson-Graham (2020) writes of a similar relegation of diverse economic

practices that fall outside capitalist logic, deeming them informal economic activity or social capital, and positioning them as primitive practices destined to die out. The endurance of such hierarchies of knowledge perpetuates conditions of cognitive injustice.

The ‘white gaze’ of development presents a locus for deconstruction in the present article (Pailey, 2020). This ‘white gaze’ of development ‘measures the political, socio-economic and cultural processes of Southern black, brown and other people of colour against a standard of Northern whiteness and finds them incomplete, wanting, inferior or regressive. In essence, white is always right, and West is always best’ (Pailey, 2020, p. 5). Interestingly, the ‘white gaze’ of development derives some of its power from being unseen; Whiteness is the unseen centre ‘against which others only appear as deviants’ (Frankenberg, 1993, cited in Ahmed, 2007; Dyer, 1997). This in part validates the necessity of undertaking the deconstructive process. The latter sections of the article, through deconstruction, will highlight how this phenomenon plays out in various ways in climate finance in Fiji.

While some scholars have adapted a deconstructive analytical process to explore development, gender, and governance in Pacific Island nations (e.g., Henne and Pape, 2018), work that couples this with the reconstructive process is still needed. For example, Henne and Pape (2018, p. 217) lay bare some of the epistemic hegemonies underpinning development through the case of Sports for Development and Peace, but they stop short of reconstruction, conducting ‘grounded analyses of the Northern assumptions embedded within the universalist claims asserted through governance practices, and reflections on the challenges of overcoming them’. Recognising their own positionality, they did not proceed further to use Southern theory to reconstruct this development space: ‘two Northern, White feminist researchers, are arguably incapable of such an analysis’. In this article, acknowledging our own locations and partial perspectives (see Haraway, 1988), we engage in reconstructive analysis using Southern, specifically Fijian theory.

7.4.2 Reconstruction

How do we operationalise this reconstructive analysis? Operationalising reconstruction requires a shifting of the analytical direction typical of the ‘white gaze’ of development. Pailey (2020, p. 9) reviews various ways the ‘white gaze’ of development has indeed been subverted; quoting Amadiume (1987, p. 10), she suggests one way is that the West itself be anthropologised and subjected to the ethnographic lens of the South. Whilst this is not our method per se, proceeding further does indeed require a shifting of the analytical lens. For one, the recipients of climate finance must be rightly reframed as loci of important knowledge and success rather than, as the ‘white gaze’ narrates, loci of dysfunction. Hau‘ofa’s (1993) seminal essay, *Our Sea of Islands*, epitomises this reconstruction. In shedding the epistemic shackles that bound individual islands in narratives of smallness and dependency, he reconceptualises the region as an expanding collective connected by the ocean: a Sea of Islands. This article aims to, as Hau‘ofa did, de-centre the ‘white gaze’.

This reconstructive work furthers the norm of cognitive justice. Cognitive justice is reflected in the destination of de Sousa Santos’ (2018, p. 29) dual process: ‘the sociology of emergences aims at converting the landscape of suppression that emerges from ... in a vast field of lively, rich, innovative social experience’. Visvanathan (2009) grounds his call for cognitive justice on the contention that epistemic diversity must be pursued not purely for the symbolic but also the material benefits. Put differently, cognitive justice not only presents potential for representation, visibility, and justice, but also for tangible development outcomes, such as climate aligned development benefits.

Cognitive justice recognises the right of different forms of knowledge to co-exist, but adds that this plurality needs to go beyond tolerance or liberalism to an active recognition of the need for diversity... In this sense knowledge is not something to be abstracted from a culture as a life form; it is connected to livelihood, a life cycle, a lifestyle; it determines life chances (Visvanathan, 2009).

It is for both the symbolic and the material that we advocate for cognitive justice as a norm to be included in climate finance governance. With regards to the latter, climate change presents an existential threat particularly to Pacific peoples and lands; the need for the delivery of material solutions has never been more pressing.

7.5 Methodology

The analysis draws from over 70 interviews and field observations conducted over a cumulative period of 6 months between August 2018 – March 2020, in the islands of Viti Levu, Ovalau, and ‘Island X’,⁵ as well as in Canberra and Sydney, Australia (Table 7.1).

Participants were recruited based on their current or past involvement in climate finance and renewable energy projects, governance, or knowledge production which included end users. Recruitment occurred through the snowball technique; as the climate finance and renewable energy stakeholder community in Fiji was close-knit and highly relational, this was an effective recruitment method. Participants were contacted via email, phone calls, and through intermediaries. Interviews were transcribed.

⁵ Given the population size of this community the name has been withheld to protect the anonymity of participants.

Table 7.1: Interview Summary

Stakeholders	Interviews
Technical/ policy consultant	16
Government representative	11
Regional organisation	7
International organisation	6
NGO	5
Financial sector including regulator	5
Community leader	5
International financial institution/Fund	7
Utility	4
Academic	3
Private sector	9
Community technician	1
<i>Total interviews/Talanoa</i>	79

The interviews capture perspectives of a diversity of stakeholders that govern climate finance at different junctures, in various ways, by combining elite interviewing techniques (Harvey, 2010) and principles of Talanoa. Talanoa is a cultural discursive practice recognised in certain PSIDS including Fiji (Farrelly and Nabobo-Baba, 2014). Whilst there are many different understandings of Talanoa, it arguably has a consistent underpinning: a shared emotionality and a strong sense of empathy. Taking the time to build trust and interpersonal relationships are a precursor to ‘emotionally embedded reciprocal exchange between researcher and participants’ (Farrelly and Nabobo-Baba, 2014). Given the diversity of participants, interviews and Talanoas were approached openly, with open-ended questions based on the particular participants’ experience or expertise. Interview duration ranged anywhere between 1–5 hours.

The research commenced and data was collected under broad aims of exploring firstly the barriers to climate finance in Fiji (Anantharajah, 2019); and secondly, the

opportunities presented by climate finance. In the process of open coding the initial interview data, however, themes of power imbalances, knowledge hierarchies, and colonial dynamics emerged. The result of this led to application of postcolonial theory in revisiting the interviews and textual materials.

The first empirical section uses postcolonial analysis to engage in the deconstructive process theorised by de Sousa Santos and exemplified by Henne and Pape (2018): interviews and textual material reveal how certain groups and knowledges in Fiji's climate related interventions are relegated as inferior, invisible, and irrelevant (de Sousa Santos 2018, p. 25).

The second endeavour was to reconstruct CAD governance based on a wider epistemic representation. Here the broad logic of positive deviance was used. Albanna and Heeks (2019) review the use of positive deviance and find the following typical methodological steps (*inter alia*).

1. Defining the problem and determining desirable outcomes;
2. Discovering individuals or other social entities who unexpectedly achieved the desired outcomes;
3. Determining the underlying practices that led to those outcomes; and
4. Designing interventions to enable others to access and practice new behaviours.

In operationalising step 2, we examined a subset of 'successful' climate finance governance interventions. We coded 'success', though partly being a construct of the researcher and the participants' perception, where an individual or project met (or was on track for meeting) its stated CAD aims and such benefits were flowing to intended beneficiaries (the desired outcome in step 1). In step three we go deeper than unearthing 'practices' and also explore the knowledges and values that they represent. In the analysis at step 3, we used the principles developed in the research methodologies of Talanoa (Farrelly and Nabobo-Baba, 2014) and 'Iluvatu' to guide codes. For example, we coded the interviews pertaining to successful interventions against the concept of

relationality. The data supported this analytic extension; application of values theorised through Talanoa and ‘Iluvatu both corresponded with and illuminated the positive deviance in Fijian climate finance governance.

Whilst step 4 was not undertaken in this study, we hope that this research may ground its future facilitation through potential for broader sectoral and geographic impact:

Likewise policies for other sectors including health, the economy, politics and the social sector would do well if they considered the indigenous approach used ...The ‘Iluvatu Framework may also be used in any cultural context and the same basic rule applies—the respect of the cultural values of the people, the recipients of the policy outcome (Naisilisili, 2012, p. 216)

The methodology aims to allow for visibility and analysis of diverse epistemologies present in climate finance governance.

7.6 Results

7.6.1 Deconstruction

7.6.1.1 Abyssal Lines in Climate Finance Knowledge Production

Hierarchies of knowledges, as well as visibilities and invisibilities, play out in the literature surrounding climate finance. Two key areas will be explored in deconstructing some of these asymmetries here. Firstly, the level to which the Global South and the Pacific are centred in climate finance related studies will be explored. Secondly, the types of knowledge visible and in the Pacific energy sector literature will be highlighted.

Exploring some of the ways the abyssal line plays out in the literature surrounding climate finance is a useful precursor to demonstrating how it plays out in a practical, lived sense in Fiji.

Taking this issue of visibility literally, we do generally see less of the Global South in the literature than the Global North. A limited review of sustainable finance found that approximately 39% of studies focused on the Global North, as opposed to only 6% on the Global South (de Carvalho Ferreira et al., 2016). Furthermore, only 2.68% of studies focused on Oceania (which aggregates PSIDS with Australia and New Zealand). More specifically, Cholibois (2020) notes a gap in research investigating the ramifications of different forms of finance for energy access in developing countries.

The visibility of PSIDS with respect to climate finance is often undermined, where the Pacific experience is often lost in the groupings of Developing Countries or the Asia-Pacific (Biswas, 2016; Clarke and Boersma, 2016; UNEP, 2015, 2016). As noted by Va'ai and Casimira (2017, p. 8), 'the Pacific is not an appendage to Asia'. They argue that the Pacific is made invisible in this grafting, and perpetuates colonial mentalities that Pacific nations must be annexed on to larger landmasses, economies, and populations of Asia. Further, as noted by Samuwai and Hills (2018), the Pacific and Asia have had vastly different experiences and prospects of accessing climate finance.

As the interview data collected focused primarily on the flows of climate finance within subnational boundaries, particularly for sustainable energy development and rural electrification, we explore the knowledges that are visible in the body of literature on Pacific and Fijian sustainable energy development and climate finance. As climate finance is a relatively new construct, we explored peer-reviewed studies published in the last seven years in conducting a limited review. The dynamics of visibility and non-presence are indeed at play here; the abyssal line plays out in the knowledges mobilised in studies.

This body of literature on Pacific renewable energy development largely comprises technical analysis. At the outset, it is important to dispel the notion that the deconstructive project aims to dismantle and discard Western knowledges; this could not be further from the truth. As articulated by de Sousa Santos (2018, p. 45) 'regarding science, what is rejected is just its claim to the monopoly on rigor, that is to say, its pretension to being the only valid kind of knowledge'. Indeed, the literature exploring

renewable energy development in the Pacific is vital in communicating the unique nature of energy challenges in the Pacific, and stands as evidence against ‘cookie cutter’ approaches (Dornan and Jotzo, 2015; Wolf et al., 2016; Cole and Banks, 2017; Hills et al., 2018; Weir, 2018). Whilst technical engineering and economic analysis dominate the field, some studies (Dornan, 2014, 2018; Hills et al., 2018) do give due weight to some of the social and political factors that affect energy sector reform. Yet the heterogeneity of voices that have cause to contribute either have no space to speak here, or are not being heard due to enshrinement of technical perspectives (see, e.g., Spivak, 1988). As articulated by Escobar (2011, p. 216), creating space is a critical aspect of inclusion: ‘the case of development, this may require moving away from development sciences in particular and a partial, strategic move away from conventional Western modes of knowing in general in order to make room for other types of knowledge and experience’. An indication of which experiences must be accommodated in the energy literature is foreshadowed in Michalena and Hills’ (2018, p. 350) concluding argument: “failure to put RE [renewable energy] into a local context, to emphasise local resilience building and to move the rhetoric from a secular nature to one which encompasses the ‘sense of place’ and spiritual-nature of traditional Pacific communities, all help to block further community engagement towards RE”. Given the blockage presented by this absence, moving towards greater epistemic diversity, that is, cognitive justice, in the literature and beyond is vital.

7.6.1.2 Deconstruction: Limiting Narratives in Interviews

The limiting aspects of development’s ‘white gaze’ materialised in the interviews. In exploring this, we particularly looked at two different aspects of a ‘deficiency’ narrative raised by respondents. The first frames the Pacific as unready for climate finance and renewable energy development; perceiving the region to deviate from norms conducive to success. The second draws the ‘white gaze’ into the local, locating the source of dysfunction in community infrastructure development in the communities themselves.

Is the Pacific Ready?

In an interview, a consulting renewable energy project manager with significant experience in the region stated: ‘Projects designed in the Pacific tend to fail’. Here, the participant appears to see the region as a source of dysfunction. Several manifestations of this sentiment emerge in the data, with participants citing various divergences between Pacific nations and the ‘norm’ as causes for poor renewable energy project outcomes.

Deconstructing this clear gaze involves an interrogation of the concealed assumptions of the ‘universal’ (de Sousa Santos, 2018). In the interviews, assumptions of the universal were most evident in discourses surrounding ideal regulatory conditions (see Anantharajah, 2021). One climate finance project manager argued: ‘Solar is especially behind in Fiji. Part of this is the inadequacy and obstacles posed by the law. The private sector has literally had to circumvent the law to do solar’. The unspoken rationale underpinning these perspectives is that the conditions resembling and advocated for in the Global North form the unseen and unquestioned centre, the progressive ideal.

The Pacific is framed as being divergent to this unspoken universal, and inherently lacking of core qualities capable of project success. In one interview, a consultant from an international development bank argued that the region was inherently limited, which stymies the attainability of its commitments under the Paris agreement: ‘There is a lack of realism in the Pacific as to its potential regarding mitigation. There’s limited potential. There is some potential, but it is limited. And people aren’t realistic as to what can be done’. This framing is not new; it is akin to the broader, older development narrative criticised by Hau‘ofa (1993). It is premised around the narrative that island nations of the Pacific are ‘much too small, too poorly endowed with resources, and too isolated from the centres of economic growth for their inhabitants ever to be able to rise above their present condition of dependence on the largesse of wealthy nations’ (Hau‘ofa, 1993, p. 150).

This pattern of locating failure in the Pacific is manifest in the ‘readiness’ discourse dominating climate finance governance in the region. The definition of readiness varies across institutions. However, it involves a series of benchmarks that ‘destinations’ for finance must reach; it delineates a particular ‘ideal’ for Pacific Island nations, institutions, and communities to emulate before they are deemed conducive environments for funding. Interviews highlighted the material impacts of ‘readiness’ in the region beyond slowing or preventing PSIDS from accessing climate finance from the Global Climate Fund. One interview with a Non-Government Organisation (NGO) officer working in climate finance revealed that the process of ‘readiness’ burdened overstretched bureaucracies: ‘people are in departments that are already very overstretched, then have to leave for training which can be 2–4 months. Then often, when they get capacity they leave for Australia and New Zealand to get good jobs’. Other participants noted that the process of hiring external international consultants to assist with climate finance readiness requirements was eroding public service capacity.

Climate finance’s preoccupation with the ‘readiness’ of the Pacific, which scholars are reflecting on, and in some cases critically engaging with (Samuwai and Hills, 2018), can be seen as a tool of monoculture creation in the development complex furthered by assumptions of the universal and the global (de Sousa Santos, 2018). Mosse (2004) has an insider perspective on how this manifests. As donors endeavour to ensure consistency under a single framework, he argues, multiple values and rationalities are displaced.

In displacing diversity in favour of a monoculture justified by a ‘white gaze’, this scenario reflects cognitive injustice. It does so in another way too, that is, that accession to metrics born from epistemic monoculture may not be leading to robust development benefits. In one interview a climate finance governor argued that the pursuit of readiness was yielding mixed results: ‘In Paris they really pushed the idea of private finance to fill the financing gaps which works in Asia, but think about private sector growth in Kiribati and Tuvalu. They are pushing Pacific countries to create an enabling environment, to fill gaps but it doesn’t work’. Michalena and Hills (2018) examine the ‘preparedness’ for renewables of PSIDS according to a range of governance, market,

and progress benchmarks. Interestingly, the analysis found that progress in these areas led to only a small increase in renewable energy penetration. This is reflective of the corollary of Vishvanathan's (2009) contention of cognitive diversity leading to better material results; epistemic monoculture may well be the root of disappointing ones.

Can Communities Manage Their Own Energy?

The 'white gaze' of development is also fixed on a more local level in responses from governors that revealed variations on the general theme of: 'Community ownership [of renewable energy infrastructure] as a rule, doesn't work' (Renewable energy policy consultant). One interviewee, for example, argued that 'maintenance isn't part of the ethos' in a specific community. Alternately, the abstract 'community' was seen to be the locus of dysfunction, with an interviewee citing a generalised state of 'inadequate recipient care and knowledge'.

Previous electrification projects in Fiji have indeed resulted in a lack of maintenance, which has led to systems becoming defunct well before their projected end of life. Laying the onus of this failure on the homogenised 'community' and further, inferring that the solution is for energy infrastructure to be externally owned and maintained is, however, a problematic and potentially harmful cognitive process.

Firstly, the interviews also showed that training of local people to use new technology has been generally ad hoc and piece-meal. Further, the technology was frequently not contextualised in any meaningful way, as noted by an officer from a Non-Government Organisation (NGO):

Most people don't consult with communities. They say, do you want this thing? This development? The community will either say yes or no. If they say yes, they won't be told about managing this resource and it will be broken in a couple of years. If they say no the resource is gone. What needs to be done is training communities in what types of development benefit them, and what types do not. It needs to be happening bottom up.

Yet the promulgation of the stereotype that communities are inherently incapable of owning and tending to their own assets endures in some quarters, and is reflective of a pattern of colonial discourse that ‘construe[s] the colonized as a population of degenerate types on the basis of racial origin, in order to justify conquest and to establish systems of administration and instruction’ (Bhabha, 1994, p. 70). Further, obscuring the governance failure of the electrification intervention and reframing it as the operation of deterministic ‘rule’ derived from inherent deficiencies of Pacific peoples, limits the potential for progress in inhibiting critical examination of weaknesses and deficiencies of the intervention. The need for space for new and innovative governance responses was revealed by the frustration of a local climate finance governor: ‘The problem is we are adopting the same old approaches.... These [development agencies] are there to address these development issues—that is their one job. I mean you go there and look around. There are so many White people’.

Here, epistemic monoculture embodied in the NGO worker’s experience of the ‘white gaze’ of development was seen as a barrier to innovation. Cognitive justice offers pathways to perhaps realising some of this hoped for innovation.

7.6.2 Reconstruction

Four salient principles derived from the methods described previously will be proposed as guiding values for climate finance governance. These are empathy, interlacing, respect, and contextualisation.

7.6.2.1 *Empathy in Climate Finance*

Engaging Deeply

Data from the interviews revealed a key facet of empathy underpinning positive deviance: governors of successful projects understood their governance context intimately, with complexity and nuance. The antithesis of this example was the oft-cited incongruent reporting requirements attached to climate finance. One officer from an international organisation described the disconnect of this aspect of climate finance

governance on the realities of bureaucratic capacity in Pacific nations: ‘There is a lack of human resources to manage and absorb climate finance. Countries have very small administrations. Sometimes there are only 5–10 people in energy offices. And they struggle to meet reporting requirements and managing. Many of the financial systems are incompatible, and thus there are inaccuracies’.

The reporting requirement described here demonstrates a lack of empathy on a very foundational level, and results in climate finance governance structures that yield poor results.

A positive deviant exemplifying an empathetic approach through deep engagement with context was the work of the Barefoot College’s local partners in Fiji. This initiative, based in India, identified that a significant barrier to rural electrification and community ownership was a lack of trained technicians to maintain and operate the systems. They also recognised that those typically trained tended to be men, who, once up-skilled, tended to migrate to urban centres leaving the community without the requisite technical support. In response to this, the Barefoot College’s local partners offered a program where older women in the communities were trained in installing, operating, maintaining, and repairing small systems in India. When they returned, they connected their own villages with solar (donated by the Indian government), maintained these systems, and acted as mentors in training younger women. The 17 women trained by the Barefoot College, one respondent noted, represented 17 now electrified villages. The construction of a Fijian Barefoot College has begun in Vanua Levu.

In exploring this case, the work of Naisilisili (2012) helps in illuminating the particular facet of empathy at play. Her discussion of her community’s ability to ‘read the gap’, encapsulates a subset of this empathy. This special ability gives the community themselves the knowledge to decide what works and what does not work for them. Through empathetic governance, the ability to ‘read the gaps’, the Barefoot College and its partners were able to offer a program that met the needs of the recipients. Further, the level of detail and nuance through which they were able to ‘read the gaps’ particularly informed the success of the intervention. This nuance is requisite to the

empathetic approach: “empathy, or being empathic, is to perceive the internal frame of reference of another with accuracy and with the emotional components and meanings which pertain thereto as if one were the person, but without losing the ‘as if’ condition” (Naisilisili, 2012, pp. 140–141, cited in Farrelly and Nabobo-Baba, 2014). It requires not just the perception of feelings but also the contextual and cultural meanings that embed the individual’s experiences.

Beyond Financial Incentives

Analysis of the interviews reveals the need for moving beyond a purely profit driven approach to climate finance. The private sector working in renewables in Fiji, mostly comprised of Small and Medium-sized Enterprises (SME), epitomises the way empathy can exist within the constraints of the market. One company was fulfilling a contract that did not include a budgetary commitment for training local people in operating the new solar technology. This company had sufficient experience to know that this lacuna in governance planning generally led, as noted above, to system failure. The company went beyond the remit of their contract (and thus also their financial compensation) to provide the training.

Access to finance is a significant barrier for SMEs in Fiji (Anantharajah, 2019). The interviews showed that SMEs that have survived in this space do so due to both personal sacrifice and commitment; the motivation for participating in renewable energy development was not entirely financial. One engineer noted fatigue at the operation of the numerous barriers of rural electrification projects, yet concluded, ‘when you see the lights go on it’s worth it’.

Another climate governor who has steered a multinational corporation to making a profound difference to climate adaptation education through their CSR contributions, also expressed frustration when a lack of climate governance action thwarts projects: ‘Sometimes I want to give up but then I see the kids light up [when learning about environmental custodianship] and I think this is the meaning of my life. This is why we are living. It’s about empathy’. One financier saw the choice between investing in

climate related projects and rejecting a loan application to be not based on the bankability or risk of the project but the level to which the account manager cared about ‘nation building’. The data reveals various emergences of empathy as a powerful source of governance transformation. Successful projects identified in the research were almost exclusively governed by people who cared; about the environment, as well as societies and the nation it supports.

It is important to note that in each of these examples, empathy is expressed in governance action, not merely feeling. An understanding of the notion of empathy from the perspective of the Fijian culture is key to unpacking this. Essentially, empathy is demonstrated actively: ‘empathic responses are not passive emotional responses in the Pacific. Rather, these are expressed through pragmatism: through service offered or material exchange’ (Farrelly and Nabobo-Baba, 2014, p. 325). In Fijian culture, empathy is, for example, expressed through the principle of sharing that is underpinned by the notion of *veirairaici* (looking after others) and *veinanumi* (thinking of others). Sharing is expressed in many ways including sharing of food through ‘*ta’ita’i*’, which is a common practice where a family shares their meal by taking a plate of food to another family. The practice serves to make sure that no one is hungry, a visitor is welcome, and to ensure that the welfare of old people is taken care of. Apart from sharing food, sharing of one’s home is a norm and reaffirms *veiwe’ani* or relatedness. This is done especially during big gatherings such as deaths, weddings or church functions when families billet visitors. In each of the examples of empathy discussed above, people will respond positively when appropriate behaviours and values are expressed.

The data also shows the coexistence of empathy within (and despite) climate finance market structures. These examples of positive deviance show how climate finance governors are organically using empathy as a governance strategy; furthermore how empathy, rather than purely profit driven rationale, may compel governors to shoulder risk, invest, and push through adversity. De Sousa Santos (2018, p. 14) offers a way to conceptualise this coexistence in his articulation of ‘warm reason’: ‘warm reason is the reason that lives comfortably with emotions, affections and feelings without

surrendering its reasonableness’. As highlighted above, the interview data indeed reflected positive outcomes when the climate finance rationale was ‘warmed’ up by empathy.

The fact that empathy can coexist and indeed inform commercial practice may be met with contestation. One participant shared a story that for him encapsulates the tension between empathy and dominant systems and knowledges:

There was an island woman, who lived in the mountains—thus she had never seen the sea. She wanted to cook a meal with seawater so she made the journey down to the coast. She saw the sea for the first time and filled her gourd. Later she saw the sea retract. It was the pulling back of the tide. She thought the sea was retracting because she took water, so she returned the contents of the gourd to the sea. For capitalists or colonisers, they would see the woman’s actions as stupidity and ignorance. But for me—I saw it as the most profound empathy and kindness.

This story highlights the risk that dominant knowledges may fail, through their internal frames and gazes, to see value in empathy. Thus, cognitive justice’s premise of the inclusion of diverse epistemologies that value empathy, such as those reflected in Fijian culture, facilitates the inclusion of this positively deviant governance strategy.

7.6.2.2 *Interlacing for Cohesiveness in Climate Finance: Relationality*

Interlacing For Navigating Complex Barriers

The data showed that interlacing to build coalitions was a particularly effective way to navigate the landscape of complexity that exists at various levels of governance. The research showed that the Fiji Rural Electrification Fund (FREF) exemplified this approach. Fiji’s Presidency of COP23 attracted US\$ 1 million from the philanthropy organisation, the Leonardo De Caprio Foundation. The Ministry of Economy, together with the utility Energy Fiji Limited (EFL); FLMMA, a NGO representing locally managed areas; and Sunergise, a private company, came together to develop and steer a project aimed at electrifying Fiji’s unelectrified villages. After seventy villages have

been electrified through this fund, the fund would have generated enough profit to roll over and go on to electrify more villages. This positively deviant model exemplifies interlacing in several ways. Firstly, the partners chosen were uniquely adapted to navigate barriers at different governance levels. Fiji attracted this impact investment due to the leadership shown on climate at the international level. Furthermore, the participation of the government allows the project to benefit from certain public concessions, including making use of government shipping routes, which bring capital costs down. Additionally, the private sector partner, Sunergise, has significant Pacific experience, and brings a level of efficiency, accountability, and technical expertise to the project. The private sector is, depending on the contract, tied to project outcomes, which means that it is in their interest to ensure that communities are electrified, but also that they remain so. FLMMA has significant community respect and social capital, which they have built over almost three decades; its role is to engage the community, to ‘provide a voice for the aspirations of people’. Having a designated agency with a positive reputation and nuanced community consultation practices developed over decades has been key to FREF’s initial success.

In exploring the success of interlaced governance, we arguably have to return to the challenging and complex governance landscape of climate finance (Anantharajah, 2019). This involves conceptualising the governance challenges themselves as interconnected. Seeing this interconnectivity is reflective of indigenous approaches, including Fijian approaches: ‘The indigenous approaches examine problems in their entirety, together with their linkages and complexities’ (Naisilisili, 2012). The data supports the proposition that coalitions help navigate the complex barriers to translating climate finance to meaningful outcomes; further, it is also an interesting model of how, through interlacing, very different governance strengths can be mobilised towards a common project.

Interlacing For More Meaningful Accountability

The interviews also highlight the potential for interlacing to be a powerful driver of accountability. The FREF model, for one, demonstrates how interlacing may create meaning, accountability, and connection across villages. In an oversimplified financial

abstraction of the model, the potential for other villages to get electrified, will depend on the first set of communities paying their tariffs. Interviewees noted that collecting payment has been difficult in rural areas, in part because certain public programs have created an expectation that rural electrification should be free. This cross-community accountability has the potential to be transformative in terms of providing newly electrified villages with unique and meaningful motivation and accountability.

This leads to another way that interlacing can provide better climate finance governance outcomes. One rationale behind the arduous accreditation processes for accessing climate finance is to ensure accountability practices. Local stakeholders note the difficulty in reporting to various financing sources, each requiring different information and conventions. The data showed that interlaced partnerships, for example between NGOs, government, and private sectors, could potentially provide more meaningful, practiced accountability and transparency. One collaboration framed transparency practices almost as a by-product of the maintenance of a functional relationship: ‘We use the open book system—everyone knows what the other party is doing. We also have an open budget. Not just for those who go to the village meeting, it’s for the whole community to see. It’s put on the notice board’. Another way accountability may emerge organically and constructively from relationships is in access to information. For example, for private sector actors to engage in an energy project, they will need to know how tariffs are being calculated in order to assess questions of viability. Their public partners are thus incentivised to make that information available.

Seeing accountability as emerging from relationships and interconnectedness is cognitively at odds with the voluminous reporting requirements associated with climate finance, which are, as noted earlier, yielding poor results. Embracing the potential offered by lived, relational, and practiced accountability will involve decentring the ‘white gaze’ of development that denies the power of endogenous institutions and practices by reference to their informality (Pailey, 2020, p. 6). Embracing cognitive justice could see a re-centring of practiced and relational modes of accountability.

Interlacing Over Time: Growing Institutional Knowledge

Analysis of interviews revealed that connection to outcomes is crucial to success; dysfunction was in part driven by a disconnect between the governor and place or community that they sought to work in. Where a company or governor was embedded in a community, results tended to be better. This also manifests temporally: short-term project cycles were reported to have led to poor climate finance interventions. Some critiques of the short termism centred around diminished accountability on the part of interveners to ensure that projects continue to yield results; further, a lack of community connection. The interviews showed that interventions with external expertise could, at times be extractive, not particularly sustainable, and could lead to an erosion of institutional knowledge. One international organisation officer noted this pattern: ‘One part of it is that it is project-based intervention where they bring their own project-based management staff, then this institutional knowledge is lost’. This is exacerbated by conditions of over-stretched and under capacitated bureaucracies and institutions.

Successful collaborations involved the sharing of technical support for the future growth of the institutional capacity. The Green Bonds Initiative was one particular climate finance success. It saw the mobilisation of funds from diverse sources to climate related projects, which after the first reporting cycle was generating positive results. A financial sector stakeholder noted that this project really benefited from the highly technical expertise of an international partner; and that this knowledge was effectively passed on: ‘the knowledge was passed on, a lot of it at least. We were meeting a lot and going through the process together’.

Here, interlacing in space, over time, was key for the longevity of results and the mitigation of extractive encounters. Underpinning these findings is the Fijian cultural norm, which regards relationships as important and empathy is expressed to uphold value. The principle of *solesolevaki* or cooperative work, for example, is an important ideal in the Fijian world and involves oneness, working together, unity of will, and unity of spirit. All these qualities are encouraged as different work groups organise themselves and negotiate amongst themselves in order to achieve personal and family goals.

7.6.2.3 The Straight Path (Na sala dodonu) in Climate Finance

Respect of Protocol and Investment of Time

The research revealed issues of conflict and poor sustainability outcomes where CAD interventions did not follow ‘the correct’ processes, such as land use protocols. This was perceptible at various levels of governance, from external development officials and private sector actors subverting national governmental processes, to defiance of land protocols on a community level. A provincial government officer noted prevalence of breaking protocol: ‘People often try and go around these [consent for land use] processes. Usually by making payments. But then what happens is that it might be quicker in the short term but the project will fail because the right processes haven’t been observed’.

This lack of respect for protocols, though many have indeed been ‘formalised’, again arguably stems from the ‘white gaze’ of development’s tendency to see non-colonial systems as unimportant. This cognitive relegation has the potential to undermine the lifecycle of the infrastructure.

Successful CAD governance, on the other hand, was respectful of protocol. This notion of the straight path, or the correct order of things, leads to another factor underpinning positive deviance: successful CAD governance supports local ownership. The interviews revealed that it was of vital importance for climate finance governance to be internally driven, rather than externally imposed. Again, this was evident from national to local levels. In discussing the tendency for national policy road maps to accumulate, growing ‘dusty’ on shelves, one policy consultant highlighted the need for an ‘internal champion’. At the local level, in attempting to negotiate their space in the economic world and deal with bureaucratic structures and power, the Navakavu community, a landowning community close to Suva, have put together their own Strategic Plan for development. While the plan aligns with the government goals, the community are involved in the decisions about their land resources.

As a further element of respect for protocol, participants noted that it was important that communities were not simply consulted as an element of project rollout; rather, that they are embedded drivers of the design process, as noted by the following perspective of a NGO officer: ‘To have renewable energy investment there needs to be a holistic perspective. You need to involve people in the community from the get go. Usually they are only involved in consulting stages. They are never involved in the design planning—but they are involved in the implementation stages’. A potential consequence of this partial consultation highlighted here is new infrastructure is misaligned to the needs and aspirations of the community.

The above links to a third element of the straight path: the need to take time. The lack of following protocol often stems from inflexible time constraints, as does a lack of meaningful community consultation. One NGO worker, for example, recounts a successful project where one year was invested in community consultation: ‘The young man who was the most in opposition, in the end was the most vocal advocate. One thing is that you have to incorporate the community knowledge, connect adaptation to old community knowledge, then they feel proud and excited’. This quote reflects the potential for positive governance outcomes made possible through a respect for protocol and time. Here, it was transformative in the facilitation of cognitive justice within this development intervention.

7.6.2.4 Contextualisation: Spirituality and Reflection in Climate Finance

Closely linked to the previous section was the finding of the positive deviance of contextualisation: participants across various interventions noted that community consultation needed to include a multifaceted contextualisation of the new infrastructure. One positively deviant governor described their process, which provides a useful example of meaningful contextualisation:

The first part is a historical look back. We look at what we have seen over the last 20 and 50 years. The elders will start to tell the sector, over what has occurred over the fifty years, then middle aged, then the teens. So collectively community sees through different eyes and views. We look at what has been negative changes; what have been

root causes of this? And what could be potential solutions? Second part is visionary: where do they see the community 10 years from now? And then we put together a village management plan. Bringing people together—to put together their plans for sustainable development. So it is important to contextualise the energy. Solar is only one component of community development. Solar is only one component of what will be needed to make them resilient in future.

Planning for the future was a key positively deviant practice underpinned by the value of reflectivity. Indeed, the notion of reflection is not simply a look to the past. Hau‘ofa (2008, p. 66) discusses Pacific notions of time as cyclical and non-linear, evidenced in the Fijian and Tongan languages: ‘The conception of the past as ahead or in front of us is not a mere linguistic construction. It has an actual historical basis in the documentation of our narrative on our landscapes’.

A related finding is that of the need to contextualise co-benefits with renewable uptake in Fiji. This goes to connectedness on a global level; as noted at the outset, Fiji contributes minimally to climate change yet have committed to highly ambitious mitigation targets. For this to have meaning on the subnational level, mitigation efforts must be tied somehow to broader development objectives and particularly adaptation. This links back to the importance of the straight path, and the need for consultation in the design process. As reinforced by one CAD governor: ‘If you involve communities in the design process you can identify potential co-benefits’.

Lastly, it is vital for governance interventions to internalise the contextual reality that development and changes to local ecologies are, as noted by one participant, ‘felt in the spirit’. The enduring contextual lacuna in renewable energy development and governance is supported by the findings of Michalena and Hills (2018, p. 350). Reflecting the various spiritual contexts that are evoked by new infrastructure will be critical to governance success.

The findings of our study lay out a case for cognitive justice: for acknowledging the limits of epistemic monoculture in development, in ‘determining life’s chances’ (Visvanathan, 2009). Equally, it echoes the call for a cultivation of epistemic diversity that resonates in one participant’s reiteration:

There needs to be an inclusion of Pacific culture in development.

There needs to be an inclusion of Pacific culture in development.

7.7 Conclusion

We do not need to develop governance alternatives. Alternatives exist and transformations are already indeed radiating out from them; rather, as argued by de Sousa Santos (2018, p. 8) ‘we need... an alternative thinking of alternatives’. To this end, this article has presented cognitive justice as a pathway forward for climate finance governance to harness the CAD benefits so vital in the Pacific region. Through postcolonial analysis, we have engaged in a dual process of facilitating cognitive justice. Deconstructing climate finance governance approaches, we have argued, creates space for reconstructions that more deftly, and empathetically, steer away from existentially threatened futures brought by climate catastrophe.

The product of reconstruction, that is the reversing of Fiji from being viewed as a dysfunctional environment to a repository of knowledge and values generative of success, has offered the following principles to CAD governance:

Empathy. Going beyond financial inducement, and engaging deeply in context must be critical elements of new governance approaches. Regarding the former, using purely financial motivators as an investment compass will leave many outside the flows of climate finance benefit. On a subnational project level, empathy (or care), not solely financial imperatives, motivated positively deviant governors. Furthermore, empathy as a deep understanding of context, underpinned positive deviance. Applying this principle would require governors to look beyond insufficient ‘readiness’ based understandings of recipients, to nuanced understanding of the governance landscape.

Interlacing. These complex landscapes, existing across scales, are much more difficult to navigate alone. The research explored cases which used networked approaches to steer towards meaningful CAD outcomes. This type of interlacing also has potential in supporting practiced accountability. The practice of interlacing, and operating collaboratively, also has the potential to ameliorate overstretched capacity and loss of institutional knowledge.

The **straight path** was a key aspect of positive deviance. This encapsulates observation of protocol and promotion of internal ownership for sustainability. Where temptation to subvert protocol may lead to short term savings, they also risk the sustainability of the project.

Contextualisation. The research found that new infrastructure must fit to the needs of a community or place, not the other way around. As such, important interrogations at the design stage must occur, such as: whether or not co-benefits of renewable energy projects will be delivered; and whether or not those co-benefits are meaningful for that community. Adapting the way infrastructure is conceptualised to include spiritual contextualisation will be key in certain consultations. Meaningfully consulting, reflecting, and planning will be key in ensuring technologies suit community needs.

We reiterate that these principles eschew hegemonic posturing; they welcome and call for the company of others. In the words of Fanon (1967, p. 11), we are ‘not the bearer[s] of absolute truths’. We argue that applying these guiding principles to climate finance and CAD governance would constitute a meaningful expression of cognitive justice. Further, through empirical work we have demonstrated that there is great potential for this centring of epistemic diversity in climate finance governance to better deliver the much-needed CAD lifeblood in the Pacific and beyond.

Chapter 8: Conclusion

8.1 Introduction

This thesis has responded to an important question: what *is* climate finance as a lived and experienced phenomenon in Fiji? As Fiji, alongside its Pacific neighbours, grapples with the escalating impacts of climate change, climate finance has emerged as a key part of the global response to this crisis. A crisis, which is indeed borne, and increasingly acknowledged to be borne, unequally. If climate finance is to be a central part of the global ‘solution’ to impacted communities like those in the Pacific, we must begin to understand how it is operating, and its effects in these very communities.

Through this interdisciplinary, ethnographic work, I have grappled with the nebulous boundaries of climate finance, seeking to understand it through the experiences and narratives of its recipients. The work contained in this thesis captures the struggle for climate finance, its limitations, the power of its regulatory discourses, the illusions of its promises, and its schema determining the conferral of its resources in Fiji. The materialities, relationalities, and futures of climate finance explored in this thesis are indeed complex, messy, and inherently partial.

The thesis opened with some reflections on the deep contradictions of climate finance—particularly, the disconnect between its discursive quality as an expression of North South justice, which could potentially change the ‘game’. Now at the end, with these contradictions enduring and even magnifying and multiplying in parts of this analysis, the conclusion begins by acknowledging a residual feeling of discomfort. One particular site of tension is that the thesis has highlighted numerous instances of climate finance operating to strengthen the status quo, be it through empowering already powerful institutions such as banks and utilities whilst failing to recognise communities and NGOs as valid recipients of climate finance, continuing the practice of locating expertise and channelling resources outside of the Pacific, or as was the case in Island X, curbing the ability for technological change to yield real social transformation. After

traversing these structural disappointments, and other complex experiences with climate finance in Fiji, a central discomfort resonates: how can climate finance make good on its promise to steer societies, economies, environments, and infrastructures away from the brink of devastation? Perhaps the answer is that, as it is currently composed, it cannot.

The composition of climate finance is not just the actual, hard-won financial disbursements, which themselves are structured around increasing proportions of latent debt, but also regulation, governance, technologies, and even more foundationally, epistemologies. Pull on these threads, weave them in patterns of love, of place, of justice, and we arguably have a fundamentally different phenomenon—one laden with hope of meeting the present ecological crisis. As noted by Boyer (2021, p. 35), ‘[these] contradictions are tragic, but they also remind us that we live in epic times. There has never been the need to remake global civilization before and we have to treat this as the unique opportunity it is to break the inheritances of white masculine supremacy that built the global capitalist order’. A remade climate finance is not in itself a solution, particularly as claims of a hegemonic, financial saviourhood beleaguer present manifestations of climate finance. However, it does have the potential to be a real and present help.

These concerns in the context of climate finance require painstaking examination, from various standpoints, at the relevant interests, histories, and futures. The thesis has engaged climate finance from loci of power and marginalisation, from climate finance organisations themselves, to the financial sectors, various levels of Fijian government, as well as NGOs, community recipients of technology, and SMEs. In Fiji, the papers show how both climate finance and energy stand at the pivot of situated histories and futures. Take for example, the standardised PPAs proposed as regulatory best practice to attract climate finance discussed in Chapter 3. Standardised PPAs stripped energy of its context, and could not recognise the histories of confidence, with non-stochastic generation informing EFL’s technological preference. The futures ushered in by standardised PPAs see further concentration of expertise outside Fiji. As such,

seemingly banal regulatory reform becomes important sites of contestation and transformation.

Additionally, it requires us to expand our criteria for inclusion as we consider the regulation, governance, technologies, and epistemologies that constitute climate finance. As highlighted in Part Three, broadening the horizon of what is recognised as governance, and what constitutes infrastructure, reveals foundations for both hope and reform.

In its organisation, the thesis operationalised de Sousa Santos' (2007) conceptualisation of the 'abyssal line', by interrogating the modes of understanding and governing climate finance that are dominant and relegated to invisibility, and the discourses that maintain this distinction in and through climate finance. In reflection of the analytic journey of this thesis, I revisit its three parts: the first two of which deconstruct climate finance's problem solution binary, and the third that begins the reconstructive process that aims to recognise alternative ways of governing and understanding technology that may be woven into more hopeful manifestations of climate finance.

This chapter proceeds as follows. Sections 8.2–8.4 summarise the contributions of Parts One to Three of this thesis, respectively. Section 8.5 presents the significance of the findings and Section 8.6 concludes with a discussion of future research directions.

8.2 The Problem: The Pacific or Climate Finance?

The first paper in this thesis asked: are there barriers to climate finance manifesting in Fiji? From the outset, it was already clear that despite the very present need for climate finance, as well as its high-profile depiction as a solution to Pacific climate vulnerability, it was not flowing generously into the region (Samuwai and Hills, 2018). This paper, through the lens of barriers to climate finance, provided some context into the home of this study, Fiji. Here, the paper argued that rather than being distinct and tractable, barriers to climate finance were interlinked; they were, to various degrees,

entrenched. Take, for example, Fiji's island geography. The remoteness of the islands poses logistical challenges and thus drives up capital costs and stretches administrative capacities. Further, the small populations representing customer bases disincentivise private investment. These characteristics are not unique to Fiji and are comparable to most Pacific nations, as well as those across other areas of the Global South (Cholibois 2020; Setyowati, 2021). This observation raises important concerns: Where are we left if characteristics of places considered the Global South render them incompatible with the solutions proffered to them?

The answer perhaps lies in, post-facto, addressing some of the analytic assumptions of this first paper and its central question. Firstly, it was problematic that I positioned Fiji as the object of my inquiry from the location of climate finance and its interests. This followed a problematic pattern in the energy literature that positions Southern nations as objects rather than agents in their own transitions (Marquardt and Delina, 2019), as well as a historic pattern of problematising Pacific communities through development interventions (Hau'ofa, 1993). Much, in fact, is to be gained from an analytic pivot: if we make climate finance the object of our scrutiny rather than Fiji, we can glean critical insights. Most importantly, rather than focusing on barriers within recipient contexts, it is possible to cultivate an awareness of the inflexibility of climate finance's rationales and mechanisms. This awareness has productive potential in challenging the efficacy of climate finance. The rigidity of climate finance can be contrasted with de Laet and Mol's (2000) work on the Zimbabwean bush pump as a fluid technology. In being flexible, this technology was able to adapt to and help the communities it found itself in: "in travelling to 'unpredictable' places, an object that isn't too rigidly bounded, that doesn't impose itself but tries to serve, that is adaptable, flexible and responsive—in short, a fluid, object—may well prove to be stronger than one which is firm" (de Laet and Mol 2000, p. 226). Thus, the first intervention in this thesis demonstrates that Fiji is not necessarily a challenging environment for climate finance, but rather, that climate finance lacks the flexibility, adaptability, and service rationale to flow into the places for which it was purportedly intended.

8.3 The Saviouric Features of Climate Finance

Part Two of this thesis wrestled with the following questions: how is climate finance, including financed renewable energy infrastructure, materialising and experienced in Fiji? How effective is climate finance governance and regulation in Fiji in the eyes of those who receive it? In answering these questions, Part Two of the thesis attempted to trouble the notion of climate finance as a ‘solution’, with the articles engaging in deconstructive processes at different levels of analysis. The notion of financial saviourhood manifested in the promise that climate finance would not only enable Fiji to mitigate and adapt to climate change but would also eliminate poverty, create jobs, and electrify communities. Where climate finance failed to materialise, regulatory alignment and technological developments formed a part of the solution to hasten its flows. Part Two engaged these saviouric features of climate finance in three papers.

At the highest level of abstraction, the first paper examined the discursive claims of climate finance through the empirics of two Southern cases, Fiji and Indonesia. The notion of climate justice finance was used to unpack Fijian experiences with climate finance. This paper asked: how is climate finance, and financed renewable energy infrastructure, materialising and experienced in Fiji?

The empirics from both countries in the paper reflect how climate finance realities are vastly different to its discursive promises. In various ways, recipients’ understandings of climate finance are coloured by experiences of climate finance injustice. Key sites of injustice emerged with the prioritisation of large-scale energy projects, a relegation of rural electrification, a lack of recognition of communities in climate finance access as well as the increased concentration of power, and finance, in already powerful institutions. Put differently, climate finance was not changing the game; it was upholding it. Take for example, the expectation that climate finance would enliven community development. This hope is largely disappointed by the fact that communities have no direct pathways to key climate funds like the GCF. This lack of disruption, coupled with the uneven power relations and access to resources conferred by climate finance, has meant that climate finance has mapped onto, reinforced and, in

some cases, exacerbated existing formations of marginalisation, power inequality, and injustice.

The second paper, ‘But our lights were still on’, engaged Fijian experiences with climate finance and energy transitions to answer the question: how effective is climate finance governance and regulation in Fiji in the lives of those who receive it? The paper went beyond concerns of efficacy to highlight various contestations surrounding regulatory and technical change. In Fiji, regulation was presented as a barrier, a locus of needed change or alignment, or an indicator of ‘readiness’. The discourse of regulatory best practice was consistently offered as a solution to ecological crisis, underdevelopment, and inequality. Yet, these uninterrogated regulatory ‘solutions’ masked important contestations, power imbalances, histories, and relationships surrounding technological change in Fiji. Indeed, conceptual and material practices surrounding regulation appear at the crossroads of vastly different futures for communities, institutions, and Fiji itself. The three regulatory interventions unpacked in this paper steer towards different futures, which, in reflection, have a common thread: they navigate the various materialities of agency and sovereignty, and extraction and dependence.

Take, for example, the financial sector regulation for mandatory minimum disbursements in the banking sector. If compliance cannot be compelled due to enduring colonial power imbalances between Fiji’s financial sector regulator and international banks, Fiji’s SME sector will continue to struggle to access finance and will be thus constrained. Without a local private sector capable of transforming climate finance into clean energy, climate finance will increasingly be channelled through intermediaries, and its benefits (such as climate finance expertise and the finance itself) will accrue outside the Pacific. Regulatory governance, as a field of scholarship and practice, has great power in steering towards maladaptive futures like this, or, indeed more hopeful ones. Recognising this potential, this paper’s key contributions target regulatory governance. For one, it demonstrates the need for regulation to support contextualisation rather than obfuscation of the interests and futures enlivened through regulation. At the very least, it calls for scholars of regulatory governance to centre

questions that are currently relegated to the margins. For example, how might we better engage the question of whose epistemologies and interests are represented in climate finance governance and regulation? We might learn from fields such as STS. In this thesis, I have tried to contend that hegemonic epistemological cores of regulation and governance have material effects in lives, technologies, ecosystems, and futures. We have an obligation to make these visible.

The final paper troubles one further solution proposed to hasten the flows of climate finance into the region. It deconstructs the emergent development of investment and resource maps of the Pacific to show the nexus between so-called technofixes, data, and the institutions in which they are embedded. By exploring racial formation in climate finance institutions, it offers a cautionary narrative about how racial formation may shape data and technologies in the Pacific and Global South. In short, the paper highlights the ways that climate finance organisations may be allocating resources of both expertise and the finance itself based on latent racial schema (Ray, 2019).

Though others have provided nuanced explorations of racial injustice in the context of renewable energy transitions (Lennon 2017, p. 2020), they are absent in discussions of climate finance. As the paper demonstrates, understanding the ways in which these schemas operate in the context of climate finance is an important contribution to emergent conversations on climate finance justice.

These three papers trouble the saviouric character of climate finance at various levels. Together these papers uncover how climate finance's discourses, regulations, and technologies are rooted in particular interests, histories, epistemologies, and schema. The papers demonstrate how these roots or inheritances inform mixed experiences with climate finance as well as its technologies, regulation, and governance (Boyer, 2021). Here we perhaps begin to see the foundational way that climate finance must be unmade. Instead of making more promises to hegemonically solve the climate crisis, demanding regulatory change and developing new technologies to support investment, perhaps climate finance must be unmade at a more foundational, epistemic level. This may involve, for example, breaking the inheritance of commercial rationales where

they displace those of justice, or delinking the allocating of climate resources from racial schema. If this process can occur, how might climate finance be remade?

8.4 Centring Alternatives: Visions of a New Climate Finance?

These visions of remaking are grounded in a recognition of alternatives that are already emerging in Fiji. Part Three continues in interrogating the constitutive threads of climate finance. It considers the following question: whose epistemologies and values are represented in climate finance governance and regulation? It also sought to recognise the beginnings of a remaking, asking: are there alternatives emerging?

The process of uncovering latent epistemologies and values underpinning regulatory and governance continued in Part Three. The goal here was to make way for recognition as opposed to development of governance alternatives. Alternatives exist and transformations are already indeed radiating out from them, largely unseen. As argued by de Sousa et al. (2018, p. 8), ‘we need... an alternative thinking of alternatives’. Part Three of the thesis engages reconstruction, exploring ways of recognising climate finance interventions that are worthy of generating hope.

The first paper in Part Three explores infrastructures financed by climate finance, their boundaries, relationalities, and agents. Using postcolonial and feminist technoscience, the paper visited three defunct infrastructures, highlighting sites and agents which fell beyond the ‘abyssal line’, yet had demonstrable power in determining the life of infrastructures. Secondly, the paper explored a temporality that is often overlooked, the point beyond rupture. In doing so it highlighted how hope may be rewilded through the ruins of techno-fixes. It gives big solutions, like climate finance local agents, which are capable of transforming disappointing offerings into workable solutions. Part of this inclusion sees the power of the non-human in the oddkin surrounding infrastructure. It also requires recognising communities as agents of their own energy transitions. As noted by Lennon (2020, p. 89): “communities of color have long engaged with modern technology through an ingenuity that both acknowledges and derives from our constrained positionality and sobering circumstances, ‘pushing it, stretching it,

redefining it, and usually getting it to do much more than it was ever meant to do’’. Climate finance can continue as it is, an inflexible construct that fractures when it arrives in the Global South, forcing its recipients to cobble together some function in its brokenness. But imagine what could be possible if climate finance was a loving, fluid technology, if it worked with and for those it was meant to serve?

‘Towards cognitive justice’, co-written with Naisilisili, modelled climate finance governance enlivened by alternative epistemologies. The principle of cognitive justice, the notion that epistemic inclusivity is the best hope we have of building effective solutions, allows us to re-traverse the empirics to analyse various loci of success. Fijian knowledges specifically and Pacific knowledges generally help to make sense of these deviant cases of success, highlighting the role of empathy and relationality as well as how ‘the straight path’ and contextualisation in climate finance governance lead to positive climate-aligned development outcomes. Indirectly, the paper also highlights the importance of humility. While finance and resources are desperately needed in Fiji and other parts of the Global South, governance beyond the epistemic vision of finance is needed. This paper advocates for an ecology of knowledge approach to see and enable the diversity in governance approaches needed to steer climate finance towards being a present help (de Sousa Santos, 2007).

8.5 Significance

A primary contribution of this thesis is demonstrating the validity, importance, contemporary relevance, and practicability of the tradition that articulated and made visible the ‘abyssal line’: postcolonial analysis. While in past decades, postcolonial perspectives have accreted into STS, their contributions are often ‘hidden or even denied’ (Anderson 2015, p. 652). This thesis aims to make demonstrably clear the importance of this analysis in understanding the present ecological crisis and its responses. Without visibility of central schema that organises power relations of climate finance, we are left grappling with its disembodied and disappointing products, offering us no way to move beyond critique. The thesis has thus brought postcolonial STS into the fields of Climate Finance, Energy Studies, Data Studies, as well as Regulation and Governance to offer a deep critique that yields pathways forward (Haraway, 2019).

Firstly, postcolonial analysis makes visible broad imbalances in the emergent climate finance literature and highlights what is lost in this status quo. While climate finance literature is a relatively new corpus, its prioritisation of climate finance's originators in the Global North obfuscates its key materialities. This can only be remedied from the perspectives of its recipients, by definition located in the Global South. The empirics generated in these six papers join nascent others (Sauls, 2019; Cholibois, 2020; Setyowati, 2021) in grounding a stronger objectivity based on Southern experiences. After all, given the promises of climate finance and the gravity of the crises it claims to remedy, understanding what it does and how it does it is important.

Similarly, the thesis has troubled energy sector literature that largely continues to place countries in the Global South as objects, rather than agents, of their own energy transitions (Marquardt and Delina, 2019). It has done so in a few different ways. Firstly, its papers have deconstructed the dominant understandings of energy as purely technical, as well as communities as mere consumers. It has contextualised energy as it *becomes*, or like the Nabou biomass, fails to. It has woven energy into local economies of continued exploitation, into histories of marginalisation, like in the case of Island X's electrification. It replaces the assumption of energy as a quantifiable, thermodynamic phenomenon that is consistently applied to Pacific Energy Studies, and shows energy as emotionally charged, messily co-constructed, and at the pivot of various futures.

Relatedly, the thesis makes key contributions at this intersection of STS and Energy Studies. It draws underrepresented STS cultural approaches such as postcolonial STS and feminist technoscience, into Energy Studies, and moreover, it does this through Pacific empirics. The thesis makes key interventions in pressing research agendas, most helpfully articulated by Sovacool et al. (2020) as emerging from the intersection of STS and energy studies. Firstly, the thesis interrogates the 'agency, structure, and meaning' (Sovacool et al., 2020, p. 20). that connect both energy and societal changes in Fiji, particularly through analytic tools drawn from both feminist technoscience and postcolonial STS traditions. Secondly, the thesis has grappled with, on many fronts, inequities that interact with climate finance and renewable energy, including race and

the oppression of marginalised people and communities (Sovacool et al., 2020). Thirdly, as noted by Sovacool et al. (2020), ‘the dynamics of problems and their coupling with solutions has not yet received much attention in sociotechnical transitions research’. This thesis has troubled this coupling, and highlighted the analytic importance of unpacking both problems and solutions. As demonstrated through these papers, this binary of problem-solutions cloaks power and marginalisation in the designation of problems and solutions, as well as underlying messy materialities. Take for example, framing regulatory alignment as a solution to slow climate finance flows. When we unpack the new relations between institutions and technologies that are ushered in by these regulatory changes, such as standardised PPAs explored in Part Two, we may see futures of North-South extraction (see Bracking, 2016).

The intervention into Data Studies continues this engagement with the unequal materialities of climate finance, particularly as they are organised through racial schema. Specifically, my exploration into climate finance organisations and emergent data projects contributes to Critical Data Studies’ growing conversation on how data technologies ‘become central mechanisms through which racism operates’ (Shelby and Henne 2022, p. 1). A key contribution is the unique ways racism manifests in the Pacific, a region with its own history of racial schema and colonial relationalities. Postcolonial analysis is particularly powerful here, because it provides us with the tools to unpack schema applied to the Pacific, which are commonly sanitised as objective investment criteria, such as scale, revealing underlying racial histories and latent interests. For Fiji, like much of the Global South, schema and relationships surrounding resources reflect ongoing reconfigurations of coloniality. These dynamics are also arguably an explicit colonial inheritance that must be broken to facilitate a just remaking of climate finance and its technologies (Boyer, 2021).

Similarly, in terms of regulatory governance, the thesis models the insights and benefits of postcolonial analytics in striving for better relations in North-South collaborations (Harding, 2008; de Souza et al., 2018). As various intersecting global crises, regulation, and governance increasingly become evident sites of power, the latent histories and potential conduits of justice and exploitation must be made apparent. The practice of

regulation and governance being a tool by which the Global North may reshape the Global South is well documented, often occurring at the intersection of finance. As noted by Bracking (2016, p. 21): ‘aid which is not spent supporting the activities of Northern firms is spent transforming societies and economies in the South so that they can become more profitable for Northern firms’. By traversing various levels of analysis, the thesis has laid out the materialities linked to the reproduction of power in and through regulation and governance. As demonstrated by this thesis, postcolonial STS has particular utility in uncovering these latencies of regulation and governance and in facilitating a means of constituting inclusive, epistemically diverse alternatives.

8.6 Climate Finance Remade?

A continued direction of inquiry beyond this thesis must be: how can climate finance be a present support rather than operate as a promised future saviour? This project requires a deep, epistemic unmaking and remaking, which has been the central endeavour of the thesis. Notwithstanding this, the thesis has also highlighted various sites for practical, material change; a few of which are reiterated in this section. These suggestions surround recognising and supporting non-hegemonic centres of agency, in particular those that allow climate finance to break from the status quo, moving resources, including the recognition of regulation and governance expertise, outside the well-worn tracks of power.

One way that climate finance entrenched these imbalances is through its fundamental attraction to the ‘big’. Climate finance’s preoccupation with scale, as has been unpacked throughout this thesis, has various perverse implications that disadvantage Pacific communities and nations due to their limited ‘size’ as a market. Throughout the thesis it was clear that climate finance was constantly searching for large opportunities, which could be translated to large profit. As such, various ‘small’ players were overlooked. This was evidenced in the case of SMEs that were considered small through a financialised lens, yet were disproportionately shaping Pacific energy landscapes. The lack of small-scale financing opportunities from major climate finance organisations had the material implication of exclusion: the scale of allocations was

often too large for small businesses, NGOs, and communities. In practice, this leads to investing critical resources in already powerful institutions. The use of scale as a schema denying the Pacific their own resources has a long and troubled history, one which climate finance must break with. The inclusion of small-scale financing is key to enlivening critical justice aims in the Pacific. This may occur through disaggregating disbursements from climate finance organisations, but also by increasing the proportion of SME accounts in the commercial banking sector. To support this latter endeavour more work on financial sector regulation, particularly imbedded in power and recognition of colonial dynamics in the Pacific, is critical.

This links closely to a more explicit mode of exclusion: climate finance organisations are not yet recognising key Pacific stakeholders. For example, in Fiji, creating pathways for communities, NGOs, and key institutions, such as churches, to access climate finance is important, because these are key governors that are capable of reaching rural communities, sites where various loci of climate finance and energy marginalisation intersect. In recognising the agency of diverse governors, climate finance must manifest humility as it enters Pacific communities. For one, it must enter more openly rather than beginning consultation with financial and thus technical parameters already decided. This has led to consultation processes failing to be a real opportunity for communities to have agency in their own technological, social, and economic transformations. In not being *prima facie* constrained by financial rationales, climate finance assumes greater flexibility and is arguably more capable of being a loving technology. This relationship between climate finance, communities, and infrastructure must be long-term. As highlighted in this thesis, communities that must live with faulty solutions have to be supported with longer term resources.

Further, for climate finance to be a more flexible technology, it must arrive with less regulatory and governance baggage. One very clear way to operationalise this is to adapt the process of ‘readiness’ to the Pacific. This will involve some foundational transformation. For one, if the idea of climate finance justice was centred, ‘readiness’ would be facilitative of access rather than proving an almost impassable barrier requiring a serious drain of public sector resources. Further, central schemas organising

the readiness metrics must also be unpacked: for example, the notion of capacity and accountability. As the thesis has shown, there are various sites of important local contestation surrounding imported global norms. These contestations are important, and should be seen as pathways to alternatives. To return again to the example of the failure to standardise PPAs, the tension surrounding this offers the opportunity for understanding energy as situated in institutional culture and emotions and furthermore imagining regulation that may enable sovereign futures.

Accordingly, future research must grapple with big concepts such as climate finance justice, especially because it presents challenges that are distinct from climate justice and environmental justice. Whereas the latter concepts recognise temporalities of material inequities, climate finance justice requires a particular focus on contestations surrounding finance as both a solution and a potential harm. Take, for example, the issue of debt, which is a spectre throughout Fiji's experience with climate finance. The commercial finance sector, through debt, seeks profit margins that are extraneous to metrics of justice. More concerningly perhaps, climate finance organisations are also increasingly including proportions of debt in their disbursements. Rather than a modality of reparation, climate finance as it is currently constituted is framing the crisis as experienced by the Global South as a profitable opportunity, as scholars have indeed critiqued (Perry, 2021). Postcolonial analysis becomes invaluable here in interrogating what materialities and histories are evoked in accepting debt as a means of help and justice? Further, the axes of subnational marginalisation, which do not fit neatly into the Global North-South binary, must also be represented in future interrogations of climate finance. For instance, the unique contexts of settler-colonial states, climate impact, and the flow of resources is a critically important research agenda (Holleman, 2018). Another key area for exploration is the place of the non-human in conceptualisations of climate finance justice. For example, nature has its own agency, recognised in this thesis as it relates to energy infrastructure, but it is not considered for its own sake in dominant understandings of climate finance. As argued by Saul (2019, p. 321), expansion of 'the legitimate subjects of justice to include non-human systems and socio-ecological relations' remains largely outside of climate finance's limits. Indeed, the financialised response to climate could productively be linked to other like

projects, including the critical response to the commodification of biodiversity (Dempsey and Suarez, 2016).

In short, research must inhabit and address these zones of extraction and their margins in order to anthropologise global (financial) solutions that are currently failing. It is through this deep critique that we can get to the other side of a hopeful recognition of epic times (Boyer, 2021). Indeed, as my interlocutors consistently showed me, sites of disruption to the hegemonic and self-interested response to the world's ecological crises, are present, vast, and varied. Our job now is to recognise them and to use their knowledge to advance more just and loving futures.

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