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**Storytelling REDD+ -
Ontological Intersections and Inequalities
between Global Environmental
Governance and Local Lives
in Papua New Guinea**



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Abstract

This thesis is about the ontological intersections and inequalities that emerge as initiatives to manage global environmental problems, such as the Reducing Emissions from Deforestation and Forest Degradation (REDD+) program, are translated locally in Papua New Guinea (PNG). It explores the frictions – awkward, unstable and unequal encounters – that are produced, and in turn move forward, different forms of environmental governance as they intersect with local lives in Suau, Milne Bay Province. I examine REDD+, and similarly the Cool Earth conservation program, as governance assemblages: constantly emerging and shifting networks of heterogeneous relations and elements coming together that necessarily impose power to foreground certain assumptions about reality. Through ethnographic fieldwork with communities implicated in the Central Suau REDD+ Pilot Project and a Cool Earth project, I focus on the stories people in Suau tell of climate change, land and trees, and how these stories come into friction with assumptions that underpin approaches to climate change mitigation and conservation.

By engaging with Suau forms of knowledge transmission, including *pilipili dai* (storytelling), this work makes new contributions to how political ontology is practiced, thereby proposing ways of doing political ecology differently and engaging with decolonial research agendas. Rather than constructing ontologies as bounded, discrete entities, this thesis recognises the multiplicity of ontological assumptions intersecting and competing for primacy, as well as the politics involved in privileging certain assumptions over others. What is at stake here is not just the management of resources and livelihoods, but the very ways different people perceive and perform their realities. The core of this thesis is about inequality. It asks how the foregrounding and marginalising of assumptions enables and constrains different forms of environmental governance that may generate and reinscribe inequalities – not just inequalities between actors, but inequalities between different ways of being and knowing. By opening up space for other ways of perceiving and performing reality, this thesis works to enable different, potentially more equal, approaches to addressing environmental problems.

Declaration Page

I declare that:

- (i) This thesis comprises original work towards a Doctor of Philosophy, except where indicated in the preface;
- (ii) Due acknowledgement has been made in the text to all other material used;
- (iii) The thesis is fewer than the maximum word limit in length, exclusive of tables, maps, bibliographies and appendices.

Sophie Pascoe

25th August 2019

Preface

This thesis was carried out under the supervision of A/Prof Wolfram Dressler and A/Prof Monica Minnegal at the University of Melbourne. The fieldwork was undertaken solely by Sophie Pascoe, who managed the research process, collected and analysed the data. Sophie Pascoe drafted the chapters in this thesis with feedback and guidance from her supervisors. Some of the chapters were also drafted as single-authored and co-authored academic journal articles, outlined below.

Chapter One

This chapter contains unpublished material not submitted for publication. This chapter is entirely the work of Sophie Pascoe.

Chapter Two

An amended version of this chapter was published by Geoforum on 4th August 2018 in an article titled ‘Interrogating scale in the REDD+ assemblage in Papua New Guinea.’ This chapter and article are entirely the work of Sophie Pascoe.

Chapter Three

An amended version of this chapter is in revision following peer review after being submitted to Conservation and Society on 26th September 2019 in an article titled ‘Stealing Air and Land – The Politics of Translating Climate Change Mitigation and Conservation in Suau, Papua New Guinea.’ This article is entirely the work of Sophie Pascoe.

Chapter Four

An amended version of this chapter was published by Geoforum on 25th September in an article titled ‘Storytelling Climate Change – Causality and Temporality in the REDD+ Regime in Papua New Guinea.’ This article was co-authored by Sophie Pascoe, Wolfram Dressler and Monica Minnegal. Sophie Pascoe collected and analysed the data in this chapter and co-authored the article with feedback and conceptual guidance from Wolfram Dressler and Monica Minnegal.

Chapter Five

An amended version of this chapter was submitted to Environmental Humanities on 27th January 2020 in an article titled ‘Frictions Around Rendering Technical – Living With, and Dying Over, Land and Tress in Suau, Papua New Guinea.’ This article is entirely the work of Sophie Pascoe.

Chapter Six

An amended version of this chapter was submitted to Current Anthropology on 12th December 2019 in an article titled ‘Paying Attention to Pigs – Equality and Equity in Global Environmental Governance in Suau, Papua New Guinea.’ This article was co-authored by Sophie Pascoe and Monica Minnegal. Sophie Pascoe collected and analysed the data in this chapter and co-authored the article with feedback, theoretical and conceptual guidance from Monica Minnegal.

Chapter Seven

This chapter contains unpublished material not submitted for publication. This chapter is entirely the work of Sophie Pascoe.

Chapter Eight

This chapter contains unpublished material not submitted for publication. This chapter is entirely the work of Sophie Pascoe.

This research was undertaken with the support of the Wenner-Gren Foundation for Anthropological Research through a Dissertation Fieldwork Grant (Gr. 9471) and the Australian Government Research Training Program. The University of Melbourne Faculty of Arts provided additional funding through their PhD Fieldwork Scheme, as did the Faculty of Science through a Science Abroad Travelling Scholarship. An Albert Shimmins Postgraduate Writing-Up Award from the Faculty of Science, University of Melbourne also enabled chapters from this thesis to be re-written and submitted as journal articles.

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Acronyms

ANT	Actor-Network Theory
CCDA	Climate Change and Development Authority
CEPA	Conservation and Environmental Protection Authority
COP	Conference of the Parties
FCPF	Forest Carbon Partnership Facility (World Bank)
FMA	Forest Management Area
ILG	Incorporated Land Groups
IPCC	Intergovernmental Panel on Climate Change
JICA	Japan International Cooperation Agency
LLG	Local Level Government
LO	Landowner
LULUCF	Land Use, Land-Use Change and Forestry
MRV	Measurement, Reporting and Verification
NGO	Non-Governmental Organisation
NRI	National Research Institute
PLO	Principal Landowner
PNG	Papua New Guinea
PNGFA	Papua New Guinea Forest Authority
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RIL	Reduced Impact Logging
R-PP	Readiness Plan Proposal
SPC/GIZ	The Pacific Community/Deutsche Gesellschaft für Internationale Zusammenarbeit
STS	Science and Technology Studies
TWG	Technical Working Group
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
VCM	Voluntary Carbon Market

Note on Language and Names

In this thesis, terms in languages other than English are italicised. Except where otherwise indicated in brackets, I use the Lausaha dialect of Suau. Across Central Suau there are other dialects that may have some cross over, including Suau (Suau Island), Teka (Bona Bona), Sinaki (Nube/Gadaisu) and Yaleba (Leileiafa). This is not a linguistic study of Suau languages and, as I am not fluent in the language, I have relied on local people's translations and transcriptions throughout the thesis. As Lausaha remains a largely oral language, the ways that local people spell words are often different to official orthographies of the area. Cooper (1975) has published an orthography of coastal Suau languages and Abel (2013) has published a dictionary based on the language from Suau Island, which was adopted by the Kwato Church as the official language of the area. While I refer to these orthographies and alternate spellings throughout the text, I have chosen not to adopt them to avoid reproducing the colonial and missionary attempts, particularly those of the Kwato Church, to homogenise the different Suau dialects and instead recognise the ways local people use and write the language.¹ All mistakes are my own. I note differences in ways people pronounce and spell certain words; for example, words pronounced with an 'l' or 'w' may be spelt with an 'r' or 'v,' respectively, for example 'Wabumali' is spelt 'Wabumari' and 'Konemaiawa' is written as 'Konemaiava.' People speaking different dialects of Suau may both pronounce and spell words differently. For instance, the village name Silosilo was originally pronounced Tilotilo (after the oysters in the bay) in the Lausaha dialect, but when the missionaries adopted the dialect from Suau Island this was changed.

Throughout this thesis, all names of individuals have been changed. Even in cases where people have given consent for their real names to be used, I have changed all names to protect the anonymity of other people who may be easily identified by association. Where information may be particularly sensitive, I have changed other identifying features as well. To protect the anonymity of participants who were involved in the ethnography in

¹ As Kaniku (1977) writes, "The Kwatoes [people who were part of the Kwato Church established by Charles Abel] ... have also lost their languages. The language itself (Suau) is not lost but the second and third generation do not know Tawala and other languages of their parents. Pure Suau is not spoken at Kwato. The Suau that is spoken on Kwato is peculiar to Kwato. It is really a dialect which develop [sic] on Kwato due to geographical seclusion. A Kwato Suau speaker may not recognise some of the words that a true Suau speaker uses."

institutions, I do not use the names of individuals or their roles and refer only to the organisation or agency. Clan names in Suau have also been changed. In terms of place names, I refer to villages but may use the ward name in instances where stating the village may identify participants more easily. For example, I use the ward name ‘Silosilo’ throughout this thesis, instead of individual village names. The only exception to this is Wabumari, which comes under Silosilo ward but is publicly identified as a Cool Earth project site.

Table of Contents

Abstract.....	II
Declaration Page.....	III
Preface	IV
Acknowledgements	VI
Acronyms	X
Note on Language and Names.....	XI
Table of Contents	XIII
Table of Figures.....	XVII
1. Storytelling REDD+ – An Introduction to the Political Ontology of Environmental Governance in Papua New Guinea.....	1
1.1 Introduction.....	4
1.2 Research Questions and Aims	5
1.3 Literature Review	9
1.3.1 Political Ontology.....	9
1.3.2 Political Ecology	14
1.4 Case Study – REDD+ in Papua New Guinea	16
1.5 Conceptual Frame – Relational and Categorical Ontological Assumptions....	21
1.6 Methodologies and Approach.....	23
1.6.1 Ethnographic Techniques	23
1.6.2 Storytelling	26
1.6.3 Family Trees.....	28
1.6.4 Garden Walks	30
1.6.5 Discourse Analysis	31
1.6.6 Positionality and Limitations.....	32
1.7 Chapter Outline.....	33
1.8 Conclusion	36

2. Unsteady Foundations – The Politics of Scale Involved in Stabilising the REDD+ Assemblage in Papua New Guinea.....	38
2.1 Introduction.....	39
2.2 Assemblage-Thinking.....	42
2.3 Scalar-Thinking	43
2.4 The REDD+ Governance Assemblage in PNG	45
2.5 Scalar-Thinking in the REDD+ Assemblage in PNG.....	48
2.5.1 Scalar-Thinking in Policy Making	50
2.5.2 Scalar-Thinking in the Central Suau REDD+ Pilot Project	53
2.6 Interrogating Scalar-Thinking Through Assemblage-Thinking	56
2.7 Limits to Assemblage-Thinking	58
2.8 Conclusion	59
3. The ‘Monster’ Behind Global Environmental Governance – Translations and Perceptions of REDD+ and Cool Earth in Suau.....	61
3.1 Introduction.....	64
3.2 History of Suau	67
3.3 Environmental Governance Assemblages in Suau	72
3.4 Translations and Perceptions	74
3.4.1 “I’m not really understanding what REDD+ means”	74
3.4.2 “We only understand that they [Cool Earth] might be getting the air from us”	77
3.5 Understanding the ‘Monster’ Behind Global Environmental Governance.....	80
3.6 Conclusion	84
4. Suau Stories of Climate Change – Assumptions of Causality and Temporality in the REDD+ Assemblage	85
4.1 Introduction.....	86
4.2 <i>Ta’ahn Pilipili Dai</i> (Let’s Story) – Climate Change	89

4.2.1	“It’s not like <i>dim dim</i> theory on climate change”	92
4.2.2	“You <i>dim dims</i> have time, we do not”	98
4.3	Causality and Temporality in the REDD+ Assemblage	102
4.4	The Politics of Privileging Assumptions	106
4.5	Conclusion	109
5.	Land and Trees, Sorcery and Death – Frictions and Inequalities Around Rendering the Environment ‘Technical’ in Suau	111
5.1	Introduction.....	113
5.2	Rendering Technical ‘Customary Land’	116
5.3	Living With, and Dying Over, Land and Trees in Suau	118
5.3.1	“It’s the women’s land, but men speak for the land”	119
5.3.2	“To fight over land, sorcerers can come and kill”	123
5.3.3	“We don’t cut trees any how”	126
5.4	How Land and Trees are Rendered Technical in the REDD+ and Cool Earth Projects	129
5.4.1	Making Landownership Static – Incorporated Land Groups	129
5.4.2	Inscribing Boundaries – Maps, Satellite Imagery and GPS	134
5.5	Frictions and Inequalities.....	138
5.6	Conclusion	145
6.	Paying Attention to Pigs – Equality and Equity in the Benefit Distribution Systems of REDD+ and Cool Earth	147
6.1	Introduction.....	148
6.2	Equality and Equity, Reciprocity and Trade.....	151
6.3	Paying Attention to Pigs	154
6.3.1	“From marriage to death, and after death, pigs are always given”	154
6.3.2	“I put pig out, you put pig out, and we all sit around and talk about it”	157
6.3.3	“We are human beings because we have pigs”	159

6.3.4	“We play pigs like money now”	163
6.4	Benefit Distribution Systems in the REDD+ and Cool Earth Projects	166
6.5	Assumptions of Equality and Equity	172
6.6	Conclusion	174
7.	<i>Wawahin Edi Pilipili</i> (Women’s Problems) – The Gendered, Slow Violence of Global Environmental Governance	175
7.1	Introduction.....	177
7.2	Gender and Slow Violence	180
7.3	<i>Wawahin Edi Pilipili</i> – Women’s Problems	183
7.3.1	<i>Wawahin Edi Paisoa</i> – Women’s Work.....	184
7.3.2	“One-Way” Borrowing of <i>Alawan</i> (Witchcraft)	188
7.3.3	Gender-Based Violence	190
7.4	Gender in REDD+ and Cool Earth Projects	193
7.5	The Gendered Violence of Governance.....	197
7.6	Conclusion	200
8.	“Development is Always Sickness and Death” – Complicating Stories About Global Environmental Governance	202
8.1	Introduction.....	203
8.2	Contributions to Knowledge	205
8.2.1	Empirical and Conceptual	206
8.2.2	Methodological.....	213
8.2.3	Theoretical	215
8.3	Limitations	219
8.4	Areas for Further Research	222
8.5	Implications	225
9.	References	228
10.	Appendices	263

10.1	Appendix 1 – List of Interviews and Meetings with Institutions.....	263
10.2	Appendix 2 – List of Documents Coded in the Discourse Analysis.....	266

Table of Figures

Figure 1. Suau Area in Milne Bay Province.....	20
Figure 2. Map of Central Suau showing outline of the Central Suau REDD+ Pilot Project	70
Figure 3. Map showing approximate area of Silosilo Ward in Central Suau.....	71
Figure 4. Image from the 22nd Asia-Pacific Seminar on Climate Change on PNG's REDD+ Program	104
Figure 5. Image from National REDD+ Awareness Raising Workshop.....	104
Figure 6. Kinship diagram of the Palu Paluta Clan	119
Figure 7. Lausaha kinship terms for family relations.....	121
Figure 8. Tracing PLO claims in the Palu Paluta clan.....	122
Figure 9. Map of the "Distribution of benchmark land cover classes in Central Suau in 2014"	135

1. Storytelling REDD+ – An Introduction to the Political Ontology of Environmental Governance in Papua New Guinea

Dr Caleb was the first person in Silosilo, a ward in Central Suau, to earn a doctorate. He was a big man, studying overseas and working at universities in Port Moresby. In 2014, he returned home to Silosilo for a holiday. His visit coincided with the development of the Central Suau REDD+ Pilot Project, a demonstration site for Papua New Guinea's (PNG's) Reducing Emissions from Deforestation and Forest Degradation (REDD+) program. During this time, teams of consultants – hired to compile the project design documents – swarmed across the Central Suau area undertaking fieldwork. Silosilo hosted a couple of these teams. A group came to do social mapping and initiate the Incorporated Land Group (ILG) process for the clans in the village. A *dim dim*² (white person) scientist from New Zealand also came to mark a plot of land, using GPS, that would be gazetted for conservation. Following this, an inventory team, comprised of foresters, arrived to establish the plot and take measurements of the trees and the valuable carbon they stored. Local people from Silosilo were paid K20 (AUD\$8) to carry their equipment and supplies up the mountain and into the forest where they set up a campsite. The work that was going on in the forest and the influx of cash into the village generated a certain degree of hype. But people were confused. Some of them thought that, “they might get all the land, all the air, the oxygen of our whole logs or whole area.”

So, people turned to Dr Caleb to explain the project; what was it really about and what was *behind* it? Dr Caleb made an analogy that has been repeated countless times since and has become engrained in local perceptions of REDD+ in Suau:

² The term *dim dim* is used by people from Milne Bay and likely originated from Kilivila or another language from the North Massim area. The term refers to the name of a reef system to the east of the Milne Bay islands where ghosts live – white people came to be associated with these ghosts.

If one person scrapes a coconut, he'll squeeze the nice cream out and keep it and then throw the scraps away. You people are just like chickens, rushing for those scraps. These other ones are taking the nice cream and you are left with the waste. The company and middlemen are going to get the big money. I know the lie.

When Dr Caleb made this illustration, a landowner from Dahuni, Kelasi, was listening. Word spread and people in the village knew that there was a dispute coming, but they let the inventory team go into the forest so that the carriers would still get paid. Sure enough, the next day Kelasi turned up at the campsite and disputed the plot, arguing that it was on his land. In fact, the plot was located on the 'boundary' between three clans from Silosilo, Dahuni and Suyalo. Through their clan histories, people in Suau speak of graves, trees, creeks and stones as boundary marks, but these boundaries are always fluid, negotiated and open to disputes. They are rarely clearly defined. Following this dispute, the inventory team packed up and left. The plot in Silosilo was never completed.

Two years later Dr Caleb was preparing to retire and return home. Before he made it home, however, he passed away. Like most deaths in Suau, this was attributed to sorcery; because of Dr Caleb's status and wealth, he was a target. Most people agreed that jealousy played a role in the death. "Here, people don't want somebody to become somebody." Prior to his death, Dr Caleb had made a trip to Isuisu to sort out land issues on his mother's side and, as a village woman explained, "Every time there is land mediation, somebody has to die."

Following Dr Caleb's passing, a grand headstone for him was erected in Silosilo, right next to the Church. This generated palpable tension in the village as Dr Caleb and his family were staying on their father's land. This was not their place. As Suau is matrilineal, land is passed through the female line, those staying in their father's place must submit to their father's sisters. Dr Caleb's grandmother, aunties and cousin-sisters were also buried in the village, but they

did not have elaborate headstones like his. While the relatives had a ‘table’ (small feast) for his burial, they did not hold a large feast with pig gifting, as is custom. Ultimately, it was Dr Caleb’s nephew Kena – who had helped dig his uncle’s grave – who would pay the price for these failures to maintain relations in the right way.

After a brief illness, Kena passed away in 2017. This death was undoubtedly the work of a sorcerer. His body was brought home and laid out in the village for people to show their faces and mourn. Days of hysterical wailing ensued as variously positioned family and clan members engaged in pig gifting. But as Kena’s body laid lifeless and people approached to pay their respects, something curious – well at least to an outsider like myself – happened. Just as a particular mourner sat down at his feet to grieve, Kena’s eyes opened and stared straight up. This was a sign that this person was somehow involved in spoiling him. Once his body was finally laid to rest, the top of the grave was smoothed over. The next day, markings had appeared on top of the gravesite, a sign that Kena’s death had been over land.

A few weeks after attending Kena’s *wah wah* (mortuary feast – the tones sung when carrying pigs), I ended up entangled in this web of relations and sorcery. At the start of my time in Silosilo, I was staying with Kena’s *tambus* (Tok Pisin: in-laws), in the house where he lived before falling ill. In fact, I was staying in the very room he and his wife had shared. One night I woke up to go to the toilet and walked outside to the small house. As I shut the door behind me, my torch illuminated a snake wrapped around the door frame just inches from my head. In the darkness, I had walked under it. This snake was unlike anything I had seen before. It was glowing white, almost translucent, and stared directly at me. I knew instinctively that this was not a good sign and could not sleep following the encounter. Then at around 4am the distinct sound of wailing grew louder and louder. Kena’s widow was returning to her family, to the house, following her period of mourning. After the sun had risen, I told the family about the snake. They asked me detailed questions about its appearance and if

it said anything to me. The concern in their eyes stung. Snakes in Suau are a sign of witchcraft. When a snake appears unexpectedly, it has been sent to give a message. By mid-morning this message had materialised in the form of sharp pains in my abdomen. The pains got so severe I could not stand. They sent the nurse to the house; she asked me about my dreams. The pastor's wife came to the house to lead a prayer. In hushed voices, the family discussed possible causes for why I had been targeted.

Thankfully, the next day a dinghy was going to Fife Bay and I was taken to hospital. After all the tests, the doctors could not find anything conclusive. So, I did what people in Suau do; I made a call to Uncle Tae, a magic man who uses spells and herbs to protect and heal people from sorcery and witchcraft. I explained the background and he agreed to help me, saying that "the magic is bad over that side, not like other areas." The next day Uncle Tae came and washed me with coral lime powder over which he had said spells. This would make me invisible to sorcerers, but they could still smell me. He also warned me not to accept *sada* (betel nut) from anyone as it can be used to do magic. But this was just the start of the story and the opening of a whole world of wonder that was to follow.

1.1 Introduction

This story points to some of the themes that run through this thesis: to the complex relations that connect people, land and non-humans in Suau and the frictions that emerge when global governance assemblages intersect with local lives. Here REDD+ is an entry point to understand broader processes of governance, how they intersect, and how they reproduce certain assumptions, knowledges and practices that may conflict with local ways of being and knowing. In this story, we see how perceptions of REDD+, particularly fears of land and air being stolen, suggest disjunctures in the ways that the project is translated locally in Suau. Dr Caleb's analogy of REDD+ captures these fears and can be placed within the context of colonialism and ongoing resource extraction in Suau, where people have learnt to associate outside interventions with the extraction of wealth from land and trees. Kelasi's reaction to the inventory team establishing a plot to measure

carbon also highlights the disputes that may emerge when REDD+ project proponents attempt to render land and trees technical, by inscribing boundaries and making landownership static, instead of negotiating complex land tenure systems. This has significant consequences for the lives of people in Suau, particularly as gender relations and matrilineal land tenure systems are undermined.

In addition to these thematic insights, this introductory story encompasses the theoretical and methodological approach adopted in this thesis. Through storytelling, this thesis offers a way to practice political ontology – to take other ways of being and knowing seriously, to highlight the politics at play as different ontological assumptions are foregrounded or marginalised, and to pay attention to positionality. As this story reveals, my experiences with witchcraft offered an opportunity to glimpse Suau assumptions of reality, challenge my own assumptions and open up to different forms of causality. Investigating what happens when different ways of perceiving and enacting reality collide, forces us to question the things that we can know to exist and the ways that we can know them. Environmental governance assemblages are important sites to undertake such questioning as they draw together different assumptions of reality – of land, trees and people – but also foreground certain assumptions over others.

With these ideas in mind, I start this introductory chapter by outlining the research questions and aims that have guided this study. I then discuss the theoretical and empirical literature that has grounded this research – from political ontology and political ecology – before sketching the case study of REDD+ and environmental governance in PNG and Suau. Additionally, I explain how I deploy the conceptual frame of ‘relational’ and ‘categorical’ ontological assumptions. Further, I detail my methodologies and approach, including ethnography, storytelling, family trees, garden walks and discourse analysis. Finally, I present a chapter outline for this thesis and a brief conclusion.

1.2 Research Questions and Aims

This study has been guided by a central research question and three interrelated sub-questions:

- What ontological intersections and inequalities emerge as global environmental governance assemblages, like REDD+, are translated locally in Papua New Guinea?
 - What relations and frictions emerge in the REDD+ assemblage in PNG as it draws together diverse assumptions, actors and interests from different contexts?
 - What epistemological tools are used to reinscribe assumptions that hold together environmental governance assemblages in PNG?
 - How do people implicated in the Central Suau REDD+ Pilot Project perceive and perform climate change and varied forms of environmental governance?

Primarily, I am using the REDD+ program as an entry point to examine the **ontological intersections** and inequalities that may be generated as global environmental governance assemblages are translated locally in Suau, PNG. Rather than focusing on ‘ontologies’ as separate, bounded worlds, this line of questioning rests on the position that there is a multiplicity of assumptions about the nature of reality that are always intersecting and competing for primacy. It is the foregrounding of certain assumptions over others that matters here. By recognising this multiplicity of assumptions and engaging with Suau ways of being and knowing, I examine how environmental governance is translated across different contexts. **Translation** is understood as a mechanism for reality-making that engages others in the construction of a “common ground,” as opposed to the establishment of equivalences based on a “reality out there” (Blaser 2010: 152 & 234). In line with Tsing (2015: 62), I treat translation as a dual and ongoing process that involves the “drawing of one world-making project into another.”

Environmental **governance** is conceptualised as an **assemblage** – an ongoing and emergent process of drawing entities and relations together (Li 2007) – that aims to make sense of, and control decision-making around, environmental change. Global environmental governance involves concerted efforts to draw together and stabilise assemblages that reinforce certain assumptions about environmental problems and deploy tools to manage such problems. Governance, in this sense, is necessarily about the

imposition of power to define the world in a particular way and the practices that seek to shape the world according to this agenda.

Here, **relations** and frictions are not just objects of investigation, but provide a means of inquiry to analyse REDD+ as a governance assemblage (Holbraad and Pedersen 2017: 171). Relations are also central to how people in Suau perceive reality and live – through complex and diverse connections between people, land and non-human beings. In examining the relations and frictions that emerge around REDD+, I question the ways that these programs draw together diverse assumptions, actors and interests from different contexts. I am interested in identifying **frictions** – unstable, unexpected and unequal encounters across difference (Tsing 2005) – and tracing how friction moves governance assemblages forward. Here friction is not only a product but is productive for governing environmental problems.

I also interrogate some of the **epistemological tools** that are used to hold together and (attempt to) stabilise these assemblages in PNG. REDD+ is just one expression of ongoing attempts to govern the environment in Suau, which replicates certain assumptions about the world but entails new forms of knowledge, practices and technology. For this study, ontological assumptions and epistemological tools are inseparable³ (Naveh and Bird-David 2014: 75) and “travel through time as a package” (Minnegal and Dwyer 2017: 255). The epistemological problem of how we see things necessarily leads us to the ontological question of what can be seen in the first place (Holbraad and Pedersen 2017: 5). Epistemology is concerned with “who can be a knower, what can be known, what constitutes knowledge [and truth]” (Gegeo and Watson-Gegeo 2001: 57). By paying attention to ontological assumptions and epistemological practices, we can consider the intersections and inequalities between different ways of perceiving and performing reality.

³ It is important to note here that some Indigenous scholars have criticised the epistemological-ontological divide prominent in Western-thinking. Watts (2013: 28) argues that, “the epistemological-ontological distinction is oftentimes the assumptive basis by which Euro-Western arguments are presented upon. It is this assumption that, I argue, creates spaces for colonial practices to occur.” It is precisely these kinds of assumptions, however, that political ontology is trying to expose and critique.

Working from the assumption that reality is **perceived and performed**, this study is concerned with both perception and performance. For this study, perception is active knowledge, produced through action, sensing and moving (Casey 1996: 18; Viveiros de Castro 1998). Through ethnographic fieldwork with communities implicated in the Central Suau REDD+ Pilot Project, I investigate how people in Suau perceive and perform climate change and different forms of environmental governance. The objective of this research is not to construct a reified, static or bounded Suau ‘ontology;’ such a thing does not and cannot exist in the relational, heterogeneous, negotiated and contested world of people in Suau. Instead, the aim is to trace relations and frictions by traversing paths and following stories across Suau in an attempt to glimpse the ways reality is perceived and performed.

Analysing frictions over the ways that environmental problems are defined and managed is about interpreting not just struggles over land and resource use, but battles over the very things that can exist in the world. Such an analysis leads us to the **inequalities** that may emerge when certain ways of perceiving and enacting reality are continually reified. In Suau, REDD+ is just one expression of outside interventions dictating how people can manage their land and trees; the inequalities reinscribed by REDD+ cannot be divorced from the history of colonialism, ongoing processes of resource extraction and overlapping forms of conservation in the area. Inequalities cannot be understood outside the context of the cosmological systems and social relations in which they are generated (Kelly 1993). As such, we need critical ways to think about how differences are produced and evaluate inequalities (Blaser 2005: 143). By answering these research questions, I aim to foreground Suau ways of being and knowing and critique the assumptions that underpin current approaches to climate change mitigation and conservation. This analysis not only challenges the ways we evaluate ‘equity’ in such regimes but opens up space for alternative conceptions of equality and alternative approaches to environmental governance.

1.3 Literature Review

1.3.1 Political Ontology

Recent debates around the ‘ontological turn’ in social theory provide an important foundation for this study (Escobar 2007; Viveiros de Castro 2015; Holbraad et al. 2014). A focus on ontology – defined here as a way of perceiving the world and performing reality that makes assumptions about the nature of existence – allows us to examine the diverse ways the world is actualised by different peoples and the implications of encounters between different ways of being and knowing (Viveiros de Castro 2004; Jacka 2015). Ontological research takes many forms across the social sciences, but I identify three main strands: Viveiros de Castro’s perspectivism, Strathern’s comparative approach to difference, and Science and Technology Studies’ (STS) practice orientation (Mol and Law 2002; Gad and Jensen 2014). While critical engagement with ontological research has provided the basis for this study, I engage with Indigenous⁴ scholars and ways of thinking throughout this thesis. I begin this literature review by positioning this thesis in relation to these three strands of ontological research before turning to the debates and Oceanic scholarship that have shaped my approach.

Firstly, Viveiros de Castro’s (2004: 11) perspectivism, which posits that there are “no points of view onto things, things and beings are the points of view themselves,” has generated critical debates around ontology in anthropology. This strand of thinking avoids representational approaches to non-Western ontologies and opens up to the possibility of multiple realities (Chao 2018). While I follow Viveiros de Castro’s (1998; 2004) lead by taking Indigenous ontological assumptions seriously and critiquing hegemonic ways of constructing reality, I do so with some conditions and disclaimers. Despite attempting to further the interests of Indigenous people, Viveiros de Castro has been critiqued for reproducing the very binaries he is intending to renounce (Holbraad and Pedersen 2017: 166). As such, my research is not about defining supposedly separate and bounded worlds, nor about drawing binaries between different realities; instead I focus on the intersections between a multiplicity of ontological assumptions and what happens when different ways of perceiving and performing reality collide and compete for primacy.

⁴ Like Smith (2012), I recognise that the term ‘Indigenous’ is limited and may homogenise diverse groups of people. Some PNG scholars also reject the term ‘Indigenous’ as many people in PNG do not identify as ‘Indigenous’ but identify to places or clans (Passingan 2013: 361).

In this way, Strathern's (1988; 2004) argument about the world being ontologically multiple underpins this study. Despite being criticised for drawing binaries between Western and Melanesian ontologies (Patterson and Macintyre 2011: 16), Strathern's method of comparison across difference provides a way to actively engage with Melanesian ontological assumptions on their own terms. Nevertheless, this method of comparison, which intentionally reifies distinctions between 'us' and 'them,' can pose the risk of essentialising cultural difference and ignoring power relations that generate differences (Street 2014: 29). Thus, I selectively draw on Strathern's argument for ontological multiplicity and her comparative approach, while recognising that radical alterity is never politically neutral and risks 'othering' Indigenous people (Vigh and Sausdal 2014).

STS practice orientation also emphasises ontological multiplicity but adds that this multiplicity is about coexistence at a single moment (Mol and Law 2002; Hastrup 2011). Through studying how scientists come to know the world, STS focuses on how knowledge is made about the ontological constitution of the world (Jensen 2017). Grounded in the 'practice turn,' STS scholars propose that ontologies are performed in practice, rather than simply schemes of classification and representation (Mol 2002; Pickering 2017: 138). Along these lines, STS scholars have explored the historically specific relationships between multiple ontologies (Street 2014: 19). STS offers valuable tools – including Actor-Network Theory (ANT)⁵ and assemblage-thinking, further described in Chapter Two – for tracing practical ontologies and exploring social processes through which knowledge is made (Merry 2016: 29). These approaches foreground relations as the way reality is constituted (Law 2004; Latour 2005), which privileges certain assumptions about the nature of reality (see also Candea et al. 2015). While recognising the importance of relations, I do not go as far as some STS scholars in framing relations as constitutive of reality; nevertheless, I do draw on the STS framing of

⁵ Actor-Network Theory (ANT) operates from the position that the world is built from networks of human and non-human actors (Latour 2005). However, as Pickering (2017: 139) notes, ANT assumes that ontology is singular, while the STS practice orientation focuses on ontologies in the plural. Both STS and ANT view reality as a result of relations (Walford 2017).

ontologies as plural and enacted. Like Jensen (2019), I also acknowledge that STS has been developed in Western contexts and remains anchored there.

Positioning my research within these strands of ontological research highlights an underlying concern with the politics of ontology. While ontological research has been criticised for being apolitical and for minimizing pragmatic, affective and epistemological dimensions (Vigh and Sausdal 2014; Kohn 2015: 316; Cepek 2016: 625), I take politics as a central element for understanding the intersections and inequalities between a multiplicity of ontological assumptions and lives. As Blaser (2009b: 11) outlines, political ontology has emerged as a field of study that focuses on the “conflicts that ensue as different worlds or ontologies strive to sustain their own existence as they interact and mingle with each other.” In this way, political ontology is not just a theoretical or methodological proposition; the field has a strong social justice component. Addressing the ontological, alongside the epistemological, is needed to advance decolonial agendas (Holbraad and Pederson 2017: 158). I see decolonisation as exposing the ontological violence enacted by the imposition of certain assumptions about the nature of reality over others, both in governance processes and everyday life (see also Sundberg 2014: 34).

Drawing on these key concerns, I aim to interrupt and challenge dominant assumptions around environmental change and governance. This involves dismantling deeply enshrined Western ways of categorising the world that have become dominant through ongoing processes of colonisation (Blaser 2014: 52). Here I follow Todd’s (2016a: 4) call to “adopt a decolonial approach that incorporates and acknowledges the critical scholarship of Indigenous thinkers whose work and labour informs many current trends in Euro-Western scholarship, activism and socio-political discourse.” While decolonial work has focused on the impact of colonialism on Pacific economies, environments, politics and social structures, less attention has been given to its impact on ‘people’s minds’ and ways of knowing (Thaman 2003). This is where political ontology may contribute most. Instead of imposing outside theories to make sense of local lives, this research uses the empirical to challenge the conceptual and focuses on finding conceptual tools that leave enough room for local people to define their own realities and are robust enough to be reflexively critiqued throughout this process. As Hukula (2018) argues, we

need to change the “elitist nature of anthropological engagement” by making arguments driven by ethnography instead of theory.⁶

Oceanic scholars have made important contributions to this space (Sarei 1974; Kabutaulaka 1997; Winduo 2009; Bell 2017; Tengan 2018) by moving away from ‘Eurocentric’ ways of conducting research to produce ‘Pacific’⁷ methodologies – approaches to research that are imbued with their own assumptions and values (Ponton 2018). PNG scholars have a long history of challenging the construction of Indigenous people in social science and highlighting the political nature of anthropology (Waiko 1972; Kasaipwalova 1973). Stella (2007) has explored how Indigenous forms of representation in PNG have been subjugated and replaced by European representational modes. Elsewhere, Hau’ofa (1993) has used Indigenous viewpoints to challenge framings of Oceania, offering not only alternative ways to conceptualise the geographical area known as the ‘Pacific’ but also alternative knowledge practices. Along the same lines, Nabobo-Baba (2006; 2008) has made efforts to decolonise epistemology and develop an Indigenous Fijian Vanua research framework. More recently, Ka’Ili (2017) has combined anthropological methods with Tongan methodologies and theoretical frameworks, contributing to the decolonisation of methodologies in line with Smith’s (2012) foundational research. This work draws on the legacy of post-colonial and subaltern studies⁸ that criticises the framing of Indigenous people and their struggles through a Western lens (Middleton 2015: 573). As Winduo (2009: 2) insists:

⁶ In discussing ontological research, Holbraad (in Carrithers et al. 2010: 184) similarly emphasises, instead of “using our own analytical concepts to make sense of a given ethnography (explanation, interpretation), we use the ethnography to rethink our analytical concepts.”

⁷ While the terms ‘Pacific’ and ‘Melanesia’ are largely used to describe the geographical area including PNG, I recognise that these terms can be problematic and have been refuted by some Indigenous scholars (Ferris-Leary 2013). Hau’ofa (1993) argues that these framings are highly political and perpetuate neo-colonial relationships of dependency. Instead, he proposes the term ‘Oceania’ to overturn hegemonic views that aim to confine Indigenous people. Like Hau’ofa (1994: 161), I use the terms Melanesia, Pacific and Oceania throughout this thesis as they are part of the cultural consciousness of the area. Kaniku (1981: 188) also recognises that ‘Massim’ is a political term used by anthropologists to speak of the region in Milne Bay, including Suau, so I use this selectively as well.

⁸ Such concerns go back to Spivak’s (1988) argument that the subaltern is always caught in translation, never fully able to speak on their own terms, and always interpreted. To be listened to and taken seriously, the subaltern is forced to fit within Western ontologies and epistemologies and adopt different practices of thought, reasoning and language (Briggs and Sharp 2004; Sharp 2009: 111).

Rather than viewing Indigenous societies and their knowledge systems through Western instruments of knowledge production and methodologies, we should reconsider, reframe, revise, and ask new critical questions to arrive at answers that enable our understanding of the Indigenous knowledge of culture in our societies.

This reflexive approach to knowledge production and emphasis on Indigenous world-making practices has long been a staple of anthropological thought. However, a common criticism of such research has been that it paradoxically appropriates other people's ontologies as theoretical tools to challenge colonial worldviews (Salmond 2014: 157) – assuming that Indigenous people and colonists possess different types of knowledge (van Meijl 2019: 157). This may not only essentialise the 'other' but may impose philosophy 'on top of the other' (Jensen 2017). There is a risk of failing to engage with Indigenous people as critical intellectual agents with equally powerful and complex analytical abilities (Cepek 2016). As Lacey (1997) argues, if Europeans are posing questions to elicit Indigenous voices, the task of translation and mediation is heavy and challenging. Indeed, ontological research is always partial, particularly because it is often undertaken by outsiders who cannot speak of Indigenous ontological assumptions in a way that is fully separated from their positions of privilege. Instead of constructing the anthropologist as an expert able to access and move between many incommensurable realities and theorise insights, I recognise that as a (non-Indigenous, white) researcher my understandings are always partial and situated in my positionality. As Cepek (2016) explains, accounts of ontological assumptions must emerge from the pragmatic and epistemological nuances of the political, social, conceptual and linguistic dynamics at play.

While a political ontology approach has limitations, when used carefully it can help reflect on the ways certain assumptions are often uncritically privileged and taken as constitutive of 'reality' (Sutcliffe 2011: 54). Emerging work exploring ontological multiplicity opens up other ways to engage with Indigenous conceptions of reality, particularly in relation to their knowledge of and connections to the environment (Cruikshank 2012). Attention to ontological assumptions can facilitate the recognition of

Indigenous perspectives and critiques as well as the articulation of political alternatives (Kirsch 2006). To avoid reasserting dominant ontological assumptions over Indigenous ways of being and knowing, we must explicitly position ourselves and acknowledge Indigenous contributions to such theoretical and decolonial movements (Theriault 2015). Thus, the political ontology approach grounding this research is drawn out of critiques of broader ontological research and emphasises the politics and positionalities involved in challenging taken-for-granted assumptions about the nature of reality.

1.3.2 Political Ecology

Through this approach to political ontology, I aim to productively engage with the core interests of political ecology. This thesis explores the intersections between political ontology and political ecology; I propose that these intersections have most productive potential when grounded in decolonial research agendas. The discipline of political ecology has largely focused on the complex relations between society and the environment combined with a critique of capitalism and the unequal power relations it produces (Blaikie and Brookfield 1987; Bryant 1997; Biersack 1999: 10; Kabutaulaka 2005; Basset and Peimer 2015). Political ecologists have made significant contributions in analysing the power, politics and inequalities of environmental crises and governance (Adger et al. 2001; Batterbury 2001; Shearer 2012). The discipline has a long history of critiquing neoliberal conservation agendas – including Doane’s (2007; 2012) foundational work on agrarian conflict, market logic and conservation in Mexico; MacDonald’s (2004) research on market-oriented conservation interventions in Pakistan; and West and Carrier’s (2004) study of the political economy of ecotourism – with more recent analysis turning to Payments for Environmental Services (PES) (Fletcher and Büscher 2017). In Oceania, political ecology studies have challenged approaches to environmental degradation that place blame on local people, rather than global processes of accumulation and dispossession (Bell et al. 2015: 2; West 2016a). I am interested in exploring new avenues within political ecology by assessing where ontological difference turns into social inequality (Leff 2015: 49).

Political ecology has been defined as the study of ecological-distribution conflicts (Martinez Alier 2002), but its analyses of conflicts over access to and control over natural

resources have typically been analysed through discursive approaches (Peet and Watts 1996) from an epistemological perspective (Escobar 2008: 6). These conflicts often go beyond epistemology, however, and involve the very definition of the ‘things’ that are at stake (Blaser 2013a: 14). Environmental crises, like climate change, are increasingly becoming sites for ontological conflicts as climate change mitigation and adaptation interventions are imposed on a complex assemblage of interrelated entities within which Indigenous people are situated (Blaser 2009a: 891). Market-based approaches to climate change mitigation like REDD+ have the potential to disrupt or displace earlier categories and cosmologies and realign local priorities (Tsing 2005: 26). Practically, opening-up pathways for alternative ways of being in and knowing the world has the potential to further livelihood and resource management practices that may be illegible under a global model for environmental policy and management (Jackson and Palmer 2015: 134).

While often overlooked and excluded from reviews of the ‘ontological turn,’ political ecologists have been producing ontologically-engaged research for many years. Rival (2005; 2014) has explored Amazonian ontological positions, including perspectivism, and engaged with ontological critiques of science and the ways that such anthropological analyses fail to reflect on the relationality of ecology. Mentore (2012) has studied the social life of plants in the Amazon and contributed understandings of gender and everyday subjectivity to ontological research. These authors have also investigated REDD+ and PES projects in South America, examining the multiplicity of assumptions at play as these projects intersect with the lives of Indigenous people (Mentore 2011; Rival 2013). Other political ecologists, predominantly women scholars, who have researched entanglements between the practices and politics of environmental governance have also been written out of the ‘ontological turn’ (Rocheleau 2005; West 2005; Ogden 2011; Doane 2012).

Moves towards an ontologically-engaged political ecology draw on elements of feminist political ecology. Feminist political ecologists have contributed an intersectional perspective to understand the gendered dynamics of environmental change while also critiquing inequalities and homogeneity by prioritising positionality, situated knowledge, lived experience and everyday politics (Rocheleau et al. 1996; Abeysekera 2007; Elmhirst 2011; Harcourt and Nelson 2015). Building on Crenshaw’s (1989) foundational work on

the intersecting subject positions of African American women within the US legal system, ideas of intersectionality offer ways to contemplate the multiplicity of individual experiences of marginalisation and critique institutional practices and power relations. Other political ecology studies have drawn on Crenshaw's work, but recognised different uses of intersectionality in post-colonial studies to examine human-nature power relations (Kaijser and Kronsell 2014). While acknowledging that I am engaging with intersectionality in different ways from its original usage, I adopt feminist political ecology's focus on the multiplicity of lived experiences of environmental change, governance and associated inequalities.

While political ecologists have made valuable contributions to anthropology by engaging with ontological multiplicity (Li 2014a; Tsing 2015), more explicit engagement with political ontology is needed. Theriault (2015) has argued for political ecology to develop an "ontologically broadened understanding of how environmental government is produced and contested in contexts of difference." West (2018a) has also called for political ecology to do a better job of decolonising the field to stop dispossessing people of sovereignty over their knowledge and instead coproduce knowledge. I respond to these calls by highlighting the productive convergences between political ontology and political ecology in furthering decolonial agendas.

1.4 Case Study – REDD+ in Papua New Guinea

I draw heavily on political ecology studies of conservation and development in PNG in this investigation of REDD+, which has emerged from the international climate regime as a leading form of climate change mitigation. REDD+ was first proposed to the United Nations Framework Convention on Climate Change (UNFCCC) by PNG and Costa Rica in 2005 as a way for developing countries to commodify the carbon stored in trees and reduce emissions from deforestation and forest degradation. The idea of REDD+ was justified by findings from the Intergovernmental Panel on Climate Change's (IPCC) that deforestation was responsible for around eighteen percent of greenhouse gas emissions (Stern 2006). Grounded in a particular vision of climate change, REDD+ has attempted to establish institutional and surveillance regimes focused on the regulation of greenhouse gas emissions (Gabriel 2015). After being accepted by the UNFCCC, REDD+ quickly

gained popularity as a possible cheap and effective solution to climate change that may provide additional benefits (Katerere 2010: 3), a vision that has since been critiqued across disciplines, including political ecology (Milne and Adams 2012; Mahanty et al. 2012; Dressler et al. 2012).

Early literature on REDD+ focused on the effectiveness and cost-efficiency of market-based mitigation measures in achieving emission reductions (Miles 2007; Laurance 2008; Angelsen et al. 2012) and the equity dimensions, specifically in relation to the impacts on forest-dependent communities and whether such projects can incorporate local socio-ecological realities in their design and implementation (Corbera et al. 2007; Long et al. 2010; Thompson et al. 2011). Despite recent attention to the complexities and contestations of global REDD+ programs and local forest governance (Asinyabi 2015; Eilenberg 2015), gaps remain around understanding community experiences and perceptions of REDD+, especially for women and marginalised groups (Larson et al. 2015; Atmadja and Sills 2016). Furthermore, most of this literature on equity and REDD+ focuses on distributional and procedural justice (Lyster 2010; Kanowski et al. 2010; Okereke and Dooley 2010) and little attention has been given to the ontological inequalities that are produced as REDD+ programs interact with local lives. Research on REDD+ has been classified as either ‘critical’ or ‘practice-oriented’ (McGregor et al. 2014), but gaps remain between and beyond this framing.

This is also true for literature on REDD+ in PNG, which has largely ignored ontological questions in favour of analysing challenges over the implementation of REDD+, specifically in terms of corruption, transparency and stakeholder participation (Melick 2010; Pettit 2010; Pearse 2012; Fujisaki et al. 2016). PNG has become a leading proponent of REDD+ internationally and is a pilot country for UN-REDD and the World Bank’s Forest Carbon Partnership Facility (FCPF). PNG is viewed as an ideal site for REDD+ as it has the third-largest tract of intact tropical rainforest in the world – approximately two-thirds of the country is covered in forest – and over ninety-five percent of the country’s greenhouse gas emissions are from land use, land use change and forestry (LULUCF) (Filer et al. 2000; Babon and Gowae 2013). So far, the PNG government has undertaken a range of REDD+ readiness activities, including the development of

institutional frameworks, organisational capabilities and demonstration activities (Grussu et al. 2014; Filer 2015). The Climate Change and Development Authority (CCDA)⁹ was established to coordinate REDD+ across sectors, with the PNG Forest Authority (PNGFA) taking on an implementation and monitoring role (Bingeding 2011). These authorities have already established a national REDD+ strategy, safeguards, steps towards a national forest monitoring system and an investment plan to facilitate results-based payments.

Babon's (2014) work on the political ecology of REDD+ in PNG offers an analysis of national policies and argues that insufficient attention has been placed on the implications of REDD+ for forest-dependent communities. PNG is unique among REDD+ countries as 97 percent of land and almost all forests are held under customary land tenure (Angelsen et al. 2012: 157). Moreover, the majority of the population live in rural areas and rely on subsistence agriculture (Bourke and Harwood 2009; Lurance et al. 2012), which means REDD+ poses risks to forest-dependent communities who may have their subsistence practices curtailed under projects that prohibit certain forest uses. Despite this, local communities have had no formal role in REDD+ decision-making (Cadman et al. 2016). Leggett and Lovell's (2012) fieldwork with communities in the April-Salumei Sustainable Forest Management Project provides insights into local perceptions of REDD+ and emphasises the potential deleterious impacts on subsistence livelihoods. As yet, however, there has been little ethnographic work on the frictions that may arise as REDD+ interacts with local land-tenure systems and livelihoods.

Political ecology studies on conservation and development projects in PNG provide examples of the relations and frictions that may emerge as governance interventions are translated locally. West's (2006) work makes important contributions to ontological theory and illustrates the value of considering the ways that environmental governance projects may be in tension with fundamental understandings of self, social relations and the environment. Studies into forestry, mining and conservation in PNG have also

⁹ The PNG government established the Office of Climate Change and Environment Sustainability (OCCES) in 2008 to steer the national REDD+ program. Following accusations of corruption and the pre-emptive sale of carbon credits before national legislation was in place (Pearse 2012: 194; Pettit 2011: 96), the OCCES was abolished and replaced with the Office of Climate Change and Development (OCCD) in 2010. The OCCES has since been re-branded as the CCDA, with some changes in funding and authority.

highlighted the disparities between largely Western conceptions of nature that underpin such interventions and local understandings of the relations between people and the environment (Tago et al. 1977; van Helden 2001; Macintyre and Foale 2002; Togolo 2006; Golub 2014). As such, this analysis of REDD+ builds on past research into how environmental governance projects in PNG intersect with local ways of being and knowing in complex and dynamic ways (Jacka 2015).

Environmental governance initiatives, like REDD+, never operate alone and are always embedded in a constellation of activities, actors, landscapes, histories and ideologies (Li 2007: 28). This is evident in the case study of the Central Suau REDD+ Pilot Project in the Milne Bay Province of PNG, the area is illustrated below in Figure 1. Developed through the German aid program SPC/GIZ, this demonstration site initially encompassed 64,000ha of lowland forest in Central Suau – stretching from Modewa to Bona Bona Island along the coast and inland to Leileiafa and including 110 clans with an estimated population of 7,000 people (SPC/GIZ 2015b). As one of five original pilot projects in PNG, the Central Suau area was originally intended to serve as a demonstration site for reduced impact logging (RIL). However, a feasibility study identified that RIL methodologies were unavailable in PNG, so the project was revised to a conservation site (SPC/GIZ 2013). This is significant because rather than limiting additional emissions through the introduction of low impact logging, this project transitioned to reducing emissions from current land use practices, namely subsistence agriculture that people in Suau depend on for their livelihoods.

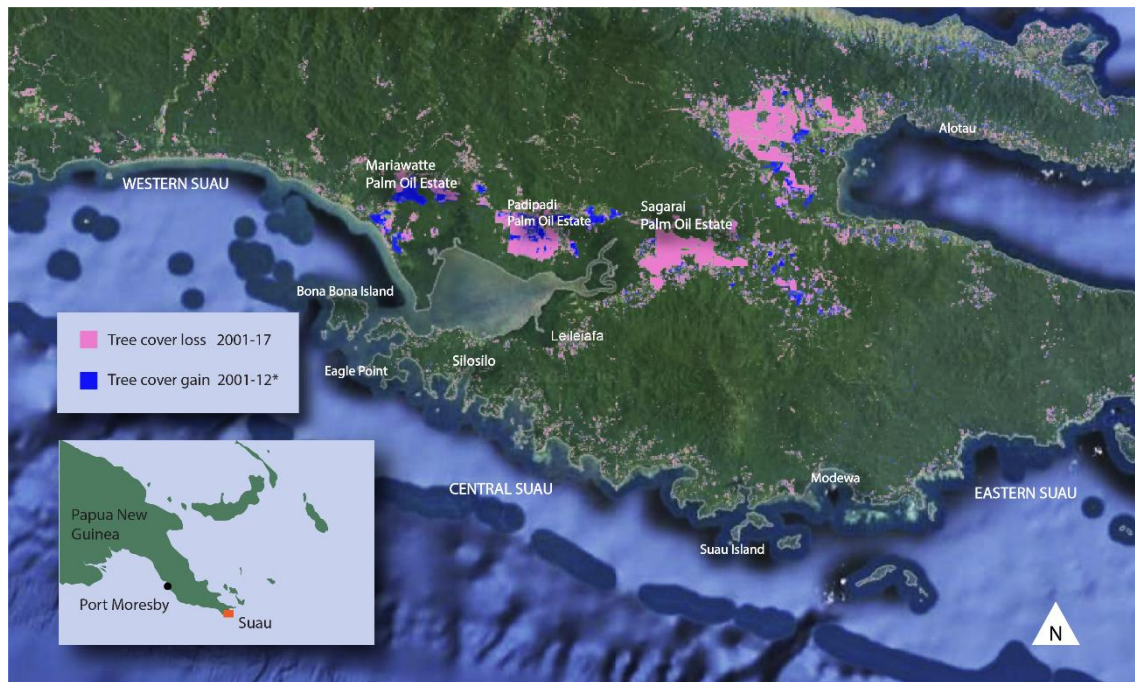


Figure 1. Suau Area in Milne Bay Province

(*Tree cover loss and gain based on available data from <https://www.globalforestwatch.org/map> - Accessed 9th October 2019)

This REDD+ project does not exist in isolation and another conservation project has started in the same area. Cool Earth, a conservation charity based in the United Kingdom (UK), initiated a project in Wabumari in 2015 to provide communities with alternatives to logging and oil palm and protect biodiversity. Recent environmental governance initiatives like these also need to be placed within the broader context of colonisation and missionisation, which began in the Suau area in the early twentieth century (Armstrong 1922; Williams 1933). The colonial encounter in Suau was largely focused on extraction – exploiting natural and human resources, for example by establishing waged labour on rubber plantations – and also involved the relocation of villages to be closer to administration stations (Demian 2004; 2007b). This, of course, had significant implications for how people in Suau relate to and use their lands, and has contributed to high rates of land disputes, which will be discussed further in Chapter Three. Likewise, more recent resource extraction projects, including oil palm¹⁰ and commercial logging,

¹⁰ The most significant concentrations of forest cover losses and gains depicted in Figure 1 are related to the planting and harvesting of oil-palm plantations.

continue to extract value from land and trees for global markets. With this context in mind, I investigate how people in Suau navigate the REDD+ and Cool Earth projects.

1.5 Conceptual Frame – Relational and Categorical Ontological Assumptions

In order to analyse REDD+ through a political ontology lens, I focus on ontological assumptions and the ways they are always intersecting, mingling and competing in the context of environmental change and governance. Reflecting on my ethnographic material and drawing on past research (Wagner 1977; Minnegal and Dwyer 1999; Ingold 2000; Nadasdy 2007), throughout this thesis I make distinctions between ‘relational’ and ‘categorical’ ontological assumptions. Relational assumptions foreground relations as more salient than entities or categories; while categorical (or substantivist) assumptions give primacy to categories and see relations as derivative from entities (Wildman 2006). As Minnegal and Dwyer (2017: 252) emphasise, relational and categorical assumptions are co-existing potentialities; but some people, in some circumstances, chose to prioritise either relations or categories. Once we recognise that all societies employ relational and categorical ways of perceiving and performing reality, the challenge becomes identifying the frictions and inequalities that emerge when certain assumptions are foregrounded over others. While such conceptual frames are useful to investigate varied forms of governance, they remain analytical constructs and should not be taken as constitutive of reality.

A focus on relations has become central to how scholars understand Melanesian societies (Wagner 1977; Strathern 1992: 11). As Strathern (1988: 173) stresses, to understand life in PNG, emphasis should be placed on the capabilities of relations, not the attributes of things. Likewise, PNG scholar Dickson-Waiko (2001) emphasises the relational nature of communities in PNG where social relations carry more importance than the persons or objects who are so related. Kamene (2009) has also adopted a relational lens to understand the connections between people and the environment. For Wagner (1977) it is the kind and quality of relationships¹¹ that matter, not the identity of the things that are related. The foundation of society is not represented in terms of static cosmological divisions or

¹¹ Similarly, Strathern (2017) stresses the need to understand the character of relations being supposed and make preliminary distinctions between internal and external relations.

categories, but in terms of human action itself (Silverman 1998: 424). Nonetheless, this is not to say that categories are irrelevant in these societies. People in PNG also categorise their worlds, but typically these categories refer to an abstract reality, removed from daily life, and emerge in the absence of ongoing interaction (Minnegal and Dwyer 1999). For the most part, relations are produced by work and sustained through the mediation of things, the continual exchange of property in its many forms (Strathern 1988: 176; van Helden 1998: 226). Throughout PNG, the relations between people and land are particularly important. Kamene (2009: 103) states, “The people hold dear these relational values, which they use as the pillar on which to conduct environmental management.”

In Suau, Demian (2003; 2006b) has provided a strong foundation for examining relationality and how relationships may be diverted or inverted by processes of change and conflict. Within the history of colonisation and missionisation in Suau (further described in Chapter Three), Demian (2006b) investigates how people in Suau negotiated relations with missionaries, plantation and government officers and how they have responded to the loss of relations after these actors left the area. She sees that the process of recognising and forging new relationships in Suau is perceived locally as a process of suppressing or displacing older relationships – it is not that these pre-existing relationships disappear, but that they are no longer foregrounded within productive fields of action (Demian 2006b; 2007). In her conceptualisation, ‘positive’ relations are active and ‘negative’ relations are those that have manifested in a destructive, rather than productive, way (Demian 2003). Work is the medium through which relations are enacted and made visible – relations cannot exist prior to or independently of their performance (Demian 2000). These points are central to understanding relationality in Suau and how people negotiate relational and categorical imperatives in processes of development and change.

Far from being an Indigenous term adopted by ethnographers, the relation is a proxy by which we glimpse what ‘other’ assumptions might look like – albeit within the confines of our own assumptions and positionalities (Strathern 1988: 4). Relations are not observed, they are conceived and thus turned into ways for thinking and talking about the world (Damon 2017: 128). However, relations should not be seen as more real in ontological terms, nor as superior in moral terms, than categories (Holbraad and Pedersen

2017: 119). Within (feminist) political ecology, relations have been analysed to understand environments, power and gender and to complicate seemingly fixed categories and homogenous conditions (Rocheleau 2008). As Rival (2014) demonstrates, ecology is relational, but this is often overlooked in anthropological studies that present ethnocentric, and Western, framings of nature/culture. Along these lines, I engage with relational and categorical assumptions to examine how people negotiate environmental change and varied forms of governance in different contexts. But this conceptual frame is just one lens through which these intersections may be investigated.

1.6 Methodologies and Approach

Working within a political ontology approach requires us to advance a methodology that is open to the existence of other ways of being and knowing (Salmond 2014). For Blaser (2005: 153), this means “engaging the ‘traditions of analysis’ (or worldviews) of our interlocutors dialogically with the willingness that our ways of looking at the world be ‘contaminated’ by them.” Ponton (2018) argues that Pacific methodologies – that is methodologies grounded in contextual, localised ways of being and knowing – are paramount to improve communication and understanding between researchers and participants. More than this, practicing research in a way that is informed by Indigenous knowledge transmission contributes to decolonial agendas. I pursue an ethnographic approach by engaging with a range of participatory methods, namely storytelling, family trees and garden walks, as well as discourse analysis. This section details my methodology and reflects on the limitations of such an approach and the impacts my positionality has on the research process.

1.6.1 Ethnographic Techniques

Ethnography plays a key role in practicing political ontology as it privileges lived experience and provides a way to foreground the diversity of ways of conceiving what exists (Das and Poole 2004; Blaser 2013b: 552). Ethnography requires immersive engagement with daily lived experiences and the broader worlds in which humans live, combined with a degree of reflexivity to reassess preconceived categories and assumptions (Li 2014a: 5; Kohn 2015: 313; Marek 2015: 43). Holbraad and Pederson (2017: 4) see an ontological approach to ethnography as, “creating the conditions under

which one can ‘see’ things in one’s ethnographic material that one would not otherwise have been able to see.” Through ethnography, personal experiences, like dreams and encounters with sorcery and witchcraft, become modes of experimentation (Jackson 1989: 4).¹² Nevertheless, ontologically-engaged ethnography still describes Indigenous worlds from the outside; insights cannot be separated from the often privileged positions and interests of researchers. To be clear, this is not an ethnography of Suau – such an exercise would not be possible within the time frame I spent in Suau and others, notably Demian (2000; 2003; 2007; 2013) and Kaniku (1977; 1981; 1989), have already done extensive work to develop an ethnography of the area. Nevertheless, I use ethnographic techniques to explore encounters between Suau people and environmental governance interventions.

I employed ethnographic techniques during my fieldwork in PNG from February to November 2017 and during a follow up visit between January and March 2019. I have been undertaking research in PNG since 2014 and prior to my PhD fieldwork spent twelve months living and working in the Milne Bay Province, which provided a valuable foundation for this study. The majority of my fieldwork was spent with communities implicated in the Central Suau REDD+ Pilot Project and Cool Earth conservation project in the Milne Bay Province. I was based in one host village, Silosilo, but frequently travelled to other villages in the project area and spent time in Wabumari, Kau Kau, Konemaiava, North Sea Sea, Fife Bay, Suau Island and Iloilo.¹³ My return visit to PNG allowed me to report back to communities and seek feedback and clarification, as well as to engage key informants around the written material, critically reflect on my own interpretations and understandings and further ground the analysis.¹⁴ It also provided an

¹² When experiencing wonder in such instances, I adopt Scott’s (2016: 478) advice to resist the inclination to explain that alterity away and allow the experience to generate new concepts that might destabilise ontological assumptions. In this way, wonder becomes both an index to and test of existing ontological premises that reconfigures ontological possibilities (Scott 2016: 474). Although, as Theriault (2015) notes, “The point is not that non-Indigenous analysts must personally validate Indigenous ontological propositions through their own experience, but rather that we should not let our unacknowledged assumptions anesthetize us to experiences otherwise.”

¹³ I do not discuss ‘sample size’ in my ethnography as such measures do not capture the way immersive ethnography is practiced and may overlook the diversity and multiplicity of encounters that make up such approaches.

¹⁴ Notably, I received feedback on Chapter Seven from a former colleague from Milne Bay who works in gender-based violence and used our discussions to critically reflect on my own positionality and assumptions of gender relations.

opportunity to present key findings to the main institutions involved in REDD+ and Cool Earth.

In addition to the fieldwork in Suau, I spent two months undertaking ethnography in institutions associated with REDD+ in Port Moresby and Alotau – namely semi-structured interviews and participant observation. Starting with a pre-selected group of contacts, the interviews were devised to get a sense of the relationships within the REDD+ assemblage and identify additional actors to be included in the research. The CCDA and PNGFA were the focal points for this study as they are the main policy-making and implementing agencies for REDD+ in PNG, respectively. Additionally, I conducted interviews and meetings with the Conservation and Environmental Protection Authority (CEPA), United Nations Development Program (UNDP), Forest Carbon Partnership Facility (FCPF), FORCERT (a PNG NGO focused on Forest Management and Product Certification Services), the German aid agency Deutsche Gesellschaft für Internationale Zusammenarbeit (SPC/GIZ), Japan International Cooperation Agency (JICA), Science and Technology Secretariat, Department of Lands and Physical Planning and the Suau Rural Local Level Government (LLG).¹⁵ My research focuses on the specificity of a conjuncture; the REDD+ assemblage as it was emerging at a particular moment in space and time (Li 2007: 4).

In recognising the overlapping forms of conservation in Suau, this ethnography also involved multiple meetings with Cool Earth staff in Wabumari and Alotau – including meetings and skype calls with their program managers from the UK and separate meetings with their PNG project officers. In April 2018, I travelled to London to visit the Cool Earth office and discuss their projects in Suau. By conducting ethnography with both REDD+ and Cool Earth institutions, I investigated the different ways that project proponents reproduce and reinforce certain assumptions, drawing on similar knowledges, practices and technologies.

Like Peluso (1992: 257), I shifted my focus from local lives to provincial, national and global agendas to illustrate the relations and frictions across space and structures. Multi-

¹⁵ A full list of interviews and meetings with institutional actors is included in Appendix 1.

sited ethnography involves negotiating different power relations and engaging with differently positioned people (West 2001: 70), which can provide a way to uncover inequalities, but may also be difficult to navigate. For example, I used different processes of free, prior, informed consent (FPIC) with differently positioned participants. In institutions, I used plain language statements and written consent forms. Rather than being a one-off agreement to participate in the research, in villages consent was negotiated over time and involved establishing ongoing reciprocal relationships with people. Following Tsing (2015) and her moves towards an ethnography of connections, this multi-sited approach informs an ethnography of encounters between Suau and environmental governance interventions.

1.6.2 Storytelling

Within the field of political ontology, storytelling is a way of practising knowledge that offers a way to recognise other ontological assumptions (Blaser 2010). The methodology of storytelling is concerned with the performance of narratives that embody certain ideas about the world and examining conflicting stories about ‘what is there’ and how reality is constituted (Blaser 2010: 25-6; Blaser 2013b: 548). Watts (2013: 21) emphasises that stories recount real events, “They were not imagined or fantasized. This is not lore, myth or legend. ...This is what happened.” As storytelling is a performance, it is often messy, contested, ambiguous and highly politicised (Ernst 1999: 88). Instead of focusing on the validity and generalisability of representations, stories disrupt the possibilities for homogeneity and generalised explanations (Tsing 1993: 125). As Cruikshank (1990) notes “storytelling does not occur in a vacuum” – the place where storytelling occurs, and the audience, provide more than just a setting for an account, they frame and shape the story. The context of the story is central, as well as the often hidden relationship between the storyteller and the researcher – storytelling is a formative process, it is not the discovery of narratives nor selves that already existed ‘out there’ to be collected and analysed (Hoskins 1998).

Storytelling is identified as an Indigenous methodology in PNG (Winduo 2009: 4), and the practice often involves sharing memories and experiences, engaging in an open discussion of questions, answers and mental associations (van Helden 1998: 8), as well

as attentive listening, emphatic responding and in-depth observation (Passingan 2013: 364). Stories provide the basis of self-awareness and autonomy in managing land, where oral traditions teach people how to deal with their environment (Waiko 1981: 11). Stories in PNG are not just personal reminiscences; they trace actions, experiences and movements of people across land that, through retelling, becomes communal knowledge (Minnegal and Dwyer 1999: 65). In Suau, this practice is known as *pilipili dai* (storying/storytelling), which encompasses the sharing of origin stories and daily practices of engaging in reciprocal relations, negotiation and contestation. During *pilipili dai*, an elder from Fife Bay explained the importance of storytelling for Suau people:

Basically, the daily lives of our people in our local villages are always, the recording system is some kind of legend tales. They have a story to tell, but in the story that they want to tell too also tells them too, or people are able to hear the ownership of the story [and land] that belongs to which clan. And also, remind them that they should not forget and also give them an awareness what they should do, what they should not do. And also, it sort of gives them a traditional rulings and guidance towards their lives.

As this quote illustrates, storytelling in Suau is an expression of reciprocity that reproduces relations between people, and people and land. By engaging with *pilipili dai* as a form of knowledge transmission, this study aims to complicate the dominant narratives about socioecological change and environmental governance. I was not concerned with producing accurate, verifiable accounts of life in Suau, but focused on collecting a diverse mix of perspectives that illustrate the politics involved not just in storytelling but in reality making. To do this, I engaged in *pilipili dai* with people across Central Suau, from all positionalities of gender, age, status and clan. The stories people shared with me ranged from legends about the clans and land in Suau, to stories of current experiences of changing weather, winds and gardens. Most storytelling was undertaken informally, in people's homes or on a *hata hata* (bench) by the beach, but some stories were more purposeful and audio-recorded.¹⁶ I always undertook storytelling in line with

¹⁶ I found a lot of people were hesitant to be audio-recorded at first, particularly if they were talking about sensitive land issues. I only recorded storytelling sessions once I had built up relationships with people and they were comfortable and consented to the recording. Some participants actively requested to be

local custom, which involved sharing *sada* (betel nut), food and drinks. By being part of daily storytelling performances, I gained insights into the lives of people in Suau, how they perceive and enact reality and how they transmit knowledge. Nonetheless, my understanding will always be partial and situated in my privilege and positioning as a *dim dim*, female outsider.

1.6.3 Family Trees

In addition to storytelling, I used family trees as a method to understand the complex and contested ways that reality is made in Suau. As a form of social mapping, family trees provide a meaningful way to identify local geographies, land tenure systems and social relations and explore the connections between individual experience and reality (Futch and Fine 2014: 42). However, it is important to acknowledge that the use of family trees as a methodology draws on Western, scientific assumptions of kinship – rendering kinship visible in the form of family trees may exclude other ways of visualising and understanding relational systems (Bouquet 1994; Bird-David 2019). Nevertheless, family trees have been used extensively in PNG since colonisation, often in regard to land. Social mapping has become institutionalised in resource extraction in PNG as a means to identify landowners, but this process is itself political and contested (Burton 1991; Filer 2007).

PNG scholar Waiko (1981: 12) emphasises that family trees are important to the ideology of a clan as they deal with the systems of land, sorcery and death, but also indicate time “in relation to the individual member along the line [from which] an elder can therefore state sequences of events.” Because the transmission of knowledge in PNG is largely oral, family trees are readily open to contestation and transformation (Silverman 1998). The purpose of this method was not to develop an accurate or definitive family tree, nor to pre-define the kinds of relations that can exist, but to connect a range of varied accounts of people and land from multiple sources. The outcome was not a complete, permanent or static family tree as such histories are always emerging.

recorded so that their stories would be preserved for future generations. Most stories were recorded in English, with a mix of Suau language thrown in.

I undertook family tree exercises with the two main clans in Silosilo – the Sala Sala clan and the Palu Paluta clan. I began the process with a small group of clan members, usually a household of relatives. I then consulted the matriarchs, the eldest women in each clan, to get their input. In accordance with matrilineal land tenure systems, the matriarchs often had the final say on the details of the family tree. I undertook a process of triangulation and cross-checking by asking individual clan members to comment on the family trees and share their stories. There was always debate and discussion about people and places which highlighted the negotiable and contested nature of knowledge sharing and land tenure. This was not the first time people in Suau had compiled family trees; during the process the matrilines showed me hand-written documents – some produced in the colonial period and others put together by their children – of their family histories and ancestors. This process revealed decision-making and power dynamics within clans, especially in regard to matriarchs and first-born sons who typically assume the public decision-making roles of Principal Landowners (PLOs).

However, there were disadvantages to using this method in Suau. Family trees are highly political. People use family trees as evidence of claims to land during land disputes. This became problematic for me when I was collecting conflicting accounts of family histories that revealed both intra-clan and inter-clan disputes. Within the Sala Sala clan, there were competing claims from different people declaring PLO status. The matriarch of this clan previously had a written document of the family tree, which had been lost, and her son – who had a claim to PLO status – was eager to receive a digital copy of their family tree on a USB, along with audio-recordings of his mother sharing origin stories. Between the Sala Sala and Palu Paluta clans, there were disputes over who had rights to particular areas of land and who were the original landowners. These tensions culminated into a land dispute and one PLO from the Sala Sala clan asked me for a copy of the Palu Paluta clan family tree to use as evidence in the village court hearing. While the family tree method was not intended to exacerbate land disputes, this experience demonstrated the multi-faceted outcomes of documenting knowledge in this way.

1.6.4 Garden Walks

Exploring how unique and complex associations between entities come together, methods like garden walks become ways to uncover human and non-human relations. Tsing (2015) has shown how the importance of understanding the open-ended entanglements between local livelihood practices, government policies and transnational markets that shape forests. By tracing paths of action and interaction, garden walks provide a way to illustrate the distribution of resources across landscapes, including human and non-human features (see also Doolittle 2015: 521). This method can reveal the relational complexity of livelihood assemblages and the diversity of perspectives at play (Barlett 1980: 566). Garden walks may also highlight rifts between what project proponents and policy-makers tell us about the forest and the lived reality of subsistence agriculturalists in Suau.

I undertook multiple and frequent garden walks with people in Silosilo, including single mothers, widows, married couples and elders. It was important to do garden walks with both men and women, both separately and together, to understand the gendered division of labour within the gardens. I visited gardens during different seasons and stages of the swidden clearing, burning, planting, harvesting and fallow cycle. By undertaking garden walks with different people at different times, I tried to get a comprehensive and in-depth appreciation of the livelihoods of people in Suau. The garden walks were not systematic, measured or linear but followed local paths and adapted to the environment. During the garden walks, I would ask my informants about the human and non-human features we encountered, the problems they were experiencing in the gardens and the history of the land on which their garden was positioned. I learnt about the main crops and practices people used and how they make a living in Suau through both subsistence and cash crops.

One garden walk with my local guide, Isabel, highlighted the insights that can be generated from this method. She and I hiked up a steep mountain-side to visit her old garden and see another garden being re-planted by her cousin Tauba and his wife Sabina, who were renowned for their gardening skills and plentiful harvests. During our walk, the couple were burning piles of debris; while Tauba dug holes, Sabina planted *kanowat* (sweet potato) seedlings. They complained about pigs and heavy rain destroying some of their other crops and having to reuse this old garden. But because this block had a warm,

sea breeze coming off the bay, they were certain that the crops would grow quickly. On the way back down, Isabel stopped at a spot to collect some tulip leaves and told me a story about a time when she was weeding this garden and a coconut fell from a tree and came at high speed towards her. “It was like someone threw it.” Isabel tried to catch the coconut but fell over, “It could have killed me.” There were non-human forces at work here. From this walk, I learnt that forests and gardens are not only sites for subsistence, but places for sorcery and witchcraft.

1.6.5 Discourse Analysis

In addition to these ethnographic and participatory methods, I used discourse analysis as a method to critically examine the policy documents and strategies that hold together the REDD+ assemblage in PNG. Discourse analysis offers a valuable tool to expose potentially hegemonic discourses in environmental governance regimes (Fairclough 1992; Hajer and Versteeg 2005). Following Dryzek (2005: 9), I understand ‘discourses’ as shared ways of apprehending the world that construct meanings and relationships while defining legitimate knowledge based on certain assumptions. Discourse analysis is indebted to Foucault (1972; 1980) and his work on the intersections of discourse, power and knowledge (Harvey 1996: 86). While discourses can emerge from a range of arenas, including the scientific community and public sphere¹⁷ (Weingart et al. 2000), I concentrate on the policy sphere as a site where discourses can become institutionalised and hegemonic. In Chapter Two, I use discourse analysis to code the transcriptions of interviews with institutional actors¹⁸ and policy documents – including UNFCCC decisions on REDD+, the PNG government’s policies and strategies as well as the project design documents from the Central Suau REDD+ Pilot Project.¹⁹ This method provided a way to trace the assumptions that underpin environmental governance assemblages through institutional and policy-making processes, and to question how these processes may marginalise other assumptions.

¹⁷ See Babon et al. (2012) for a discourse analysis of print media articles on REDD+ in PNG.

¹⁸ Where consent was given for interviews to be audio-recorded.

¹⁹ A full list of policy documents analysed in this study is included in Appendix 2.

1.6.6 Positionality and Limitations

Based on the understanding that selves are always constructed – and more so that the process of constructing a self through opposition to an ‘other’ represses or ignores other forms of difference – positionality, audience and power in distinctions between the self and the other become core concerns for anthropological and feminist research (Abu-Lughod 1991). Recognising positionality is key to acknowledging the politics and partiality of knowledge and knowledge production. It is within the politics of partial perspectives that the purpose of feminist inquiry lies (Haraway 1988). Situated knowledges require that the object of knowledge be seen as an actor with agency (Haraway 1988). Following Haraway (1988), rather than pursuing ‘objective,’ relativist or universal findings, I am concerned with the contestation, deconstruction, connection and transformation of systems of knowledge and ways of seeing. Like Abu-Lughod (1991), I focus on connections and interconnections, both historical and current, between communities and other actors (including researchers) as a way to reflexively understand encounters within and beyond ethnographic fieldwork. Given this orientation, I continually, and critically, reflect on my positionality in the research process and the limitations that this generates.

The ways that Suau people positioned me as a white, English-speaking, female outsider and the ways that these attributes shaped by ability to engage with the world as Suau people do influenced the research process and outcomes. Given the ways I was positioned in Suau, there were some things that I could not see, and other things I did see that differently positioned people may not have. My positionality, combined with my limited language skills, also restricted the people that I could engage with in the field; most of my storytelling was undertaken with people who were sufficiently comfortable speaking to a white woman in English. As such, many of my key informants were local ‘elites’ – people who were educated or held positions of authority. However, some of my other core informants in Suau would not be considered ‘elites’ in the general sense – they included single mothers, widows, customary leaders who gained influence from the possession of sorcery or witchcraft, people who held status by influencing decisions on land. As Martin (2019) acknowledges, the opinions and interests of local ‘elites’ in PNG

(particularly those who have gained status and influence through colonial structures) may strongly differ from those of other local people.

Primarily, my iterative approach to multi-sited ethnography, where I worked between Port Moresby, Alotau and Suau, came at the expense of mastering the Suau language. As there are at least five dialects²⁰ of Suau in the REDD+ pilot project area, I was unable to become proficient in each dialect and focused on the Lausaha dialect from Silosilo. Due largely to the intensity of colonisation and missionisation in the area, as well as the ongoing role of the church and formalised education, the majority of people in Suau speak English. By the end of my fieldwork, I was able to follow conversations and share daily dialogues with people in the Lausaha and learnt a range of specialist vocabulary related to the garden, environment and family relations, which proved useful during the participatory methods described above. Nevertheless, my lack of fluency in Lausaha meant that my data was restricted to storytelling in English or translated accounts of stories and I could not include overheard conversations or the nuances of the different local languages. The language people use does provide important insights into their ontological assumptions, so understanding local languages is an asset to such research. In my theoretical framing, however, ontological assumptions should not be entirely bounded to language – while language is linked to the ways people perceive and enact their realities and language fluency thus influences the research process, it does not preclude investigation of ontological intersections in an ethnography of encounters.

1.7 Chapter Outline

This chapter has introduced the theoretical, methodological and conceptual grounding of this thesis, which the subsequent chapters build on. Like this one, each chapter begins with a story that captures the key themes and conjunctures that will be investigated and analysed. Each chapter foregrounds certain concepts from the research questions presented in this chapter; these concepts run through the entire thesis but are taken up and problematised at specific points in relation to the ethnographic material at hand.

²⁰ I noted the following distinct languages during my fieldwork: Lausaha (Silosilo area), Suau (Suau Island), Teka (Bona Bona), Sinaki (Nube/Gadaisu) and Yaleba (Leileiafa).

Chapter Two introduces assemblage-thinking as a way to trace the relations that make up the REDD+ program in PNG. While epistemological tools – specifically scalar-thinking – are used by project proponents in an attempt to stabilise governance assemblages, this privileges certain assumptions over others. Governance is necessarily about drawing together different actors, assumptions and interests and asserting power to define the world in a particular way and manage problems accordingly. This chapter introduces the central problematic of this thesis – what happens when categorical assumptions are foregrounded within governance assemblages and relational ways of being and knowing are marginalised. In this chapter, assemblage-thinking becomes an entry point to open up different ways to think about, frame and manage environmental problems. However, assemblage-thinking only takes us so far and the following chapters engage more explicitly with Suau ways of being and knowing.

Chapter Three goes beyond the institutions governing REDD+ in PNG to include the complex network of human and non-human actors implicated in the Central Suau REDD+ Pilot Project and the Cool Earth conservation project in Wabumari. This chapter uses the conceptual tools of translation and perception to highlight the contingency and instability of environmental governance assemblages and investigate, what an informant called, the ‘monster’ *behind* REDD+ – the diverse assumptions about the nature of existence that are drawn together in processes of translation and ‘never talked about.’ I provide background information on the Suau area to contextualise the emergence of REDD+ and Cool Earth projects within the history of missionisation, colonisation and resource extraction. This chapter focuses on the heterogeneity and positionality of people’s perceptions of different forms of conservation in Suau. The fears that some people in Suau have of REDD+ and Cool Earth ‘stealing land and air’ are not only about ‘awareness’ and ‘understanding,’ but point to intersections between different ways of being and knowing in the world. The three following chapters then examine these ontological intersections – frictions and inequalities – in greater detail.

Chapter Four explores the multiplicity of ontological assumptions around climate change and how people in Suau negotiate these assumptions within the context of the Central Suau REDD+ Pilot Project. I engage with *pilipili dai* storytelling practices to

understand how people in Suau perceive and experience climate change through their assumptions of causation and temporality. Through the story of Kakotilotilo, a mythical being from Silosilo, I learn how people in Suau perceive climate change to be occurring because of people ‘breaking custom’ and ‘not respecting nature.’ However, under the REDD+ pilot project, climate change is conceived as occurring because of greenhouse gas emissions from anonymised processes of deforestation and forest degradation. Employing the conceptual frames of ‘categorical’ and ‘relational’ assumptions, I draw out the politics at play as certain assumptions are privileged over others in the REDD+ program.

In **Chapter Five**, I describe the lived realities of land and trees in Suau, and the links to sorcery and death. By telling the story of one family over four generations and their movement over land over time, I describe the fluid and negotiable nature of land tenure. I then investigate how land and trees are ‘rendered technical’ in the REDD+ and Cool Earth projects as proponents use epistemological tools – Incorporated Land Groups (ILG), maps, satellite imagery and GPS – to make landownership static and inscribe boundaries. By examining the contested and contextual relations that make up matrilineal land tenure systems in Suau, I explore the frictions and inequalities between increasingly static, fixed and bounded assumptions of land and trees.

Chapter Six delves deeper into the relational sociality of people in Suau and uses pigs to unpack the distinctions, and ambiguities, between reciprocity and trade. Through an ethnography of pig gifting and trade, this chapter draws out different assumptions around equality and equity and how they intersect, and may be foregrounded or marginalised, in governance assemblages. Specifically, I consider how conceptions of equity (based on assumptions of equivalence and sameness) are privileged over equality (based on assumptions of relationality and difference) within the benefit distribution systems of the REDD+ and Cool Earth projects. While the benefit-sharing arrangements in these projects are aimed at achieving ‘equitable’ benefits, they may actually close down possibilities for negotiation and undermine relational processes of reciprocity. I indicate that this continual subsuming of relational sociality has consequences for how people in Suau live and how they see the world.

Building on this interrogation of equality/equity, **Chapter Seven** considers what this theoretical analysis of ontological intersections and inequalities may mean for the lived realities of women in Suau. This chapter engages with the Suau notion of *wawahin edi pilipili* (women's problems) to explore the gendered, 'slow violence' (Nixon 2011) of global environmental governance. Through an analysis of gender, I consider the practical implications of privileging categorical assumptions of reality over relational ways of being and knowing. While recognising the agency of women, I look at how intensifying asymmetrical dependencies in the gendered division of labour, combined with reduced social protections from changing practices of sorcery and witchcraft, places women in increasingly precarious, and unequal, positions. In this light, I frame REDD+ and Cool Earth as forms of 'slow violence,' replicating older colonial inequalities and intensifying precarity.

Chapter Eight draws the thesis together to accentuate the complex, emerging, shifting, heterogeneous and political assemblage of environmental governance in PNG. In addition to outlining the contribution to political ontology and political ecology, I highlight the implications of this research for enabling alternative approaches to environmental governance and furthering decolonial agendas.

1.8 Conclusion

This introductory chapter has presented the research questions, aims and literature that have shaped this study and explained the case study, conceptual frame, methodology and approach that I have used. This thesis draws together political ontology and political ecology to examine the ontological intersections and inequalities that may emerge as environmental governance assemblages, like REDD+, are translated locally in PNG. This study is not an argument for extreme relativism or the incommensurability of radical alterity; rather it is a proposition to expand our analytical concepts and gain a deeper understanding of relations between people and the environment. Through ethnographic fieldwork and decolonial, participatory methods, including storytelling, family trees and garden walks, I examine the ways that people in Suau perceive and perform their realities in the context of the Central Suau REDD+ Pilot Project and Cool Earth conservation

project. By engaging with relational ways of being and knowing and complicating categorical constructions of environmental change and governance, we can critically evaluate the ways that certain assumptions are foregrounded and marginalised. The next chapter will expand on the themes I have introduced and begin to describe the complex network of actors and relations that are drawn together, and the assumptions that are reinforced, in the REDD+ assemblage in PNG.

2. Unsteady Foundations – The Politics of Scale Involved in Stabilising the REDD+ Assemblage in Papua New Guinea

Since Papua New Guinea (PNG) first proposed the idea of Reducing Emissions from Deforestation and Forest Degradation (REDD+) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2005, an array of institutions, policies and projects have been developed in the country, including the Central Suau REDD+ Pilot Project in the Milne Bay Province. REDD+ draws together a range of assumptions and interests across different contexts, with a concentration of actors in the capital Port Moresby.

When I arrived in Port Moresby in 2017, a collection of REDD+ proponents were located in the Avara-Annex building, including the Climate Change and Development Authority (CCDA), United Nations Development Program (UNDP), Forest Carbon Partnership Facility (FCPF), as well as the Secretariat of the Pacific Community and the German aid agency Deutsche Gesellschaft für Internationale Zusammenarbeit (SPC/GIZ). The seven-storey building was striking, encased in tinted glass windows, perched high above Ela Beach and across the road from the Crown Plaza. Inside, you could feel the building swaying slightly in the wind. The security guards complained about having to rush down to check the building's foundations when the gales picked up. They cursed the construction company that built it. Upon entering the CCDA mitigation office, there was a banner that read:

REDD+ Papua New Guinea

Healthy forest.

Strong nation.

Better world.

These simple slogans hint at how REDD+ draws actors and interests together and structures them through certain assumptions of 'scale.' One thing that the banner, and people in the Avara-Annex building, made clear was that PNG is

taking a ‘national’ approach to REDD+. Staff at FCPF declared, “This is not project-based approach, this is national-based approach. The benefits go to the country, rather than to a specific group of the people.” One CCDA staff member explained how this works, “When the direction is held at the national level, we can in turn filter it down through different levels of government.” However, an officer at the PNG Forest Authority (PNGFA) admitted that, “We most times talk about the national, but then we have to also consider the local scale, their perspective. At the end it is them who will implement at their level, so we should also consider their perspective at the local-scale as well.” While scale appears implicit in the REDD+ program in PNG, it is highly political.

When I returned to Port Moresby in 2019, the Avara-Annex building was derelict and empty, its former inhabitants gone. They had moved to a brand-new office block at Waigani – Dynasty Tower. Interestingly, this building is part of the Vision City complex constructed by Rimbunan Hijau, a Malaysian logging company. There was a security guard at the reception and visitors must sign in to enter the building. The furniture was still wrapped in plastic and many of the offices remained empty and stark. Under the Office of the Minister of Environment Conservation and Climate Change, CCDA and the Conservation and Environmental Protection Authority (CEPA) each occupy four floors. CEPA was previously located in the B-Mobile building, alongside the Japan International Cooperation Agency (JICA), but moved to a temporary office while the Tower was being constructed. Now both authorities have settled under the Ministry, in a building financed and owned by a logging company. These offices are symbolic of REDD+ in PNG – always emerging and shifting, swaying with unsteady foundations, intersecting with other resource extraction interests and stabilised through the construction of scale.

2.1 Introduction

The above observations and quotes point to the way that REDD+ proponents use scale to frame how we understand and manage environmental problems. Scalar-thinking – a way of understanding the world that pre-defines categories of scale and organises them into

hierarchies, such as the ‘global,’ ‘national’ and ‘local’ – has become central to how we know and address climate change and, thus, how we govern it (Sovacool and Brown 2009). By extension, scalar-thinking influences how different people are positioned, and framed as bounded to different scales of action, within climate change mitigation projects. In terms of REDD+, scale has become institutionalised in the ways that such projects are implemented and evaluated, with literature focused on the scale at which REDD+ projects should operate (Angelsen et al. 2008) and how benefits should be shared across scales (Angelsen et al. 2012; Luttrell et al. 2013). Recent research has explored the ‘global’ and ‘local’ dynamics, contestations and complexities of REDD+ projects (McGregor et al. 2015; Eilenberg 2015; Asinyabi 2015). More specifically, studies on REDD+ in PNG have criticised the government’s ‘national’ approach to REDD+ as heavily top-down and paternalistic (Chatterton 2010; Pettit 2012: 177) and called for greater attention to ‘local’ consultation and livelihood needs (Leggett and Lovell 2012). While this literature makes valuable contributions to understanding the politics of scale at play in the REDD+ program, it also works to reify scalar-thinking and the power relations it produces.

As alluded to in the introductory story, the politics of scale are playing out within the REDD+ program in PNG, but even when contesting the dominance of certain scales, actors may continue to reinforce categorical assumptions of scale and hierarchy. Through policy making and project design, scale has become so hegemonic within the REDD+ regime that individuals working within institutions may be unable to resist scalar framings, even when recognising the politics of scale. In this way, scale works as an epistemological tool to reinforce certain assumptions about reality, which may marginalise alternative ways of perceiving and performing reality. This chapter interrogates and challenges the dominance of scalar-thinking by engaging with REDD+ as an assemblage.

An assemblage is not a finite entity or final product in itself; rather, assemblage is an ongoing process of relations, actors and interests coming together. I adopt assemblage-thinking as a theoretical orientation and method that focuses on relationality, heterogeneity and emergence. Assemblages, as specific ways of arranging social relations, offer a way to analyse spatiality and power not as products or things, but as

relational effects (Allen 2003: 66). Through assemblage-thinking, we can recognise a multiplicity of ontological assumptions²¹ while examining the politics around these assumptions and implications of encounters between different ways of knowing the world (see also Blaser 2010; Viveiros de Castro 2004). Rather than treating assemblage and scale as mutually-exclusive or contradictory concepts, I investigate how these ways of thinking intersect and how certain assumptions of reality and spatiality may become dominant.

This chapter, thus, sets the scene for the underlying problematic of this thesis – what happens when different ways of perceiving and performing reality intersect and what frictions emerge when certain assumptions of reality are foregrounded over others. In this sense, the tensions between scale and assemblage become a starting point to understand the frictions between categorical and relational ways of being and knowing. By investigating the knowledge practices and power dynamics within the REDD+ assemblage, we can interrogate the privileging of certain assumptions over others.

I begin by outlining the concepts adopted in this chapter – assemblage-thinking and scalar-thinking – and discuss the literature that has informed this analysis. I then trace the relations that make up the institutional REDD+ assemblage in PNG. I use discourse analysis²² to further interrogate how scalar-thinking holds together the REDD+ assemblage in PNG and how it translates in policy-making processes and the Central Suau REDD+ Pilot Project. I then consider how assemblage-thinking may be used to

²¹ As Latour (2005: 259) notes, the purpose of assemblage-thinking is not just to “enjoy the spectacle of the sheer multiplicity of new connections” but to consider the politics and ontological questions at play.

²² The discourse analysis method utilised in this chapter focused on the use of scalar-language, the actors who are adopting and reinforcing scalar-thinking and the policy outcomes and social impacts (Adger et al. 2001). I analysed the use of scalar-language – that is, certain vocabulary defining entities, categories or hierarchies of scale and the semantic relations between such vocabulary. In addition to interview transcripts, this method was used to code key documents that hold together the REDD+ assemblage in PNG, including UNFCCC decisions on REDD+, the PNG government’s policies and strategies as well as the project design documents from the Central Suau REDD+ Pilot Project (see Appendix 2 for a full list). Firstly, I identified scalar-language and analysed such terms in context to highlight patterns or inconsistencies in the way that scalar-language was employed. Additionally, I considered the actors producing scalar-thinking and their situatedness and interests in the REDD+ assemblage to get a better understanding of the politics at play. Subsequently, I investigated the underlying assumptions that are privileged through scalar-thinking and considered what assumptions may be marginalised in this process. While these documents have been taken from institutions that have been constituted and operate at different scales, I do not intend to reify scalar-thinking by presuming the existence of such scales or drawing hierarchical relations between them.

interrogate scalar-thinking and the imposition of certain assumptions of reality in governance regimes. Finally, I address the limitations of assemblage-thinking for the purposes of this thesis.

2.2 Assemblage-Thinking

Drawing on Actor-Network Theory (ANT), assemblage-thinking considers the ways that humans and non-humans are entangled in socio-natural configurations and foregrounds the politics that such assemblages imply (Blaser 2014: 49; Burnham et al. 2016). Following Li (2007), I define an assemblage as “an ongoing labour of bringing disparate elements together and forging connections between them.” Rather than pre-emptively defining the way the social world is made, assemblage-thinking focuses on telling a story that captures the making of multiple relationships between places and actors (Mol 2010). Assemblages are relational, heterogeneous, productive, partial, unstable, open-ended and situated; they do not follow pre-determined scales, hierarchies or configurations of relations (Ong 2005; Collier and Ong 2005; Grossberg 2014; Muller 2015; Tsing 2015).

Assemblage-thinking is indebted to Deleuze and Guattari and their emphasis on relationality, multiplicity, emergence and resistance to totalising categories (Deleuze and Guattari 1987; Deleuze 1994; Cockayne et al. 2017: 581). Such work prompts us to map assemblages of complex processes, including multiple, interconnecting dimensions of the biological, climatological, economic, political, social and cultural (Bonta and Protevi 2004: 15). Horowitz (2016) has drawn on Deleuze and Guattari’s concept of assemblage to examine encounters between large-scale conservation and Indigenous activism in New Caledonia. Likewise, West’s (2016a: 109) work on dispossession and the environment in PNG draws on Deleuze and Guattari’s notion of ‘becoming’ to explore new engagements between actors and possibilities for political change. In this light, natural resources, knowledge and environmental conflicts are viewed as provisional assemblages of heterogeneous elements that combine materiality, technology, relations, discourses and practices (Li 2014b: 589).

As assemblage-thinking enables us to remain open to relations and avoid fixed and bounded categories (Anderson and McFarlane 2011; Tsing 2015), it is particularly useful

for examining the multiple epistemologies at play around climate change (Burnham et al. 2016), which are often closely intertwined with scalar-thinking. Assemblage-thinking rejects hierarchical narratives of scale where ‘local interactions’ are embedded in a wider and larger ‘global context’ (Latour 2005: 176). Such an approach allows us to assess how inequalities and differences are generated around climate change through competing accounts of agency, hierarchies and relations of domination (Latour 2005; Holifield 2009). Using this approach, I examine the intersections between assemblage-thinking and scalar-thinking not to denounce scale as a false image of reality, but to bring attention to the social and political processes through which certain assumptions become dominant (Ferguson and Gupta 2002).

Some effort has been made to analyse REDD+ as an assemblage that gathers divergent interests at different scales and is held together by its ‘global’ reach (Arora-Jonsson et al. 2016). Anderson (2016) has examined REDD+ as an assemblage that brings together heterogeneous policies, projects, concepts and actors at a particular spatio-temporal conjuncture. In this process of assemblage, expert knowledge often works to hold REDD+ together and attempts to fix certain actors in place (Li 2014b). Conservation organisations, including REDD+ proponents, often act as governance institutions that enforce particular assumptions about the world to impose order on human and non-human assemblages (West 2016c). In this way, political ecologists have described emerging forms of environmental governance as ‘global assemblages’ (Ogden et al. 2013). Rather than focusing on how the environment is being governed, assemblage-thinking asks questions about the co-existence of different ways of addressing problems, framing concerns and enacting reality (Mol 2010: 264).

2.3 Scalar-Thinking

Engaging with literature on the politics of scale (Smith 1990; Brenner 2001; Towers 2010; Benson 2010), this chapter is grounded in the position that scale is not an ontological category, but an epistemology that makes assumptions about how we can know and organise the world (Jones 1998; Kurtz 2003: 893). Scale is not a thing ‘out there’ to discover; it only becomes meaningful when it is operationalised as an epistemological tool – a way to recognise and reinforce certain assumptions of the nature of reality through

knowledge practices (Ahlborg and Nightingale 2012). In this way, scale is no longer viewed as a pre-determined, unproblematic and fixed hierarchy of bounded spaces that orders the world as ‘global,’ ‘national’ and ‘local’ (Delaney and Leitner 1997: 93; Marston 2000: 220). The drawing of boundaries between scales and bounding of spatial categories as ‘fixed entities’ acts as a means of inclusion, exclusion and legitimation (Kurtz 2003: 887).

Within the literature on human geography, scholars have critiqued the dominant hierarchical visions of scale and developed alternatives (Mansfield 2005; Ostrom 2010). Notably, Marston et al. (2005) have called for human geography to replace scale with ‘flat ontology’ – an alternative to hierarchical scale that is composed of complex, emergent spatial relations. The concept of ‘flat ontology’ has developed out of engagement with Deleuzian visions of difference and critiques of scalar thought (Cockayne et al. 2017: 581). While I agree with Marston et al. (2005) that the categorical and hierarchical ontological assumptions reinforced by scalar-thinking are problematic, I do not suggest that we abandon scale entirely and instead engage with politics of scale (see also Neumann 2015).

Despite these critical debates around scale, climate change and the ways it is managed continue to be framed in scalar terms and focus is often placed on global governance and national action (Smith 2007: 200; Tschakert 2012: 147). To try and counter this emphasis, literature on climate justice has questioned the dominance of the global and national scales in debates on climate change and highlighted the significance of local experiences (Fisher 2012; Mathur et al. 2014). Nevertheless, much of this literature actually works to reify scale as a bounded category that organises reality in a particular way. Without critical analysis of the fluid and strategic ways that scalar-thinking operates in relation to climate change and its governance, the static categories of ‘global,’ ‘national’ and ‘local’ become fixed (Martello and Jasanoff 2004: 14). In contrast, I do not presuppose the existence of such scales and turn to examining how scalar-thinking works to reinforce certain assumptions over others.

2.4 The REDD+ Governance Assemblage in PNG

This section begins to analyse REDD+ in PNG as an environmental governance assemblage to consider how diverse actors, assumptions and interests are drawn together in an attempt to make sense of, and control decision-making around, climate change. The REDD+ assemblage in PNG is always emerging and shifting over time and space, so this analysis is focused on the specific conjuncture during which ethnography was undertaken. The relations and frictions emerging during this period are contextualised in terms of the history of REDD+ in PNG and more recent policy developments. REDD+ is just one expression of environmental governance in PNG's long history of engagement with conservation and development initiatives (see also van Helden 1998; West 2006), but it has become a leading approach to addressing climate change and deforestation. The focus on institutional actors in this chapter provides a starting point to understand how governance operates.

Through interviews and observation with institutions in Port Moresby and Alotau, it became clear that REDD+ assembles in various ways. There are formal networks, like the Technical Working Groups (TWGs) run by the CCDA, and informal relations, like the personal connections forged between officers and communities during fieldwork for the Central Suau REDD+ Pilot Project. Cross-departmental TWGs were established in 2010 and are chaired by the CCDA. Fujisaki et al. (2016) have conducted research into these TWGs to understand the interactions among actors, including national agencies, international governing bodies, NGOs, donors and industry. However, local communities and customary landowners were notable exclusions from the 21 recorded stakeholders in these TWGs (Fujisaki et al. 2016: 8-9). Further, actors engage in the TWGs in varied ways. Following TWG meetings in 2017, staff from CEPA expressed that they are “not really involved in REDD+” and that they “have nothing to do with CCDA.” However, the officer attended workshops on REDD+ to “try and understand REDD+” and how CEPA might be able to “do REDD+.” Here the TWGs become sites where roles, responsibilities and decision-making authority are designated and contested. Already we can see how actors and practices within environmental governance assemblages work to include some and exclude others and shape who has power to make decisions.

Commenting on these TWGs and relations, a staff member at FCPF stated that, “In terms of consultation, another challenge you can include is inter-agency coordination is very, very weak.” They went on to explain:

In the beginning this chain between all these stakeholders and departments was broken. So now we are playing, we are building that bridge between all these stakeholders coming together, working together, discussing together, all this REDD+. And almost all assignments we struggle, we face challenges, but we are building that bridge between all these stakeholders to work together.

This quote highlights how institutional actors work hard to build relations – or ‘bridges’ – between other actors. This process of drawing together elements is political and is influenced by, and in turn influences, broader policy shifts. The improvement in stakeholder relations described above can be contextualised in terms of the development of the PNG *National REDD+ Strategy* (GoPNG 2017). The launch of this strategy was seen by some as strengthening certain relations; a representative of a conservation NGO saw that the development of this strategy enhanced the relations between the CCDA and international governing bodies like FCPF. That is, the policy documents that hold together the REDD+ assemblage also work to strengthen certain relations – relations that shape who is included or excluded from decision making about environmental governance.

In other cases, policy making has damaged relations and generated friction around governance arrangements. The *Climate Change (Management) Act* (GoPNG 2015) produced conflict between the CCDA and PNGFA, which are the main policy-making and implementing authorities for REDD+ in PNG, respectively. Relations between these departments have been strained over time; early confusion over the division of roles and responsibilities has been an ongoing source of tension (Filer 2012; Babon 2014: 137; Dalsgaard and Pedersen 2015). While these relations are fluid and constantly being remade, the *Climate Change (Management) Act* (GoPNG 2015) has exacerbated tensions around the distribution of authority. A staff member from the PNGFA discussed this:

At that time the relationship was very good, until the Climate Change bill came in. ... The relationship is, I don't know at the moment, but now I am not fully attending the Technical Working Group. But that Climate Change Act has infringed into other sector activities and that is where there are some concerns raised. ... For example, the REDD+ is now under CCDA, so we have nothing to do with REDD+. So, for example, previously we were running the project base, like Central Suau [REDD+ Pilot Project], now the act says that if we are doing any kind of climate change activities, we have to go through the CCDA. So that's why we couldn't move any further with the Central Suau project. ... So, although we did most of the groundwork on Central Suau, when the Act passed then that was the end.

Evidently, policy changes have impacted on relations within the REDD+ assemblage precisely because of the way they (re)configure governance arrangements and power dynamics. From the perspective of at least one staff member in the CCDA:

With that, we still have discrepancies with sectors in terms of they feel like our Act has overridden, superseded – well it has superseded their Acts. So that has caused friction I would say. But I'd say the Act was there and they were given ample time to come back to us, however there was no feedback. ... But yes, we are in the process of reviewing the Act also. ... We don't want to create disharmony, especially with policies because policies ... have a great effect on what the outcome will be for the country.

People within these agencies recognise that policies impact on relations and outcomes. Other actors, including representatives of FORCERT, mentioned the *Climate Change (Management) Act* (GoPNG 2015) not only as a source of tension, but also as a trigger to strengthen certain alliances within the assemblage. For example, the PNGFA drew on the support of NGOs in their criticism of the legislation. This illustrates how changes in the policy landscape impact on REDD+ in varied ways and how the assemblage is always shifting as a result.

By examining some of the relations that comprise the institutional REDD+ assemblage in PNG, we can appreciate how REDD+ draws together diverse actors over space and time and investigate how the relations between them may become strained, especially as policies and legislation are drawn into the assemblage and access to resources and authority shifts. Like the Avara-Annex building in Port Moresby, the REDD+ assemblage is always swaying. But, as shown below, scalar-thinking attempts to stabilise the unsteady foundations.

2.5 Scalar-Thinking in the REDD+ Assemblage in PNG

By tracing the relations that make up the REDD+ assemblage in PNG, we can already see some instances of scalar-thinking. Actors strategically employ scalar discourses in an attempt to stabilise environmental governance assemblages by defining categories and hierarchies where certain actors and actions can exist. Across the interviews, actors frequently employed scalar-language – namely ‘global,’ ‘regional,’ ‘national,’ ‘provincial,’ ‘district’ and ‘local.’ Phrases such as ‘going down’ and ‘filtering down’ were also regularly adopted in relation to REDD+. Such statements were combined with body language where actors frequently used hand gestures to depict scale as a vertical ladder, one even going as far to draw a diagram of the provincial, district and ward levels organised as hierarchical steps.

Staff at the FCPF discussed the ‘top-down’ approach to REDD+ in PNG and one commented: “Here [it is] very crucial to build the standing of the national stakeholders. It’s like [a] top-down approach. And then bringing them, or scaling them, down to the local level.” An officer within the CCDA justified this:

At the local scale, I think the way that I see it is the major hindrance would be the guys at the provincial level knowing what the guys at the national level want. What the direction is. ... So that’s why now most of the actions and approaches we are doing are policy-based. We have to know where we are going, so we can give guidance to the guys at the provincial level who will in turn provide the necessary guidance further down.

This ‘direction’ of scale is important as it reveals the hierarchical assumptions where actors engaged at the ‘local’ or ‘provincial’ scale are seen as ‘below’ those at the ‘national’ level. Such hierarchical scalar-thinking was prominent during discussions around the voluntary carbon market (VCM) where certain actors stressed the importance of a national approach to REDD+. Carbon markets are often classified into two groups: compliance markets and VCMs. Compliance markets are created from international and national regulations that impose limits on emissions and allow actors to trade and sell credits. In comparison, VCMs are driven by demand from business and private consumers wanting to improve their corporate social responsibility and reduce their carbon footprints (Dalsgaard 2016: 71). As Dalsgaard (2016) notes, both types of markets rely on different conceptual scales – the compliance market, in particular, necessitates national action that is regulated at the global scale. Under the compliance mechanism established by the UNFCCC, the PNG government has adopted a national approach to REDD+, and consequently opposes any VCM activities that might undermine this. One staff member at FCPF declared:

The challenge here in the country is ... they mix the REDD+ of the UNFCCC approach with VCM, which is absolutely wrong. ... The [VCM] market is limited, first of all, and the benefits go to a specific community. This is not ... a national approach and this is absolutely out of UNFCCC compliance approach. And when we talk about the country level, the national level, think, we always think about the benefits going to the country under UNFCCC.

As this quote reveals, REDD+ proponents in PNG use the compliance approach as a way to designate, and justify, the national scale as an arena for policy making and action and the global scale as the arena for governance. Indeed, throughout the interviews, frequent references were made to the ‘national REDD+ strategy,’ ‘national approach,’ ‘national safeguards,’ ‘national forest base map,’ ‘national forest inventory,’ and ‘national land use plan.’ Stakeholders also referred to ‘cascading relationships’ between the UNFCCC negotiations and national implementation. Staff at CCDA mentioned that they look to the global scale for ‘guidance’ and follow the modalities laid out by the UNFCCC. Through this language use, we can see how scale works to define arenas of governance.

Yet some actors in the REDD+ assemblage in PNG, particularly staff at the PNGFA, did acknowledge that this scalar-thinking privileges the global and national scales. Following the launch of the *National REDD+ Strategy* (GoPNG 2017), staff at the PNGFA commented that the strategy was, as the name suggests, more about the national scale, not local communities. Staff at the PNGFA argued, “Because we have the national and then we have the provincial and the local and then we have the district and then it goes as far as the ward level, so we should consider all levels.” This quote indicates that, even when recognising the politics of scale, actors reproduce categorical and hierarchical assumptions of scale. While actors adopt scalar language in an attempt to stabilise the REDD+ assemblage in PNG, such discourses, and the assumptions they entail, may become hegemonic when they are institutionalised in policy-making processes.

2.5.1 Scalar-Thinking in Policy Making

The banner in the CCDA office in the Avara-Annex building hints at how scalar-thinking has become dominant in the REDD+ assemblage in PNG – the way REDD+ is promoted is intimately connected with ideas of the ‘national’ and ‘global.’ Such scalar-thinking may also become embedded in policy-making processes, particularly in the documents, legislation and strategies that work to make the REDD+ assemblage cohere (Arora-Jonsson et al. 2016). In this sense, we can investigate how scalar-thinking may become dominant through discourse analysis of such documents, particularly policy documents from the international climate regime and PNG government.

Across the UNFCCC decisions on REDD+, scalar language was consistently used to establish ‘global,’ ‘regional,’ ‘national,’ ‘subnational’ and ‘local’ scales. This hierarchy of scales is evident from the first submission proposing REDD+ to the UNFCCC at COP11 (PNG and Costa Rica 2005). Scalar discourses become more explicit in subsequent documents, including the *Paris Agreement* (2015) from COP21 that recognises “the importance of the engagements of all levels of government and various actors” and emphasises the need for “global, regional, national and subnational cooperation” (UNFCCC 2015). Similarly, the PNG government’s policies and strategies

on climate change and REDD+ draw boundaries between these scales and extend such hierarchies to the ‘provincial,’ ‘district,’ ‘ward,’ ‘clan’ and ‘village’ levels.

Through these hierarchies, the scalar discourses identified in this analysis define arenas of decision making and action. To a large extent, the ‘global’ scale is constructed as the predominant arena for environmental governance. In the UNFCCC documents, climate change is framed at the global scale and mitigation measures, like REDD+, are designed to be governed at this level.²³ This scalar-thinking was reinforced through climate science (Miller 2004); the *Fifth Assessment Report* (IPCC 2013) analysed in this study highlights how the Intergovernmental Panel on Climate Change (IPCC) privileges the global scale by using global climate models and associated scalar language.²⁴

In this analysis, the national scale was found to be framed as the central arena in which REDD+ policy making and implementation should take place.²⁵ This is apparent from the first proposal of REDD+ to the UNFCCC, which necessitates the adoption of national baseline rates of deforestation (PNG and Costa Rica 2005), and continues through the *Cancun Agreement* (UNFCCC 2010), which requires that developing countries establish a national strategy or action plan for REDD+ as well as national forest emissions reference levels and national forest monitoring systems. The *Warsaw Framework* for REDD+ (UNFCCC 2013) also stipulates that countries implementing REDD+ need to designate a national entity or focal point under the UNFCCC and the *Paris Agreement* (UNFCCC 2015) uses nationally determined contributions (NDCs) to calculate emissions reductions.

²³ Frequent references were made to: ‘global climate change,’ ‘global emissions,’ ‘global efforts,’ ‘global negotiations,’ ‘global mitigation,’ ‘global responsibilities,’ ‘global action,’ ‘global effort,’ ‘global response,’ ‘global priorities,’ ‘global goal,’ ‘global agreement,’ ‘global forest cover,’ ‘global mechanism’ and the ‘global REDD+ scheme.’

²⁴ Scalar language within the IPCC (2013) *Summary for Policymakers* included ‘global-scale observations,’ ‘global-scale changes,’ ‘global patterns,’ ‘global carbon cycle,’ ‘global water cycle,’ ‘global-mean surface temperature’ and ‘global-mean sea-level rise.’

²⁵ Throughout the documents analysed here, emphasis was placed on ‘national circumstances,’ ‘national interests,’ ‘national priorities,’ ‘national development,’ ‘national capabilities,’ ‘national needs,’ ‘national action,’ ‘national planning’ and ‘national mitigation.’

Accordingly, the PNG government's policies frequently refer to the national scale as an arena of policy making.²⁶ The *National Climate Compatible Development Management Policy* (GoPNG 2014: 16) states that, "The National Government has the legitimate position to address climate change at the local level and regional level by adapting and improving planning, policy priorities and capital funding ..." REDD+ activities at other scales are expected to be undertaken in 'strict alignment' with national policies and programs.

The construction of a 'subnational' scale within these documents extends the national scale's arena of influence. For example, the *Bali Roadmap* (UNFCCC 2007) explicitly states that, "Subnational approaches, where applied, should constitute a step towards the development of national approaches, reference levels and estimates." The *National REDD+ Strategy* (GoPNG, 2017: 26) also uses this language, while PNG's *Readiness Preparation Proposal* (R-PP) affirms:

... REDD+ implementation should be conducted in a coordinated manner within this [sic] government systems such that the links between implementation of REDD+ activities at the sub-national level influence and or captured clearly in the national level policies (FCPF 2013: 11).

Adequate systems and procedures will need to be in place to reconcile the monitoring and performance of sub-national activities within national level monitoring, both to understand the contribution of sub-national activities to overall national performance, but also with regards to issues such as leakage (FCPF 2013: 76).

The construction of a sub-national scale works to extend the influence of the national scale, but this also curtails the agency of the local scale. The local scale has been largely overlooked and overshadowed in terms of decision making; references to the local scale are limited and, when they do appear in these documents, are typically in relation to 'local

²⁶ For example, references to 'national REDD+ strategy,' 'national REDD+ framework,' 'national REDD+ management,' 'national REDD+ readiness activities,' 'national reference levels and targets,' 'national greenhouse gas inventory' and 'national safeguards.'

communities,’ ‘local landowners,’ ‘local people,’ ‘local resource users,’ ‘local customs,’ ‘local capacity-building’ and ‘local benefit sharing arrangements.’ The only mention of ‘local action’ in the documents analysed appeared in the *Climate-compatible Development for Papua New Guinea* (GoPNG 2014) report and, even then, this reinforced a hierarchy of scales: “Climate change requires action at multiple levels: international agreements, national plans and local actions must complement each other.” To a large extent, the local scale is constructed as a place for REDD+ awareness and benefit sharing, not as an arena for decision making.

This analysis of policy documents from the international climate regime and PNG government reveals how scalar-thinking has become dominant within the REDD+ assemblage in PNG. Scalar language works to stabilise the REDD+ assemblage in PNG by defining categories and hierarchies that delimit arenas of governance, decision making and action. This scalar-thinking has also translated into the Central Suau REDD+ Pilot Project in the Milne Bay Province.

2.5.2 Scalar-Thinking in the Central Suau REDD+ Pilot Project

The dominance of scalar-thinking within the institutions and policies holding the REDD+ assemblage together has also translated to the project design documents of the Central Suau REDD+ Pilot Project. These documents continue to adopt scalar language, including references to ‘global,’ ‘national,’ ‘local,’ ‘provincial,’ ‘district’ and ‘ward’ levels. By analysing how scalar-thinking translates in the Central Suau REDD+ Pilot Project, we can see how the reification of categorical and hierarchical assumptions has both discursive and practical consequences. That is, how scalar-thinking comes into practice as projects are designed to recognise the agency of some people, at some scales, and exclude others.

In line with the construction of the global scale as the predominant arena for REDD+ governance, the Central Suau project design documents focus on achieving global emissions reductions and validation through international standards, specifically the Verified Carbon Standard (VCS) and the Climate, Community and Biodiversity (CCB) standard (SPC/GIZ 2013: 9). Likewise, the proposed benefit distribution system for the

project pushes for a “national legal framework and governing body” to ensure that “vertical benefits devolve only as far as the ward level, within which they will be shared by all community/ward members” (SPC/GIZ 2015b: 4-5). The ward scale is constructed as the level where benefits should be distributed, which again bounds people at this scale and frames landowners as recipients, rather than decision makers or active participants in REDD+. The emphasis on global and national decision making within the Central Suau REDD+ Pilot Project ignores the agency of local people and the role they play in governing their environments.

While few people in Suau have seen or read the project design documents, they have had to negotiate scalar-thinking as it is translated in the Central Suau REDD+ Pilot Project. Through encounters with foresters, scientists, consultants and policy makers, people in Suau come into contact with scalar-thinking, and often contest their positionality as bounded to the ‘local’ scale. There are notable disputes around the exclusion of local knowledge, forest management and decision making within the REDD+ pilot project. One villager recognised climate change and REDD+ as a global issue but emphasised the importance of local knowledge: “Because it’s a global issue, we try our best to understand the basics of it, not so much of how it will impact in the global sense, but in local knowledge, what does REDD+ mean to us.” Another leader acknowledged that climate change was a global phenomenon, but emphasised that REDD+ is about local forest use:

That would be the translation I would say, trying to explain to a simple villager, that the concept itself is basically telling us that we need to be wise in using our forest because of this global phenomenon that has so much carbon dioxide released into the atmosphere by foreign countries. And we, as a virgin country who has got the forest intact, we need to maintain our forest to help reduce those emissions that are released by the major industrial countries.

As these quotes demonstrate, people in Suau adopt scalar-thinking to make sense of REDD+, but also question whose knowledge is valued, who can use resources and how. This quote, and references to “simple villagers” also reiterates that REDD+ actors, and

likewise this research, have largely engaged with local ‘elites’ – people who are educated and may hold positions of authority. It is important to note that many of my discussions of REDD+ were with these elites who engaged in the REDD+ meetings and awareness programs and this limits how representative these claims are. While scalar-thinking has largely excluded local people from decision making, people in Suau want to play an active role in REDD+. An elected leader from Suau argued:

I’d just like to see the agencies involved, even the government and our foreign partners who are pushing for REDD+, to really come out with the clear plan and the local content of how we are going to participate and benefit in the REDD+ program. And so that’s how I really want to see REDD+ move and some of the things, areas that we are struggling in, and for them to come and capture what areas we need to get support for. Rather than making decisions up there, come down and consult with us and see what’s best for us and we can be able to dialogue and share some of those ideas.

This quote draws attention to the hierarchies of scale at play around REDD+ where decisions are made ‘up there’ and landowners want REDD+ actors to ‘come down’ and engage in reciprocal decision making. Indeed, this could be considered to be a Suau critique of scalar-thinking – while REDD+ agencies foreground categorical and hierarchical scalar imaginaries, people in Suau foreground relationships and emphasise the importance of negotiation. By examining how scalar-thinking translates in the Central Suau REDD+ Pilot Project, we can start to see the frictions that emerge as environmental governance intersects with the lives of people in Suau. The bounding of communities at the ‘local’ scale denies the complex relationships that people are entwined in which do not conform to scalar hierarchies. The voices of certain social groups are silenced and erased; ‘local’ people in particular are collectivised and fixed in place (see also West 2006: 32; Li 2014b). Scalar categories and hierarchies, which construct the global and national scales as arenas of REDD+ governance and policy making, not only exclude certain groups from engaging in decision making, but marginalise other ways of being and knowing.

2.6 Interrogating Scalar-Thinking Through Assemblage-Thinking

As shown in this chapter, we can interrogate and challenge the dominance of scalar-thinking by using assemblage-thinking to remain open to relations, heterogeneity and emergence and avoid reinscribing categorical assumptions. In the context of climate change and its governance, it is becoming increasingly important to hold onto the complexity, multiplicity and contextuality of intersecting assumptions of reality (Grossberg and Behrenshausen 2016: 1026). To challenge the hegemony of scalar-thinking and dissolve concrete and categorical assumptions, we must remain open to other ways of being and knowing and recognise heterogeneity (Tschakert 2012). Assemblage-thinking offers a lens to examine the complex relations that come together around REDD+ over time and space. Through assemblage-thinking, we can focus on the relationality, instability and situatedness of REDD+ processes while remaining alert to the way that hierarchies are constantly reproduced within environmental governance regimes (see also Arora-Jonsson et al. 2016: 82).

Scale is continually reproduced within the REDD+ assemblage, by the institutional actors and policy documents that attempt to structure and stabilise the assemblage. Institutional processes are not forged in isolation; they remain entangled with, and co-constituted by, other assemblages (Satizábal and Dressler 2019). This process is political – it delimits arenas of decision making and action that may exclude certain actors and their assumptions. In particular, scalar discourses draw boundaries around arenas of governance, policy making and action that enable and constrain different actors to engage in decision making. When this translates into practice, for example in the Central Suau REDD+ Pilot Project, local people may be excluded from decision making in favour of actors positioned at the national and global scales, actors who reinforce such scalar-thinking. This is evident in the TWGs, which draw together actors in the REDD+ assemblage in PNG, but notably exclude communities and customary landowners (Fujisaki et al. 2016). By tracing the relations in the REDD+ program in PNG, this chapter has analysed scale and power not as entities or products but as relational effects (Allen 2003). This examination highlights the politics at play as actors attempt to stabilise REDD+ through processes of categorising and organising reality into hierarchies – these knowledge practices also make power-differentials.

As in all processes of defining the world, it is within this process of categorisation that underpins scalar-thinking where power comes into play. Merry (2016: 4) has argued that all forms of governance require knowledge that is classified, categorised and arranged into hierarchies, but there is politics, interpretation and judgement in systems of categorisation – who and what is included or excluded. Processes of categorisation inevitably construct the way that reality and social action are understood (Merry 2016: 27). Returning to Foucault (1980), we see that knowledge is always embedded in frameworks of power; all epistemological tools, including scalar-thinking, are mechanisms for creating knowledge and exerting power by actors who are positioned to create and reproduce such framings. When scalar-thinking becomes dominant and institutionalised in policy making, categories of scale may appear objective and natural, and the power exercised in creating them may not be visible (Merry 2016: 77). Scalar-thinking acts as a form of inclusion and exclusion, delimiting who has access to decision making and power and reproducing such dynamics.

Rather than revealing truth, scalar-thinking is a particular way of categorising and making known one set of ontological assumptions out of a multiplicity of possible assumptions. As an epistemology, scale reinforces categorical assumptions about how reality is constituted and organised. Scalar-thinking implicitly assumes the universal applicability of categories and the ability to categorise and organise the world in this way. It is grounded in assumptions that there is a ‘real’ world where scales exist as boundaries between levels organising this reality (see Escobar 2016: 29). Within scalar-thinking there is a presumption that hierarchy is a logical consequence; each scale both encompasses and is encompassed by others. But this ignores relations that do not fit within such sequences. We can see how categorical assumptions of reality are foregrounded in the scalar-thinking that has come to dominate how actors frame and implement REDD+ in PNG. This chapter, thus, provides a starting point to examine the frictions that may emerge when categorical assumptions are privileged and open analysis up to other, relational, ways of being and knowing.

2.7 Limits to Assemblage-Thinking

Assemblage-thinking is a useful conceptual lens to interrogate scalar-thinking and categorical assumptions of reality, but this only takes us so far. This chapter has introduced the central problematic of this thesis – the intersections and frictions between categorical and relational assumptions of reality in the context of climate change and environmental governance – but in using assemblage-thinking to trace these intersections it is important to critically engage with the philosophical theories that are being centred and the associated limitations. By using conceptual lenses like assemblage-thinking, we are valuing certain epistemic practices over others (West 2018b). Like all concepts, assemblage is grounded in particular theoretical traditions – in this case critical social and cultural theory (Marcus and Saka 2006) – and indebted to particular scholars – that is, largely European, male scholars like Deleuze, Guattari and Latour.²⁷ Even while criticising ontological categories, it is possible to reassert ‘Western’ assumptions over Indigenous ways of perceiving and enacting reality (Theriault 2015). Ahmed (2013) notes that concepts like assemblage help to question categories and are needed to think differently as we encounter worlds, but these ‘new terms’ should also be critiqued.

Indigenous and feminist scholars, including Todd (2016a), have critiqued concepts like assemblage for filtering the ideas of Indigenous thinkers through white intermediaries. Indeed, Oceanic scholars present similar ideas about relationality, multiplicity, emergence and heterogeneity (see for example Māhina 1992), but this work is largely excluded from discussions of assemblage-thinking. People in PNG have always had Indigenous forms of knowledge, but these have been continually subsumed and subjugated at the interface with Western conceptual and representational models (Stella 2007). The task then is to ask questions that enable Indigenous knowledge to be understood on its own terms (Winduo 2009). This is a difficult task and raises questions about positionality, subjectivity and knowledge production; as a white, outsider researcher I continually reflect on how to interpret Suau knowledge and contribute to

²⁷ As West (2018a) explains: “If we as a field continue to seek to understand and explain the multifaceted global present with reference only to the past (that old canon) or the work of, for example, French philosophers of emergence, we run the risk of not only producing knowledge that has little or no connection to how people living those global presents experience the world, but also – again – producing an anthropology that is inaccessible to the people with whom we work. In its inaccessibility, this version of anthropology is utterly nonreciprocal.”

decolonial research agendas. For knowledge to be decolonised, it is important to move away from the exclusive reliance on theoretical framings and concepts developed by cultural outsiders (Gegeo and Watson-Gegeo 2001; van Meijl 2019). Thus, critical reflection on the use, and limits, of assemblage-thinking – and engagement with Suau ways of being and knowing, which is the focus of the following chapters – is part of the decolonial agenda of this research.

Throughout this thesis I reflexively and iteratively engage with both emic and etic concepts. As Babidge and Dressler (2010) emphasise, it is important to acknowledge and account for how and why research is positioned according to certain ideological and philosophical perspectives that influence how people are characterised. While recognising the limitations, I draw on ‘Western’ concepts, like assemblage-thinking, for their flexibility and ability to make space for other ways of being and knowing. Assemblage-thinking opens up the possibility of seeing relations and shifting stories from one context to another (Mol 2010), which is useful for tracing the relations and frictions that move REDD+ forward. Rather than using conceptual lenses like assemblage-thinking to make sense of the lives of others, I attempt to rethink such concepts through engagement with Suau ways of perceiving and performing reality.

2.8 Conclusion

Through ethnography with key institutions and discourse analysis of policy documents, this chapter has traced the complex network of relations that make up the REDD+ governance assemblage in PNG. Focusing on relationality, heterogeneity and emergence makes things visible that may otherwise be obscured. I have used assemblage-thinking to challenge the hegemony of scalar-thinking around climate change and how it is managed, which has become institutionalised across the REDD+ agencies, policies and projects in PNG.

This chapter has provided an introduction not only to REDD+ in PNG, but also to the central problematic of this thesis – the intersections, frictions and inequalities between categorical and relational assumptions of reality that may be foregrounded or marginalised through environmental governance. By engaging with assemblage-thinking,

the categorical and hierarchical assumptions of scalar-thinking begin to dissolve, which enables a different analysis of REDD+. However, assemblage-thinking has its own limitations that must be critically reflected on, particularly when pursuing decolonial research agendas. This chapter has focused on the institutions and policies stabilising REDD+ in PNG, but the next chapter examines how REDD+ and Cool Earth are translated locally and how people in Suau perceive these projects. Building on this foundation, the following chapters explore these intersections and frictions between the ways that REDD+ is designed, implemented and evaluated and the ways people in Suau live with and relate to their land and trees.

3. The ‘Monster’ Behind Global Environmental Governance – Translations and Perceptions of REDD+ and Cool Earth in Suau

When I arrived in Silosilo in February 2017 I was expecting to research the Central Suau REDD+ Pilot Project, but quickly realised there were multiple forms of environmental governance at play in the area. Whispers of a ‘Cool Earth’ conservation project in Wabumari were circulating between villages and, like the REDD+ project before it, people feared what this intervention might mean for their land and livelihoods. Eventually these murmurs were confirmed at a launch event that I attended alongside many people from Silosilo interested to hear what the project was about.

In March 2017, the Wabumari conservation project was officially launched by staff from the Cool Earth charity, based in the United Kingdom (UK). The launch included a whole day of speeches, feasting and finally the unveiling of a plaque, which declared “This Area of Protected Woodland was Officially Dedicated to the Queen’s Commonwealth Canopy.” This plaque drew much speculation and criticism from villagers, particularly because of its location on land that had been gifted to the church in the past, with people saying, “Don’t sign that land, it is not your land.” In an area that has experienced colonisation and missionisation, dedicating land to the ‘Queen’ prompted confusion and fear. Martin, a village magistrate in Suau, attended the event and told me:

I was there. I was confused about the project. I don’t know, how will they operate? The confusion is that we had is no clear explanation to the community. That’s why some of us were not happy. That’s why some people are commenting that we have no idea about Cool Earth. ... We as a village, we only understand that they might be getting the air from us, or something like that. So that’s where we have the confusion. They might be getting our air and we don’t know. ... So, I was not really clear about that, because the Queen, she’s very respected and high up. ... To me I was thinking they might be sending our land up to her or something like that.

Because it was Queen's what [Queen's Commonwealth Canopy]. ...
Because when they came ... our government here they don't know
anything about it.

Members of the Suau Local Level Government (LLG) also found out about the project on the day of the launch, and complained, "They are acting as if there is no government." While government agencies like the PNG Forest Authority (PNGFA) had brought in the idea of REDD+, villagers were worried that this new 'company' had not gone through the government. This launch event drew attention to the confusion and uncertainty around different, overlapping, forms of environmental governance, not just from people in the village but from project proponents. Through discussions with the Cool Earth staff on the day, it became clear that the organisation was unaware that the Wabumari area was already part of the proposed Forest Management Area (FMA) for the Central Suau REDD+ Pilot Project.

The event was supposed to conclude with the signing of a Forest Protection Agreement between Cool Earth and the Wabumari community, but this was postponed due to land disputes. During the launch, a male Principal Landowner (PLO) from Wabumari, but living at Fife Bay, spoke out:

I am coming here with a sad face. I was not consulted. This is not in the law of land. It is wrong and illegal. The boys forgot about me. Other block²⁸ members are also not happy. For me, I say no to my block. I am the principal [landowner]. This is my frustration. Not only me, others too lay complaint.

Following this launch, and the days of discussion and debate that followed, Serah, a widow from Silosilo, commented on people's concerns about the Cool Earth project:

²⁸ 'Block' is an English term frequently used by people in Suau to describe plots of land, which may be gardens in various stages of cropping and fallow, that was likely introduced by copra and rubber plantation managers in the early 20th Century (Demian 2007b: 165).

But in the end, they don't know what's going to happen, good life or bad life. He [God] said people cannot give things away: life, air, land or forest. No. There must be something coming later. You have to think. Otherwise in our future life and they'll come and boss our land. We were telling them, otherwise they boss Wabumari. You have to think Wabumari people. You have to think first. All the LOs [landowners] come, have meeting, think properly and then you bring company in. But you see, these ones still complaining, disputing.

These fears of land and air being stolen through outside interventions are not new. Similar concerns and confusions were generated by the Central Suau REDD+ Pilot Project when it was first introduced in 2012. After a few years of inaction on the REDD+ project, these fears began to dissipate but were reignited through the emergence of the Cool Earth project. Reflecting on REDD+ at this point in time, Sabina, a mother of five who attended a few REDD+ meetings in Silosilo, explained to me:

They [village people] don't really know about this REDD+. They only knew that this REDD+ will bring destruction to the community. And they are not clear about the REDD+. The REDD+ might bring problems. Or they [REDD+ proponents] might own that land. That's how they [village people] think. ... Maybe they just forget about REDD+ because they are not clear with it. ... They were not thinking positive; they were thinking negative. They were having negative mind.

Isabel, a women's leader in Silosilo, was involved in a number of REDD+ workshops in both Alotau and Port Moresby and helped the PNGFA to run community awareness sessions on the Central Suau REDD+ Pilot Project. But she faced a lot of resistance in the village:

Every time you say Forest [PNGFA] are coming, they [village people] say ‘they are coming to steal our land. They are coming to give our land away. Or they are coming and tricking us, bullshitting us.’ When you tell them, they make such comments, or they say, ‘tell them to come and give us money.’ So like all those comments we can easily know that people are yet to understand that project. Even some are speaking negative about the project. Like some say ‘they come, and they put those machines up, cameras up and they will suck up all our air and we will die here. They are getting all our air out, carbon out and very soon all those trees will dry up and we will run short of air.’ Because they are like sort of absorbing all our air up. You don’t know what these cameras are doing, they are destroying our environment. The oxygen, they are talking about the oxygen, the air that we are breathing. That good air they are saying might be sucked up and we will be left with less and we will end up going out of air just like that, where you are trading that carbon.

For some people in Suau, outside forms of environmental governance incite fears about land, trees and air being stolen.

3.1 Introduction

The above stories that were elicited around the launch of the Cool Earth conservation project highlight some of the tensions that emerge as outside environmental governance interventions, and their associated assumptions, intersect with local lives in Suau. These stories were told by people from different positionalities in Suau, including elected leaders, village magistrates, landowners, widows and mothers.²⁹ While REDD+ and Cool Earth are different projects with different aims and processes, they generate similar fears and confusions for people in Suau. During storytelling, people frequently expressed concerns that external project proponents may steal their land and air. Project proponents often explained these kinds of stories away by emphasising a lack of ‘awareness’ or local

²⁹ This is important, as Martin’s (2019) work highlights, because the views and interests of local elites differ from other local people in PNG. More so, postcolonial elites (who have assumed authority and status from colonial structures) are not representative of Indigenous worldviews opposed to colonial oppression (Martin 2019: 12).

people ‘not understanding’ the project. But these perceptions are not just about (lack of) awareness or understanding. They point to the so-called ‘monster’ behind global environmental governance – the diverse assumptions about the nature of existence that these assemblages draw together in processes of translation.

Building on the political ontology approach outlined in Chapter One and the exploration of scale and assemblage in Chapter Two, I employ the concept of ‘translation’ in this chapter to understand reality-making processes at play within environmental governance assemblages. Like Tsing (2015: 62), I see translation as the drawing together of world-making projects. Translation is thus understood as a dual (two-way) process that engages others in the construction of reality – the performance of ontological assumptions – rather than the establishment of equivalences based on an external reality (Blaser 2010). Following Callon (1984), translation is a process, never a completed accomplishment, which can fail (see also Horowitz 2012). From a relational view, this process is about engaging others to construct partial common ground (Blaser 2010: 234). If we take translation as a relational, necessarily reciprocal, process of reality making, it becomes increasingly important to recognise the politics, positionalities and perceptions of translation as we search for the other in the self (Spivak 1993).

Perception, and performance, are central to understanding how reality is made and translated. For this study, perception is not just someone’s experience or understanding, it is “synesthetic – an affair of the whole body sensing and moving” (Casey 1996: 18). As such, perception necessarily implies and entails enactment in processes of reality making. West (2006: 145) has shown how perceptions of conservation projects in PNG are personal and largely made in relation to an individual’s engagement with project proponents. In following this lead and emphasising the diversity of perceptions based on individual experience, the purpose is not to discern different perceptions while showing them to be equally logical or valuable. Rather, I focus on how these perceptions highlight the contingency of translations within governance assemblages (see also Hastrup 2011: 426).

Political ecology studies of other conservation projects in PNG have highlighted the politics of translation as human-environment relations are translated by project proponents in ways that fit complex local worlds into generic categories (West 2005; 2016a). Recent research has also investigated how different actors translate REDD+ and the consequences and inequalities that are generated through this process. Pasgaard (2015) has examined the two-directional translation process of REDD+ where policy rhetoric and practice are translated both upward and downward between communities, conservation practitioners and donors. The dual process of translation and network formation is constantly emerging and always unstable – particularly if actors promote conflicting translations of the problems and solutions at stake (Sanders et al. 2017). Similarly, Sanders et al. (2017) have used translation to analyse how local actors understand REDD+ in Indonesia and the tensions that emerge in this process. This research emphasises that a more nuanced perspective is needed to understand the various actors translating REDD+, their interests and communication patterns (Pasgaard 2015). Although multiple actors engage in processes of translation for REDD+, they do not participate in equal ways (Sikor 2013). Building on this work, I focus on how REDD+ and Cool Earth are being translated by project proponents in Suau and the power imbued in these processes as differently positioned actors have different capacities to engage in translation.

To start, I provide background details on the Suau area to contextualise emerging conservation regimes within the history of colonisation, missionisation and resource extraction. With this context in mind, I outline the development of the Central Suau REDD+ Pilot Project and Cool Earth conservation project in Wabumari. Following this, I examine how these projects have been translated in Suau and the multiple, positioned perceptions of these projects in Silosilo. Taken together, I emphasise how these processes of translation and people's perceptions point to deeper ontological intersections, what a key informant referred to as the 'monster' behind REDD+ – the diverse assumptions that are drawn together, in unequal and unstable ways, through processes of translation. This chapter lays the groundwork for the rest of the thesis where frictions between different ways of being and knowing – particularly assumptions related to climate change, land, trees, equality, equity and gender – are problematised in greater detail.

3.2 History of Suau

The colonial history in Suau strongly informs the emergence of environmental governance assemblages in the region. The Suau area covers the south-western corner of the Milne Bay Province in PNG and is part of the Massim cultural group. The Suau coast went through a concentrated period of missionisation from the late 19th century; James Chalmers was the first missionary to arrive in Suau in 1877 under the London Missionary Society (LMS). The LMS introduced an evangelical Christian belief system with strong imperial connections to Britain (Demian 2007a: 92). Chalmers was followed by Charles Abel who went onto leave LMS and set up the Kwato Extension Association, adopting Suau as the official language of the area.³⁰ The LMS established a base at Fife Bay, which eventually became a seminary for Polynesian and New Guinean teachers, and extended west to Gadogadoda (Kaniku 1997: 264). People in Silosilo spoke of Samoan, Fijian and Tongan missionaries who came through the LMS and set up churches; their graves can still be found in the area.

Christianity promoted new ideas of individual responsibility and moral obligations to God that intersected with existing relational dynamics and constructions of personhood (Cox and Macintyre 2014). Missionisation involved moving away from the history of violence, cannibalism and the worship of ancestors and spirits towards new religious and economic obligations (Demian 2013: 32). Missionaries took a “hostile attitude” towards mortuary feasts and traditional dancing, singing and drumming (Armstrong 1922; Williams 1933). Elderly people in Silosilo recount stories of missionaries burning *kundu* drums and I frequently heard them lament their ‘lost’ culture with statements like “Our culture was destroyed by early missionaries from Samoa. They came and killed our culture, destroyed our tradition” and “Suau is really a lost culture, because of Christian influence.”

Kaniku (1977) has written critically about Charles Abel’s vision of the Kwato Church as a theocratic state – functioning as a completely independent entity – and links this to cultural alienation in Suau. More recently, Demian’s (2006b) research has reflected on

³⁰ While the missionaries adopted the language from Suau Island itself, Cooper (1975) notes at least six mutually-intelligible Suau dialects.

this ‘loss of culture’ in Suau not as a process of dispossession but as a consequence of people’s attempts to engage with missionaries and colonial figures. Suau people saw this process as recognising or accommodating new relationships, rather than suppressing or displacing old relationships (Demian 2006b: 519; 2007b: 150). This may not have always been a voluntary process; the Kwato Church was known to forcibly remove children from villages and limit their interactions with their family to ‘transform’ them into British children (Demian 2007a: 99). The establishment of schools across the Suau coast, often by missionaries and colonial authorities, also served as a mechanism to enforce new forms of logic.

Following the missionaries, colonial administrators came to Suau in the 20th century and established waged labour on rubber and copra plantations (Demian 2006b: 521). PNG endured three successive colonial states from the late 19th Century – including protectorates under Germany, Britain and Australia – before reaching Independence in 1975. In the 1920s, the colonial resident magistrate for the Australian administration moved villages in Suau closer to station centres (Demian 2004; 2007b: 159), which has contributed to high rates of land disputes in the area. Colonialism increased mobility in Suau with people employed in state service roles, including teachers and nurses, travelling to other parts of the Province and beyond. For example, Ala in Silosilo attended the LMS school at Fife Bay until grade six and then went onto train as a nurse’s aid and worked in Chimbu province. Although, this mobility was seen to contract during World War II (Demian 2007a: 103), particularly with the Battle of Milne Bay in 1942 between Japanese forces and Australian and American forces.

The ways that people lived in Suau were significantly altered through processes of colonisation (Dickson-Waiko 2001). Many cultural practices were stopped in Suau as people attempted to facilitate relations with missionaries and colonial authorities – now people in Suau mourn their lost ‘kastom’³¹ (Demian 2006b). Early anthropological

³¹ ‘Kastom’ is a Tok Pisin term that some people in PNG use to refer to beliefs and activities that are seen as traditional or customary. While the term derives from the English ‘custom,’ it is often used in opposition to Western beliefs and practices (Bainton 2008). The term ‘custom’ was first applied by colonial authorities to designate practices that people were assumed to perform before colonisation; the term has now become enshrined in the PNG Constitution, although this framing differs from local uses of kastom (Demian 2015). As the people I storied with in Suau typically used the English word ‘custom,’ I

reports note that the ‘break up of custom’ following contact with Europeans was accompanied by a ‘growing sense of irresponsibility’ (Williams 1933: 19) – colonialism changed relations and obligations between people. Like missionisation, colonisation shifted the balance between individual and collective interests; individual responsibilities and personal relationships to colonial authorities were increasingly foregrounded. Some Oceanic scholars have framed colonialism as breaking up relationships between peoples and places (Ellis and Hau’ofa 2001: 22).

Resource extraction has also been part of the ‘development’ of Suau and contributed to processes of change. Since colonisation, the eastern and western parts of Suau have experienced logging. While there are some small forestry companies in Milne Bay owned by local families, like Masurina Timbers owned by the Abel family (the grandchildren of the missionary Charles Abel), logging in PNG is largely controlled by a small group of foreign-owned companies (Laurance et al. 2012; Babon and Gowae 2013: 6). People in Suau complain that royalties from recent logging were low and not sufficient to enable desired development for villages; expectations and promises were never met. This generated tensions, particularly around land; as one landowner expressed there are “always disputes when companies come in.” In 2019, there were three logging projects starting in Suau, in Garua Modewa (Eastern Suau), Sagarai Gadaisu and West Gadaisu (Western Suau), all under Malaysian logging companies or subsidiaries.

In addition, the New Britain Palm Oil (NBPOL) company has large oil-palm³² plantations and estates in Suau, particularly around Padipadi, Sagarai and Mariawatte (see Figure 2). The estates provide income opportunities to a considerable number of people, both through direct employment³³ and through smallholder arrangements where people crop oil palm on their own blocks and sell it to the company (although this income is variable depending on oil-palm price fluctuations). These estates have also become sites for

use the English term throughout this thesis, but acknowledge the broader meaning, and distinction, encompassed in ‘kastom.’

³² According to Elahi and Michael (2017), oil palm was first planted in PNG in 1894 by German colonisers in Madang, with experimental plantings done in West New Britain and Oro Provinces in 1920. The commercialisation of oil palm across PNG began in the 1960s under the Australian colonial government.

³³ NBPOL is the largest private employer in PNG.

villagers to sell goods, notably *sada* (betel nut), garden food, sago and fish, and buy goods from small canteens, like rice, tea, sugar and soap. Women at Kau Kau remark, “We sell garden food to get store food.” Through resource extraction projects, people in Suau are becoming increasingly entangled with cash economies and global markets.



Figure 2. Map of Central Suau showing outline of the Central Suau REDD+ Pilot Project

The whole Suau area has been engaged in complex and ongoing processes of change, but this chapter will mainly focus on the Silosilo ward in Central Suau (Figure 3). Silosilo is the second-largest ward in the Suau Local Level Government (LLG) and, according to the ward recorder, has a total population of 543 people (including 274 women and 269 men).³⁴ As is typical of most wards in Suau, Silosilo has a primary school (with 118 enrolled students from across the ward), an aid post (servicing the ward as well as people from Kau Kau due to the closure of the Konemaiaiva aid post), two United Churches and one Christian Life Church (CLC). Christianity is central to social life in Silosilo; most people attend Church on Sundays; many women attend Women’s Fellowship every week

³⁴ According to the 2011 Census, Suau Rural LLG had 2,326 households including 11,879 people (Silosilo had 104 households including 519 people) (National Statistical Office of PNG 2011). Population data from the Milne Bay Provincial Forest Plan in 2008 estimates the overall population of Central Suau to be 6,619 people (SPC/GIZ 2013: vii), assuming an annual population growth rate of 2.7 percent, the population in 2019 would be approximately 8,900 people. Data on population numbers and language groups is limited; in the 1980s Wurm and Hattori (1981) estimated that around 20,800 people spoke a Suau dialect, 6,800 of which were primary speakers.

and the Youth Fellowship program is active. People who do not attend Church or Fellowship programs are considered lapsed Christians, more than atheists or agnostics. People regularly contribute to Church fundraising drives and during my time in Silosilo the community were raising money to build a new house for the pastor and his wife. Originally, Samoan United Church missionaries set up a church at Wabumari, but this was relocated to the next bay after the pastor was killed by local men who wanted to marry his wife. Silosilo is now the centre of the ward, but the community of Wabumari is trying to establish an elementary school and has recently set up a resource centre (under the Cool Earth project).



Figure 3. Map showing approximate area of Silosilo Ward in Central Suva

There are two ‘permanent’ (registered) canteens in Silosilo and a handful of unregistered canteens that sell store goods. Provisions are brought in on regular dinghy trips to Alotau that often run through the oil-palm estates of Mariawatte and Padipadi. While Central Suva is surrounded by large scale resource extraction projects, this activity has not extended into the area – perhaps because of the steep topography and rugged terrain – and most people maintain small-scale agriculture and cash crop practices. Every Saturday morning there is a village market where people sell garden food, homemade donuts, sago,

fish and *sada* (betel nut). People in Silosilo rely primarily on subsistence agriculture and the main crops are *apoi* (yam), *udo* (taro), *maniota* (cassava – tapioca), *kanowat* (sweet potato), *buinana* (banana), *pineapa* (pineapple) and *mawi ope* (papaya). People practice swidden cultivation with stages of clearing, burning, planting, harvesting and fallow. This process of clearing and burning becomes significant, and contested, in the context of varied forms of environmental governance, where such practices are discouraged as ‘degrading’ the environment. To understand this contestation, it is important to understand the emergence of the REDD+ and Cool Earth projects in Suau.

3.3 Environmental Governance Assemblages in Suau

Across PNG there is a precedent of outsiders telling local people how to use the environment (West 2006: 129). Emerging environmental governance assemblages in Suau are another expression of outside influence dictating how land can be used in an area that has already been subject to missionisation, colonisation and resource extraction. The Central Suau REDD+ Pilot Project is one of five original demonstration sites in the REDD+ program in PNG. Between 2012 and 2014, SPC/GIZ supported PNGFA to undertake feasibility studies for the REDD+ project in the area.³⁵ As shown in Figure 2, the Central Suau REDD+ Pilot Project originally encompassed 64,000ha of land from Modewa to Bona Bona Island and inland to Leileiafa including 23 wards and an estimated population of 7,000 people (SPC/GIZ 2015b). Sixty percent of this area is considered “pristine primary forest” by the REDD+ project proponents and 28 percent is under cultivation (SPC/GIZ 2013: 3).³⁶

While the original plan was to host a Reduced Impact Logging (RIL) project in the area, this was subsequently changed to planning for a conservation project (SPC/GIZ 2013). According to the feasibility study, a lack of approved or even pending methodologies to

³⁵ In addition to this feasibility study, fieldwork was also undertaken for reports including: *Analysis of Historical Deforestation, Degradation and Land Use in Central Suau/Papua New Guinea* (SPC/GIZ 2014a); *Forest Carbon Inventory in Proposed Central Suau REDD+ Area, Milne Bay Province, Papua New Guinea* (SPC/GIZ 2014b); *Measurement, Reporting and Verification (MRV) Manual for Improvement Forest Management (Logged to Protected Forest in Central Suau REDD+ area/Papua New Guinea)* (SPC/GIZ 2015a); *Proposed Benefit Sharing System for REDD+ Pilot Project in Central Suau/Papua New Guinea* (SPC/GIZ 2015b). JICA also undertook a biomass survey in 2013.

³⁶ I discuss the tensions between local land use and classifications of ‘primary’ and ‘secondary’ forest in the REDD+ project in Chapter Five.

implement RIL in PNG ruled out that option. Furthermore, the likely revenue from a RIL project would have been insignificant compared to that from a conservation approach, which would generate income from global carbon markets (SPC/GIZ 2013). With this change of plan, the area was reduced to 15,000ha. The PNGFA realised, however, that this area would be too small to undertake an effective REDD+ project and there are ongoing discussions around the size and boundaries of the proposed project. The move from a RIL to conservation project involved establishing clusters and plots of land to be preserved. Out of a target of 24 plots, mapping of most was not completed as the project proponents faced challenges while trying to draw and mark plot boundaries and measure forest carbon. As discussed in Chapter One, the plot at Silosilo was disputed by landowners and never finished. While the PNGFA and Department of Lands initiated the Incorporated Land Groups (ILG) process for clans in Central Suau implicated in REDD+, registration of ILGs was never completed.³⁷ Due to financial constraints and limited staff capacity, work on the Central Suau REDD+ Pilot Project has stalled. While project validation was meant to start in 2017, there has not been any recent activity on REDD+ in Suau and people are still “sitting and waiting” for the project to start.

In the meantime, a Cool Earth conservation project has started in Silosilo ward, in Wabumari village. When I discussed this project with the PNGFA, officers recognised that the community were taking part in this program but labelled the activities as “contradictory to what we are doing with REDD+.” Cool Earth first came to Wabumari in 2016 after starting a project in Gadaisu.³⁸ By 2017, Cool Earth had associated with the Queen’s Commonwealth Canopy, which seeks to seal communities into a “global initiative of forest protection and ecological conservation” (Cool Earth 2018b). Cool Earth also operate in Peru, the Amazon, the Congo, Ecuador and Brazil. In Wabumari, the charity is trying to protect 400 acres of “biodiversity-rich, community-owned” forest (Cool Earth 2016). The aim of the project is to provide villages with an alternative to logging and oil palm and set up community associations to undertake sustainable livelihood projects.

³⁷ I go into more detail about the ILG process and resultant frictions in Chapter Five.

³⁸ The project in Gadaisu also generated tensions within that community, including disputes over benefit sharing and land rights; the community faces additional pressure from logging companies attempting to re-establish a concession in the area. In 2018 and early 2019, the project was suspended for six months and has subsequently restarted after a mediation process.

Under the Forest Protection Agreement between Cool Earth and Wabumari, the community commit to not “cut or sell any tree species for commercial use” and this is monitored through satellite imagery, photography and forest surveys. The agreement must be renewed by each party every year and Cool Earth intend to maintain a presence in the village for between five to ten years. Cool Earth give the Wabumari Community Association US\$20,000 per year paid in two instalments and villagers can access this funding by submitting proposals for sustainable livelihood projects to the Community Association committee.³⁹ They can also apply for additional funding for large-scale projects; for example, Wabumari has already received eight water tanks through Cool Earth. While REDD+ and Cool Earth operate through different knowledge practices and processes, they are both forms of environmental governance that reinscribe assumptions about reality and intersect with local lives in Suau in complex ways.

3.4 Translations and Perceptions

The assumptions, motives and practices of REDD+ and Cool Earth have been translated in different ways and people in Suau have had varied interactions with these projects. The process of drawing different perceptions of reality together is complex and difficult; it is dependent on two-way processes of translation that establish a ‘partial common ground’ (Blaser 2010), processes that are imbued with power and influenced by people’s positionalities. In this section, I detail some of the ways that REDD+ and Cool Earth project proponents have worked to translate these projects locally in Suau, how people in Silosilo have been engaged in these processes and the contingency and diversity of their perceptions.

3.4.1 “I’m not really understanding what REDD+ means”

In Suau, REDD+ translation began in earnest in October 2012 when project teams arrived to compile the project design documents for the Central Suau REDD+ Pilot Project and continued until 2015. For many people in Suau, their experiences of REDD+ have been limited to interactions with project proponents during the development of the project

³⁹ The benefit sharing arrangements of REDD+ and Cool Earth are explored in more detail in Chapter Six.

design documents and associated ‘awareness’ programs. These project design documents are central to how REDD+ is translated locally, but their development and dissemination often failed to effectively enrol local people in reciprocal processes of translation. Even though Silosilo hosted a number of project teams, none of the people in the village that I shared stories with had seen the resultant project design documents produced by SPC/GIZ. I showed people these documents and discussed the content, but most people felt that they were too scientific and could not understand the technical terms used. The production of these project design documents, and the perceptions some people in Suau have of REDD+ based on their encounters and relations with project proponents, provide a starting point to analyse disjunctures in the ways REDD+ is translated locally.

The feasibility study was the first to be undertaken in the Central Suau REDD+ Pilot Project. While the REDD+ project proponents acknowledge that feasibility studies usually take 10-14 days, only five days were spent in the Suau area during this process and only five communities (out of 23 ‘communities’ defined by project proponents) were visited (SPC/GIZ 2013: 2). The other project design documents, including the carbon forest inventory (which was based on field site visits in September and October 2014) and social mapping for benefit sharing, also involved project teams travelling to Suau and running ‘awareness.’

Silosilo was one village that was involved in these processes. A forestry team visited Silosilo in 2012 to undertake community awareness on REDD+ and spent one to two hours explaining the concept to the villagers. The team arrived on a Sunday and spoke to the community in the Church, after the service. However, people complained that the officers were unable to communicate in the local language and the concept was very complicated and too scientific. In 2013, another team including staff from the PNGFA and Department of Lands, came to Silosilo to do social mapping and start the ILG process. For the carbon inventory report, a *dim dim* (white person) scientist from New Zealand arrived to mark the boundaries of the Silosilo plot before another team came to establish the plot and measure the carbon stored in the trees. This team spent two to three days inviting land groups to meetings and gaining consent before they went into the forest.

Despite these efforts, however, there was a land dispute around this plot – as described in Chapter One – so the inventory team packed up and left.

According to the project design documents, people talked to during the social mapping process for the Central Suau REDD+ Pilot Project, “generally did not see why they needed to protect their forest and land. They acknowledged that they have been maintaining the forest ever since ancestral times.” (SPC/GIZ 2015b: 6). By 2017, however, most people in Silosilo did seem to understand that REDD+ was about carbon (which they often linked to ‘air’), about preserving the land and not cutting down big trees. As one person explained:

They told us how to preserve the forest, not to encourage these others logging and all this to come in. So, they told us, ‘you must look after [your forest], because there are other parts of the world where they do not have forest.’ So we must keep our forest virgin as it can contribute to other parts of the world which don’t have good fresh air, it contributes.

During a storytelling session, Kere, a youth and church leader who helped the inventory team to carry their equipment into the forest, reflected on all these meetings and shared his perceptions of REDD+:

For REDD+, my understanding is, I’m not really understanding what REDD+ means. In this place everywhere you go, most of the people they understand, but some no. These groups when they came here, probably 2012 and 2010, those years they came here, so when they call everybody together doing their awareness some they understood, some know about the project. Because that project was coming from overseas maybe, like from other countries, other parts of the world. ... So those groups, they came here, they do their awareness calling the land groups all together, all the clans. We are having meeting.

At the end of the storytelling, Kere turned to me and asked: “Okay so like what I’m thinking is, if you can clear what REDD+ really means? What does the carbon really mean? If you can just clear it out and then I can understand.” This was indicative of many storytelling sessions on REDD+ where local people would ask me to explain the project to them. But their own perceptions of REDD+, and associated uncertainties, tell us a great deal about how the project has been translated, by whom and the effectiveness of this process.

The multiple, positioned perceptions of REDD+ point to the politics of translation. Some formally-educated and employed people from Silosilo had engaged with REDD+ more than others and were invited to meetings and workshops around the project design documents. After attending one workshop in Alotau, a leader from Silosilo expressed that the *dim dim* facilitators were “speaking at their [own] level” so people who were “not used to lecturing” found it “difficult to understand.” In 2015, four people from Suau were selected by the PNGFA to go to a National REDD+ Stakeholder Workshop in Port Moresby. In this one-day workshop SPC/GIZ presented the project design documents for the Central Suau REDD+ Pilot Project. At this workshop, the Suau LLG Chairman for Forest spoke on behalf of the group of landowner representatives. When one agency asked why there was a dispute in Silosilo after all the awareness that was done, the Chairman responded that “for little people at the grass-root level, it is so complicated to understand.” He acknowledged that ‘educated’ individuals may have some understanding of REDD+, but ‘village’ people are still struggling to grasp it. These events are sites of translation that highlight not only who has the power to translate global and national understandings (project proponents) but also who is positioned to engage in reciprocal processes of translation (local leaders). The repeated perception that people in Suau do not ‘understand’ REDD+ also points to the contingency of translation processes, which depend on both parties establishing a common ground.

3.4.2 “We only understand that they [Cool Earth] might be getting the air from us”

While often perceived as similar to REDD+, the Cool Earth conservation project in Wabumari has involved different processes of translation. The launch event described at

the start of this chapter and the signing of the Forest Protection Agreement were some of the first attempts to translate the project locally. People continued to express confusion about the project, its aims and practices, during subsequent visits to Suau by the UK-based staff. Most translation of the Wabumari project occurred during site visits, when staff would undertake household surveys and hold meetings with the community. To translate the project and develop relationships with people in Wabumari, Cool Earth hired a local woman (whose father and paternal family lived in Wabumari) as a project coordinator; a role that involved frequent visits to the village. In 2019, however, the charity fired this staff member because of an organisation wide policy not to employ people from the community as project coordinators. Despite establishing an office in Alotau and hiring a program manager (from PNG but not from Suau), between late 2017 and early 2019 no UK-based staff visited Wabumari, further limiting opportunities for two-way processes of translation. As one community member stated, “They are still learning the culture, still only spent a few days here.” Another emphasised that Cool Earth want the community to do the project “the London way, not the PNG way,” indicating that processes of translation may not have established a partial common ground.

Different perceptions of Cool Earth also highlight how differently positioned people may engage in processes of translation in different ways. Predominantly, people residing in Wabumari had more opportunities to develop relationships with Cool Earth staff, compared to people from other villages in Silosilo and Suau more broadly. In this case, Cool Earth held the power to translate the project and Wabumari residents had some opportunities to engage in processes of translation, but outside landowners were largely excluded. Based on individual positionalities, some people within Wabumari felt that “these friends coming in from England are okay” and want to help the community. A local pastor explained:

I think they really like the Cool Earth because they are providing services for them. ... They’ve got some water tanks and they gave each house K200 [AUD\$77] for kitchen utensils. And maybe they are coming back for some more things that they will provide. But they are, I mean they are here actually to develop the village to a standard that everyone should be at that same level.

Despite some positive perceptions, some people, particularly those living outside the project area, are still uncertain about the motives behind Cool Earth. Landowners who live outside the village have been the most vocal in opposing the Cool Earth project. Local teachers at Silosilo also expressed concerns, “We don’t know what it is; they only told us the benefits, not the disadvantages.” A woman from Wabumari commented on the ‘confusion from outside:’

We are trying to find out ways if we can hear from some white people, like the views of whether they are honest with us. I think, like to me, I think they are honest because everybody asks them questions and they give us right answers. But like the views from people outside, there is plenty of confusion from outside because this is the very first time that we have such a group coming in and they donate very big money to us. And then many people are asking why are they donating this big money?

This quote is indicative of many storytelling sessions with people in Suau, where they often asked me to explain the Cool Earth project, what was ‘behind’ it and if the proponents were ‘honest.’ The view expressed can be contextualised in the history of colonisation, resource extraction and other conservation interventions, which have generated similar confusions and fears and contributed to a sense of ‘loss’ around culture and land. Like REDD+ before it, Cool Earth has created fears about outsiders stealing land and air. Many people expressed fear that Wabumari landowners are selling their land away to Cool Earth. People in Wabumari are scared that in the future Cool Earth might tell them to “move out” and they “might live in the sea.” Members of the Wabumari Community Association placed these fears in the history of colonialism, which dislocated people from land and established waged labour on plantations, in the area:

Customary lands are owned by the state now and it’s very hard for the people to get their lands back. Even the colonial times, those *dim dims* [white people] came, having their businesses or what, especially plantations land they are

owned by those people now. People are trying, it's very difficult to get their lands back. They are thinking that way.

The colonial experience in Suau was one of extraction, where land, resources and people were extracted from their social relations to further colonial interests; REDD+ and Cool Earth are similarly feared for their potential to extract land and trees and leave people without access to these resources. Within this complex colonial context, perceptions of REDD+ and Cool Earth have become fused together with many people commenting on the similarities of the projects. A Wabumari man acknowledged that REDD+ and Cool Earth are similar because “the air comes from the trees in the forest” but stated that each project has “different terms and conditions.” While REDD+ was predominantly associated with carbon, most people in Silosilo perceive Cool Earth as more focused on protecting the forest and animals by preventing logging, oil palm and mining. A clan member from Wabumari, who lives outside the village, noted that, “It’s really similar to when the REDD+ came and they were doing awareness on the forest. And then when I went there [Wabumari], actually what they [REDD+ project proponents] explained, it happened with the Cool Earth.” Another landowner also observed that Cool Earth was delivering on the expectations raised by REDD+, “Actually I thought that was what REDD+ was, some projects going on in the village, making people happy so they conserve.” These perceptions indicate that the translation processes between different forms of environmental governance are intersecting in Suau. The comments of local people illustrate, too, how these processes are always emergent and contextualised in histories of colonialism, where people were extracted from places and value was extracted from land, trees and labour.

3.5 Understanding the ‘Monster’ Behind Global Environmental Governance

The ‘monster’ behind global environmental governance refers to the diverse and sometimes incompatible assumptions about the nature of existence that these assemblages draw together in processes of translation, processes that may be strained and warped under the weight of tangled meanings. Assembled from different sources, this monster pulls different assumptions together into a daunting, confusing, frightening imaginary. This monstrosity crosses boundaries between the visible and invisible, the real and

imagined, but it is not merely an epistemological construct – it has an ontological reality (Nirta and Pavoni 2019). Fears and confusion around REDD+ and Cool Earth stealing air and land⁴⁰ point to this monster and highlight the contingency and instability of reality-making practices that draw different ontological assumptions into co-existence. An officer of the PNGFA referred to this ‘monster’ behind REDD+ when reflecting on the fieldwork conducted for the Central Suau REDD+ Pilot Project:

One of the issues, the lessons learnt from Central Suau is that we talked about REDD+, what REDD+ is, but what is behind REDD+ we never talked about it. I would say, the monster behind REDD+. And as a result, this is a classic example, I was summoned by the landowners to walk 10km to explain to them why we are doing that kind of activities. Because we are collecting the biomass, leaves and all those kind of things. That we did not explain to them. ... I had to go back because in their custom, collecting rubbish is very offensive to them. If you collect somebody’s rubbish that means you are going to do something bad to them. ... But it’s a classic example, we can talk about REDD+ everything, but we also have to talk about the interpretations at the village level and the language.

In this quote, the monster is notably ‘behind’ REDD+ and ‘never talked about’ – it is the unspoken assumptions that are implicated in processes of translation and revealed in people’s perceptions, or ‘interpretations at the village level.’ Indeed, in Suau it is thought that if you collect a person’s rubbish – or similarly the rubbish of their trees or gardens that embody those who care for them – you may be using that rubbish to practice sorcery and ‘do something bad to them.’ For the REDD+ project, however, this rubbish is biomass that is needed to measure the carbon stored in trees. Under the REDD+ project in Suau, there is no way to account for ‘biomass’ as a tool used in the practice of sorcery. Attempts to translate REDD+, and similarly Cool Earth, locally have failed to draw different assumptions of reality together to establish a partial common ground and have instead produced a monster.

⁴⁰ This perception is not unique to Suau. Staff at the PNGFA revealed that people implicated in the April-Salumei REDD+ Pilot Project were also afraid of their air being stolen and spoke of ‘containers of oxygen’ being taken from their forests.

Project proponents often mistake this elusive monster as a symptom of ‘poor awareness’ or ‘lack of understanding’ from project recipients – rather than recognising the intersecting assumptions that are drawn together and may come into friction. It is within the very processes of translation that take place during ‘awareness’ raising that this monster emerges. The project design documents for the Central Suau REDD+ Pilot Project acknowledge: “It was clear from our research that however many times the PNGFA had visited and conducted awareness throughout the District, there remain great numbers of people who simply do not understand the concept” (SPC/GIZ 2015b: 9). When attending REDD+ workshops, community leaders from Suau were frequently asked, “Why are there still disputes and the people still don’t understand this project when all this awareness is done?” The issue here is not a lack of understanding from the communities nor poor awareness-raising by project proponents but, rather, the struggles between different ontological assumptions that intersect in processes of translation.

Although REDD+ project teams visited villages to raise awareness and develop the project design documents, these visits were short and did not allow local people to participate in the translation on their own terms or to find a partial common ground for reciprocal translation. Indeed, these ‘awareness’ activities operated as a form of unidirectional knowledge dissemination. As Jacob, a local landowner who studied forestry in Lae, discussed:

There is anger there, they [village people] were angry, upset. But the problem is because we need to make good awareness with them. ... They don’t come and stay with us for long; one came in one day and goes out again, that’s why we are still finding problems. ... They are not just making disputes for nothing. ... We need to really sit with them [village people], talk with them, eat with them, we need to learn their lifestyles and beliefs.

The disputes Jacob discusses here are not only about the ‘awareness’ undertaken in the Central Suau REDD+ Pilot Project but are about the intersections between different ontological assumptions – the ‘lifestyles and beliefs’ of different actors – and how they

are mediated (or not) through processes of translation. In terms of Cool Earth, a man living in Wabumari added, “It is hard. They [local people] are very stubborn to understand.” Another community member elaborated:

We talk over these problems and how to solve them and all these things. They have some understanding. But, like it’s already become, it’s a sickness to us. You explain things, talk to people, our own people, our own clans, even our own family members, our brothers and sisters, we talk to them, face to face we talk in our own mother-tongue language, but it is very hard.

This ‘sickness’ of not understanding is a symptom of the monster behind global environmental governance, of underlying ontological conflicts. Ontological conflicts occur when different assumptions about reality come into contact and compete for primacy (Blaser 2013b: 548). There is a strong tendency to misrecognise ontological conflicts (Blaser 2009a: 880), but these struggles are becoming increasingly visible around global environmental change and governance (Boulton 2016). As economies and governance become increasingly globally integrated, these seemingly ‘irrational’ conflicts are intensifying (Aikau and Spencer 2007). These conflicts are not unique to REDD+ or Cool Earth but have been recognised in other environmental governance assemblages that draw together different assumptions and knowledges and, in the process, generate misunderstandings and fear (see also Roepstorff 2003; Blaser 2013a).

Project proponents translate their own assumptions of how reality is constituted to project recipients, but these processes are imbued with power – governance necessarily involves the imposition of power to define the nature of reality. However, this power and ontological politics is often obscured, masked and overlooked. REDD+ and Cool Earth project proponents continue to place emphasis on ‘awareness’ activities – imposing their own assumptions – rather than working to themselves understand local ways of being and knowing. Translation is not a one-way process; it involves drawing reality-making projects together, so necessarily it must involve engaging with other ways of being and knowing.

3.6 Conclusion

In this chapter, I provided background information on the Suau area to contextualise emerging environmental governance assemblages within the history of missionisation, colonisation and resource extraction. Further, I detailed the development of the Central Suau REDD+ Pilot Project and the Cool Earth conservation project in Wabumari. I then explored how these projects are translated and discussed the multiple, positioned perspectives of people in Suau. This chapter has laid the groundwork for examining the ontological intersections and inequalities that emerge as REDD+ and Cool Earth are translated locally in Suau. By paying attention to Suau people's perceptions of these projects, we can begin to open up some of the awkward and unstable interactions that emerge as people, and their assumptions, are drawn into governance assemblages.

The fears, confusion and disputes over REDD+ and Cool Earth described in this chapter are not simply because of a lack of understanding or awareness, but point to the 'monster' behind global environmental governance – the different assumptions about the nature of existence that are drawn together in unequal and unstable ways, ways that may produce ontological conflicts. To understand this monstrosity, it is necessary to challenge the categories that are used in these assemblages as well as the mechanisms of categorisation through which reality is perceived and performed (Nirta and Pavoni 2019). It is important to understand the different assumptions of reality at play, as well as people's perceptions and positionalities, in processes of translation. The subsequent chapters will build on this work to locate and trace some of the frictions and inequalities that emerge as REDD+ and Cool Earth interact with local lives in Suau.

4. Suau Stories of Climate Change – Assumptions of Causality and Temporality in the REDD+ Assemblage

Once the people of Erema, up on the mountain side, called a big feast. All the nearby villages came. The Taboina people, who were then called Yow Yow, paddled into the bay on their way to the festivities. They were dressed up in their traditional clothes, their bodies shiny with coconut oil and hair decorated with feathers. When they got to Silosilo, there was a man burning oysters – *tilo tilo*⁴¹ – on the beach. This man was Kakotilotilo. He was dirty and covered in sores. The people going for the feast told him he was ugly. He encouraged them to go and enjoy the feast while he stayed, “I will stay here and burn *tilo tilo*; this is where I am meant to be.” More people from Aboboma and Soiata came and he told them the same thing. When everyone had gone up the mountain, Kakotilotilo washed himself in the water by the oysters and his body began to change. All his sores disappeared, and he became handsome. He oiled his body and put a hibiscus flower in his hair. Then he went up to the feast.

A woman had come to fetch water from the river and was shocked to see the reflection of Kakotilotilo in the water. She ran back to the feast to tell people about the handsome man, but he was already arriving. The villagers called out and were happy to see him; they were dancing and beating *kundu* drums. As the feast was in motion, there was a young mother who had just given birth to her first child in the village. In custom, she was not allowed to leave her house. She was forbidden from showing her breasts to anyone; they were for her baby only. But the mother heard the commotion of Kakotilotilo’s arrival and peeped through the door. His power drew her outside. She broke custom.

In this moment, Kakotilotilo jumped onto the platform they had made for the feast and caused a massive landslide down the mountain. The skies grew dark with thunder, lightning and rain. The ground opened up and all of the people

⁴¹ Silosilo was originally called Tilotilo after the oysters in the bay, but the pronunciation changed as the dialect from Suau Island became prominent in the area after being adopted by the Kwato Church.

were sucked down. The human beings were turned into black stones along the coast. They ended up all over the place, from Bona Bona to Konemaiava. After this, Kakotilotilo turned into a snake and went to live in the water near the mangroves in Silosilo.

Today, the black stones at Yaba are still there; when you go past you can hear the cries of people, pigs and chickens from the feast. The hole at Erema is still there. And the oysters can still be found at Silosilo; they will never run out. You must not hunt eels or crabs in the river or Kakotilotilo will appear. Killing the eels and crabs causes thunder and lightning. In the past, the *bubus* (Tok Pisin: grandparents) could do spells over the thunder and rain, they knew how to communicate with nature. They would explain to Kakotilotilo and apologise for their children not knowing about the eels and crabs. The ancestors and mothers believed this, but the new generation does not. They do not respect custom, so changes are happening. People's carelessness is causing climate change.

4.1 Introduction

The story of Kakotilotilo was first told to me by Luni, the eldest woman in Silosilo, the matriarch of the Sala Sala clan. During my fieldwork in Silosilo, I heard the story many times, each version slightly different, but the core moral always the same. People and the environment are connected, non-human forces and custom work to protect these relations. Breaking custom leads to environmental destruction that can signify a rupture in time. While most villages in Suau have their own, distinct origin stories, the legends people shared with me in Wabumari, Alo Alo and Suau Island imparted similar themes. In other parts of Papua New Guinea (PNG), such myths likewise detail the interconnectedness of the environment, climate, humans and non-humans to understand processes of change and guide local environmental governance (Jacka 2015).

Stories typically narrate the histories of people living in places over time and are often created to legitimise land ownership and usage (Stella 2007). But origin stories are not discrete or bounded to certain people or places, they are fluid, negotiated and contested

across space and time (Minnegal and Dwyer 2017: 202). Stories have multiple vocalities and sites of production (Sivaramakrishnan and Agrawal 2003; Anand 2017). It is the performance and politics of storytelling that matters here. PNG scholar Stella (2007: 40) emphasises that myths in PNG are “sacred in most cultures because they are the basis of people’s ontology.” Stories may articulate ontological assumptions about the nature of existence, assumptions that may themselves be contested in the stories told by others. As Ingold (1993) urges, we must resist the impulse to assume that since stories are stories they are in some sense unreal, as this presupposes that there is one real reality; instead we must recognise that “Stories help to open up the world, not to cloak it.”

This chapter draws on Suau stories, and the assumptions they disclose, to explore the ontological intersections around climate change within the REDD+ assemblage in PNG. Through analysis of their stories, I examine how people in Suau negotiate different assumptions about the causality and temporality of climate change. Here I follow West’s (2018a) lead in focusing on local epistemic practice around causality – asking people about a problem they see (climate change) and what they think is going on. While other scholars have researched climate change in PNG (Lipset 2011; 2013; Jacka 2016), this chapter offers an original analysis of how external and local explanations for change intersect, what those intersections look like and what actions they foreclose. Lipset (2017: 2) has asked, “how to conceptualize the relationship among multiple perspectives of climate change that does not pre-empt local voices?” However, little research has started from the perspective of local people in PNG. Despite the important research on the politics within the PNG climate change and REDD+ assemblages (Babon 2014; Filer 2015; Fujisaki et al. 2016), this work has been largely disconnected from local interpretations and experiences of climate change. I am interested in not only the politics at play as climate change mitigation mechanisms like REDD+ frame environmental problems and solutions, but also how this intersects with local lives and livelihoods (Milne and Adams 2012: 136; Sanders et al. 2017). As REDD+ casts forest management and land use in the context of climate change, it constructs new rules and norms aligning with certain assumptions but conflicting with others (Fujisaki et al. 2016: 2).

Climate change is configured through a multiplicity of knowledges (Hastrup 2016), but competing knowledges shape the ways in which the problem is framed and governed (Goldman et al. 2011). The definition of the problem implies the way it should be handled, but definitions of climate change are not universal nor uncontested (Merry 2016: 44). Stories have the potential to become tools to connect climate change to place and people, to conceptualise and contextualise climate change (Borrevik 2019). Storytelling is becoming increasingly significant for understanding the multiplicity of perspectives and experiences of climate change, challenging the idea of a unified narrative of climate change and responses to it (Wickman 2018).

In stories of social and environmental change, Indigenous scholars may draw attention to aspects of reality that outside scholars risk overlooking (Morauta 1979). Indigenous writers make important contributions to synthesising local experiences of climate change through storytelling and reflections about environmental change and human-environment relations (see for example Simpson 2013; Jetñil-Kijiner 2014). As Rakova (2012) states: “Climate change is not just about statistics. Climate change is not just about science.” Stories may destabilise dominant assumptions about climate change, including causal and temporal explanations from climate science, which can obscure Indigenous ways of perceiving environmental change (Wickman 2018). While Indigenous stories of climate change may appear to be in tension with climate science, they are not inherently in opposition to each other, but are increasingly intersecting.

To examine these intersections, I draw on the ideas of ‘relational’ and ‘categorical’ ontological assumptions introduced in Chapter One and Chapter Two, while emphasising that these are not dichotomous constructs but, rather, interconnected and mutually-constitutive ways of making sense of the world. For this chapter, relational and categorical assumptions of reality are important in terms of causality and temporality. When relations are foregrounded, causality becomes fluid and contextual since relations are always in the making (Blaser 2010: 114). Time, in this view, is experienced through relationships and interactions with the world, rather than through pre-existing categories (Minnegal 2009: 90). Where categories are foregrounded, causality is focused on entities and temporality is seen as an external, ‘real’ phenomenon structuring reality into linear and chronological

units and scales. When certain causal and temporal assumptions are brought to the fore, this frames the kinds of choices people perceive and the ways they work to execute the choices they make (Dwyer and Minnegal 2007: 558).

By focusing on the intersectionality of assumptions of causality and temporality, the aim is to not only highlight how actors negotiate a multiplicity of assumptions around climate change, but to also critically reflect on the politics at play as some assumptions are privileged over others. This may open up space for alternative approaches to addressing climate change based on different ways of being and knowing in the world. Before analysing how people in Suau negotiate relational and categorical assumptions of causality and temporality, however, I will introduce some of the stories people tell about climate change.

4.2 *Ta'ahn Pilipili Dai* (Let's Story) – Climate Change

People from Suau Island have a story called Aigaru Yahiyahisi about a tulip tree (*Gnetum gnemon* – called *heyabu ewana* in Lausaha, or *two-leaf* in Tok Pisin) known for its paired leaves and branches. The tree in this story had one branch for *busso* (edible flowers) and one for *ega ega* (nuts) and a man with two wives, one who was a witch and another who was not. The witch was unable to have children and was jealous of her husband's other wife who had a son and a daughter. One day the husband travelled to Bona Bona to get clay pots and yams. While the husband was away, the wife climbed the tulip tree and was picking the *busso* from the middle of the tree. The witch was watching her and saying, "squeeze our friend there." She kept repeating this until the tree branches came together and squeezed the wife to death. The witch then cut off her limbs and attempted to feed the children their dead mother's body. The children knew it was their mother and did not eat it. They saw their father approaching on his sailing canoe and ran to the beach and told him the story about their mother and the witch. They carried the goods back to the house and found the witch covered in charcoal, pretending to be in mourning. The father killed the witch. Now there are always tulip trees on Suau Island with short branches and easy to reach *busso*.

This story links people on Suau Island with their land and is used to explain why there are tulip trees everywhere on the Island. Tulip trees are central to life on Suau Island. One morning I was storying with Serah, whose father is from Suau Island; the day before she had gone looking for *busso*, little green flowers that are often cooked with chestnuts. *Busso* only last for a few weeks each year, so people turn to harvesting them as soon as they appear. It was the season for these flowers to blossom. *Ega ega* come into season first and then *busso* appear, but recently this has not been the case. As nuts must proceed flowers, I interpreted this to mean that the season has lengthened to the point that some trees now flower while others are still bearing nuts. During our *pilipili dai*, Serah asserted that this was because of climate change – “making everything out of order.”

This interaction with Serah is just one example of the ways people in Suau perceive and perform climate change on a daily basis, through storytelling. Like the story of Kakotilotilo, people in Suau turn to their origin myths to make sense of changes in the environment, but they also discuss climate change as part of everyday life. During a storytelling session, a former councillor from Silosilo emphasised, “Climate change is my concern today. Very, very big concern to me today.” He added, “[Now] you feel the heat of the sun, it’s very hot. Not like our old time, we call it peace time. Now it is very hot. You can feel, you must experience it through your body, that it is hot today.” These sentiments highlight the experiential, embodied way that climate change is perceived and experienced; such concerns about climate change were shared by others and elaborated in different ways.

When I arrived in Silosilo in March 2017, people had just experienced an unprecedented high tide that came up under the houses in the coastal village. Elders in the village recounted that the sea level had risen, mangroves had fallen over and the channel that separates the Sala Sala and Palu Paluta clans had grown wider. People expressed fear of the rising sea level, but also uncertainty about what this event meant more generally for their lives. Bush material houses are usually built near the mangroves or coastline; the presence of people on the land near the coast is thought to keep the sea at bay. If houses are built further inland, or on higher ground, people said, the seas will continue to encroach on their land unabated. It is the performance of living near the coast that is seen

to keep the separation between the sea and land. While most people continue to live in houses along the coast, some have moved to permanent houses further inland. They moved due to loss of land but recognise that moving will exacerbate loss of land.

In addition to complaining of high tides and rising sea levels, people also frequently spoke about changing rainfall patterns. Usually January and February are dry months for the area, but in 2017 there was high rainfall through those months. These changes were most often discussed in relation to the gardens. My local guide Isabel explained, “In the gardens, the seasons have changed. The rain patterns change. Like before we have certain times where it’s like we experience rain. But because of this change in the climate, sometimes the rain falls at times where we don’t expect it.” People’s expectations of rain are grounded in their close engagement with their environments; as most people depend on subsistence agriculture, the ‘unexpected’ changes in rainfall raise significant livelihood concerns.

During garden walks, people would often express sentiments like, “Climate change really has a lot of effect here, the sun’s heat has never been as strong as this.” The hot sun is blamed for the taro leaves dying, which has not happened previously in this area, and for reduced crop yields. While reduced crop yields can be attributed to a number of factors – including soil depletion, pests and intensified use by more people – it is notable that people in Suau are increasingly linking this to climate change. While I acknowledge that such comments may reflect a certain bias towards the ‘good old days,’ this does not undermine the fact that people in Suau see these changes as unprecedented. For example, women noted that in previous times “we have plenty and big” coconuts, whereas now there are fewer coconuts available and some are growing without juice inside. This is an unusual phenomenon, they said, not experienced in this area before – these signs indicate a rupture in time for the world as people in Suau know it.

The observations and predictions of climate science accord reasonably well with these stories. Warming trends have been observed in both annual and half-year air temperatures in PNG since 1943 and 1962 respectively, just as mean sea level is projected to continue to rise over the course of the 21st Century (Australian Bureau of Meteorology and CSIRO

2014). Average rainfall is expected to increase alongside the intensity and frequency of days of extreme rainfall, but the incidence of drought is projected to decrease (Australian Bureau of Meteorology and CSIRO 2014). Yet the stories told by climate scientists foreground different things to those told in Suau. The ways that people in Suau speak of climate change indicate a type of communicative disjuncture (de la Cadena 2015: 27; Viveiros de Castro 2004) – while people in Suau and climate scientists are using the same words, they are not talking about the same things. People in Suau negotiate different assumptions about the causality and temporality of climate change, which I discuss in the following sections.

4.2.1 “It’s not like *dim dim* theory on climate change”

One day Isabel and I had gone up to the big river in Silosilo to wash, along with her six-year old daughter Laile. When we reached the river, there were two large frogs sitting on the bank and Laile promptly began to throw rocks and yell at them to go away. Isabel scolded her, not for throwing rocks, but for talking to the frogs as if they were humans. She explained that if you talk to animals like humans it will cause “big thunder and lightning.” Isabel also had to scold me for this behaviour. When I was given a puppy by my host family as a pet, I would often pick it up like a baby and talk to it; while the children found this entertaining, the adults would warn me not to treat the puppy as though it was a person. Such caution with actively maintaining distinctions between human and non-human relations is also evident in the story of Kakotilotilo, which instructs people not to kill the eels or crabs in this river. Isabel elaborated on this:

Before they have leaders, who believe in custom, and they use those powers to control the nature because of those beliefs. Today we are careless, we are just living, not following the custom beliefs and all that, that also destroys the environment. People are careless. ... Like before when there are big water eels in the rivers, they said ‘don’t destroy them.’ Because when you destroy them, they believe these people [the eels] own this river, or they say, ‘this is their place.’ When you destroy them, you sort of make them angry and you cause big floods and you cause erosion and all this stuff. Those were beliefs, which people respect the environment and what is in it, like to keep it intact

or something. Today, the new generation just live very carelessly and destroy the environment. And, partly, we contribute to the changes in the environment – our carelessness.

‘Breaking kastom’ – or performing wrongly it – was commonly referred to as a cause of climate change in Suau. As this quote and the story of Kakotilotilo indicate, humans and non-humans are not intrinsically different in Suau but emerge as different through the performance of relations between them – performing in the wrong way produces different kinds of beings. Sabina, a gracious mother of five who is married to Silosilo, expressed: “Nowadays, the new generation, we don’t respect some of the customs that people follow before. That’s why maybe that brings the changes, some of the changes.” The beliefs and practices that previously kept the world intact – that maintained the distinctions between different kinds of beings – are not being followed and the world is changing as a result.

Most people in Suau foreground a relational view of causality to explain changes in the environment. A landowner from Fife Bay articulated this well:

Basically, it’s all about not caring for yourself and your environment because our lives depend heavily on the place in which we are born, the mountains and the sea. When the land is washed away, it is basically because you have not cared for the beaches, that is why the waves come up. ... The second thing is that we have an attitude problem; the tree has done no harm to your life, but you take a big action to the tree – that tree has stood there for a hundred years, but you came to put it off [cut it down]. ... So, in other words, you are assaulting, you are murdering, you are destroying nature. ... Today, nature has not respected us because we have not respected nature. ... Because of our poor relationship, we say that there is a problem. There has never been a problem, the problem starts with you and I not respecting the nature, on the climate change in the area.

As this quote reveals, people in Suau see “poor relationships” with nature as causing climate change. Not “caring for the beaches” – not living on the coast and maintaining

active relations with, and distinctions between, the land and sea – is seen to cause sea-level rise. This framing of the “problem” of climate change places blame on people in Suau not respecting nature.

Interestingly, while recognising that changes in the climate are anthropogenic, people in Suau rarely attribute responsibility to industrialised countries or corporations. Similarly, Lipset’s (2013) work on how the Murik people in PNG conceptualise the impacts of climate change found that they connect rising sea levels to climate change, but do not see these changes in terms of human rights violations or violations by economies or corporations. For Murik people, rising sea levels and storm events are not framed in scientific terms – as representing an anonymous, non-human threat outside the subject – but signify, and seem saturated by, the social relations that connect people and their environments (Lipset 2011). Smith (2018) also notes narratives of ‘self-blame’⁴² among the Pala’wan in the Philippines, where the causes of climate change are filtered through social relations. In attributing the causes of climate change, people in Suau, like others, tend to foreground relations between people, land, sea, trees and non-human beings.

Recognising that for Suau people the environment itself plays a reactive role in causing climate change helps to shape our understanding of these stories (Jacka 2015: 17). This is important for challenging the ‘noble savage’ stereotype that there is a natural conservationist ethic in Melanesia (Macintyre and Foale 2002: 1). While people in Suau link the causes of climate change to breaking custom and disrespecting nature, what they are bringing to the fore is the relationships between people and the environment, not some kind of inherent conservationist value that people observe. They are not specifying some desired, conservationist outcome, simply identifying the actions that shape outcomes.

Although people in Suau predominantly articulate the cause of climate change in relational terms, or in terms of a failure to maintain proper relationships, these assumptions intersect with a multiplicity of ways of being and knowing, including Christian beliefs and stories. As discussed in Chapter Three, following an intensive period

⁴² That subsistence agriculturalists may blame themselves for destructive changes in their environments, however, does not diminish the responsibility of developed countries, corporations or consumption patterns for their role in causing climate change.

of missionisation, the church has greatly influenced the ways people perceive and enact reality and still plays a prominent role in social life in Suau. When I asked a group of women in Kau Kau about the changes in the environment they were experiencing, the women responded that it was “only God who changes everything, maybe these are the last days.” Many people referenced the Bible and the story of Noah’s Ark in reflecting on the recent high tides and rising sea levels. The Pastor from Alo Alo went as far as saying that climate change is occurring because “the world is full of sin.” However, Kere revealed that before the missionaries arrived, people in Suau had their own kind of God, *Yabawahina*, who looked over people and ensured that they did things properly, especially in the forest and garden. While adopting Christian assumptions of causality – as expressed in Bible stories – to make sense of climate change, the Pastor from Alo Alo also told me a story of *Yabawahina*:

When these people go to the garden and when they bring out the food from the garden and they start cleaning them properly, taking the roots out and the leaves and then they put them properly and cover them. They said somebody up there is looking down. Because they came to understand that that fellow up there is the creator of all things. So they say we have to put them properly. Not nowadays. And also when they go out husking coconut they have to put the husks properly. And when they climb the coconut, the green ones they try to drink, they husk them properly. ... Nowadays they get a bush knife and just start cutting and drinking. So that’s how I came to realise why coconuts are not bearing fruit properly, because we are misusing the blessings. We are not using them in the right way. That’s why we are saying ‘oh coconuts are not really bearing fruits properly; our gardens are not putting what we expect.’ Because we are not respecting how we should do those type of things. And like I saw my grandmother doing that and I ask her, ‘why are you putting all those roots and leaves properly and hiding them under the banana tree and covering them properly?’ And she told me that ‘somebody up there is looking.’ He created them and we have to put them properly [to show] that we are having respect for what he has given us.

Through this storytelling session with the Pastor, we can draw out the distinctions between different, but intersecting, assumptions of causality in Suau. In this story, you have to “do things properly” or things will slip out of place, for example, gardens will not produce harvests as expected. In comparison, the Pastor’s references to Bible stories emphasised that you have to follow Christian teachings or God will punish you; flooding and sea-level rise were seen as acts of divine retribution for a world “full of sin,” similar to the story of Noah’s Ark.⁴³ In both cases it is people who are causing changes, but the mechanisms are different. Christian assumptions of causality are similar to ‘breaking custom’ but the relations are between people and God instead of with other beings in the world – different power differentials are at play in these assumptions.

When storying about climate change Kere, a youth leader in the church, pronounced, “It’s not like *dim dim* [white people] theory on climate change.” This is an important distinction. Kere distinguished between the ways he experiences changes in the environment and the ways that REDD+ project proponents talk about climate science, greenhouse gas emissions and carbon during their awareness campaigns. Like Kere, other people in Suau also recognise, negotiate and make distinctions between different ways of perceiving climate change. Jacob, who studied forestry at a college in Lae and was part of the REDD+ awareness teams, told me that climate change was occurring “because of our great harvest of the loggings and whatsoever, big trees and great gardens and whatsoever. ... It’s very hot. It’s caused by loggings and [cutting] big gardens, chopping down of big timber, [cutting] trees down.” In this quote, it is simply the logging of trees that is seen to cause climate change, not the cutting of trees in the wrong way, against custom. This is similar to the narratives promoted by REDD+ proponents that emphasise (anonymised) deforestation and forest degradation as causes of climate change. In further discussions, however, Jacob emphasised people’s relations to trees when explaining this logging:

⁴³ Rubow and Bird (2016) also note the connections between biblical understandings, including Noah’s Ark, and Oceanic teachings of land and ocean; they argue that climate change science and biblical theologies envision and scale the environment in different ways that are not necessarily directly comparable or translatable.

Sometimes they select those big trees, our old grannies, they select those trees for them to go and sit down when there is sun time or something. They said they feel that that is the special tree that is providing air to us. Today, they are destroyed. They are harvested through logging or even gardening. Because people live on their subsistence farming, so they want good land to plant *kai kai* [food] so they are destroying those important trees. But in our old times they preserve the trees that they name [after people]. Like rosewood today and *kwila* today, those are special trees to us. ... They are now harvested.

Here it is the cutting of trees, which are made distinct through the performance of relations (trees named after people, trees selected by grandparents for shade), that breaks custom and causes environmental change. Jacob's stories demonstrate the intersecting assumptions at play around the causality of climate change. Further, they illustrate how storytelling is political – some people, in some settings, choose to foreground certain assumptions of causality over others. While in origin stories and everyday practices of storytelling people tend to frame climate change through relational causality, they may also draw on categorical assumptions, particularly in the context of the Central Suau REDD+ Pilot Project.

An analysis of the perceived causality of climate change in Suau would be incomplete without a discussion of temporality. In Suau, as in most places, there are strong connections between causality and temporality as causal events are understood through temporal schemes that connect the past, present and future (Demian 2003: 35). An account of the teachings and principles of Reverend Lusa Anere – a prominent figure in Suau – emphasised that, “Causes and effects spread across space and time. And depending on their vivacity, in whatever and time and place, can lead to either new causes or effects. In time and space alone, the principle of cause and effect are most profound and the two are inseparable” (Anere 1991: 14). Here temporality is not chronology (regular systems of dated time intervals in which events are said to have taken place) nor history (a series of events that may be dated in accordance to chronological interval) but is a perspective that makes sense of changes in the world (Ingold 1993: 157).

4.2.2 “You *dim dims* have time, we do not”

One afternoon in Silosilo I was sitting and storying with a group of women and Silas, a hard-working gardener with a quick sense of humour. We heard a bird calling in the forest and Silas jumped up and described this special bird, “When this bird calls, it is a signal that the tide is changing.” He added that people in Suau call this bird, the ‘Harbour Master.’ I was amazed to hear of this bird and how its call gave people in Suau the time, in relation to the tides. But the women promptly began laughing at Silas’ joke on the naïve visitor. For the rest of my time in Silosilo, people called Silas the ‘Harbour Master.’ However, his joke was not entirely without truth. The bird Silas mentioned is called Kolobi and its cry does give people the time. Sabina explained, “Kolobi too used to cry, that bird’s name is Kolobi. They cry and give us time. We don’t have time before; these things give us time. ... Some they hear from the birds, you know. Birds give them signs, like *debole saima* [high tide] or *margoon itiwah* [low tide].” As Sabina expressed, before people had relations with the birds, there was no time – by listening to the cries of birds’ people learnt to follow the times of the tides.

Another bird Sabina mentioned, often called the ooh’ooh bird, is a signal for death, “That bird when it cries, they know that it is asking for death. Somebody is very sick, and they are going to die very soon. He or she will die very soon.” This indicates links between the calls of birds and circular, rather than linear, time. Bird calls indicate turning tides, that is a daily recurring event, but also the occurrence of deaths, which recur on different time scales. Similarly, Kirsch (2006: 58-9) has noted the varied ways birds mark the passage of time among the Yonggom in PNG, including how certain birds indicate changing seasons and how others can report deaths or convey warnings.

Despite these inklings of temporality, Uncle Mosi, the only surviving brother of my host family in Silosilo and one of the elders in the village, repeatedly insisted, “You *dim dims* have time, we do not.” When discussing this, Kere also said to me, “You *dim dims* have a time to eat, to sleep, to work, but here there is no time.”⁴⁴ In this statement, Kere is drawing a distinction between categorical time and the ways that people in Suau

⁴⁴ As an aside, before I left Silosilo Kere put a great deal of thought into what gift I could buy him in Australia for when I returned to Suau. After serious consideration, he decided that I should bring him back a watch.

experience time. Rather than accepting that in Suau there is no time, I came to realise that people negotiate, and operate within, different assumptions of temporality. In different contexts, for example discussing the Kolobi bird with women and discussing daily work routines with men, different people may draw on different assumptions of temporality. Moreover, they make distinctions between different kinds of assumptions, particularly those underpinning “*dim dim* time.” Instead of time being an external, linear and categorical measurement of reality, time in Suau is largely relational.⁴⁵ The story of Kakotilotilo has already hinted at the ways people in Silosilo link temporality to changes in the environment, where breaking custom can lead to environmental destruction and signify a rupture in time.

For most people in Suau, time is revealed through the birds, trees and winds. Sabina summarised how people see time: “They see through plants, through the wind blowing and through the rains and, also, this hot, dry season.” It is the relations between people and the environment that matter in terms of time. Jacob, a community leader who previously studied forestry in Lae, elaborated, “Some of the trees they see the leaves or whatsoever the stems grow down, that indicates to them that the season will change this way, this way. This is time for harvest, time for fish, it is always the tree that will indicate [to] us.” The rosewood tree, for example, tells people the seasons in the garden. When the rosewood tree blooms, it is time for the crops in the garden to grow and for people to plant new seeds. The *badila* tree also signals a time for fishing; when its leaves turn red, people can catch red emperor fish. The changing directions and strengths of the wind also mark a change in season. People in Suau distinguish between *yalasi* (a strong, southerly wind), *alo’wabu* (a northerly wind that coincides with very low tides), *yawahno* (harvest time that coincides with a light wind – *see’wahlo*) and *wai’yahu* (dry season). Recognising and observing these seasons depends on people’s close engagement with the winds, rains, seas, tides and gardens, rather than the linear progression of categorical seasons.

⁴⁵ Malinowski (1927) and Leach (1950) have also examined temporality in Milne Bay, but focused on the Trobriand Islands. They both accepted that the events that Trobriand peoples wished to predict occur not in a solar year of determinate length, but in a seasonal year of indeterminate length.

But these examples of relational temporality do not mean that people in Suau do not have categorical time as well – they have always categorised their worlds, but categories may have had different salience in different contexts. Sabina highlighted the intersections between categorical and relational time by explaining the planting of crops in terms of months and signs from trees, “By March, April we should be planting *kau kau* [sweet potato] too. That comes in when the tree leaves are growing. They see their mark through these plants growing. They see new leaves are growing that means they have to plant new *kau kau*.” While colonial administrators attempted to control villagers’ utilisation of time in PNG – through the introduction of the clock, calendar and schedules – they did not manage to dominate or eradicate relational time (Dalsgaard 2013a). Forms of governance, like colonialism and REDD+, impose authority over the chronological definition of time to controls aspects of everyday life (Munn 1992: 109), which may exclude relational ways of being and knowing.

Within this relational temporality, climate change is making time in Suau less predictable. In Silosilo people would often say to me, “Now time doesn’t work out.” The Pastor from Alo Alo noted that it is like time is, “Fading away, like what you expect won’t be to your expectations.” Pearse, a Principal Landowner and highly-respected leader, recalled, “Before, in the time of the *bubus* [Tok Pisin: grandparents], tides were their calendar and seasons. Now this isn’t working like before. The tides don’t follow the same patterns. The same is happening with the gardens and the times for planting.” Because people in Suau are so entangled with the performance of time through their relations with their gardens and the weather, there is a growing sense that things are not as they were before and that this is bringing new hardships for people. An elder from Kau Kau expressed these sentiments:

In the olden times, the climate has a pattern, or it has where it falls. ... But nowadays we don’t have those patterns anymore. Everything is changed. We have certain seasons, like especially with the garden crops; now the seasons have changed too. When we come to that time we are expecting our certain garden food, which is time for it, it doesn’t work out, it won’t bear. So that’s where our people, especially the old people, usually tell us now we don’t have

proper seasons for our place because of climate change. We have a very big problem, especially with the garden crops. Sometimes we have certain food which we plant and then harvest that at that time and then we are going to have a good harvest, but when we plant it, it doesn't work out because of climate change.

During garden walks, women in Silosilo also explained to me that, in the past, the time from planting to harvest was always the same – for example, *kau kau* (sweet potato) was harvested every four months – but now time frames tend to vary much more. Certain foods, like mangoes and water chestnuts, would in the past come to fruit at consistent times, but now they can bear at any time. A range of social relations, including those between human and non-human beings, are linked to such temporal changes, including a loss of certain kinds of magic. Before, the ancestors could use spells and magic in the garden to help the plants grow and prevent crop diseases. The Pastor from Alo Alo remarked, “Nowadays, because we don't know that type of spells and all that magic – we believe only that God has created all those things, so we don't have those type of things – so we have those types of sicknesses in the garden.” Where in the past magic could be used to actively maintain human-environment relations, this kind of magic has been lost through colonisation and missionisation, which has contributed to perceptions that gardens, and the world, are now less predictable.

In discussing these changes, people sometimes draw on categories to make sense of climate change, for instance, the Pastor went on to reference seasons and months:

Okay like we do have seasons. When it is time for summer, it's time for summer. When it's time for winter, it's time for winter. But now at this moment here, when it's time for summer it doesn't look like summer, it looks like winter all the way. So when we have rain, because we have seasons like June and July we have rainy season. So people know that June and July it is time for rain. But then sometimes it rains, sometimes it can rain the whole year. And the waves are taking the land away. Before the land is some metres away from the sea but now it's like digging away the soil and the sea level is

coming close. ... Just to witness we can see coconut trees and some other big trees are out in the sea so that makes it like the climate is changing.

As this quote demonstrates, people in Suau draw on different assumptions of temporality to make sense of climate change. In addition to framing the temporality of climate, and thus climate change, as relational – that is, perceived and performed through people's relations with their environment – people also use categories of time, like seasons and months, to track changes. Temporalities of climate change are always emergent, never stable, and qualified through interactions with human sociality (Salazar 2018: 37). People mediate between linear and circular time, but climate change is generating ruptures where people struggle to fit unprecedented events into either a linear progression of time or a circular process of time. In these stories, for people in Suau boundaries are blurring and the world is becoming increasingly unpredictable. Climate change is, in this view, people disrupting relations with non-humans, which is destabilising time and making the world less predictable.

4.3 Causality and Temporality in the REDD+ Assemblage

Like people in Suau, REDD+ proponents in PNG adopt certain assumptions of the causality and temporality of climate change, reflected in their policies, strategies and 'awareness' programs. The institutions and policies governing climate change in PNG give precedence to entities and categories – namely greenhouse gas emissions and mitigation targets and limits – in their framing of climate change. For instance, PNG's *National REDD+ Strategy* (GoPNG 2017: viii) attributes the rise in global temperatures to greenhouse gas emissions. But in saying this, the actual source of emissions is anonymised. It is commonly asserted that over 95 percent of greenhouse gas emissions in PNG come from land use, land use change and forestry (LULUCF). The national *Climate Change and Development Strategy* projects that greenhouse gas emissions will increase by 40 percent by 2030 if current deforestation rates continue (Babon and Gowae 2013), but these categories, again, are defined without reference to the people, or human-environment relations, involved. These assumptions have translated into the Central Suau REDD+ Pilot Project, where the emphasis on the certification of emissions reductions (SPC/GIZ 2013: 9) shows how categorical assumptions of carbon and accounting have

become divorced from the different relations and contexts in which emissions are produced (Dalsgaard 2013b; 2016).

In accordance with these assumptions of the causality of climate change, the PNG Forest Authority's priorities for climate change include mitigating greenhouse gas emissions, as well as improving understandings of both forestry and climate change, and promoting education and awareness (Amos 2013: 11). PNG's *Vision 2050* insists, "There is poor understanding of climate change and variability and hence inadequate adaptation and mitigation measures currently in place in the country" (National Planning Committee 2010: 41). Attempts to address this have involved climate change awareness programs, as part of the Central Suau REDD+ Pilot Project, which presented greenhouse gas emissions, deforestation and forest degradation as the causes of climate change, where forests are both a source and sink of carbon. But, as discussed in Chapter Three, people in Suau complained about these awareness programs and frequently reiterated that they did not understand such 'scientific' stories. As depicted in the Figures below, taken from REDD+ promotional material presented at conferences by the CCDA and PNGFA, climate change is commonly assumed to be caused by greenhouse gas emissions from LULUCF. In these images, emissions are categorised into causal groups and quantified into percentages. These generalised cause-and-effect statements have effectively become 'laws' in climate change mitigation (Forsyth 2011), but as these categorical assumptions are translated in practice, they may become problematic.

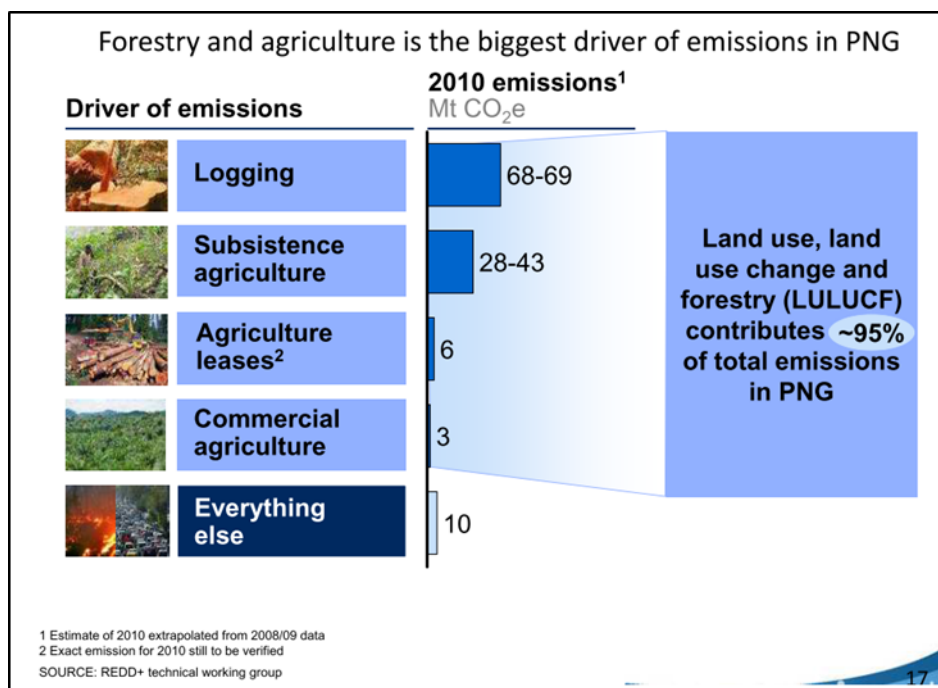


Figure 4. Image from the 22nd Asia-Pacific Seminar on Climate Change on PNG's REDD+ Program (Pokana 2013)

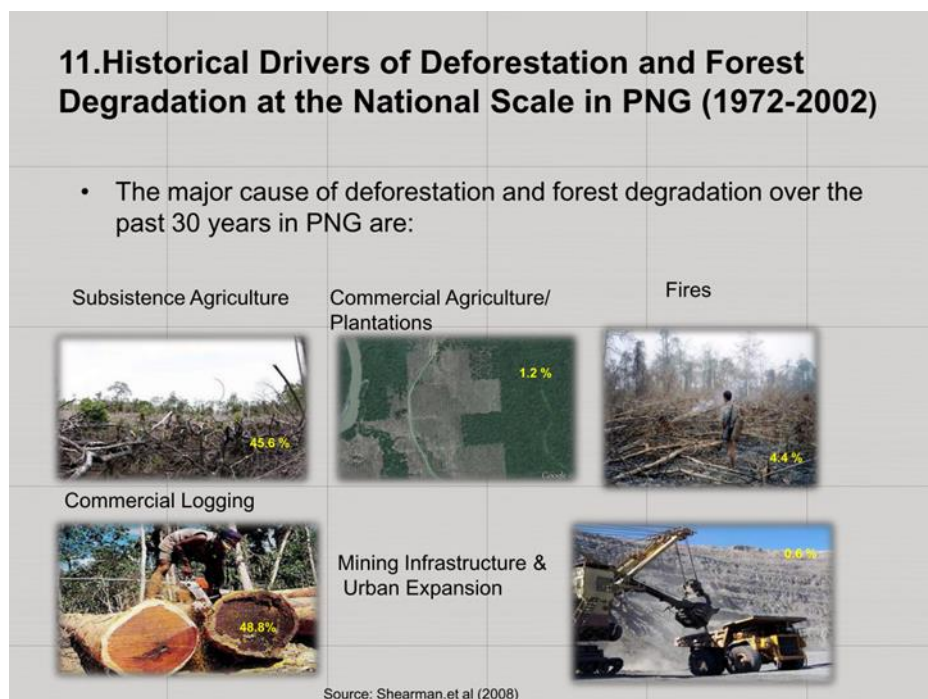


Figure 5. Image from National REDD+ Awareness Raising Workshop (Amos 2013)

In addition to framing the causality of climate change through categorical assumptions, the institutions and policies behind REDD+ largely foreground categorical temporality.

In terms of climate change, it is often taken for granted that time is linear and disembedded from human-environment relations (Krøijer 2015: 13). Categorical assumptions of time were evident in the policies and strategies that hold the REDD+ assemblage in PNG together. These documents typically adopt climate projections that stretch several decades beyond human lifespans (see also Rubow 2014). The *National REDD+ Strategy*, for example, draws on chronological, long-scale time frames when measuring and projecting climate change. The strategy states, “Average temperatures have increased by 0.6°C over the past 60 years and could rise by 1°C from 1990 by 2030, while sea level could increase by 1.5cm over the same time period” (GoPNG 2017: viii).

These long-term, linear, disembedded timeframes have also translated in the Central Suau REDD+ Pilot Project; they were promoted during community awareness sessions on climate change where villagers were shown graphs depicting emissions and warming over chronological, bounded timeframes. The feasibility study for the Central Suau REDD+ Pilot Project also emphasises categorical time, while simultaneously overlooking the complex relations between people and forests in shaping land use practices:

A 35-year cutting cycle is used in PNG and implies that each year an area of roughly 965 ha will be logged and left to regenerate for 35 years. Both stand regrowth (emission sink) and mortality (emission source) will continue for years after logging; as such, these sources and sinks in each annual logging compartment have been accounted for in a cumulative manner (SPC/GIZ 2013: 26).

Rather than seeing deforestation in terms of relations between people, livelihoods, forests and land, the project design documents emphasise specific linear timeframes, namely a 35-year cutting cycle with bounded time periods for regeneration. This emphasis on fixed periods of time (and space), such as annual logging compartments, does not take into account changes in relations between people and their environments over time, nor does it consider other temporalities. Nevertheless, these assumptions of causality and temporality have become embedded in policy-making processes in PNG and are reinforced through the design, implementation and evaluation of REDD+ projects.

It has to be acknowledged that the kinds of empirical material compared here – that is orally told stories from Suau and written policy documents from PNG’s REDD+ program – also influence the kinds of assumptions at play and how they are analysed. The performance of stories in Suau is a political process, open to contestation. Likewise, the production of policy documents is imbued with politics, but this is less visible in the final products, such as those analysed in this chapter. In talking with the key REDD+ agencies in PNG, a more nuanced picture of climate change emerges in relation to these policy documents. PNGFA officers recounted that villagers often became ‘aggressive’ during climate change awareness programs and recognised that different perceptions were at play. One staff member at CCDA also emphasised, “You can have your policies, you can have your legislations, you can have everything in place – but did you really consider the people on the ground?” While stressing the need for real, tangible awareness on climate change, however, staff within the CCDA still argued for a “common understanding of climate change” in terms of PNG’s policies and legislation. This focus on a common vision of climate change suggests that certain assumptions may be privileged or marginalised within the REDD+ assemblage in PNG. The following section explores the politics of privileging some assumptions over others.

4.4 The Politics of Privileging Assumptions

REDD+ proponents in PNG, and their policies, have promoted a ‘common understanding’ of climate change – a common understanding largely grounded in categorical assumptions of causality and temporality and drawing authority from climate science. However, as we have seen in the Central Suau REDD+ Pilot Project, people entangled in these assemblages negotiate a multiplicity of intersecting assumptions about how and why climate change is occurring. In this light, it is the privileging of certain assumptions over others that becomes important for understanding how different approaches to governance are enabled or constrained. Starting with the assumption that climate change is categorical, linear and measurable denies other, relational and fluid assumptions (see also Simonetti and Ingold 2018).

Assumptions from climate science – in this case, assumptions embedded in policy making in PNG, in the form of statistics on greenhouse gas emissions from LULUCF and projected temperature increases over time – are used to justify approaches to governing climate change, like REDD+. In this sense, climate science is not just a claim to knowledge, but also a political economic system for resource control that can silence competing claims. As Stead (2017: 179) notes, abstracted and categorical forms of knowledge, such as climate science, are given authority on the basis of their capacity to extend over time and space; written knowledge is often privileged over verbal knowledge, which is contingent on relations and contexts. While climate science is used for political purposes, the production of scientific knowledge is seen as separate from politics (Goldman et al. 2011). By recognising that knowledge is not singular, we can open up to other ways of conceiving, and addressing, climate change (Hastrup 2016: 40). Climate science is often forced to fortify categories and shore up boundaries to see the world with a singular vision (Tsing 2005: 81), but stories from Suau complicate this unified narrative.

For people in Suau, climate change is seen in the breaking down of relations and the increasing unpredictability of the world. Rather than there being pre-existing categories, difference in Suau is created through the performance of relations; things and times are differentiated because they are made different through human action – that is, if humans break custom, for example, the world will change. With climate change, the boundaries between kinds of things, times and places that should be kept apart are starting to blur and the meaning of signs are becoming harder to read. Trees that previously gave people the time and seasons are not functioning as they previously did. People's presence on the coast is no longer keeping the seas at bay. For people in Suau, climate change is deeply relational. People in Suau still categorise their worlds, including by using days, months and seasons to define time, but this categorisation is often done by paying attention to relations, action and interaction, rather than according to pre-existing categories. Where relations are less salient and interaction is less relevant, then categories may dominate. While multiple temporalities are intersecting in the context of climate change, they remain unstable and not yet calibrated to guide people living with climate change (Rubow 2014: 254).

The assumptions promoted by REDD+ institutions and policies ignore these relational ways of being and knowing. Categorical frames of temporality, which are linear and independent of experience, have become so powerful that they may obscure other ways of enacting time (Fabian 2014). The foregrounding of categorical assumptions in framing the causality and temporality of climate change marginalises the understandings that people derive from their lived, everyday relations in the world (see also Ingold 1993: 152). This shift from relational to categorical temporality is political – it has to do with the construction of governance regimes that embed people in a “wider constructed universe of power” (Munn 1992: 109).

The privileging of categorical assumptions is often disembedded from political economic contexts and historical processes of colonisation. Assumptions drawn from climate science are often seemingly detached and removed from human-environmental relations and power dynamics (Li 2007). The foregrounding of simplified, anonymised assumptions of causality – that, for example, subsistence agriculture emits greenhouse gases and causes climate change – is a political act that works to legitimise particular approaches to governing climate change that are, in turn, reinforced by such projects. By placing blame on subsistence agriculturalists, these assumptions obscure the role of economic systems and markets in driving greenhouse gas emissions. Further, they overlook the legacy of colonialism and ongoing inequalities reinscribed by economic systems. By storytelling climate change, we can recognise these inequalities and explore the politics of privileging certain assumptions of the causality and temporality of climate change.

In recognising the intersections between different kinds of assumptions about the nature of reality, and in this case climate change, the task is not to draw binaries but to investigate how certain assumptions may be privileged over others in different contexts. In exploring Suau ways of perceiving and experiencing climate change, I am not arguing that relational assumptions are in any way morally superior to, or better able to capture reality in comparison to, categorical assumptions (Holbraad and Pedersen 2017: 119). Relational and categorical assumptions never operate in isolation and are instead mutually-constitutive. There is no such thing as ‘Suau ontology,’ rather people in Suau negotiate a

multiplicity of ontological assumptions. Therefore, it is important to examine the politics at play as some assumptions are foregrounded and others marginalised. As we have seen with the Central Suau REDD+ Pilot Project, and as is common in other mitigation projects, governance involves a recursive process where assumptions drawn from climate science enable certain approaches to managing climate change, approaches that reinforce such assumptions and exclude others. Policy-making processes around climate change in PNG, like elsewhere, reify these assumptions in the ways that projects are designed, implemented and evaluated – but the politics of this process is often ignored.

4.5 Conclusion

Origin stories, like those of Kakotilotilo and Aigalu Yahisi, combined with everyday practices of storytelling, provide some insight into how people in Suau perceive and enact environmental change. This chapter has demonstrated how, by engaging with storytelling, we can examine the complex intersections between different ontological assumptions around climate change. The stories presented reveal how people in Suau negotiate relational and categorical assumptions around the causality and temporality of climate change. People in Suau typically adopt relational assumptions of causality and temporality to make sense of climate change in their daily lives, but in other contexts they also use Christian stories and categorical assumptions linked to REDD+ ‘awareness’ programs. While recognising these intersections, this chapter has critically analysed the politics involved in foregrounding certain assumptions over others.

The ongoing privileging of categorical assumptions promotes simplistic accounts of the causes of climate change that disproportionally assigns blame to communities practicing subsistence agriculture and ignores the broader colonial, political-economic processes that underpin the current human-environment relations contributing to climate change. This foregrounding of categorical assumptions marginalises relational ways of understanding and addressing climate change. By complicating the stories told about climate change, this chapter has critically reflected on the assumptions that enable and legitimise environmental governance approaches like REDD+. But this is just a starting point; REDD+ may be rationalised and validated by categorical assumptions of climate change, but it also reproduces assumptions about land and trees in its attempts to mitigate

deforestation and forest degradation. This is explored in Chapter Five where I examine the frictions and inequalities around ‘rendering technical’ land and trees.

5. Land and Trees, Sorcery and Death – Frictions and Inequalities Around Rendering the Environment ‘Technical’ in Suau

Nawalai was from a village on the mountain near Leileiafa.⁴⁶ During colonial times, that village was moved closer to the church station in Leileiafa, where the administration was located. After the relocation, Nawalai’s family were embroiled in an ongoing conflict with the nearby owners of the land to which they had moved. To protect the family, her father hired a sorcerer and he killed their enemies. Under the agreement, her father was to pay the sorcerer with a young girl or land. But he did not fulfil this obligation. As a result, people in the family started dying. The sorcerer threatened that he would keep killing people in the clan until he was paid. To protect her from this danger, at a young age, Nawalai’s parents arranged for her to marry Walagohe, from Palu Paluta clan in Silosilo, far to the south.

Walagohe was the youngest son of Taubada and Pitai, but as a child he was adopted by a great man called Wali Ubo Bo, the last landowner of the Manu Manu clan. Wali Ubo Bo had married two of Walagohe’s older sisters, but neither marriage produced children, so they adopted Walagohe. When Wali Ubo Bo died, Walagohe took over the Manu Manu clan’s land and continued to maintain his rights to the land through custom; he planted coconut trees that still stand today and engaged in pig gifting.

Together, Walagohe and Nawalai had seven children. Their eldest surviving daughter is Vida, the current matriarch for the family. Vida married Lesi, from Kau Kau. Lesi had one older brother and two younger sisters who all died, leaving him an only child with no sisters through whom to pass on his mother’s land. When his mother died, Lesi became a Principal Landowner (PLO) of a large block of land between Konemaia and Kau Kau.

⁴⁶ See Figures 1 and 3.

Lesi decided to ‘develop’ – earn income from – this land through logging. He started an application to register an Incorporated Land Group (ILG), although this was never finalised. Then he flew in a company from Lae to do a timber survey. Two days after the company men visited the village, Lesi got sick. While his only son, Dom, was preparing the chainsaws for felling and a barge to bring in saw mills, Lesi deteriorated and was taken from the aid post in the village to the hospital in Alotau. The logging project stopped, but within two months Lesi had died.

This was not a normal illness. His family knew that Lesi had been ‘spoiled’ by sorcery. They suspected that the sorcerer responsible for his death was linked to particular, close relatives. These relatives were a minority family within the clan and had been adopting children and settling them on the clan’s land in an attempt to strengthen their land claims. Dom commented, “Now the adoptees are trying to take over the land.”

When Lesi was buried, they smoothed over the top of his grave and the next day there was a straight line in the dirt. This indicated that land was the cause of his death; Lesi’s daughter Isabel reasoned, “It’s all because of land.” While there was no dispute over Lesi’s claim to the land, which he inherited from his mother and continued to pay for in custom, other people in the clan were jealous about the forest survey and thought he might get money from the trees. The family are still afraid to go to the garden or into the forest in case they meet his spirit.

As the only son of a man who had no sisters, Dom could be considered PLO of the land Lesi had sought to develop, “From my case, I inherit it from my dad, so I have the total right over the land.” While this is not a conventional way of receiving land – usually it goes through the mother’s side – such transfers do occur when there are no women to pass the land on. However, Dom does not claim PLO status, “When people talk about land issues, I don’t go and talk about land. The moment I open my mouth I will create problems.” He has plans

to continue the ILG application that his father initiated and use this registration to develop the land, through logging or tourism, but he is not acting on these plans. He is fearful of attracting jealousy and sorcery like his father; he will only be safe from this “As long as I talk sense and I behave in a way that I don’t attract the enemy.”

The family are now in an awkward position. Dom’s sisters are too scared to live on the land at Kau Kau, but Dom remains there because his line has already ‘spent on it’ in custom. He has a responsibility to stay, “If you escape from the land, you are giving it away.” Most of the sisters stay in Silosilo, under the Palu Paluta clan, the birth clan of their mother’s father. Technically they also have land rights under the Manu Manu clan, because of Walagohe’s adoption, but they still submit to the larger clan. The family retains land rights at Leileiafa through Nawalai. Isabel is considering claiming the land at Leileiafa as they will feel free “on the motherland,” but the family will need to perform a reconciliation ceremony first. In making *kai kai* (food, feast) for the current residents, they would not be “paying for the land, but paying for safety” by reconciling the sorcery debt of past generations. For people in Suau, “Land is always sickness and death.”

5.1 Introduction

This account of land and trees in Suau has been pieced together from multiple storytelling sessions with people from varied positionalities within the same family. During this process, I learnt that when you ask people about land in Suau, you get a story of social relations and kinship networks across space and time. These stories are always partial and contested; people from other clans bring alternative claims and accounts. While recognising this partiality, this story traces the relations between this family and their connections to land and trees over four generations and points to the fluid and complex processes that make up land tenure systems in Suau. In this story, we can see some of the varied ways that people establish claims to land. Land rights and roles are always contextual and negotiable in Suau; they are not only inherited but performed – rights can be earned through custom and land usage practices. Boundaries and land rights are

continually negotiated and contested; they are never clearly defined or static. People's connections to land intersect with relationships to non-human beings and practices of sorcery; these relationships become sites of politics.

While land tenure in Suau is matrilineal – that is, land is transferred through the female line and women play an important role in guiding land management – first-born sons, like Lesi and Dom, typically become Principal Landowners (PLOs), meaning they play a public role in decision making over land and are responsible for upholding custom relations. As Demian (2007b: 167) notes elsewhere in Suau, rather than being a rule of inheritance, matriliney is a configuration of relations that allows persons to make claims to land. Within these relations, the category of PLO is not a traditional status or role. The word for landowner in Lausaha is *tanu tanuwagana* (from the word *tanu*: land), but this can refer to men and women and is applied to all clan landowners. The word *baisah* may offer the closest equivalent to the term PLO but is used more generally to refer to a person who is a 'boss'⁴⁷ of the land' or, in current usage, to refer to a man who makes decisions on land, sometimes called a 'chief.' The concept of a PLO was introduced in colonial times and has gained saliency within development interventions, typically assigning decision-making roles to men. However, this brings women's matrilineal land rights into a precarious balance with increasingly male-dominated decision-making processes.

As the story of Nawalai's family illustrates, interventions such as colonialism and logging have exacerbated land disputes by introducing static and bounded forms of landownership and new ways of relating to, and gaining income from, land and trees. Registering land, as Lesi attempted to do, entails the mapping of its boundaries and assigns an unambiguous title. Such processes are also ways to make land legible under The Central Suau REDD+ Pilot Project and the Cool Earth conservation project. REDD+ and Cool Earth can be seen as points of convergence where competing claims to land and trees generate frictions between local livelihoods and global environmental governance. These projects are challenged by the complexities of local land tenure, land use and forest governance, but

⁴⁷ Demian (2007b: 161) also notes that 'boss' is the preferred English word for *tanuwagana* in other parts of Suau.

these complexities are also being refigured by conservation projects in ways that generate and reinforce inequalities (Asinyabi 2015).

Like Li (2007; 2014a), I am interested in exploring the ways that capitalist relations intersect with ‘customary’ land tenure and usage patterns and the ways land and trees are ‘rendered technical’ within the REDD+ and Cool Earth projects. This process of rendering land ‘technical’ relies on a set of practices that work to frame land and trees as intelligible and legible with specifiable limits, characteristics and boundaries (Li 2007). It thus necessarily involves the foregrounding and marginalising of different ontological assumptions and epistemological practices to make land and trees visible and productive for conservation. Through Tsing’s (2005) concept of friction, I explore the awkward, unstable and unequal interactions that emerge as project proponents attempt to render land and trees technical in Suau. In this sense, “Friction is not just about slowing things down. Friction is required to keep global power in motion. ... Friction is not a synonym for resistance. Hegemony is made as well as unmade with friction.” (Tsing 2005: 6). Here friction is central to how governance is performed and brings attention to the productive potential of heterogenous and unequal encounters (Tsing 2005: 5). In exploring these frictions, I concentrate on the stories people in Suau tell about their land and trees, and the ways local people perceive and dispute outside conservation projects. Recognising Indigenous critiques of environmental governance interventions can expose power relations and inequalities in ways that may otherwise be overlooked (Kirsch 2006).

This chapter is not an ethnography of land in Suau (other ethnographies from Suau provide a foundation for understandings of land tenure and use, including Demian 2003; 2007), but I engage with the conceptual tools of ‘rendering technical’ and ‘friction’ to explore ontological intersections around land and trees. The first section of this chapter outlines the process of ‘rendering technical’ and introduces the ways this has intersected with ‘customary’ land tenure in PNG. The second section focuses on the stories people in Suau tell of land and trees, and the links to sorcery and death. These stories reveal the complex, contested and contextual nature of land tenure systems in Suau. The third section investigates how land and trees are rendered technical within the Central Suau REDD+ Pilot Project and Cool Earth conservation project. Particular attention is placed

on the tools used to make landownership static and inscribe boundaries, including ILGs, maps, satellite imagery and GPS. In addition to being instruments for rendering land and trees as mere technical objects, these tools are also epistemological – they enforce particular ways of knowing the world and exclude others. The fourth section delves into the frictions that emerge as global environmental governance assemblages interact with local lives. Land and trees mean different things to different people; the way subsistence farmers in Suau relate to and use land and trees is different to the way REDD+ and Cool Earth actors define project boundaries and measure the conservation value of forest areas. This chapter thus considers the inequalities that may be generated when certain ways of perceiving land and trees are privileged over others.

5.2 Rendering Technical ‘Customary Land’

For land and trees to be treated as a commodity and made available for investment, and in this case climate change mitigation and conservation, a complex assemblage of social relations, institutions and tools need to be developed (Goldstein and Yates 2017: 209). This process is linked to the practice of problematisation; in this case, climate change is problematised in a particular way that legitimises REDD+ as a form of mitigation and, similarly, biodiversity loss is problematised in a certain way to justify Cool Earth’s conservation approach. As Li (2007) explicates, the processes of problematisation and rendering technical work together to enable and facilitate approaches to environmental governance. For Li (2011), the process of rendering technical means:

... a set of practices concerned with representing ‘the domain to be governed as an intelligible field with specifiable limits and particular characteristics ... defining boundaries, rendering that within them visible, assembling information about that which is included and devising techniques to mobilize the forces and entities thus revealed’ (Rose 1999: 33).

Inscribing boundaries is a key part of rendering a domain technical, which separates those who claim to know how others should live from those whose conduct is to be governed (Li 2007). Environmental governance, thus, depends upon rendering land and trees technical by drawing boundaries (Vandergeest and Peluso 1995). For REDD+ and Cool

Earth, land and trees are rendered technical by mapping forest boundaries and identifying legitimate and illegitimate forest use (Li 2016: 82). This process also bounds communities as units through the use of tools like maps, diagrams, charts and templates from ‘experts’ (Li 2011). Such tools – in the case of the Central Suau REDD+ Pilot Project and Cool Earth conservation project: ILGs, maps, satellite imagery and GPS – work to reveal certain measures of land value and legitimate value claims within a particular frame of reference (Goldstein and Yates 2017: 210). These tools are operationalised to make land legible and productive to one set of actors by disrupting existing modes of environmental governance. Environmental governance is not just about access to and control over land – there is a politics of knowledge involved in such processes that inscribe what counts as valid understandings of the environment (Goldman et al. 2011).

Here I bring together Li’s (2011) concept of rendering technical with Tsing’s (2005) concept of friction to reflect on the implications of this process. While ‘rendering technical’ offers an encompassing view of how environmental governance operates, the notion of ‘friction’ brings a situated way to understand the awkward, unstable and unequal interactions that are produced in this process. The concept of friction provides a way to ground analysis of global connections in concrete engagements, while remaining attentive to power and knowledge (Tsing 2005: 267). Using friction in this way highlights the importance of interaction – it is the intersections between different ways of being and knowing that creates friction, but friction is also productive and moves governance assemblages forward. It also allows us to question dominant assumptions about the nature of reality – assumptions reinforced through processes of rendering technical – not in terms of truths or lies, but as ‘sticky engagements’ (Tsing 2005: 6).

This situated understanding comes from investigating how people in Suau relate to and manage their environments and how this comes into tension with conservation projects. Existing modes of environmental governance are often characterised as ‘customary land tenure,’ but this framing can be problematic. Colonial history has influenced systems of land tenure, some of which are now classified as customary, yet are based on imposed practices (Naybor 2015: 886). In PNG, the distinction between customary and non-customary land should not be taken as a definite empirical distinction (Martin 2013: 5).

Filer (1997) has already discussed the ideology of customary landownership in PNG where resource extraction has fostered a vision of customary landowners as the model of Indigenous citizenship. Although, this concept of ‘native custom’ was originally the creation of Australian colonial law (Filer 2006: 65) – customary land tenure is not an Indigenous concept but is an imposed classification from colonial occupation. Customary land tenure thus emerges in relation to and through friction with other governing actors and political economic processes (Allen 2018: 21). The temporal dimension of ‘tenure’ is also problematic as it indicates possession of something for a limited duration (Li 2017: 276). In this chapter, I do not take the concept of ‘customary land tenure’ for granted. Instead, I critically engage with normative concepts of land and tenure⁴⁸ to explore how certain categories of land and ownership are reified through environmental governance assemblages.

Building on the work of Oceanic scholars, in the following sections I pay attention to the ways space is constructed through people’s interaction with each other and with their land and trees (Stella 2007) and the ways these relations intersect with alternative ways of being and knowing in the world (Tofaeono 2000). A large body of work investigates the intersections between resource extraction interventions, land and forests in PNG (van Helden 1998; West 2006; Filer 2011; Golub 2014; Jacka 2015; Damon 2017). While it is often claimed that 97% of land and almost all forests in PNG are held by customary landowners, customary land tenure systems in this country are highly variable and largely undocumented (Filer et al. 2000: 4). Everywhere, however, it seems social relations between people are embodied in land (West 2006: 196) and, typically, rights and relationships to land in PNG are constructed through interactions between people and places (Minnegal and Dwyer 1999: 66).

5.3 Living With, and Dying Over, Land and Trees in Suau

Building on the introductory story, which is illustrated in the kinship diagram in Figure 6, this section further explicates matrilineal land tenure systems and the role of PLOs.

⁴⁸ Ingold (1987: 130-131) draws distinctions between ‘tenure’ and ‘territoriality,’ but emphasises that both elements are present in all societies: “Tenure is an aspect of that system of relations which *constitutes* persons as productive agents and directs their purposes, territoriality is an aspect of the means through which those purposes are put into effect under given environmental circumstances.”

The fluidity of land tenure is emphasised by investigating the mobility of people across land over time and contestations of land claims. I also highlight the connections between land and trees; how the planting and cutting of certain trees can substantiate land claims but also generate disputes.

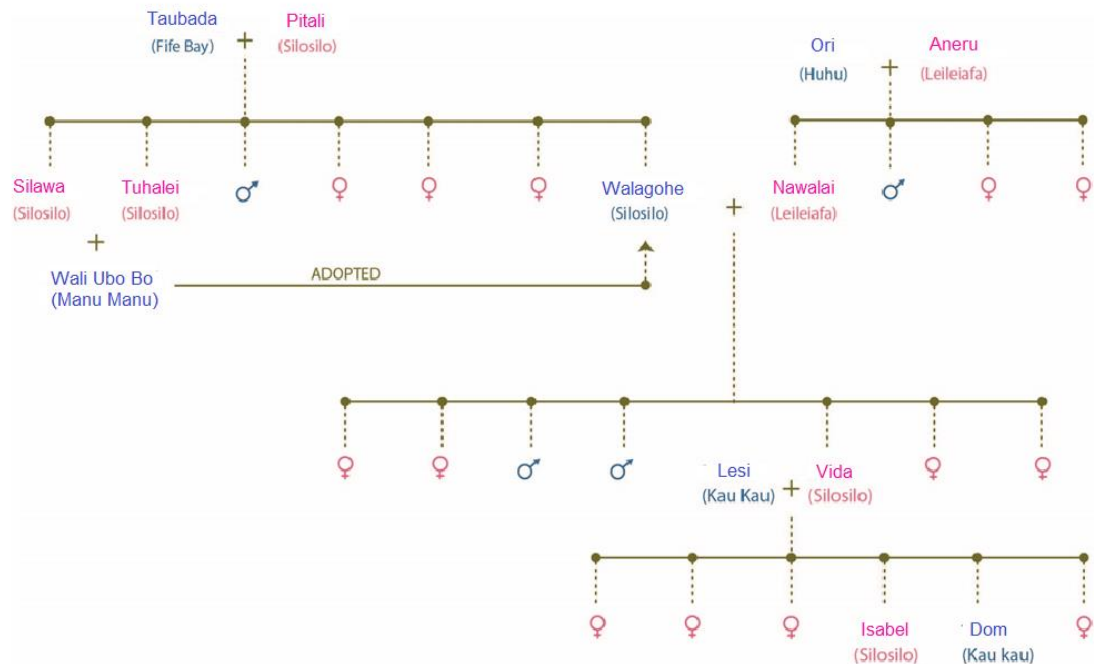


Figure 6. Kinship diagram of the Palu Paluta Clan

5.3.1 “It’s the women’s land, but men speak for the land”

Like other coastal areas in Milne Bay, land tenure in Suau is matrilineal – women and men are both imbricated in complex land tenure roles and processes. In Suau, people do not possess land, but belong to and orchestrate on behalf of land; rights and roles to act on land are always negotiable (Demian 2003: 34; 2007b). Distinctions are made between ownership and usage rights, but these rights exist on a continuum and are not mutually exclusive (see also van Helden 1998: 227). While land is typically inherited through the matriline, there are multiple mechanisms for obtaining usage rights, including transferral of land rights through the father (Demian 2007b: 155), as we saw with the case of Lesi and Dom. When explaining matrilineal land tenure, people in Suau often make statements

along the lines that women are the custodians of the land and men are the stewards. Jacob described:

It's always men. But the good thing about ladies ... the title will be given to them, so they will maintain that forever, they still maintain that today. Men are the ones who are going to talk, organise things. When it is feasting times, they are the ones to rise up. But the ladies will still stand there and listen [to check] whether their brother or uncle is doing the right thing. Because that is their land. But we are the stewards there. Men are the stewards.

In practice, these roles come into being through kinship relations. A local elected leader explained, "If the mother is from Suau, the men's children belong to the mother. But if they are going to be on their father's side [live on their father's land], they need to submit to their cousins from their daddy's sisters." These relations are exemplified by different words in the Lausaha dialect of the Suau language – these words are notably not used to refer solely to individuals but to relationships between people positioned within a family, as depicted in Figure 7. Women call their mothers and maternal aunties *ti'nagu* (my mother)⁴⁹ and their own children and their sister's children *nana'tugu* (plural, my children; singular, *na'tugu*: my child). Whereas, women call their mother's brothers *egu'bada* (my uncle, literally my big one) and their brother's children *yaya'agu* (also the word for aunty when used by children to refer to their father's sister). Men call their brothers and the sons of their mother's sisters *egu'yuhu* (my brother) – that is brothers and maternal cousins are all equivalent as 'sons of your mother' (Abel 2013: 18) – but their nieces and nephews are all *egu'gogola* (my niece/nephew), regardless of whether they are the children of their brothers or sisters. Women differentiate children of either their brothers or sisters, but men do not. Women can discipline their sister's children as these are considered their own, but not their brother's children as these belong to his wife and her family. For example, May is a landowner in Kau Kau, the only daughter among several sons. As her brother and his family live on May's mother's land, her brother's children come under her authority. She has the final power to decide on the blocks of land

⁴⁹ The word for my/mine is *egu/enagu* in Lausaha. Often a man will not use his wife's name but would call her *egu sinebada* or *natugu sinana* (my child's mother) in the Suau Island dialect (Abel 2013: 18).

given to her brothers and their children, though sometimes there are disputes over this. The right to land goes to her children, not her brothers' children.

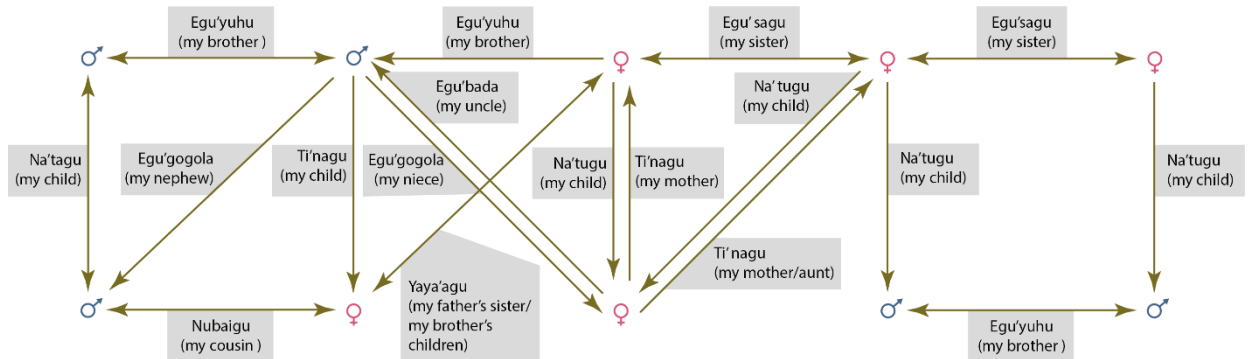


Figure 7. Lausaha kinship terms for family relations

While land transfers through women, it is typically first-born sons of matriarchs who become PLOs. In places where land rights are shared by clan members, land usage decisions are rarely made by individuals (West 2006: 197); in Suau, however, PLOs play a significant role in decision-making processes – though mothers and their sisters have the final power and can override decisions. PLOs are called on to make decisions about land use, like assigning gardening blocks, giving permission to cut trees for household use, and also about development projects that may alienate land for many years.

In Silosilo, the position of PLO is contested within clans and multiple men make claims to PLO status – Figure 8 depicts the first-born sons of this generation with a PLO claim in the Palu Paluta clan. While there are three sons that may make this claim, Pearse is currently recognised as a PLO – that is, he is performing the role. The two other first-born sons also have PLO status but as they do not live in the village, they are not acting on this. These PLOs do not divide the land up to manage but negotiate and discuss issues to do with land together. Pearse explains that PLO status can be earned; he says the previous PLO handed him rights to the land because he has stayed in the village “full-time.” To become a PLO, you have to “be good” to the previous PLOs, which often means “bringing pigs” to show you can be a leader – “Land rights are based on the care you give people, the care and effort you give to the LOs [landowners]. It’s not just through first-borns, but through work and custom as well.”

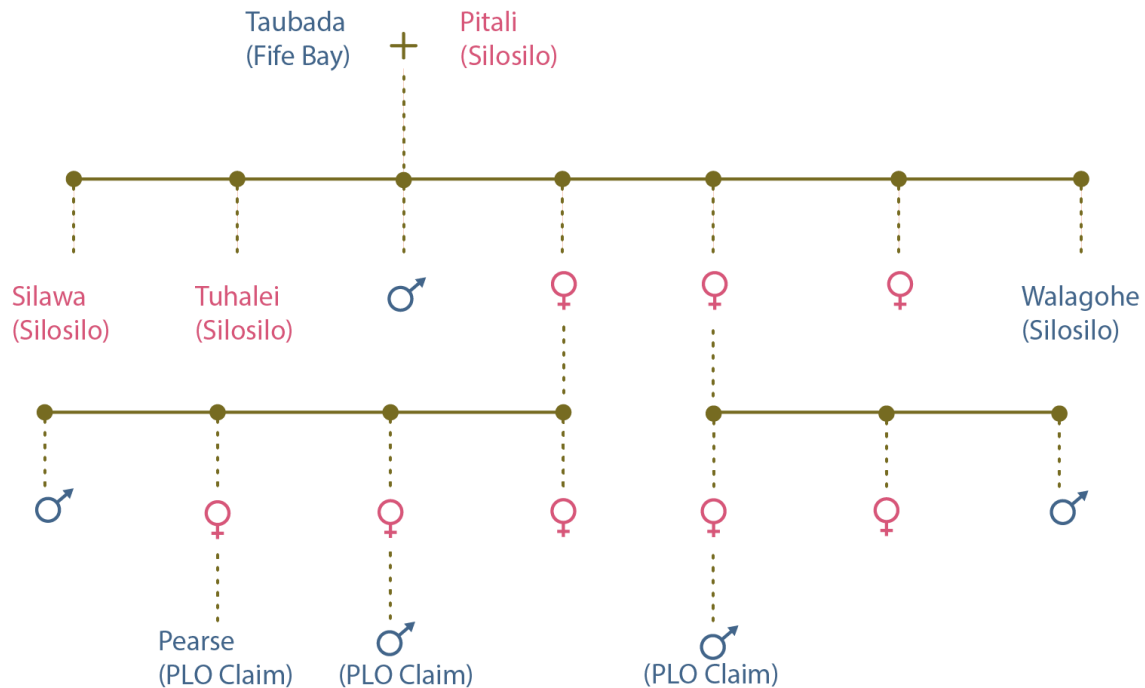


Figure 8. Tracing PLO claims in the Palu Paluta clan

Names are used to substantiate PLO claims and trace relations between people and land across generations. For example, Pearse’s custom name is Walagohe (in kin terms Walagohe was Pearse’s maternal grandmother’s brother), which he says gives him rights to look after the Walagohe family and land. When I was recording genealogies, the proliferation of ‘namesakes’ – people named after other people, often relatives – became clear. Bearing the name of someone associated with the land before provides evidence that you belong to a place and, like land, names are typically passed through the female line. People often say, “my *bubu*’s [Tok Pisin: grandparent] name is here so I can stay here.” Family trees play a decisive role in land disputes, but they are often transmitted orally, “They come and sit together and start talking about who has been here from there until this generation. That’s where they win the land.” While compiling family trees, if I asked who a person was married to, people would reply with a place name, rather than a person’s name. As it is against custom to say the given name of your *tambu* (Tok Pisin: in-law) in Suau, people who have married into a village are identified by the name of their mother’s village. For example, Navaboo married to Silosilo and her in-laws call her Navaboo, rather than Rachel, because that is where her mother is from. Whilst people use names to make claims to land, disputes are common.

5.3.2 “To fight over land, sorcerers can come and kill”

Establishing who owns land in Suau at a particular juncture in time is difficult as landownership is always subject to ongoing debate (Demian 2003: 35). I observed different kinds of tensions over land rights within families and between clans in Silosilo. The Pastor from Alo Alo described one situation in which disputes may occur within families:

They do have disputes. Like there will be some sisters coming in and another sister coming here and, all of a sudden, the other moves out from that area and then stays there for years and years and then later comes back again. But then they dispute because they say ‘we never saw you here. We have been here for years and years and where have you been, you should have been here with us.’ So those kinds of things are happening now.

This kind of dispute is about the performance of land claims over time. In addition, disputes between clans are often over ‘boundary marks’ – sites people use to make claims to land, like graves, trees, creeks and large rocks. Graves are often used as sites to make and defend land claims; bodies are brought home to the village to be buried to substantiate a family’s claim to the land. Other disputes may involve custom payments for land. For instance, Walagohe’s descendants, who have no matrilineal claim to Palu Paluta land, claim that he has already paid for their area of land by giving pigs in the past, but landowners from the dominant Palu Paluta expect them to continue such reciprocal relations to maintain usage rights. On this subject, Sabina explained how moving to another clan’s land will cause disputes:

What I think and see in this place here, on the land which belongs to that person, when that person will die, the new generation will come up and use the same land. They will never go across and use another person’s land. It’s law. They will have disputes and problems. So when, for example, these people here, this [Walagohe] family, [Walagohe] died and then another generation came now, their generation and another one will come on. And we

children, we are going to use the same land. We are not going to take over another clan's land – no.

In this quote, Sabina is emphasising that the family continue to use land that Walagohe used, which is acceptable, and are not taking over the land of the Palu Paluta clan, which is unacceptable.

Other disputes may occur between 'proper' landowners – who have matrilineal land rights – and people who have been 'looking after' their land. Indeed, some families staying at Silosilo have ancestry from Mailu, in Central Province far to the west, and say that "the pure landowner is somewhere at Suau [Island]." Over time, people have migrated along the coastline. Silas tells a story that past generations of his family moved from Saga'aho to Taboina to escape tribal fighting and cannibalism. Other families, like Nawalai's descendants, have been moved through colonisation and missionisation, or migrated through marriage, and retain land rights in other areas of Suau. People maintain long-distance interests in land and make claims through their daughters (Demian 2006a: 139). In some cases, however, people can become alienated from their land; as Kaniku (1977: 269) reveals, some people who joined the Kwato Mission run by Charles Abel in Suau, have "completely lost their land rights." Relations to land in Suau are fluid and change over time as people migrate and marry, or as outside interventions intersect with people's movement over land. These relations are also contested, and disputes can be deadly when sorcery comes into play.

Land disputes in Suau are frequent and tensions can lead to sorcery and, as a result, death. Nabobo-Baba (2006) explains that land is a source of life, but also a source of death; death results from the misuse of land or wrong-doing associated with land. Other scholars have also explored the links between land, sorcery and death in PNG (Macintyre 1989; Damon and Wagner 1989; Demian 2006b).⁵⁰ People in Silosilo note that as disputes and

⁵⁰ While sorcery and witchcraft have been engaged throughout this thesis in relation to ontological assumptions and epistemological practices in Suau, histories and transformations of sorcery and witchcraft in other places in PNG have occurred differently, and have been examined in different ways. In the Highlands of PNG, for example, there has been a notable intensification in conflict over the past thirty years; sorcery and witchcraft are implicated in these changing conflict dynamics, although they are also intimately connected to land and issues of resource extraction. Zimmer-Tamakoshi (2012) has drawn

competition over land increase, sorcery increases.⁵¹ In Suau, there are two gendered forms of magic: *taubalau* (sorcery, which is typically practiced by men) and *alawan* (witchcraft, which is typically practiced by women) (see also Demian 2000: 108). The former is most relevant here as sorcery is seen as a way to ‘defend the land.’ Often sorcery is used when it is perceived that a certain clan has too much land. One customary landowner, with potential to claim PLO status, sees sorcery as “a traditional way of how they can defend their land, or secure their land, through sorcery and witchcraft. That’s our tradition. ... They will always poison.”

The story of Nawalai and her family around Leileiafa provides an example of how sorcery is linked to death. In explaining how these sorcery killings are organised and may precipitate more deaths, an elder described:

If there are land disputes or maybe other families are not happy, one can easily order somebody, a sorcerer, to do the killing. Payment is always a woman or land. Sometimes they make those agreements and those agreements don’t work. And you will see that a lot of death takes place in [the clan who] gives that order because that agreement was not done.

During a mortuary feast, a deceased person may signal more deaths to come by extending two fingers. Like Demian (2013: 35), I noted that each death in Suau was followed by a process of “moral and divinatory forensics” in which all of the deceased’s relationships and those of their entire lineage are examined for evidence of conflicts with people who are capable of sorcery themselves or able to hire a sorcerer.

attention to sorcery-related violence in Madang and suggests that accusing someone of sorcery may offer an excuse for killing them and demanding land rights or compensation for mitigating the threat of sorcery. In the Eastern Highlands, Schwoerer (2017) has examined how sorcery-related violence has the potential to escalate into inter-community warfare, and linked this to uneven economic development. Gibbs’ (2012) research in Simbu Province also looks at how beliefs in witchcraft have led to violence and deaths, including the deaths of women accused of being witches. Along these lines, in Chapter Eight I turn to the links between changing practices of sorcery and witchcraft and gender based-violence in Suau.

⁵¹ Early anthropological records from Suau note that increasing death rates were locally attributed to sorcery (Williams 1933: 6). However, local explanations for rising death rates were framed as problematic. Williams (1933: 7) stated in his report: “While one needs to treat this hypothesis seriously, viz., that the increase of deaths is due to an increase of sorcery, there can still be no doubt that the belief in sorcery has an injurious effect on the population.” Sorcery was not advanced “as a factor of great importance” and it was noted that “such evidence, based on native tradition and observation, is far from trustworthy” (Williams 1933).

Understandably, people are fearful of land disputes and the sorcery killings that they may prompt. Like Dom, other PLOs also expressed reservations about developing land out of fear of attracting sorcery. One such PLO was Brad, from the Sala Sala clan. While two of the matriarchs of the previous generation are still alive, Brad says the PLO role is ‘in his hands.’ His cousin is actually the first-born son of their generation, but he lives in Port Moresby; Brad claims that he has PLO rights because he has stayed in the village and “others have left.” Brad believes it is better for one person to be PLO, otherwise there are “plenty of ideas and disputes.” He sees that sorcery killings have come from disputes and jealousy within the clan. In 2002, all the families in the clan were called to Silosilo and they started talking about “making the place,” or developing the land. Then people started dying. Since this, Brad counts seven deaths that have occurred because of sorcery. In 2012, Brad moved to Mariawate because of the disputes over land and fears of sorcery. He said sorcerers were following him in the bush and trying to kill him, so he left Silosilo. After five years away, he moved back to the village, but land disputes continue so risks remain.

In Suau, the links between land, sorcery and death also intersect with trees. As we saw with the case of Lesi, even when rights to land are not in dispute, the prospect of logging and getting money from trees can lead to jealousy and sorcery. In addition to disputes over sharing benefits from trees attracting sorcery, forests are important places for magic. The women told me that sorcerers prepare their spells in the forest by putting special leaves and words in their mouth. If they encounter their intended victim in the forest, they will kill them instantly. People express fear about going into the forest when there is a land dispute or danger of sorcery.

5.3.3 “We don’t cut trees any how”

Relations to trees are significant for people in Suau, not only in terms of the links between trees, land, sorcery and death, but also in the ways people use trees to make sense of their worlds. Peluso (1992) has shown how people use trees to orient themselves to the landscape and to each other. In PNG, certain trees facilitate continuity of personhood across generational time (Kirsch 2006). In Milne Bay, Damon (2017) has explored how

Trobriand and Muyuw people relate to and perceive trees – how certain trees generate reproductive conditions of fallow while the land is simultaneously being used to produce food. In this way, understandings of trees also articulate mutual relations between entities, between wholes and parts (Damon 2017). As discussed in Chapter Four, the *badila* and *kwila* trees are used by people in Suau to tell the seasons, which indicates how trees are intimately linked to people's sense of temporality.

In Suau, trees also play a practical role in establishing claims to land. Trees in Suau mark the matrilineage of the land's owner and are often named after the person who planted the tree (Demian 2004: 60). Planting certain trees, and cutting trees for the cultivation of land, are preconditions for land claims. As Dom revealed:

The moment you plant a coconut in our custom, your children and everybody else will believe the land belongs to you. Gardening, only planting like vegetables, they normally don't dispute that because [those crops are short-term]. Trees will grow again. But for coconut, it will last for years. ... it's permanent [compared to garden crops]. So, whoever plants coconut, it indicates that the land belongs to them. So that is where the arguments always arise. Or like small-scale business, like logging, slabbing and then reselling in Alotau. Those are the things, in terms of money, that's where disputes arise, other little businesses.

Here Dom is explaining how trees – particularly income-generating trees like coconut and betel nut palms – can establish land claims but can also cause disputes. Demian (2007b: 170) notes a 'horticultural hierarchy' in Suau where fruit-bearing trees and income-producing trees have more salience to substantiate land claims than gardens. Planting 'permanent' trees – that is, trees that last longer than garden crops and must be planted – creates a claim to land and harvesting or cutting those trees is seen as acting on that claim. Cutting trees may also be seen to be challenging another's claim to land by removing the marks that someone else has made (see also Minnegal and Dwyer 1999). The products of land, namely trees, are secondary to land itself; as trees are more like property (in that the people who plant them are seen to own them) they generate different

kinds of disputes than land (Demian 2004: 33). To avoid such disputes, people are careful about planting and cutting down trees. PLOs are called in to approve the cutting down of trees to make gardens or build houses; they may refuse requests if people are not following custom – “not sharing or talking to them badly.” PLOs may check on people’s gardens to make sure they are not planting income-generating trees or cutting down trees without permission.

People in Suau take great care when cutting down trees and follow custom processes, particularly if they are not landowners in the area. For example, one day when I was visiting some of the women in their homes, Kere decided to cut down a large palm tree that was close to the family’s permanent house. He feared that the tree might fall down and damage the iron roof. But as this tree was planted by his father, he could not cut it down himself, because it belonged to his father’s line and not his mother’s (and thus his own) line. Instead, he asked Tauba, his father’s sister’s son, to cut it down. Because he is staying on his father’s land, Kere has to submit to his father’s sisters’ children and get permission to remove trees. People in Suau do not cut down trees ‘anyhow’ – they follow custom processes and seek permission from PLOs.

Sago palms offer another example of the complex ways trees are used to inscribe people into the land. Sago has great cultural significance in Suau and sago palms are often named after the person who planted it, thus connecting them to place. Unlike coconut and betel nut palms, sago palms tend to be planted in swampy areas, rather than in an individual’s garden block. The processing of sago from palms is done communally, with the product being shared among the family and clan members who assisted in the beating and squeezing. Sago can be sold at local markets but is also consumed by households, so it does not have the same connotations as other cash crops, such as copra or betel nut. The planting and cutting down of certain trees illuminates distinctions around landownership and usage rights and the ways people make land claims on the basis of trees. Often when disputing the cutting of trees, people are concerned with the potential for a tree to be alienated from the land and landowners – appropriated for individual benefit instead of maintaining ongoing relations. By paying attention to the ways people engage with trees, we can glimpse the fluid and contested relations between people, land and trees in Suau.

5.4 How Land and Trees are Rendered Technical in the REDD+ and Cool Earth Projects

The previous section explored the links between land, trees, sorcery and death in Suau, highlighting the complexity, mobility and contestation around land tenure and land usage rights and the deeply relational form of those rights. This section begins to problematise how REDD+ and Cool Earth project proponents work from positions of power to employ specific epistemological tools to render land and trees technical. Tools like ILGs, maps, satellite imagery and GPS enforce certain assumptions around ‘landownership’ and ‘boundaries’ while excluding other ways of perceiving and relating to land and trees. Conservation requires imposing regimes of exclusion that distinguish legitimate and illegitimate land use and users. As Hall et al. (2011: 4) acknowledge, “Exclusion is not a random process, nor does it occur on a level playing field. It is structured by power relations.” Both the Central Suau REDD+ Pilot Project and the Cool Earth project in Wabumari make distinctions around what trees can be cut down (for example primary or secondary forest), for what purposes (household use or commercial logging) and by whom (certain landowners and not others). However, as we have already seen in the story of Nawalai’s family, the lines between illegitimate and legitimate land use and users in Suau are often blurry. The process of rendering technical is necessarily political – by focusing on the power at work in these transformations, the actors promoting or opposing these changes in land relations, we can see this politics (Hall et al. 2011).

5.4.1 Making Landownership Static – Incorporated Land Groups

Within the REDD+ assemblage in PNG, ILGs are used to recognise customary landowning groups as legal corporate entities to enable the distribution of benefits derived from land (Amos 2009: 10). Across PNG, ILGs remain strongly contested, but are becoming increasingly widespread as mechanisms to access ‘development’ (Stead 2017: 8). As staff at the PNGFA emphasise, ILGs were introduced to legally recognise existing land systems. The extent to which they achieve this, however, remains questionable. Under the Central Suau REDD+ Pilot Project, people in Suau have been engaged in the ILG process to identify customary landowners entitled to share in any benefits the project may generate. The *Land Groups Incorporation Act* was first adopted in 1974 but in 2012

this was superseded by the *Land Groups Incorporation (Amendment) Act 2009*. While ILGs were not originally intended to act as a mechanism for benefit distribution,⁵² they have acquired new functions under resource extraction and development projects, which has led to unanticipated and severe difficulties in their implementation (Lea 2013; Weiner 2013).

The amended Act includes specific requirements to formalise ownership of land; applicants are required to submit a sketch map of land boundaries; the Department of Lands is then required to use GPS to map out these boundaries.⁵³ In addition, applicants have to draw up a family tree and write an abstract of the genealogy of the area. Under the new model, anyone named on an ILG application must have a birth certificate, which can be difficult (and costly) to obtain. Once all of this has been completed, applicants have to advertise the ILG in the national newspapers and notify people in the village, so they have an opportunity to raise any objections. Further, ILGs must now have a constitution, hold minuted annual meetings with written reports on finances and be open to inspections of bank accounts (Minnegal et al. 2015: 499). Clearly, establishing an ILG can be a lengthy and expensive process.⁵⁴ Experiences of the ILG process in the Central Suau REDD+ Pilot Project highlight some of the difficulties and tensions of formalising landownership systems.

In Silosilo, a visiting REDD+ team started the ILG process one evening by putting up a projector screen displaying a map of the area and asking people to point out their

⁵² Kalinoe (2001: 4) asserts: “The Land Groups Act 1974 was originally intended to organise customary based social groups to hold, manage and deal in alienated land which they have acquired through the plantation redistribution scheme. I therefore venture to suggest that the Act was never intended to give customary landowners recognition as owners of customary land. In other words, incorporation of a social group under the Land Groups Incorporation Act was never intended and indeed does not validate ownership of blocks of customary land.”

⁵³ According to the ILG application forms, a sketch map should “consist of a boundary walk by clan leaders, Provincial and District Lands Officers, a land Mediator and the Provincial Surveyor.” This map should clearly mark “any disputed boundaries” and be “signed by the disputing clan elders to acknowledge the existence of the dispute”. It should be “drawn on a A3 paper by the Registered Surveyor using topographical map of the area or GPS coordinates to indicate the size, location and the exact boundary.”

⁵⁴ In 2017, the costs for registering an ILG included: 1) Government printing office publication fee - K160; 2) Media fees for the national newspapers - National Newspaper K290.5 and Post Courier K450; 3) Notice of Grant of Certificate Fee - K274; 4) Birth Registration Fee - K15 per member (applies to people aged over 18 years only).

boundaries. Not all of the people in Silosilo attended this meeting; as it was in the evening many women could not attend as they had to look after children. Isabel recalled, “They said to confirm the boundaries, that was the reason they put up that projector.” The next morning, the visiting REDD+ team called people in the village to come to the market area, under the casuarina tree on the beach, and asked them to sit in their clan groups. They then began filling out the ILG forms and adding people’s names under each clan group. But the team did not return to the village after this and the status of the ILGs remains uncertain. Isabel commented, “After we filled in our ILGs we gave it them, [they] went to another ward, same thing. And up until this day we don’t know. We just don’t know.” Another community member from Kau Kau shared a similar experience, “We only filled in the forms and then they took them, and they never came back with them or approved those ILGs, so we don’t know whether it’s approved. They have to come back and let us know.” Indeed, this ILG process was initiated in the 23 wards from Dahuni to Modewa under the REDD+ project and many people across Suau expressed confusion about these ILGs. When discussing this with staff at the PNG Forest Authority and Department of Lands, they confirmed that the ILGs for this project were never approved or finalised. Nevertheless, the process of drawing boundaries and organising people into ILG clan groups has led to disputes.

People in Suau link disputes over land and REDD+ to this ILG process. Jacob noted that the dispute over the REDD+ plot in Silosilo, first discussed in Chapter One, was connected to the ILG process, “That’s where the conflict came in. That’s where the dispute came, because of that ILG, the signing of the ILG, because people were still not understanding.” Speaking about the ILG experience through the Central Suau REDD+ Pilot Project, a local elected leader detailed some the complications and conflicts that may emerge through the ILG process:

The idea was that every clan in every village, with their demarcated land markings, would register their land under the ILG process, so it makes it easy to identify who the resource owners are and if there is any benefit it will go through the ILG. ... Also, in capturing the family tree and everyone under the clan, you identify who your father is, who is the PLO and is more like your

chief, who is your leader. ... But you have a leader who is from the mother's generation. And so we begin to know who we are submissive to and then it brings out the rights. The only issue, I would say, is because of our customary and traditional process of acquiring land, whereby land has been given away at some stage as a compensation payment from one clan to another ... that particular clan may want to register for REDD+ under their own name, under their own ILG. But the original landowner may also want to capture their piece of land under his ILG. ... And that's where conflicts might arise.

As this quote explains, people in Suau have migrated across land over time and land has been transferred to different groups through custom payments, for example in sorcery deals. The ILG process may render ownership unambiguous but only by forcing people to decide between multiple claims, accepting some and denying others.

REDD+ project proponents recognised the challenges of implementing ILGs, particularly the problems that arise when you define an area and this excludes certain people from asserting their land claims or denies access rights to people who have land usage rights. As one officer in the CCDA recognised, the ILG process struggles to fit with different cultural groups and the ways that people relate to land through kinship ties and intermarriage:

We also have intermarriages within local clans or local villagers from this area to that area where the REDD+ project is. Then when you are trying to set up an ILG, this person will say 'my daughter or my son also married into [that clan],' then you have to include her too. ... It's difficult for us as an office, I mean an organisation, to look into due to the different cultures and diversities that we have...

Another officer within the CCDA mentioned the challenges of land registration processes, but insisted on communities having ILG certificates to define 'genuine' landowners:

The challenge would be there are sometimes different groups registering ILGs and they would want to do REDD+ and there might be duplications of REDD+ for the same area. And also the process is very long ... [the ILG has] to go through the provincial administration and it takes a while for this type of thing to go up. Also the type of setting, the village, sometimes a lot of people at the local level have their own representatives and some may be genuine, some may not be genuine, others have other intentions of bringing other projects. ... That's why in REDD+ projects we always tell them you must have an ILG certificate ... you must have the GPS referencing of that place, you must have a land use plan.

As this quote indicates, ILGs formally recognise the land claims of some people and not others. This may well render land technically available for projects such as REDD+, but in the process of doing so friction is generated.

While Cool Earth have not followed the ILG process as a path to benefit sharing in their conservation projects in Suau, they still render land ownership static: "We don't spend money on reserves or fences. We don't buy land. Instead we secure the land tenure for the people who already live there." (Cool Earth 2018c). Staff at Cool Earth indicated that having an ILG in place for communities in Suau may make these areas attractive to resource extraction companies, specifically oil palm and logging companies, who may be able to persuade members of an ILG into resource extraction projects with the promise of monetary benefits. Nevertheless, they still distinguish between what they see as legitimate and illegitimate ownership by excluding landowners who live outside the project area from receiving benefits. In this way, Cool Earth enforce a static vision of landownership that is dependent on people residing in an area of land at a particular moment in time. As we have seen with the stories of Nawalai's family, this is not how customary land tenure works in Suau, where people move over land over time and land claims exist on a spectrum and are continually negotiated and contested. REDD+ and Cool Earth, however, reinforce static conceptions of landownership through the use of tools, like mapping, satellite imagery and GPS to inscribe boundaries.

5.4.2 Inscribing Boundaries – Maps, Satellite Imagery and GPS

In line with ILG processes that attempt to bound sets of people and identify these with clearly bounded places, tools like maps, satellite imagery and GPS are used to inscribe boundaries for REDD+ and Cool Earth projects. These tools do not just record the presence of land as a resource but are integral to assembling it as a bounded entity legible to different actors. Maps, satellite imagery and GPS play interconnected roles in framing land and land use through a particular lens. These tools and processes determine the boundaries around land, the kinds of land use and land claims that are deemed acceptable within those boundaries (Hall et al. 2011: 5). For the Central Suau REDD+ Pilot Project, these tools are instrumental to the development of the project design documents and establishing plots of land and trees to be measured and monitored for carbon. For the Cool Earth project, such tools are used to map community forest resources and monitor forest loss. People in Suau tell different stories about these tools and often dispute the ways they inscribe boundaries around their land and trees.

A landowner from Kau Kau described the ways REDD+ teams used maps and satellite imagery to inscribe boundaries around areas designated for conservation:

They told us they've got their maps and they told us they've marked certain areas which they want us to preserve. And they said there is a couple of clans in Kau Kau, so we looked at the map and they put the mark where they wanted to preserve that particular area. ... When they marked the areas, they told us ... it will be under a kind of satellite. They will put the watch on it, so when you [cut big trees] ... they can also come [and monitor the land].

This quote indicates how maps and satellites are used to govern land and trees in Suau – how REDD+ has introduced new forms of surveillance to control land use. Figure 9, originally produced for the REDD+ project design document titled *Analysis of Historical Deforestation, Degradation and Land Use in Central Suau* (SPC/GIZ 2014a), shows how these tools have been deployed to define land, trees and land use in Suau. The kinds of maps used in the REDD+ assemblage represent local land and land use in forms that are

legible to institutional actors and that make land and trees productive for conservation and economic valuation.

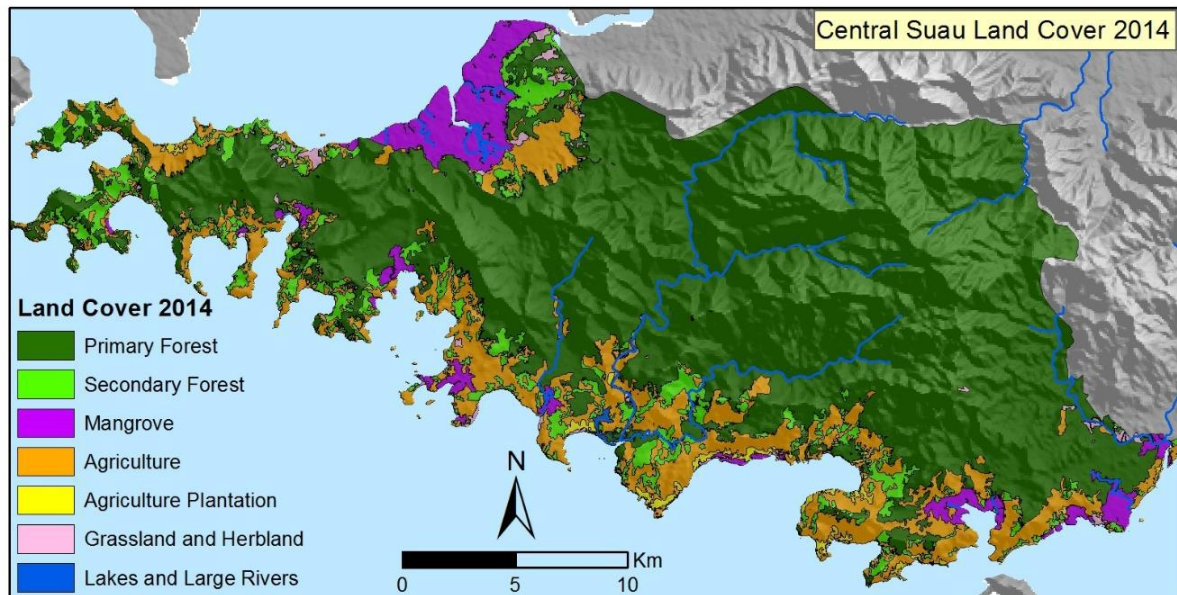


Figure 9. Map of the "Distribution of benchmark land cover classes in Central Suau in 2014"
(SPC/GIZ 2014a: 11)

Similarly, Cool Earth use satellite imagery⁵⁵ to map community forest boundaries, “This is done using government boundary maps, GPS coordinates from the ground, satellite images and isoclines to determine terrain that would prevent logging...” (Wilkinson 2016). The Forest Protection Agreement between the community of Wabumari and the NGO Cool Earth states that: “Cool Earth will not continue its support if the Community of Wabumari cut their trees, with the previously mentioned exceptions, which will be monitored and corroborated through visits and satellite monitoring.” The exceptions mentioned here include that, “The community may cut a select number of trees for community use, in the construction of houses and community spaces, tools for personal or collective use or for agro-forestry with the approval of Wabumari Community Association.” In this project, maps and satellite imagery are used to establish and monitor land use, but they also work to categorise and enforce what trees can be cut down, who can cut trees and for what purposes.

⁵⁵ It is important to note that Cool Earth use other methods, “As well as using satellite imagery to monitor rainforest protection, Cool Earth’s partner communities use boats and regular treks and radio communications to monitor access points and the forest itself” (Cool Earth 2018c).

To demarcate areas where trees can and cannot be cut down, maps and satellite images reinforce particular definitions of ‘forest’ and ‘classes of land cover.’⁵⁶ The official definition⁵⁷ of a forest under the PNGFA is: “A land spanning more than one (1) hectare, with trees higher than three (3) metres and the canopy cover of more than ten (10) percent” (SPC/GIZ 2015a). This definition, which makes it possible to measure forest cover through satellite imagery and mapping, is adopted across the project design documents for the Central Suau REDD+ Pilot Project. Like Figure 9, these documents also draw distinctions between primary and secondary forest, although the feasibility study recognises the difficulties of drawing spatial boundaries around areas designated as secondary forest, “The spatial boundaries of the REDD site should exclude agricultural areas, but since some of the roughly 3,000 ha of secondary forest may actually be in a fallow state from the villagers’ shifting cultivation, the precise boundaries at this stage can’t be estimated” (SPC/GIZ 2013). This is important as it highlights the tensions between the fluid and mobile ways that people use land in Suau and the tools that are used to draw boundaries around land and restrict land use.

The categories of primary and secondary forest are central to how REDD+ defines areas for conservation. In practice, this involves using tools to establish bounded plots of land to measure and monitor trees and the carbon they store. The *Measurement, Reporting and Verification (MRV) Manual* (SPC/GIZ 2015a) for the Central Suau REDD+ Pilot Project explains how preliminary sample plots were initially located using satellite imagery and maps and confirmed using GPS to mark the boundaries of each plot. The use of GPS to define plot boundaries has generated significant confusion and tension for people in Suau. The *Forest Carbon Inventory* (SPC/GIZ 2014b: 11) report details how these plots were established, but revealed, “A number of cluster sites and also parts of clusters had to be

⁵⁶ These definitions are explicitly linked to tools like satellite imagery, “The methodology employed for the spatial data analysis of historical land use and land cover as well as land cover changes is straightforward and comprises 1) the identification of appropriate data sources for satellite images, 2) the definition of forest in line with the official definition in PNG, 3) the definition of classes of land cover, 4) the definition of temporal boundaries of the Land Cover Change (LCC) analysis, 5) the stratification approach and 6) the steps in creating land cover change matrix” (SPC/GIZ 2014a: 4).

⁵⁷ Another definition is presented in the *Climate Change (Management) Act* (GoPNG 2015): “forest means land spanning more than 0.5 hectares with trees higher than 5 metres and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ to the exclusion of land that is predominately under agricultural or urban land use.”

dropped due to landowner permission issues....” Kere, who accompanied a forestry team attempting to establish one of these plots in Silosilo, discussed how the team used GPS and the disputes over marking fixed boundaries in areas where land tenure is shared between a number of clans and boundaries are not clearly defined:

That’s when the dispute started. So they got the boys, a few boys, about ten boys here, young boys, they went to [the forest] and this place in the middle of it and they do the survey. And I was one of them following them. We got the knife, we cut the marks of the trees, the sign of X. And then they were trying to make the GPS ... They [the REDD+ team] were trying to mark the square block. ... They [the landowners] say that this land is not really settled, there is some bother, this place [goes to this clan] and this place [goes to another clan], then [another clan] came in and they all meet together here. So here it is about the border. So when they got the GPS, there are some boundaries. I mean the owners are not really sure [of the boundaries].

As boundaries are fluid and contested in Suau, imposing fixed boundaries using GPS can lead to land disputes. Like REDD+, the Cool Earth project in Wabumari has generated tensions around using tools like GPS. Early in the project, a visiting team attempted to mark boundaries using GPS and put cameras in the forest to monitor wildlife activity.⁵⁸ However, this led to disputes and Cool Earth have since been careful to avoid such mapping activities. While the Cool Earth Forest Protection Agreement obligates communities to participate in the ‘informal’ mapping of the community land boundary, people in Wabumari have confirmed that such mapping has not yet been done. By attempting to inscribe boundaries around land and trees, and around people, in Suau, both REDD+ and Cool Earth have generated frictions.

⁵⁸ Nearby villages disputed the use of GPS and cameras in the forest as part of the Cool Earth project, which they perceived as “sucking up all the air” from their land as well. They argued that you “can’t put a boundary on the air.” An outside landowner threatened to break the Cool Earth cameras because Wabumari people were getting money from the photographs and he was not. Since then the cameras have been taken out of the forest.

5.5 Frictions and Inequalities

So far, this chapter has described the complex and contested ways that people use and make claims to land in Suau and explored the tools that REDD+ and Cool Earth employ to flatten that diversity and thus render land and trees technical. The last section pointed to the disputes that have arisen as a result of the ways landownership and boundaries are defined under REDD+ and Cool Earth projects, and how these techniques themselves are being challenged. Jacob describes the frictions between local land tenure processes and the conceptions of landownership and boundaries being promoted by REDD+ and Cool Earth:

When people, through their obligations (their pigs or whatsoever), or they live most of their time here, they claim that's their land – so if the proper landowner comes there will be a dispute. Sometimes they will tell them, 'where's your cemetery?' It's always like this. Now the Land Act is changing, and people need to know where their life is spent on which land. Sometimes when people go and make gardens or cut trees that's where disputes will come. Because where the boundaries are, two clans or three clans must be consulted so that tree or that garden will be made there. ... Sometimes we make mistakes where the boundary is. We are claiming that is our land, but the other clan will come and say 'who witnessed that you cut that tree down or made a garden there?' ... That's the problem when that REDD+ or Cool Earth came in because some of the boundaries they did not come and sit together, call them together, meet together and see their boundaries. ... It's not one clan that has to make final decisions, it has to be two and plus.

As Jacob points out, REDD+ and Cool Earth have caused problems by attempting to formalise landownership and boundaries in ways that conflict with the fluid and permeable nature of land tenure and usage in Suau. These frictions emerge between the negotiated and contested ways people perceive and relate to land and trees in Suau and the static visions of landownership and boundaries promoted by REDD+ and Cool Earth.

Here friction is produced as global power intersects with local lives – it is a product of encounters across difference, encounters that can be unequal, but is productive in its own right and works to move governance forward (Tsing 2005: 6). By exploring disputes over the spatial control of land as sites of friction, we can investigate the intersections between ontological and epistemological dimensions of land and practical concerns of livelihood inequalities (Lund 2016; West 2016a: 128). As land and trees are made legible for conservation, project proponents work to separate ways of knowing and being (Li 2007). Epistemological tools like ILGs, maps, satellite imagery and GPS enforce particular ways of knowing the world and related assumptions about how reality is constituted.

The ILG process under the Central Suau REDD+ Pilot Project has generated significant frictions, not only about landownership, but also in transforming previously mobile and negotiable land tenure systems into a system comprising fixed and formalised landowner groups. Clarifying rights to land is seen by project proponents as central for ensuring the equitable distribution of benefits from REDD+ projects (Angelsen et al. 2012: 156), but such clarification may itself produce frictions and inequalities. While in the past land tenure systems in Suau were contextual and usage and residency rights could be negotiated and contested, recognition of rights is becoming increasingly rigidified under environmental governance assemblages. The assumption that customary landowners and an ILG are equivalent, that ILGs are a legal articulation of landownership, comes into friction with the lived realities of people in Suau (see also Stead 2017: 79).

As Minnegal et al. (2015: 500) highlight, the ILG process is focused on the “definition of categories and drawing of boundaries, rather than on the negotiation of relationships.” This has the potential to reshape and fix previously fluid social and political forms. Filer (2007: 160–166) describes how ILGs are carved out of flexible, contextually elicited social groups, re-envisioning them as fixed social groups. Others, too, have noted that the ILG process attempts to transform social groups from loosely organised, socially contingent, porous units to exclusive and bounded groups that restrict membership (Ernst 1999; Gilberthorp 2007). The increasing fixity of social relations goes beyond the ILG process; it has been observed for several decades in other parts of PNG and is linked to

broader political economy movements, including the increasing connections to global markets through resource extraction projects (Weiner 2013; Leaver and Martin 2016).

Even though Cool Earth have not utilised ILGs in their projects, they also attempt to stabilise communities into a fixed group that excludes customary landowners who live outside the project area. The stories that Suau people tell, however, illustrate that land is not necessarily owned exclusively by stagnant clan units but, rather, that usage rights depend on complex relations between people, land and trees. As in the story of Nawalai's family, people move over land over time and lineages retain rights to land, although these claims may be contested (see also Demian 2007a: 103). The performance of co-existing land claims in Silosilo reveals the flexible relationships between people and land, the different ways in which clan groups and places are perceived and enacted. It is through processes of rendering technical that different assumptions of land and trees are brought into friction – friction is a necessary part of governance, of attempts to dictate how reality is constituted and, as such, friction is productive. These frictions are influenced by, and have consequences for, power relations, both between communities and project proponents and within communities themselves (Stead 2017: 76)

The exercise of power within environmental governance assemblages produces not only frictions between different assumptions about land and trees, but also inequalities around access to benefits and livelihoods. Dissociating people from land and preventing access to forest resources has livelihood implications for forest-dependent communities (Ghazoul et al. 2010: 399). Efforts to render landownership static can undermine the flexibility of land use rights and negatively impact on local livelihoods and food security (Weiner 2013). For REDD+, people not listed on an ILG may be excluded from accessing project benefits and could have their rights to use land curtailed. This has been a problem in other REDD+ projects in PNG, where the ILG process has been co-opted by individuals and some community members dispute the legitimacy of the landowner company that controls the distribution of REDD+ benefits (Leggett and Lovell 2012).

Moreover, registering ILGs may exacerbate gender inequalities by undermining matrilineal land tenure systems. In Suau, there are concerns about land registration

processes being corrupted by patrifilial sensibilities of outside groups (Demian 2006b: 524). While matrilineal systems are the custodians of the land in Suau, male PLOs play a public role in decision making over land; formalising the roles of these men through the ILG process may damage the processes that underpin matrilineal land tenure systems. Macintyre (2003) has also noted the ways that women have been excluded from decision-making around resource extraction projects in PNG, and the impact this has had on the matrilineal transmission of land rights. The ILG registration process excludes women from the legal architecture of these entities and, in doing so, increases and validates existing male power structures (Beer 2018: 354). Since colonisation, there have been disruptions in women's traditional power over land, with men increasingly being recognised, not just by outsiders but also internally, in formal decision-making roles. In as much as REDD+ and Cool Earth project proponents recognise particular landowners and exclude others, they could jeopardise the complex decision-making processes that facilitate matrilineal land tenure.

The epistemological tools used to render land and trees technical, namely maps, satellite imagery and GPS, have also contributed to these frictions and resultant inequalities. As in other parts of Oceania, cartography and satellite imagery have redefined the world that people in Suau inhabit (see also Nabobo-Baba 2006: 6-7). Of course, maps are not new to Suau; people have their own kinds of maps and have been exposed to Western cartography since colonisation and missionisation. In environmental governance assemblages, however, maps operate as instruments of control that transform fluid and contested ways of knowing and using land into fixed boundaries, while also defining the economic value and productivity of areas of land (Chao 2017). Maps are always abstractions; they reduce information to content but are not the lived relations between people and land (Dwyer and Minnegal 2014).

This contrasts with more traditional modes of mapping in Suau, through oral accounts of the configuration of matrilineage boundaries and kinship ties that are open to negotiation and contestation. Oceanic scholars like Hau'ofa (1994) recognise that, before colonisation, boundaries were not imaginary lines on maps but points of entry that were constantly negotiated and contested. Stories from Silosilo reveal how trees, graves and

names link people to places together and serve as maps of a community. As Silverman (1998: 424) has demonstrated, maps in Melanesia are primarily political, not representational; they present arguments about how the world should be, not objective accounts of how the world really is. It is this distinction between ‘object’ (where the abstraction of maps is experienced as a distancing from lived experience) and ‘process’ (where maps transform that experience and create contexts for further transformation) that Dwyer and Minnegal (2014) emphasise. Conservation projects that rely on certain kinds of maps to see land and trees actively transform ways of knowing and using land, displacing and distancing other, relational, ways of connecting to land.

Maps are central to how land and trees are perceived, and performed in practice, in REDD+ and Cool Earth projects. As Tsing (1993: 287) discusses, maps mark out a dream of development in which the ‘untidy forests’ and ‘backward peoples’ are tamed and transformed. Boundaries drawn on maps, with connotations of ownership and property rights, intrude on the lives of other people (Minnegal and Dwyer 2017: 164-5). Making land and trees productive in this way can erase local forest claims. Maps and satellite imagery present particular – limited – interpretations of land and land use (Bong et al. 2016), which may not fully capture the variety of ways people in Suau engage with land and trees. For instance, these images cannot depict the relations between land, trees and sorcery in Suau; they cannot account for the ways that sorcery interrupts and transcends project boundaries.

Maps, satellite imagery and GPS are used not only to define boundaries but also to classify different categories of land use and trees. The definitions of ‘primary’ and ‘secondary’ forest underpinning the Central Suau REDD+ Pilot Project generate frictions with the ways that people in Suau use their land and trees. The swidden agriculture practiced by people in Suau means their gardens are constantly moving. Any map that purports to inscribe boundaries around areas of ‘primary’ and ‘secondary’ forest is thus necessarily contingent and will be of short-lived validity. These categories have little salience for people living with, gardening and hunting in the forest. People in Silosilo do make distinctions between *yabaha* (old growth forest) and *mutamutawa* (regrowth forest),

but these terms are not fixed in place.⁵⁹ A woman from Wabumari explained, “Here in our village we said our gardens, our forest, we call them *mutamutawa* and *yabaha*. *Yabaha* is where all the big trees are, those trees that haven’t been cut down. But this *mutamutawa* that’s where we already make gardens and the trees grew up again. And we can also go and cut them again.” The distinctions between *yabaha* and *mutamutawa* are dependent on the ways people have used the forest over time and can change into the future. The categories of primary and secondary forest are less able to account for the varied ways people use land.

Classifying forest as the project maps do works to control how people in Suau use their land. These categories do not provide information about how people garden, how they choose land for new gardens or how social relations influence land use decisions. The classification of ‘primary’ forest, in particular, excludes the ways that people in Suau have always used, and continue to use, their land and trees. Primary forest, though lacking any obvious signs of human habitation, may be important as a hunting ground or sacred site (Stella 2007: 31). REDD+ focuses on the conservation of primary forest, and Cool Earth undertake projects in Suau because the area is “strategically placed to shield the pristine rainforest behind” (Cool Earth 2018b). The ‘pristine forest’ discourse is deeply problematic, however; land in PNG has been significantly modified by humans for thousands of years (Macintyre and Foale 2002: 2).

With its focus on preserving ‘primary’ forest, REDD+ necessitates that people in Suau alter their subsistence agriculture practices, often shortening fallow cycles in designated ‘secondary’ forest with consequent degradation of land and decline in crop yields. As Kere recalled:

When they [REDD+ teams] were here they told us that we mustn’t cut the big trees, so we just preserve them. ... When you make your garden, [they said] please don’t make garden, don’t cut trees down. That’s why people will go,

⁵⁹ In the main Suau dialect, these terms are *gunuwala* (old growth forest), *mutawa* (regrowth forest) and *nu’ula* (bush) (Abel 2013: 72).

they make small, old gardens. Maybe they have to cut after ten years, and now they are trying to repair them to make a new garden.

In Wabumari, people have also been instructed not to cut down trees in the forest by Cool Earth, although the project allows for some trees to be cut for household use. Restricting land use in this way puts pressure on local livelihoods. But these projects are not the first interventions seeking to reduce clearing of land; the colonial administration also attempted to govern land in Suau by encouraging intensified use of old garden sites. A colonial government anthropologist noted that the system of “Rotation of Areas” in Suau is a “destructive one” where the “actual gardening methods are very primitive” and “involves no small waste of time and energy” (Williams 1933: 66).⁶⁰ Framing swidden agriculture in these terms fails to recognise the ways people in Suau relate to and manage their land and forests. As already outlined, people in Suau “do not cut trees any how;” decisions over cutting trees and starting gardens are made through negotiating complex land tenure arrangements. Furthermore, not using land may weaken land claims as the cultivation of crops and planting and cutting of trees create land usage rights (van Helden 2001: 359).

The ways REDD+ and Cool Earth work to make ownership static and inscribe boundaries often separates land and trees, which is problematic in Suau where land and trees are intimately connected. People in Wabumari often expressed confusion about the ways that Cool Earth separated land and trees. Isabel explained:

They [people in Suau] reckon that the forest, the tree is on the land. So, like at Wabumari, one of the simple ways one of the committees [Cool Earth] said ‘we are not touching the land, we are dealing with the trees.’ But the other person says ‘but the tree is standing on the land, and the land belongs to me. It doesn’t stand in the air. The tree is standing on the land and I own that land, it is in my block.’ ... That is why I am the owner of that tree or I’m the

⁶⁰ Similarly, in parts of South East Asia both colonial and contemporary foresters have argued that Indigenous forest users are ‘backward’ and ‘ignorant’ (Peluso 1992: 125).

landowner there, so I deserve to benefit something from my land. Whatever is on my land is my benefit as a landowner.

Like other forms of environmental governance, these projects work to separate land, trees and people (West and Brockington 2012: 1). For people in Suau, land and trees cannot be separated, nor can they be disentangled from sorcery and death. The imposition of static categories and boundaries impedes any serious understanding of the role certain assumptions and practices, such as sorcery, play in people's daily engagement with the environment (Descola and Palsson 1996: 4). In PNG, people's day to day lives and social relations with the living and dead bring land and trees into being (Samana 1988: 17; West 2016a: 92). As such, the ontological importance of land and trees, and the links to sorcery and death, cannot be ignored. By paying attention to friction, we can see how different assumptions of land and trees intersect within environmental governance assemblages, and how some are foregrounded through epistemological tools that work to exclude other assumptions.

5.6 Conclusion

This chapter has presented stories from Suau to complicate the ways that land and trees are framed in REDD+ and Cool Earth projects. Environmental governance interventions attempt to make landownership static and inscribe boundaries around land and trees using epistemological tools like ILGs, maps, satellite imagery and GPS. The exercise of power within processes of rendering land and trees technical generates frictions between different assumptions of the nature of reality. For people in Suau, the environment comes into being through complex relations between people, land, trees and sorcery; land tenure systems and land use patterns are complex, contested and contextual. This relational way of knowing and being is increasingly excluded, however, by more categorical frames that cannot account for the ways that people in Suau use and engage with their land and trees. Intersections between relational and categorical assumptions are increasingly occurring in PNG as local communities are drawn into global processes of change, but these encounters are often messy and contested (Minnegal et al. 2015: 511).

In REDD+ and Cool Earth projects, the use of epistemological tools like ILGs, maps, satellite imagery and GPS works to designate legitimate and illegitimate landowners and land use practices. Rendering technical is also rendering political – politicising land and trees in different ways. In areas like Suau, where people depend heavily on subsistence agriculture, this process of excluding certain people, limiting claims to landownership and restricting land use can produce significant livelihood implications and inequalities. The increasing fixity and rigidity of landownership and land use also threatens fluid matrilineal land tenure systems and puts the customary rights of women in a precarious position, as explored further in Chapter Seven. And yet, these interventions are explicitly structured with a view to ensuring that benefits be shared equitably among those affected. Chapter Six thus problematises the concept of ‘equity’ as it is framed in REDD+ and Cool Earth projects.

6. Paying Attention to Pigs – Equality and Equity in the Benefit Distribution Systems of REDD+ and Cool Earth

Once there was a married couple feeding their pig. It was a female pig, who had just given birth to seven piglets. The mother was feeding six of the piglets, but the seventh was missing. The couple went out looking for the seventh piglet, but it was hiding. Whenever the husband or wife went into the bush to search for the piglet, it would climb a tree or hide in the stones. One day the husband followed the piglet's tracks and saw it hiding behind the stones. The husband rushed back to his wife to tell her, 'We have seven piglets, but the seventh one is half-human! It has a pig head and a human body.'

They decided to catch the half-pig, half-human. The couple made a *bebedula* (bush net) from pandanus fronds. They went into the bush, saw the mother pig walking with her piglets and started chasing the seventh piglet. They caught it in the net and took it home. But this piglet was not used to humans, it was still an animal. So the couple tamed him. Then, one day, he became their child. He became Tauhou, their son.

Tauhou stayed with the family. He had a cave in Isuai, which is still there. He had two wives, each with their own room. He had a *kundu* drum and a *bebedula* net in his room. From this cave he travelled across Suau, from the east to the west and out to the islands. On one trip, he went to visit another chief who was a cannibal. The chief had organised a feast and invited Tauhou. He had two lines of humans tied up like pigs ready to be killed. Tauhou said he would take his humans home to kill and eat, but when he returned home he set them all free. Later Tauhou invited the chief for a feast. The chief brought humans for the feast but Tauhou told him not to feast with humans, only pigs, 'Humans are there to help with work, not to kill for food.' Tauhou stopped cannibalism and started the exchange of pigs.

When Tauhou travelled to Gadaisu, he walked along the beach early in the morning and it was cold. He turned the palm trees around to face the mountainside, so the sun would shine on the beach. The trees still face this way today. The opposite happened in Mariawate, where the trees face the sea because Tauhou walked there during the day and wanted shade. Tauhou also invented chewing *sada* (betel nut). One day, while walking through the forest, he was chewing a betel nut and walked into a mustard vine that turned his mouth red. Tauhou combined the three elements of *sada*, *kiba* (mustard) and *haligu* (lime) that people still chew today, especially when negotiating pig exchanges.

6.1 Introduction

The story of Tauhou is well known across the Suau area. This introductory story is pieced together from multiple storytelling sessions with people from different clans in different parts of Suau; like other stories, it is partial and open to contestation. In different villages, stories of Tauhou tell the custom and rules of each clan, what they should and should not do. Just as Tauhou travelled long distances over land and sea, the people whose land and laws he shaped also moved from place to place – lineages in Suau remain characterised by the mobility of their members (Demian 2007a: 103). Because of Tauhou, people started ‘talking about pigs’ – if they are having a feast, they will sit down and negotiate pig gifting. To be able to talk, you need to have pigs. Tauhou is not just a person, or a pig, but is the spirit of Suau sociality: of reciprocity and negotiation. Tauhou and his legend thus emphasise the importance of relations between people, which establish the conditions for personhood in Suau. To be a person in Suau, you need pigs; that is, you need to be able to engage in relations of reciprocity and negotiation.

By paying attention to pigs, I explore the distinctions and ambiguities between reciprocity – giving and receiving that imbues people in ongoing relations – and trade – instances of selling and buying that do not necessarily implicate people in ongoing relations. In following pigs as they move between being gifts and commodities (Appadurai 1986), I examine different conceptions of equality (based on assumptions of relationality and difference) and equity (based on assumptions of equivalence and sameness) and how these play out in the lives of people in Suau. The ambiguity around gifting and trading

pigs allows people to manipulate relations and negotiate equality and equity. However, within the benefit distribution systems of the REDD+ and Cool Earth projects in Suau this ambiguity, and associated agency, is closed down. As I show, while environmental governance assemblages impose categories and develop mechanisms to ensure the ‘equitable’ distribution of benefits among supposedly equivalent actors, this may marginalise relational ways of experiencing and managing inequality.

This chapter builds on the intersections between political ecology and political ontology to question the ways that equity, as distinct from equality, has been framed in the REDD+ and Cool Earth projects in Suau. Political ecology has a long history of examining inequalities resulting from power relations implicit in environmental governance regimes (Bryant and Bailey 1997; Biersack 1999; Brosius 1999). In PNG, political ecology studies of development and conservation have investigated the ways that inequalities are generated, lived and reinforced (Jacka 2015; West 2016a). Anthropologists have also questioned taken-for-granted ideas about the nature of inequality and how they are linked to ontological assumptions (Knauff 1999). Recent efforts have assessed where ontological difference turns into social inequality (Leff 2015) and how environmental governance projects may exacerbate such inequality by ignoring it (Li 2014a).

Programs like REDD+ and Cool Earth raise significant concerns about equity in their dealings with forest-dependent communities, concerns that are often framed in relation to benefit distribution and around principles of justice (Okereke 2008; Okereke and Dooley 2010; Cattaneo et al. 2010; Howson and Kindon 2015). Equity is often coupled with effectiveness and efficiency to evaluate REDD+ programs (Angelsen 2009; Babon 2014; Pasgaard 2015). Nathan and Pasgaard (2017: 29) have analysed REDD+ equity dimensions in terms of distributional, procedural and contextual inequities.⁶¹ Injustice claims typically arise from the inequitable distribution of burdens and benefits and from a lack of recognition, representation and opportunities for participation (Corbera et al. 2007; Luttrell et al. 2013; Mathur et al. 2014).

⁶¹ They argue that REDD+ projects need to consider how benefits, risks and costs are distributed as well as the underlying mechanisms of benefit distribution, decision-making processes and existing social structures that influence people’s capacity to access benefits (see also McDermott et al. 2012).

In PNG's REDD+ assemblage, benefit distribution is seen as a critical factor for the success of projects. Babon and Gowae (2013) propose that if customary landowners do not perceive they are getting a 'fair' share of benefits, they are unlikely to participate in REDD+. Due to its complex land tenure systems, PNG faces particular challenges in ensuring 'equitable' compensation from REDD+ for all landowners (Hunt 2010: 80). In this context, the 'elite capture of benefits' has been raised as a central concern for the equity of benefit distribution of REDD+ projects in PNG (Leggett and Lovell 2012). Similarly, Cool Earth (2018b) has placed significant emphasis on achieving equitable and community-wide benefits to ensure the success of its conservation projects in Suau. In these projects, benefits are distributed to people based on how they fit into categories – in this case categories of landownership determined on the basis of clan group, matrilineage and/or residency – while acknowledging that not all people have the same rights to benefit, it is presumed that all people within each category should benefit to the same extent.

However, this framing of 'equity' – grounded in assumptions of equivalence and the possibility of comparing people on the basis of external categories to evaluate the distribution of benefits (Walker 2015) – closes down different ways of experiencing equality. Kelly (1993), writing about the construction of inequality elsewhere in PNG, argues that inequality must be analysed in relation to the context in which it is constructed. If inequality is derived from ontological systems defining social differentiation and moral evaluation (Kelly 1993), we must pay attention to the underlying assumptions at play in order to understand the form it takes. In this case, that means focusing on the different categorical and relational assumptions behind conceptions of equality and equity that play out as REDD+ and Cool Earth projects intersect with local lives in Suau. What is central here is the foregrounding of certain assumptions about the nature of reality over others.

This chapter engages with pigs ethnographically as an entry point to explore the conceptual distinctions between equality and equity – these conceptual tools inform the underlying theoretical concern with ontological politics and inequalities. I use pigs to highlight the ambiguities around the distinctions between reciprocity and trade in the everyday lives of people in Suau; in one instance, a pig may be a commodity that can be

traded for money and in another the same pig may be a gift that can be given to maintain social relations. This slipperiness and untidiness (Davis 1992) allows people to negotiate equality and equity. People may foreground equality in relations or equity in trades in different circumstances, but it is important that this be negotiated. Following from this, I investigate the ways that benefits are distributed in the Central Suau REDD+ Pilot Project and Cool Earth conservation project in Wabumari. While these benefit sharing arrangements are aimed at achieving ‘equitable’ and community-wide benefits, they may actually close down possibilities for negotiation and undermine relational processes of reciprocity.

6.2 Equality and Equity, Reciprocity and Trade

Equality and equity, as theoretical and practical concerns, are rooted in Western ideas and concepts (Strathern 1987). However, the forms that equality and equity take in different contexts must be understood within the social and ontological systems in which they are constructed (see also Kelly 1993). I employ Walker’s (2015) notion of ‘Equality Without Equivalence’ to understand the particularities of equality and equity. Here, **equality** foregrounds relational assumptions where inequalities emerge from relations between differently situated individuals. Equality is always understood and measured in relation to something else – rather than through comparison with other members of an externally defined category. In contrast, **equity** is premised on the idea that people are formally equal as participants in a bounded group (Walker 2015). The concept of equity foregrounds categorical assumptions about reality where there is an equivalence, and sameness, between individuals that does not depend on relations to others. Just as difference is a matter of degree and sameness is absolute, equality is relative – actors may be more or less equal – whereas equity is absolute – a division is either equitable or not. Equality and equity are not separate or incompatible concepts – they are mutually constitutive and always intersecting in complex situations – but the assumptions that they foreground are distinct. Instead of drawing binaries between these concepts, then, my focus is on recognising the intersections, and often uneasy co-existence, of different ways of perceiving and enacting equality and equity. By acknowledging the multiplicity of relationships that create heterogeneity and difference (Lund 2016), we can investigate complex inequality/inequity in new ways.

To do this, I explore the analytical distinctions⁶² and ambiguities between **reciprocity** – the establishment and maintenance of ongoing relations through gift giving – and **trade** – a closed transaction that does not necessarily implicate people in ongoing relations. The basic premise of reciprocity is that the social act of gifting binds people to other people through the creation and maintenance of social relations that hold society together (van Helden 1998; Nadasdy 2007: 29). Acts of reciprocity are embedded in social relations and made possible by past relations that shape future outcomes and cannot be abstracted from those relations (Sykes 2005; Martin 2013). Reciprocity and trade are both embedded in relations but in different ways; they are mutually intelligible and inform each other but are distinct and differentiated by actors through negotiation. A trade is a closed event that does not establish grounds for or expectation of further exchange, but it does not preclude further exchanges. If trades are repeated, relations of trust and expectation may develop – at this point the distinction between trade and reciprocity, commodity and gift, starts to blur. While mutual obligations emerge when people transact with each other over an extended period of time, within studies of moral economy there is a distinction between the “moral values that are the context of economic activity and those that arise from the activity itself” (Carrier 2018).

The gift/commodity distinction in anthropology assumes that gifts link things to people through social relations and that exchange of commodities is mediated by money rather than social relations (Appadurai 1986). However, if we follow Appadurai (1986), attention turns to the situation in which things are exchanged, where a commodity is not a particular kind of thing but a phase in the social life of things. Through this kind of framing, we can explore the ambiguities and uncertainties around gifting and trading that allow people to play with different conceptions of equality and equity. These ambiguities can be exploited; the same act can mean different things to different people (Davis 1992: 55), but it is precisely this ambiguity that allows, and necessitates, negotiation. As a process that invites recipients to participate in the creation of social relations, negotiation is central to reciprocity, but plays out differently in trades that entail a closed agreement.

⁶² Of course, these conceptions of equality and equity, reciprocity and trade are analytical constructs developed by researchers, rather than Indigenous concepts. But, as the story of Tauhou indicates, analogous distinctions are recognised by Suau people.

The Kula Ring in the Massim area has provided an important site to investigate reciprocity and trade (Strathern 1988; Davis 1992; Weiner 1992; Sykes 2005), and how people negotiate equality in relations and equity in trades. While reciprocity creates relationships and integrates society, selective acts of reciprocity can also sever and detach people from other people; for example, in the Kula Ring the circulation of gifts can exclude people (Strathern 1988: 191). It is essential to recognise that gifts are neither freely, nor spontaneously, given and that systems of reciprocity can entangle people in unequal, competitive and awkward relations imbued with coercion, deceit and risk (Nadasdy 2007). As Māhina (1992: 189) details, gifting between social groups maintains relations, but imbalances in such giving and receiving can change the relations. In trading, the focus is not on maintaining equal relations between people, but on establishing an equitable trade of two equivalent things. Although part of the Massim, people in Suau no longer practice Kula (Demain 2006a: 514). The negotiations implicit in ‘talking about pigs,’ however, bear similar creative and destructive potential.

While there is no Suau term that could be simply translated as ‘reciprocity,’ there are a number of Suau ideas and practices that highlight that importance of giving and receiving. The Lausaha word that most closely equates to reciprocity, *hai sagu sagu*, has many meanings but can be used for any instance of giving with an expectation of return. For example, *hai sagu sagu* may be practiced during feasts where people are expected to bring a ‘one-one’ contribution, a gift that is expected to be reciprocated by the recipient at a later point. Such practices also play out in the church where there are frequent ‘plate-to-plate’ and ‘basket-to-basket’ programs during which individuals give and receive plates of cooked food or baskets of garden food to establish and maintain relations not only between the (randomly selected) individuals with whom they have been paired, but also between the respective congregations of which they are members. In Lausaha, the word for negotiation is *oi’liba* and this can refer to many situations where people sit down and discuss matters of concern, which may include planning feasts, mediating land disputes and arranging pig exchanges. By turning to pigs, we can begin to see how reciprocity and trade, equality and equity play out in the lives of people in Suau.

6.3 Paying Attention to Pigs

Pigs play a substantial role in daily life in Suau. Every family I met in Suau kept domestic pigs, although the numbers and sizes of these pigs varied and shifted as they were gifted and traded. While the Suau Local Level Government (LLG) introduced a law that each family could keep only five pigs at a time, this rule was generally ignored. When I arrived in Silosilo, for example, Arlo and Emily, a married older couple, had five large pigs and five small pigs. Sabina and Tauba, a young married couple, had ten pigs of varying sizes. Isabel, a single mother, had four pigs – one very large and three medium-sized. Kere, a single male, also kept four medium-sized pigs. Traditionally looking after pigs was seen as a man's job, but now pigs can be looked after by either men or women – both women and men negotiate how pigs are used (Kaniku 1989: 371).

Feeding pigs takes considerable time and energy. Most people in Silosilo fed their pigs twice a day, usually a diet of coconut and food scraps. Arlo also fed his pigs stingrays, which are seen as slow animals who live in muddy areas, to make them docile and less likely to escape from their pen. LLG regulation requires that pigs be fenced in, for sanitation reasons and to stop them destroying people's garden crops, but while some people adhered to this, others allowed their pigs to roam free. Disputes over domestic pigs destroying gardens were common in Silosilo. Sabina was renowned for her pig magic and was often asked by other people to apply special leaves and spells to make their pigs grow fat and tame. People showed great care for their pigs.

6.3.1 “From marriage to death, and after death, pigs are always given”

The pig-gifting system initiated by Tauhou still operates in Suau and is particularly clear during mortuary feasts. In this section, by describing the continued importance of pigs in these feasts, I demonstrate the performative role that pigs play in maintaining, and differentiating, social relations in Suau. Domestic pigs (as distinct from wild pigs) embody the relations and labour of those who gift them. As themselves products of ongoing social relations, pigs offer the potential to negotiate further social relationships between people (Minnegal and Dwyer 2007: 4). Much has been written about the role of pigs in mortuary sequences in the Massim area, including Suau, and the ways that the reciprocal giving of pigs in these rituals reconstitutes or redirects relations impeded by

death (Damon and Wagner 1989; Macintyre 1984; 1989; Demian 2006; 2013; Kuehling 2017). As Arlo explains, “This custom keeps on going because from marriage to death, and after death, pigs are always given. People are always getting pigs through those ceremonies. Until you die.”

There is a performative aspect to the gifting and receiving of pigs; social relations are composed or decomposed in mortuary feasts (Kirsch 2006). Mortuary rituals serve to dispose of all the deceased’s socially constructed relationships, particularly those resulting from marriage (Macintyre 1989). Pigs are typically given alive, with selected pigs killed during the feast to be consumed. Pigs are central to a process called *anan tutu* in Lausaha, or *pesa pesa* (going out) in Suau, which involves the widow of a deceased person. If a woman’s husband dies, the siblings of the deceased make a separate room for her to stay inside until the feast to mark his death begins (typically a few days) and care for her during this time. Then the brothers of the widow will kill two or three pigs and place them at the doorway of the house.⁶³ It is important for pig’s blood to be spilt to ‘free’ the widow from her mourning; not doing so may contribute to future disputes over land rights and usage. The widow is then brought out by her dead husband’s sisters, mother or aunties, and must walk over these pigs wearing a black veil before going to the sea and washing herself. Stepping over these pigs symbolises the widow coming out of her mourning and being able to move around again. In *anan tutu*, pigs play a performative role in making relations visible.

Pigs are also central to establishing and maintaining other relationships during mortuary feasts. People in Suau have ‘custom friends,’ known in Lausaha as *oli oli sau*, with whom they have obligations to give and receive pigs; custom friendship performed through such exchanges differentiates relations within a larger group of affinal relations.⁶⁴ During mortuary feasts these custom friends have a special status; they often coordinate the feast

⁶³ During the feast, the family of the new widow will gather on one side of the house and call out to the widow, throwing stones at the house and yelling that they are taking the widow with them (and possibly insulting the deceased for any failures in upholding their reciprocal obligations while alive).

⁶⁴ Knauft (2010) has noted similar friendships in another part of PNG that are not directly tied to kin relations but are established through shared reciprocity. In Gebusi, people establish ‘exchange names’ with other people; their social identity is connected to sharing with each other specific kinds of things (Knauft 2010: 12).

and may receive some of the gifted pigs. Potential custom friends are determined by marriages in previous generations, with the grandparents' marriage often influencing the custom friends of their grandchildren. For example, Sabina's eldest son Ila has just turned 18 and is 'making custom friends' with Guy – their grandparents were related through marriage. Ila has given a pig (acquired from his parents as a piglet) to Guy already, and when this pig has piglets, Guy will have to give Ila a pig in return. Custom friends are bound in long-term social relationships that have particular salience during mortuary feasts but also connect people through mutual obligations to give and receive.⁶⁵ Custom friends are distant affinal relatives who, by engaging in relations of reciprocity, become differentiated from others in that category – it is difference, rather than sameness, that people foreground.

These 'custom friend' relations also influence who is permitted to eat certain pigs, gifted and killed by certain people, at mortuary feasts. People do not usually eat their own pigs, and instead eat those that have been gifted. Silas jokingly refers to different groups of people at these feasts as 'eaters,' 'biters' and 'skin collectors.' The eaters (*tau anan*), usually custom friends of the deceased, can eat anything at the feast. The biters (*dabu dabu*) are not able to eat freely but food is laid out on a small table from which they can eat; they tend to be from the same lineage as the deceased, so cannot eat pigs that embody the labour or explicit relationships of the deceased for that would be to consume their own essence. The skin collectors (*tau alama*) refers to anyone else who is around, potentially from other clans, who may want to join the feast but have to be invited to eat from the small table. People are positioned in these groups based on the kinds of relations they had with the deceased – their history of giving and receiving.

While mortuary feasts are still practiced in Suau, colonial and mission influence tried to curtail practices of pig gifting, particularly at deaths. Kaniku's (1977) research on the Kwato Mission in Suau reveals that mortuary feasts were forbidden – "This must have torn the people in two. For funeral feasts were not just saying goodbye to the dead, they involved a network of relationships and obligations." Colonial anthropologist Williams

⁶⁵ These obligations also extend to daily sharing of food, for example, Guy may come to Ila's family house and eat food as though he was an immediate member of the family, and vice versa.

(1933: 52) noted that while the “exchange of pigs is futile,” to the “native” it is “obviously a thing of great importance.”⁶⁶ Colonial authorities saw these exchanges as a waste of resources – that is, they focused on the exchanges as trading ‘things’ and emphasised the material value generated (and wasted) in these trades, rather than the relational value of ongoing reciprocity. This quote from Williams’ alludes to the problems that may emerge when understandings are limited to categorical assumptions about the nature of reality that close down possibilities for seeing, and valuing, relational processes like reciprocity and negotiation.

6.3.2 “I put pig out, you put pig out, and we all sit around and talk about it”

In mortuary feasts we can see how pigs facilitate ongoing processes of reciprocity and negotiation in ways that are distinct from acts of trade. However, it is often difficult to distinguish whether an exchange is an act of reciprocity or trade – where the same pig can be a gift or a commodity in different circumstances – and this ambiguity may be used to manipulate relations. Gifting pigs at mortuary feasts is an attempt to elicit from others a particular kind of relationship, but there needs to be negotiation and shared recognition between people about what kinds of exchange will establish what kind of relationship (Schram 2015). There is an ambiguity in handing over pigs during mortuary feasts and how this act may establish or maintain social relations (Macintyre 1984). An elder from Fife Bay describes the differences between pigs given to maintain relations of reciprocity and pigs traded:

If I deal business with this person my pigs are not lost, it is with him, it is banking with him. And later when I need them, I will go and pick them back again. So, you invest your pig into this man. But if you take your pig today [and trade it for money] you will probably go and lose your pig. So, you would rather make a negotiation, so he can pick your pig up and the pig you give to him – *geisoa esega* [one mango] means three pigs – you are happy going up because you don’t lose the pig.

⁶⁶ He went on to add, “It is to my mind questionable whether we should interfere overmuch with the time-honoured custom of carrying [owning and exchanging] pigs, and even whether we should be too tender-hearted towards a dumb animal that must be sacrificed in the interests of human beings.” (Williams 1933: 53).

While pigs are sometimes traded for money, people in Suau prefer to engage in relations of reciprocity so as not to 'lose' their pigs. However, it is not always clear if an exchange is a gift or a trade.

For instance, when an elderly woman (who was from the Palu Paluta clan but married to North Sea Sea) died, the Palu Paluta clan were expected to attend the mortuary feast and bring pigs. In total, 68 pigs were gifted during that mortuary feast. The Palu Paluta clan brought four pigs to the feast and returned with two pigs. Some people gave pigs as gifts, with the expectation that other pigs would be received in return at a later time, while others were given to fulfil obligations established by receipt of pigs on previous occasions, or to acknowledge 'custom friend' relations. Arlo, for example, gifted one pig to the elderly woman's family to reciprocate pigs received from the lineage after a previous death in his clan from Suau Island. One man, who was married to the niece of the elderly woman, was expected to bring pigs to the family to maintain his affinal relationships, but he had no pigs that he could bring. He asked Isabel, a woman from the affinal clan who lived on the land of his wife, for her very large pig, but she refused because she only had three pigs in her possession. Therefore, he had to secure a pig through trade with another clan to avoid being shamed at the feast. The pig he bought was very large and valued at K1500 (AUD\$635), far more than an equivalent pig would cost if bought for home consumption – the 'worth' of this pig was based on its intended use as a gift to maintain social relations, rather than its value as meat per se. The buyer did not have the money to pay for the pig immediately and now has a debt with the other clan. In the future, he may exploit the uncertainty around gifting and trading to manipulate social relations and avoid paying this debt. From this one example, we can see the ambiguous nature of gifting and trading in Suau – the same pig is at one point a commodity, at another a gift, and it is the potential to move between these forms that underpins the value of the pig (see also Appadurai 1986).

For people in Suau, negotiation is central to processes of reciprocity, but negotiating a trade takes a somewhat different form. As we saw in the story of Tauhou, the chief first gave Tauhou human beings, which he accepted but did not kill, and when it was his turn

to reciprocate he gave the chief pigs, telling him not to kill humans for food. Such negotiation is not possible in one-off trades but develops through ongoing relations of reciprocity. Tauhou was unable to negotiate with the chief about giving (and killing) humans at the first feast but could do so once they had developed reciprocal relations. As an elder from Fife Bay explained, “there are elements of negotiation, it is not something that is new. Although we talk about negotiation today, we always sit around and talk about it [pig gifting].” In order to be able to participate in negotiations around pigs, you must have pigs that can be given. The process of negotiation typically involves sitting on a platform, lighting a fire, chewing *sada* (betel nut) and “focusing on the spirit of Tauhou” to make decisions about pigs.

Negotiating pig gifts during mortuary feasts is also a political act. It is commonly said in Suau that people ‘buy land with pigs, not money’ and that ‘the blood of pigs must be shed over land’ for people to have rights to stay there. Pigs are not directly exchanged for land, but giving pigs establishes relations of reciprocity that allow people residency and usage rights. While giving pigs is neither necessary nor sufficient to establish land rights, if pigs are not given during mortuary feasts the family of the deceased will say ‘what have you contributed?’ and will be less likely to allow access to land. It is not the provision of meat that matters, but the performance of relations of reciprocity. A person’s obligations vary depending on whether they are staying on the land of their mother, father or spouse – for example a son staying on his father’s land would have obligations to his paternal aunties if he is to maintain usage rights on the land of his father’s matriline. Pigs are also used to settle land disputes and their exchange is said to ‘bring peace’ during conflicts. In all these cases, there is negotiation over the value of things (pigs, land, use rights) being exchanged, as well as over the relationships being established. People in Suau negotiate both the gifting and trading of pigs, then, but in this process they are also negotiating equality and equity.

6.3.3 “We are human beings because we have pigs”

The intimate connections between pigs and personhood in Suau, including in bride price ceremonies, provides an entry point to consider how assumptions of equality and equity intersect. The story of Tauhou illustrates the origins of the links between people and pigs,

and how there may be inequalities in relations and inequities in trade. The exchange with the chief in the story – where the chief gave Tauhou humans, but he reciprocated with pigs – foregrounds equal relations of reciprocity over the equitable trade of equivalent things. By investing labour into pigs, those pigs become human-like, meaning they can be substituted for human beings in exchanges, but they are not humans themselves (Macintyre 1984: 114). The entanglements between pigs and personhood allude to the ways people in Suau negotiate equality and equity, and how ambiguities around reciprocity and trade may be manipulated.

If you do not have pigs, you are not considered a person in Suau. As Sabina stated, “By having pigs they make us a person. People can call us human beings because we have pigs.” However, it is not the possession of pigs that is central here, but the ability to engage in processes of reciprocity and negotiation that owning pigs entails. By having pigs, you have the potential to act as a person in Suau: you can negotiate and fulfil reciprocal obligations. As the identity of people is shown in the relations they establish and the outcomes of their actions, identities are always emergent and particular (Minnegal and Dwyer 2007: 4). It is the relations that you make, not the identities that you inherit, that are prioritised.

One way that pigs become central to performing personhood is through bride price ceremonies – where, by giving and receiving pigs, men and women show they are persons who can be married. In Oceania, there has been significant scholarly debate about bride price as either gift or commodity – raising questions about personhood, subject and object distinctions, and how Indigenous categories have been influenced by colonisation and missionisation (Jolly 2015). In PNG, bride price is intimately connected to the reproduction of social relations, not just between individuals but between families and clans, and has become symbolic in broader debates about commoditisation (Filer 1985).

In Suau, compared to mortuary feasts, a smaller number of pigs are given and received as bride price, often between five to ten pigs (Demian 2015: 101) but I heard of cases where only one pig was given from each family. The whole family contributes to these gifts, which may also include chickens and baskets of garden food. The rule is that the man

must give first – to prove that he is a man who can look after the woman – and then the woman reciprocates with the same number of pigs. If the woman gives first, the man must give an extra pig, so this is avoided if possible. The received pigs are typically consumed, either at the bride price ceremony or they may be taken back to the village to be killed and shared with the extended family who contributed to the gifting.

For example, Arlo and Emily met on Suau Island in the 1980s and the parents of both agreed to their marriage. Because their families lived so far apart, they did not do an *asaboeh* (engagement ceremony),⁶⁷ but had a *goli sau ana*⁶⁸ (customary marriage, bride price ceremony) where they each gave the other one huge pig, which were taken back to their respective villages to be killed and shared with their families. This exchange was immediate, but also established the conditions in which the families could enter into relations of reciprocity. Such marriage exchanges open up the possibility, and necessity, of reciprocity and negotiation (Sykes 2005: 84). Gifting will continue throughout the marriage with emphasis on balanced and equal relations between the two lineages (Macintyre 1987). In Suau custom, if a husband or wife commits adultery, they are expected to give one pig to their *tambus* (Tok Pisin: in-laws) as compensation. Similarly, if a widowed husband or wife wants to remarry he or she has to give two to three pigs to the family of their deceased spouse. Both of these practices are about managing affinal relationships – here equality is characterised by balance in reciprocal relations.

While the contemporary practice of bride price has been interpreted, and criticised, as treating women as property (Maisonneuve 2006: 12; Macintyre 2012), bride price is not about trading goods for women (Ogil and Danomira 2018). Instead, it is grounded in relational sociality. Bride price facilitates the opening round of a cycle of gift giving and receiving that will continue for many years between the closest kin of the bride and groom (Knauft 2010: 59). As Sarei (1974) emphasises, unlike the Christian tradition of marriage

⁶⁷ In addition to the *asaboeh* process, people in Suau practice *sau'moli* – when the woman's family first meet her intended husband, he is expected to 'shake hands' with them and pass them money, or more traditionally *bagis* (shell necklaces). Brothers should not know about their sister's partners until this has taken place; if a brother does find out about the relationship before the couple announce it in this way, he can force them to marry.

⁶⁸ This is how people in Silosilo spelled this term when I asked. However, the orthographic spelling is *golisa'e'eno* – *goli* (spear), *sae* (go up), *'eno* (sleep), which indicates that bride price relates to killing pigs and enabling a couple to sleep together.

where two individuals enter into a partnership, traditional forms of marriage create a relationship not only between the bride and groom, but also between their respective clans. Marriage thus is a social means to form allegiances, and thus establish personhood. But the gifting associated with marriage, in the form of bride price, is also a site where inequalities can emerge.

Some women in Suau, often educated and income-earning women, do resist the practice of bride price by refusing to engage in marriage exchanges. However, this resistance is more about women seeking to assert a new form of (non-relational) personhood and autonomy, than a rejection of bride price because it supposedly values women as property. For example, Mary, a small business owner and women's leader married her husband in a Christian ceremony, but chose not have a customary marriage; she explained this decision was because she did not want to be subservient to her *tambus* and obligated to undertake household duties for them. In such cases, women are asserting that they are marrying their husbands as individuals and are, therefore, not obligated to gift services in extended social relations with their husbands' families. Rejecting bride price may be also be seen as a way people choose to differentiate themselves as 'middle class' and not bound by 'grassroots' practices (Demian 2016b: 420).

Within the practice of bride price, pigs are not only a source of personhood, but also provide the means to make and maintain or negate and sever relations – and, thus shape how inequalities are perceived and performed. If a sense of equality is premised on balanced social relations, then inequalities are generated through relations in which two parties do not, or cannot, invest equally – where, for example, a family cannot reciprocate a pig given during a bride price ceremony. Relations of reciprocity and negotiation are themselves imbued with power. Not everyone has the same ability to engage in negotiation and meet reciprocal obligations. Negotiations about pig gifting are inherently politically and can devolve into arguments. A person's ability to negotiate and reciprocate largely is predicated on past relations established by themselves, their parents, *tambus*, family and clan members and ancestors. Due to the complexity of past networks and the always-emerging nature of relationships, people in Suau are continually negotiating their

positions to engage in reciprocity. But that position is also dependent on having pigs. As a landowner outlined:

You will only make an announcement when there is a pig. Never open your mouth to say any announcement about traditional feasting [without a pig]. A person who talks louder and speaks louder in any village issues, it is because he is a rich man traditionally, he has a pig standing by. And if you don't have any pig, don't talk too much because some people might indicate to you that you are a small person. You don't have the money, you don't have the pigs. So pigs become sort of like power. Like you are a real man, you're a real person. If you don't have pig, then you are a small boy. You could be a very adult person with a wife, but because you don't have a pig, sorry mate. But if you call for a feast and you don't have a pig, they will come and tell you to stop because you are foolish. You are against the feasting system. So that's the power of it.

This is true for Suau, but also for other parts of the Massim area. Kuehling (2005: 89) notes that in Dobu big gifts such as pigs provide the only legitimate opportunity to be aggressive in public speeches, where words can be “deployed as a social weapon.” Having pigs, which are embedded in past relations of reciprocity and enable future relations, gives people power to negotiate. But that power is itself relative; people who do not have as many pigs may have less power to negotiate. The links between pigs and personhood, particularly around bride price ceremonies, highlight how people in Suau may foreground conceptions of equality – grounded in a person's ability to negotiate relations of reciprocity – over equity – grounded in the trade of equivalent things. However, assumptions of equality and equity are always intersecting.

6.3.4 “We play pigs like money now”

In the past, pigs were given predominantly to maintain relations of reciprocity but increasingly pigs now are being traded and can be bought and sold. The trading of pigs demonstrates the ways people in Suau are always mediating relational and categorical assumptions, including in conceptualisations of equality and equity. In Suau now, as in

other parts of PNG (for example, Minnegal and Dwyer 1997: 54), pigs are kept not only because of the potential they confer to continue reciprocal relations, but also because of their potential to generate money through trade. Minnegal and Dwyer (1997) have analysed people's relations with pigs in another area of PNG to understand how the monetisation and valuation of pigs is generating social change. Damon (1989) also has considered how pigs and money are transacted in the Massim area in ways that connote transformations in networks of reciprocity.

For Sabina, pigs are important because they allow you to engage in relation-building activities, like bride price ceremonies, but also because they can be traded for money: "The relationship between human being and pigs – we love pigs because pigs give us money and also, in custom, especially for bride price, we need pigs very much in Suau. If person doesn't have pig, that person is nothing in custom." Previously, the handshaking undertaken during a *sau'moli* entailed the intended bride or groom giving their future sisters in-law *bagis* (necklaces made of shell money) but now the gifts commonly comprise cash, ranging from K2 to K100 (AUD\$1-40) depending on the age and status of the sisters. This change highlights how cash has come to infiltrate processes of gifting. But the increasing prominence of cash in the local economy also changes the ways pigs are valued and used, and ideas of commensurability and individuality (Macintyre 2011).

The intersecting values of pigs – as gifts to maintain social relations and in trade for money – are especially evident when speaking with young people. Fern, a young student from Kau Kau, recognised that being a man in Suau culture is defined by having pigs and income, which are both seen as a form of status. He revealed that you need to own *geisoa esega* (one 'mango,' meaning three pigs), to be considered a man in his village. But he added, "The most important thing is money. If you have money, you can progress." In this way, personhood is no longer solely dependent on having pigs – that is, on being able to maintain social relations through reciprocity and negotiation. Money – perhaps obtained by selling pigs – introduces a potential equivalence between individuals, a means by which they can be made commensurable and ranked against external categories.

Pigs are still given to establish relations of reciprocity, but they are increasingly being valued economically and traded for money. Pigs ‘come into being’ as objects by being framed according to their use value and transactional value, rather than their relational value (see also Naveh and Bird-David 2014). One day in Silosilo, for example, a father was walking from house to house in the village selling pieces of a pig he had killed to raise money for school fees. I bought some of the pork for the family for K12 (AUD\$5) and noted that selling pig meat in this way significantly reduced the value of the pig, compared to what it would be worth alive for gifting during a mortuary feast. The ‘worth’ of pigs gifted in mortuary feasts is in their embodiment of the relations and labour of their owners and their potential to maintain relations. For example, the biggest pig in Silosilo, named Palu Palu after the clan of its owner, was ‘worth’ around K2000 (AUD\$800) but the owner insists that he would never sell it and is instead keeping the pig for an appropriate mortuary feast (while joking that he could ‘get plenty of wives’ with this pig).

When I left Silosilo, I arranged a small feast to thank the village for hosting me and bought a pig from Sabina and Tauba. As I was engaged in relationships of reciprocity with Sabina and Tauba for an extended period – including daily sharing of *sada*, purchasing garden food and helping them with larger expenses like chainsaw parts – they intended to give me the pig for ‘free,’ as an act of reciprocity. However, knowing that they would need money in the near future, I gave them K400 (AUD\$170) for the pig. As an outsider, I was constantly unsure of how best to negotiate these relationships. On the one hand, I did not want to upset processes of reciprocity or force Sabina and Tauba into unequal relations; but on the other hand, I recognised the social/economic value of the pig they were giving me and wanted to compensate them accordingly. I also did not want to attract jealousy (and sorcery) by giving them, and not others, money as a gift. There is an ambiguity in the distinctions between gifting and trading that is open to manipulation – was the money a gift or a payment, was the pig a gift or a commodity: depending on the context, it could be either. This dilemma points to the difficulties in negotiating intersecting assumptions about equality and equity at play in processes of reciprocity and acts of trade.

Trade is necessarily about making things commensurable and equivalent, whereas reciprocity is about investment in relationships that are potentially unequal. In this sense,

inequity can be seen in trading non-equivalent ‘things’ and inequality can be seen in unequal relations. Evidently, assumptions of equality (premised on social relations) and equity (premised on categories of equivalence) both operate in Suau. Pigs can be given (through negotiations of ongoing reciprocity) or traded (through closed transactions), but people can experience inequalities in those relations or inequities in those trades.

Here, the idea of equivalence embodied in money, a currency that supposedly renders the value of all things commensurable, establishes a means whereby pigs can be valued economically (Walker 2015). The commoditisation of pigs involves them being made available for trade and increasingly valued according to what can be obtained in exchange for them (Naveh and Bird-David 2014: 85). The introduction of cash in Suau has been accompanied by a process of abstraction in which pigs (and people) are removed from their social relations. The value of a pig no longer depends only on who raised it, or which relationship will be mediated by giving it to others, but by its attributes (size, colour, gender, fitness) compared to other pigs. The growing prominence of cash in the local economy, however, through its predication on recognising the commensurability of differences, has implications beyond the way pigs are valued and used (Minnegal and Dwyer 1997) – reifying categories at the expense of social relations has broader consequences for how people perceive and perform their realities. This is important for considering how equality and equity are conceptualised within the benefit sharing arrangements of the REDD+ and Cool Earth projects in Suau.

6.4 Benefit Distribution Systems in the REDD+ and Cool Earth Projects

Benefit distribution systems in environmental governance assemblages are often framed and evaluated in terms of equity – the distribution of equal benefits to all individuals or groups within a defined area (Babon and Gowae 2013). The Central Suau REDD+ Pilot Project and Cool Earth conservation project in Wabumari both propose benefit distribution systems focused on equity and community-wide benefits, which are underpinned by assumptions of equivalence and sameness. PNG’s *National REDD+ Strategy* (GoPNG 2017) emphasises the “equitable” use of forest resources “for the benefit of current and future generations” and gives authority to the National REDD+ Steering Committee and Technical Working Groups to manage results-based payments.

The proposed benefit sharing system for the Central Suau REDD+ Pilot Project recommends that cash benefits of any kind should not be given to landowners, with focus instead placed on community-wide projects identified by women in each ward and shared amongst villagers (SCP/GIZ 2015b: iv). The idea of this system is to “reclaim the matrilineal authority of these communities”⁶⁹ and “streamline the process of benefit sharing” (SPC/GIZ 2015b: iv). Here wards are the equivalent entities – the focus on individuals within these wards benefiting ‘equally’ denies difference based on people’s relations to land. As we have seen in the gifting of pigs in Suau, it is often difference, rather than similarity, that people seek to foreground to maintain their relationships with others (see also Demian 2015: 104).

Similarly, Cool Earth set up the Wabumari Community Association as a way to distribute funds with the intention of generating community-wide benefits and avoiding the risks of ‘elite capture of benefits.’ Cool Earth’s (2018c) approach to benefit sharing is described as follows: “Each village sets up a bank account and a Community Association to prioritise and deliver the funds to benefit all members. The community decides what they need most and how funds are spent ...”⁷⁰ The Forest Protection Agreement between Cool Earth and the community of Wabumari requires that people in Suau “use the money delivered by Cool Earth to benefit the community as a whole.” In line with this approach, people in Wabumari need to propose projects, using written application forms in English, to access funds.⁷¹ The board of the community association – which is led by a President, Deputy President, Secretary and Treasurer who must be elected every year for a maximum of two consecutive years – awards funding. Both REDD+ and Cool Earth benefit distribution systems frame equity in terms of equivalence, where everyone in the

⁶⁹ The project design documents state, “Only by re-inscribing traditional tenure principles can a BSM [benefit sharing mechanism] for Suau avoid generating an tsunami of new land disputes and intra-familial antipathies.” (SPC/GIZ 2015b: 3).

⁷⁰ This is the approach taken in the Wabumari project, but Cool Earth’s two other Suau projects take different forms. The funds of one project are managed by Cool Earth and external consultants to supposedly avoid the misuse of funds and disputes within the community. The other project initially followed the Community Association approach but due to ongoing disputes the benefit distribution system is being revised and Cool Earth are investigating household-based payments as an alternative.

⁷¹ High illiteracy rates have limited people in Wabumari from completing written project proposal forms. Many people in Wabumari expressed that they had limited education and struggled to fill out the forms. For example, one member of the Wabumari Community Association brought a project proposal form to me and asked for my help to complete it. He had an idea for a piggery project and had acquired quotes for the materials needed, but as he only had a grade three level education, he wanted help with writing in English.

community is assumed to have a right to an equal share of benefits. These systems have generated significant frictions in Suau, particularly as project proponents have failed to negotiate with local people.

To differing extents, REDD+ and Cool Earth project proponents have failed to negotiate with people in Suau in determining how benefits should be distributed. While the design of the proposed benefit sharing system for the Central Suau REDD+ Pilot Project involved a rapid rural assessment, including household surveys and focus groups, the system was designed by outside consultants. The principles of the system – assumptions about equity, equivalence and ‘community-wide benefits’ – were drawn from “international literature on benefit sharing mechanisms and experiences in REDD+ countries” (SPC/GIZ 2015b: 1). Indeed, the proposal stated:

The term ‘Benefit Sharing’ in its simplest sense here, refers to ‘equitable benefit sharing’ of monetary benefits or non-monetary benefits that will be obtained from carbon credit payment in return for maintaining forest and taking part in activities that reduce carbon emissions. ... [We] borrow basic tenets of our proposal from some of the most recent thinking about REDD+ Benefit Sharing by economists and environmentalists within PNG (SPC/GIZ 2015b: 3).

People in Suau had little input into the design of these benefit sharing arrangements, something they resented. One landowner contended that, rather than REDD+ proponents telling people how benefits should be shared, it should be up to, “LOs [landowners] to decide, not them to tell us. All the LOs from other clans have to sit together to decide.” Another elected leader in Suau, argued that REDD+ agencies should negotiate with people in Suau around how they can benefit from the project: “It’s like you are trying to shove something into somebody’s mouth when he doesn’t really want to have it. It’s got to be a balanced kind of involvement and participation.” For people in Suau, it is important to negotiate these kinds of social relations, but this practice has not been upheld in either the REDD+ or Cool Earth projects.

Cool Earth have been more successful than the REDD+ agencies in establishing ‘friendships,’ at least with one village in Suau, but also failed to negotiate how benefits from their project should be distributed. Cool Earth staff from the UK usually visit Wabumari a few times a year⁷² and they have established an office in Alotau with a manager and project coordinators. Cool Earth initially employed a Wabumari woman as the project coordinator, and this helped to facilitate the early stages of the project and establish relationships in the community. In early 2019, however, the charity fired this staff member and stated in an email that it was because of a “Cool Earth wide policy decision to not employ Project Coordinators that have close family and friends in the community or history with the community that can significantly impede on their ability to coordinate the project without bias.” This policy change not only goes against their ‘community-ownership’ approach but privileges objectivity in the way that benefits are shared over relational sociality. Indeed, relational sociality was explicitly identified as problematic in terms of potential inequities in outcomes.

Throughout the project, Cool Earth have actively avoided negotiations around benefit sharing. As one person in Wabumari noted, “They don’t argue with anybody, that is what they said. They just try to preserve the forest. If there are any conflicts between the people and them, they might as well just leave.” This approach is antithetical to the processes of negotiation that underpin social life in Suau, which often involve the ongoing mediation of relations not one-off agreements. The handling of the Forest Protection Agreement that Cool Earth presented to the community of Wabumari symbolised this tension; the signing of the agreement was delayed by land disputes, but this delay was also an attempt by people in Suau to keep negotiations open.

REDD+ and Cool Earth project proponents not only have failed to negotiate benefit sharing with people in Suau, but also have also overlooked and undermined existing relations of reciprocity. By defining categorical ‘communities’ who can benefit from projects (for example people who live inside the project area) and excluding others (those who live outside the project area), these benefit sharing arrangements may impact on

⁷² On my return visit in early 2019, people in Wabumari confirmed that no UK-based Cool Earth staff had visited them since late 2017.

social relations across space and time. The resultant tensions are most evident in the Cool Earth project as they have already started distributing benefits, including water tanks and support for income-generating initiatives. I discussed benefit sharing multiple times with the Cool Earth staff during their visits to Suau and they repeatedly emphasised their strict policy that benefits should remain in the village and not be shared with people living outside Wabumari. However, many people living in Wabumari are from clans who have migrated to the area over time, while most of the ‘original’ landowners live outside the village itself. Cool Earth’s policy thus ignores the mobility of people and the ongoing relations of reciprocity between customary landowners and people living on their land. As a local magistrate explained:

Like Cool Earth, for example, I’m living here [in Silosilo] but I’ve got a block of land there [at Wabumari]. So at the moment, when Cool Earth come in, I don’t receive anything. Because they said the people here who have land at Wabumari, but are living outside, like at Silosilo, Isudau or Sea Sea, they can’t benefit. But we have our land there, so that’s where the confusion comes, and we start disputing.

A village woman added, “I heard some people are not happy because these families outside, LOs [landowners], they never let them know and come and listen to these people and understand.” Through their assumptions that people are equivalent, individual actors who differ only in terms of residence, Cool Earth’s benefit distribution policy works to sever social relations between people and between people and land. As land is not owned by individuals in Suau but orchestrated and managed by landowners on behalf of the clan (Demian 2003), these assumptions of equivalence between individuals are problematic. Cool Earth suggested that outside landowners move back to Wabumari to access benefits, but current residents worry about increasing land disputes, jealousy and sorcery if this happens.

The establishment of a Community Association and positions of authority has also generated tensions within the village, as one committee member explained:

They have procedures about how they assist the people in the village. They have [procedures about] who give us money to use here in this community. People are complaining. Within the association, as one of the committee, I have no powers. Only the chairman and the treasurer [have power].

People with claims to land around Wabumari all believe they should be able to negotiate around the project, but this conflicts with Cool Earth's conception of how equitable benefit distribution should be achieved. Cool Earth focused on equitable outcomes, not on equal input in decision making. In this way, environmental governance interventions are severing and straining social relations in Suau by defining categories of people who can or cannot access benefits and establishing positions of authority that may not fit with existing social relations.

While not operational yet, the REDD+ project has produced similar concerns around who is entitled to benefit from the project. A village magistrate expressed, "The problem is some people who are living here, they don't have any block or land here, but they still get the benefit out of that." As the Central Suau REDD+ Pilot Project has not delivered benefits to people in Suau, local efforts to conserve the forest are seen as an unrequited gift, an initiative that has not yet elicited reciprocity. Most people in Silosilo expected to receive money from the REDD+ project: "We were expecting that if they settle here and they get the air, we are expecting that they should give us some money." Kere expressed:

We want to get only the money. Not something else, but the money only. They [village people] expect this. Like they said, when this thing [REDD+] comes we have to do it, it will help everybody. Whether you are a landowner or not, still you will have a bit of share. ... They [landowners] have got power and we are like their children, so when they happen to get their money, they will help us too. But like we were a bit confused, whether it is true if we will benefit or not.

Kere highlights how assumptions of equality and equity— drawn from relations of reciprocity and acts of trade – are both at play in people's assessments of REDD+. While

he perceives that REDD+ will deliver individual monetary benefits (trading ‘air’ for money) between equivalent actors (“it will help everybody”), he is also conscious of inequalities that may emerge in relationships between differently positioned individuals – in this case relations between landowners and non-landowners and the imperatives to share that are embedded in those relationships. In this quote we can see the tensions between the foregrounding and marginalising of different conceptions of equality and equity; turning people into equivalent ‘things’ that can be categorised undermines relational sociality. The emphasis on ‘equitable’ benefit sharing has left people uncertain about the inequalities that may be generated or reinscribed through the REDD+ and Cool Earth projects.

6.5 Assumptions of Equality and Equity

If we accept that perceptions of inequality are always grounded in ontological assumptions, then we need to consider which assumptions are privileged or marginalised as different conceptions of equality and equity intersect. As we have seen in the story of Tauhou and in processes of pig gifting and trade, both relational assumptions of equality and categorical assumptions of equity operate in Suau, but processes of reciprocity and negotiation tend to be foregrounded in social life. The ambiguities around the gifting and trading of pigs in Suau highlights how people negotiate assumptions of equality and equity. Environmental governance assemblages in Suau, however, close down this ambiguity by institutionalising assumptions of equity in the design of projects. In refusing to negotiate benefit sharing, project proponents are also refusing to acknowledge other ways of experiencing inequality. Thus, by imposing benefit distribution systems based on categorical assumptions of equivalence and equity, REDD+ and Cool Earth projects overlook, and may exacerbate, relational inequalities in Suau.

In Suau, it is difference, rather than similarity, that people seem to emphasise in establishing and maintaining relations (Demian 2015: 104). As people foreground their differences, ensuring equity among people may not be a priority (or even be possible); it is the establishment of equality in relations between people that remains of central concern (Demian 2016a: 28). While the gifting of pigs is grounded in the irreducibility of differences and relations between persons, the trading of pigs emphasises categories

within which ‘things’ (pigs, money, people) can be made commensurate (Minnegal and Dwyer 1997). The benefit distribution systems in the REDD+ and Cool Earth projects are premised on assumptions of the ‘sameness’ of people, which overlooks differences. This focus on ‘sameness’ can be experienced as dehumanizing for people in Suau, as the heterogeneity of social relations cannot be reduced to commensurable attributes, and thus equivalence (Walker 2015).

Like the pigs that people now buy and sell, people implicated in REDD+ and Cool Earth projects are being abstracted from social relations, increasingly measured in terms of the attributes they possess rather than the relationships in which they are entangled. Making pigs and people commensurable depends on identifying a core principle that they all share that makes them instances of the same ‘thing’ and, thereby, removing them from their embeddedness in a relational setting (Merry 2016: 212). Based on outside criteria, people are either landowners who can access benefits, or not. Equity is an absolute – either the division of benefits between equivalent actors in the same category is equitable or it is not – but equality is relative.

The REDD+ and Cool Earth projects contribute to ongoing intersections and frictions between different ways of being and knowing in the world. Just as colonial authorities framed mortuary feasts as events where pigs were traded and misunderstood the relations of reciprocity that are embodied in pig gifting, conservation project proponents are imposing their own interpretations and conceptualisations of equity on people in Suau. Intersections between categorical and relational ways of perceiving and performing reality are not new, nor exclusive to environmental governance assemblages; they have been at play in colonisation, missionisation, development and resource extraction projects, and in Suau society before any of these interventions. But, each of these interventions have foregrounded (or overshadowed) categorical and relational assumptions in different ways. Placing different emphases upon relations, categories and assumptions that already exist in a community, has the potential to change the ways people perceive and perform reality (Minnegal and Dwyer 1999). As Martin (2013: 233) acknowledges, engagement with the global commodity-based economy has not resulted in the complete destruction of local societies but has intensified disputes between

different ways of valuing relations and entities in different contexts. There are no irrevocable differences between alternative assumptions of equality and equity, but the privileging of certain ways of being and knowing may obscure and marginalise others.

6.6 Conclusion

The story of Tauhou and everyday practices of pig gifting and trading in Suau tell us much about how reality is constituted and the ways that relations of reciprocity and negotiation hold society together in this place. As pigs influence a person's ability to engage in relationships of reciprocity and negotiation, they also shape personhood and how equality and equity are perceived and enacted. During mortuary feasts and bride price ceremonies, people in Suau are not only negotiating (potentially unequal and power-laden) social relations, but also mediating different ways of perceiving and enacting reality. By paying attention to pigs and the ambiguities around how they are gifted and traded in different contexts, this chapter has critically engaged with framings of equity within the benefit distribution systems of REDD+ and Cool Earth projects in Suau that close down opportunities for negotiation.

By focusing on equity and community-wide benefits, REDD+ and Cool Earth projects have overlooked and obscured local concerns and experiences of inequalities in social relations. Indeed, people in Suau have disputed elements of the REDD+ and Cool Earth benefit distribution systems that abstract them from their social relations and treat people as anonymised, equivalent entities. These projects are intensifying the intersections between different ontological assumptions, which may deepen inequalities if certain assumptions continue to be privileged over others. It is not only the 'equitable' distribution of benefits that is at stake here, but the ways that people perceive and perform their realities. The gendered implications of the ongoing marginalisation of relational ways of being and knowing are explored in the next chapter.

7. *Wawahin Edi Pilipili* (Women's Problems) – The Gendered, Slow Violence of Global Environmental Governance

Isabel is a women's leader, a single mother of four children, a small business owner and an elected representative for Suau Local Level Government (LLG). Isabel lives in Silosilo with her children, mother and extended family, in a small house made from *keipa* (woven sago palms) where she runs a canteen selling rice, sugar, tea, coffee and soap. On the door to her canteen is a green sticker in the shape of a leaf with red letters that read *REDD+*. In her role as a women's leader, Isabel was engaged in the Central Suau REDD+ Pilot Project, not only hosting visiting project teams that came to Silosilo but participating in workshops in Alotau and Port Moresby.

In 2014, Isabel was invited to one workshop in Alotau to discuss the project design documents developed by SPC/GIZ for the Suau REDD+ project. This workshop was run by *dim dim* (white people) consultants and staff from the Papua New Guinea Forest Authority (PNGFA). During this one-day workshop, the participants were split into groups – the women were all put into one group to discuss the social aspects of the project. As Isabel recounted:

Mostly we were talking about the benefits. How are the benefits going to be shared and you, as a woman, what are you thinking ahead? When the project is on the ground what are you thinking to do as a woman? Or what do you think the project is going to do for you as an individual and as a woman.

When presenting the group's discussion at the workshop, Isabel and the women's group argued:

The benefits must be shared equally. We women must be prioritised because we are the landowners. Our culture allows us to be bosses of our

own land, our own resources. So, women must be prioritised in this benefit sharing. Our needs must be met.

Following this workshop, Isabel attended a national stakeholders meeting in Port Moresby alongside forestry staff and a male councillor from Leileiafa. During this meeting, project proponents questioned why there were ongoing disputes in Silosilo about REDD+. Isabel recalled:

I didn't speak out publicly in that workshop because I felt small. They [the forestry staff and councillor] speak on my behalf. So, I told my forest chairman, the councillor, I told him 'I will not speak. You are a former administrator, so you will be in a better position to be talking. But I will give you, I will sort of influence you, what I think, what our people think. I will discuss, and you will do the presentation for us.' So he did. We mainly we told them that our people are yet to understand this project. Your awareness [programs] might be too difficult, too complicated for our people, or the project might be too scientific for our people to understand.

With her involvement in REDD+ and position as an elected women's leader, Isabel increasingly spent time in Alotau where she had a stall at the informal market and helped other women from Suau to sell their goods. The income she earned from her small business allowed her to mediate between her reciprocal obligations and formal leadership position – people would frequently ask for her assistance with money, store goods and pigs. Isabel prided herself on being a village woman who knew how to uphold custom, and was skilled at negotiating her position to ensure that people did not get “jealous” and attempt to “spoil her.” While in town, Isabel became involved with a new ‘husband,’ who was a senior public servant. This husband expected her to stay in the house, cook and clean. But Isabel remained adamant, “I am a leader. I am working for women.”

Early one morning Isabel called me. Her husband had beaten her so severely she thought she was going to die. The assault ended after he hit her with a pedestal fan and locked her outside where she slept under a tree with torn clothing and swelling bruises. I met her at the police station and then took her to the Family Support Centre at the hospital for medical treatment and counselling. I returned to the police station repeatedly to follow up on the case. At some point her husband was arrested, but subsequently released without having posted bail. Despite pressing charges, and presenting medical reports, photographs and witness statements, the case was dropped. I accompanied Isabel to her husband's house to pick up her belongings. She decided to return to the village. When she fell ill weeks later, Isabel told me she suspected her husband was using sorcery to spoil her. But she is a strong woman, and she survived.

7.1 Introduction

Isabel's story points to the complex intersections between the seemingly disconnected issues of global environmental governance, gender inequalities and gender-based violence. It offers a glimpse – though partial and abridged – of a much larger problem. Untangling the factors that contribute to gender-based violence is difficult, and the purpose of this chapter is not to draw causal links between projects like REDD+ and Cool Earth and gender-based violence. Rather, Isabel's story highlights some of the ways that governance assemblages produce and reproduce categories of gender with the potential to reify gender inequalities – for example, by splitting men and women into different groups and positioning them in specific ways. It also returns to the frictions and inequalities around matrilineal land tenure and benefit sharing in the REDD+ and Cool Earth projects, as discussed in Chapter Five and Chapter Six. Isabel's participation in REDD+ workshops reveals the gendered dynamics of negotiation, framing who can speak and who is influencing behind the scenes. Her role as a women's leader shows not only the tensions around changing gender relations, but the risks and violence that can result as women navigate these shifting roles. Sharing stories of gender-based violence draws attention to patterns of violence and how they intersect with ongoing processes of change.

The task here is not to identify the direct causes of individual acts of gender-based violence, but to examine the processes that enable this violence (Jolly 2012b: 25).

Tracing these threads, this chapter explores the gendered, slow violence of global environmental governance. While the previous chapter focused on how conceptions of equity have been foregrounded within REDD+ and Cool Earth projects, this chapter focuses on the inequalities rendered invisible (and thus exacerbated) as a consequence of this foregrounding. I combine the Suau notion of *wawahin edi pilipili* – women’s problems – with the concept of ‘slow violence’ (Nixon 2011) to analyse how global environmental governance intersects with local lives and the implications of this. In using these concepts together, the goal is not to replace ‘Western’ concepts with Indigenous concepts, but to dually construct concepts that retain enough connection with different social realities to allow reflexive scrutiny (Strathern 1988: 8; 1987: 5). While recognising the agency of women, I look at how the ongoing marginalisation of relational sociality places women in increasingly precarious, and unequal, positions. In this light, I frame environmental governance interventions as a form of ‘slow violence’ (Nixon 2011) – an incremental, almost invisible process where attention is forcibly shifted from relationships negotiated between persons to the attributes assumed to inhere in persons and things.

This chapter explores the gendered experiences of REDD+ and Cool Earth through a decolonial, feminist political ecology lens (see also Truelove 2011; Mollett and Faria 2013; Arvin et al. 2013). I follow a feminist political ecology framework to (re)conceptualise gender as a process and focus on the dynamic relationships between gender, the environment and other aspects of sociality (Nightingale 2006). Here gender is a highly relational analytical concept, rather than a descriptive term or categorisation (Butler 2004; Elmhirst 2011). By changing the social capacities people have – their relations, knowledges and actions – conservation projects make new kinds of women and men, who participate in these projects in different ways (West 2006). Women tend to experience environmental change and governance differently because of structural inequalities and underlying assumptions that silence their voices, knowledges and lived experiences (Harcourt and Nelson 2015: 5).

Some effort has been made to analyse REDD+ through such a lens (see for example Howson 2017). Westholm and Arora-Johnson (2015) examine how practices and assumptions of gender difference and dominance organise institutions, capacities and ideologies of actors involved in the REDD+ policy process. Their study in Burkina Faso found that national REDD+ policy processes shifted formal environmental decision making upwards and moved the burden of environmental labour further down in particularly gendered ways (Westholm and Arora-Johnson 2015: 189). While REDD+ projects often target women in benefit sharing arrangements, such policies tend to be based on assumptions about what women and men do that ignore intersecting relations of inequality (Westholm 2016). Although not explicitly focused on gender, Milne and Mahanty (2019) frame REDD+ as a form of bureaucratic violence, which involves the implementation of technical rules that hide local contestations and deny justice, and argue that such violence is fundamental to the generation of value in the green economy. Both material and structural dimensions shape these processes of differentiation and (re)produce gender inequalities. In applying this lens to PNG, this chapter examines how overlapping forms of conservation intersect with and destabilise gender relations in Suau, while reifying categories of women and men.

Drawing on the empirical and theoretical discussions in the previous chapters, I engage with the Suau notion of *wawahin edi pilipili* to examine the multifaceted and interconnected ways that women experience inequalities in gender relations. As gender relations are performed, I investigate the gendered division of labour and emerging asymmetrical dependencies between women and men, which are further contextualised in the history of colonisation and missionisation in Suau. Moreover, I consider how the changing practices of sorcery and witchcraft may reduce the social protections of women. Taken together, this provides a foundation for understanding women's experiences of gender-based violence. I then investigate how gender is framed in REDD+ and Cool Earth projects, and how categorical assumptions of gender have become dominant. Subsequently, I discuss the incremental and often invisible repercussions of the ongoing privileging of categorical assumptions over relational ways of being and knowing.

7.2 Gender and Slow Violence

As gender is the predominant concern of this chapter, it is important to outline how gender is perceived and performed and how this links with the concept of slow violence. To frame this discussion, I adopt Strathern's (1988) approach to gender and concentrate on the ways in which relations are constructed through gender. My focus thus is not on categories of men and women as entities that constitute fixed points of reference but, rather, on the relations between men and women and how they are defined in respect to each other (Strathern 1988: 69). Following Butler (2004), I focus on the performance of gender and the ways constructions of gender are contested and subverted through repetition in different contexts. Feminist thinking is useful for such an analysis as it attempts to dislodge assumptions, particularly assumptions about categorical distinctions between men and women (Strathern 1988). Feminist scholars such as Lorde (1984) and hooks (2000) have made significant contributions to destabilising such assumptions. The strength of a feminist approach rests in its ability to foreground the lived experiences of women while remaining open to other ways of being and knowing in the world and recognising that the dominance of certain assumptions about the nature of reality may marginalise others.

Many women in PNG, however, distance themselves from the term feminism, some choosing instead to identify as women activists (Dickson-Waiko 2003; Ogil et al. 2018). Women in PNG may not identify as 'feminist' for many reasons, including fears about antagonising men and provoking violence, as well as concerns about destabilising the family unit or being labelled elitist or 'Westernised' (Dickson-Waiko 2003). PNG scholars like Dickson-Waiko (2003) contribute to an 'evolving Indigenous feminism' that focuses on the intersections between existing gender relations and emerging class and political interests that determine women's specific oppression in postcolonial settings. Similarly, while disavowing Western feminist framings, Gorodé's (2011) work considers the status of women in Oceania alongside issues of colonialism, poverty, violence, social inequalities and the degradation of tradition. Though women in PNG, and elsewhere, may avoid identifying as feminists, they are redefining what feminism means for themselves and, in a sense, "regaining what has been taken from us since colonisation" (Ogil et al. 2018).

Ongoing processes of change, including colonisation and missionisation, have contributed to a reification of gender categories in at least some areas of PNG (Minnegal and Dwyer 1997). As Indigenous and introduced patterns of change are increasingly connected, it is important to evaluate changes in gender relations in the context of broader political economies and colonial histories (Knauft 1999: 158; Macintyre 2017). Colonialism and economic development in Melanesia have contributed to changing norms and values around the roles of women and men and transformed gender relations and the status of women with, in many cases, these changes reinforcing male dominance (Jolly 2012a; Jolly et al. 2015: 12). For example, political authority in PNG is typically held by men and their prominence in public affairs is accompanied by overt expressions of dominance over women (Strathern 1988: 34-5; Sawang 2017). Moreover, the value of women's labour may be undercut by the increasing role of male-controlled cash and goods in networks of reciprocity (Knauft 1999: 176). But the complex entanglement of gender relations based in precolonial systems with those of colonisation, missionisation and new economic forms challenges simplistic divisions of 'traditional' and 'introduced' (Macintyre 2017: 5).

Many Indigenous scholars in PNG, and elsewhere, have critiqued framings of gender 'equity' imposed by development interventions and emphasised the role of colonialism in contributing to current social issues, including gender-based violence. Zeriga-Alone (2017) emphasises that PNG did not start in colonial times and, "The current state of dysfunction needs to be viewed as a cultural transition from one governance system to another." As Watts (2013: 31) argues, colonialism is operationalised through dismantling the ontological assumptions of other societies. Current attempts to "make women equal" and "empower women" through development interventions are seen as problematic because they overshadow relations between men and women and ignore colonial legacies (Ogil and Danomira 2018). Ogil and Danomira (2018) reject the notion that gender-based violence in PNG is cultural – they rightly argue that it happens in all societies regardless of culture – and assert that such violence occurs because "we have lost our way." Some Indigenous feminist scholars link violence against Indigenous land – through resource

extraction, land privatisation, commodification and alienation – to gender-based violence (Watts 2013).⁷³

It is at this intersection – between the environment, gender and colonialism⁷⁴ – that I adopt the concept of slow violence as an entry point to critically analyse the implications of REDD+ and Cool Earth projects in Suau. According to Nixon (2011: 2), slow violence “occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.” Slow violence is often linked to resource conflicts where “official landscapes” are forcibly imposed on “vernacular landscapes” (Nixon 2011: 17). The concept was developed in thinking about harm to/through the environment, though it is more widely applicable (O’Lear 2016). Nixon (2011) focused on the compounding effects of environmental degradation in his application of slow violence, but I expand this focus to examine different forms of environmental governance. Similarly, George (2014) has adopted the concept of slow violence to explore not only environmental degradation but masculinised politics and militarism in Bougainville and how these processes contribute to gender insecurity. Slow violence is a useful lens to understand how environmental governance may reproduce and introduce new forms of precarity by destabilising local lives (Blake and Barney 2018: 818).

The gradual undermining of agency and relations through ongoing processes of colonisation and ‘development’ has gendered dimensions and consequences. Women in some post-colonial contexts have experienced successive waves of dispossession since colonisation and are disproportionally marginalised from economic opportunities; as Nixon (2011: 140) puts it: “Women inhabited the betrayals of successive narratives of development that had brutally excluded them.” To a large extent this is because colonisation has shifted structures of land ownership in certain parts of the world, often to the detriment of women. In Kenya, for example, where previously land had belonged

⁷³ Non-Indigenous scholars also note the links between resource extraction, the privatisation of land, processes of exclusion and gendered inequalities and violence in PNG (Macintyre 2003; Filer and Macintyre 2006; Federici 2010: 17).

⁷⁴ In an interview, Nixon revealed that the book *Slow Violence and the Environmentalism of the Poor* (2011) emerged from the interface between environmentalism and postcolonial studies (Christensen 2018).

inalienably to the extended family or clan, colonialism transformed land into property that was privately ‘owned,’ predominantly by men (Nixon 2011: 140). Colonial discourses of “betterment” also recast the gender of subsistence agriculturalists and failed to recognise women as primary cultivators, thus diminishing their deeply grounded, adaptable knowledge (Nixon 2011: 139).

Destabilising matrilineal land tenure systems and devaluing women’s roles in land management by imposing different ways of relating to and managing the environment compounds conflict risks and vulnerabilities to gender-based violence. Gender-based violence is not ‘slow’ in itself, but incremental and often invisible processes contribute to acts of gendered-violence. Federici (2010: 11) argues that forms of gender-based violence, namely witch-hunts in Africa, are linked to the breakdown of communal land ownership and land privatisation driven by neo-liberal economic policies. This gendered violence is not isolated or singular and links to other forms of violence. Investigating emerging climate change mitigation and adaption regimes in Oceania, Higgins and Maesua (2019) have demonstrated how adaptation projects in the Solomon Islands and international climate financing may generate conflicts that intersect with localised power relations and land tenure arrangements in a post-conflict setting. However, women are not passive victims in these processes and during resource conflicts, for example in Bougainville, women have resisted marginalisation and reasserted their matrilineal authority (George 2016: 172).

The following sections build on these understandings to examine violence in its varied forms – slow, structural, material, bureaucratic, gendered – and within the context of the disintegration of relational sociality and the growing dominance of categorical and economic priorities encouraged by REDD+ and Cool Earth projects.

7.3 *Wawahin Edi Pilipili* – Women’s Problems

The notion of *wawahin edi pilipili* in Suau encompasses the multifaceted and intersecting challenges and inequalities that women face in their daily lives. In describing *wawahin edi pilipili*, I begin by outlining the gendered division of labour in Suau and identifying intensifying asymmetrical dependencies between women and men, contextualising

changing gender relations in the history of missionisation, monetisation and colonisation. I then explore how changing practices of sorcery and witchcraft are reducing social protections for women. Taken together, this provides a starting point to understanding women's experiences of gender-based violence today.

7.3.1 *Wawahin Edi Paisoa* – Women's Work

In Suau, as elsewhere, it is not the categories of male and female that define what it is to be a man or a woman but the gendered relations between people. These relations are constructed and enacted – they come into being through the gendered division of labour and performance of gender roles. The work of men and women is contingent upon, and assessed according to, particular relational configurations (Demian 2000). As Demian (2000) notes, people in Suau differentially value certain kinds of work done for certain kinds of people – the subsistence economy, for example, is partly grounded in the production of specialised relationships, rather than specialised objects or techniques (Wagner 1975). Depending on a woman or man's relationship to, and the kind of work done for, another person – for example, subsistence agriculture, domestic labour, contributing to mortuary feasts or bride price ceremonies, paying school fees – they may expect this work to be reciprocated at a later point or it may change the relationship between the two people (Demian 2000: 97). As gender relations are performed through labour, asymmetrical dependencies can emerge between women and men.

Work between women and men in Suau is characterised as complementary – women's and men's work are typically performed for each other, with women and men thus indebted to each other (Demian 2000: 98). The productive spheres of women and men are sometimes divided, but often they are charged with different tasks within particular production sequences. The processing of sago reveals the complementary division of labour; men cut down the sago palm, open the trunk and beat the pith inside it, while the women squeeze the pith to extract flour, often a lengthy process. The work done by a man or woman alone is, thus, incomplete (Demian 2000: 98). This is also obvious in labour associated with swidden agriculture. During garden walks, I observed that men predominantly do the cutting, burning and clearing of gardens while women do the planting and weeding. In the household, while women perform most of the domestic

duties, men are not forbidden for assuming these roles and some jobs can be done by both women and men.⁷⁵

However, missionisation in Suau involved the introduction of new forms of production, and particularly new productive spheres from which women were often excluded, that have influenced the gendered division of labour. Kaniku's (1981: 194) collection of historical accounts from Milne Bay women reveals that after missionisation men were "busy at Kwato [church]" and working on plantations and in sawmills, so the women were left to do "extremely hard work like collecting coconuts and making copra." The economic priorities of the church, thus, changed the ways women and men worked. The gendered division of labour within the Kwato church was segregated, rather than complementary, and involved the rigid division of tasks between women and men. At the Kwato mission, women were trained in sewing, cooking and cleaning, while men were trained in boat building, furniture making and carpentry (Kaniku 1987). Under a market economy, the value assigned to the products of men's labour was higher than that assigned to the products of women's work; boats and building were of value beyond the family, often enabling further productive activity, while the clothes and meals of women were primarily consumed within the household. Thus, missionisation generated opportunities for different asymmetrical dependencies to emerge in the gendered division of labour.

The arrival of corporate enterprises, particularly industrial-scale agricultural production, provided opportunities for paid employment, but these jobs – such as waged employment on oil-palm plantations – were predominantly taken by men. Today, some women are employed on the plantations and, as cash increasingly becomes part of the local economy, many travel from across Suau to the estates to sell their market goods, including baked donuts, woven mats, coconuts, garden food and sago. But men generally are seen to have more mobility – and thus more access to waged labour – than women, who often have care responsibilities that may limit their ability to travel.⁷⁶ Historically, across Massim

⁷⁵ As Kaniku (1981: 188) explains, "Traditional sexual roles were defined and a division of labour existed. Women (as in many cultures) have the same role of bringing up children, cooking and preparing food and generally looking after the welfare of the family; but men are not forbidden to perform these roles. Milne Bay men do not consider it below their dignity to perform these tasks."

⁷⁶ Some women also mentioned fears of sea piracy and *raskols* (Tok Pisin: rascal) as limiting their ability to travel to Alotau by dinghy and PMV.

societies including Suau mobility has been highly valued (Demian 2007a: 92). Women in Suau are not restricted to the village and there are many well-educated, salaried and entrepreneurial women who run their own businesses or small markets. Women here have agency and diverse experiences and positionalities but differentiated mobilities and opportunities for waged employment must be placed in the context of colonisation and the opportunities afforded to men and not women.

In Suau, as elsewhere in PNG, colonial structures gave men positions of authority and influence in decision making, simultaneously excluding women from the colonial state and political arenas (Dickson-Waiko 2001, 2003; Jolly 2012b: 15). Across PNG, women continue to negotiate access to these power and decision-making structures (Sepoe 2002).⁷⁷ As in other parts of PNG, women in Suau often work behind the scenes to influence decision-making activities (see also Maisonneuve 2006: 12). Women from Milne Bay have been more prominent in public affairs than women in most other parts of PNG (Kaniku 1981) but even here, as men continue to occupy formal positions of authority, the roles of women in decision-making are always being (re)negotiated. Under matrilineal land tenure systems, women in Suau play important roles in negotiation and decision-making processes, but these roles are changing. Matriarchs typically have final say in land disputes, and while it is usually men who perform public-speaking roles, some women leaders in Suau are now vocal in public discussions. I observed women contributing to discussions in public ward meetings and village court hearings, though they were typically outnumbered by men in these forums. Processes of missionisation, monetisation and colonisation have influenced changing gender relations in Suau and contributed to the everyday challenges and inequalities that women describe as *wawahin edi pilipili*.

During my time in Suau, women frequently complained about the heavy burden of *wawahin edi paisoa* (women's work). One day after a women's fellowship program in the church, I sat with women in Kau Kau chewing *sada* (betel nut) and the conversation

⁷⁷ Much has been written about women in leadership and politics in PNG (Sepoe 2002; Baker 2014). Following the 2017 elections, where no women were elected to the national parliament, there has been an increasing push to understand the barriers to women's involvement in formal politics and ways to address this (Spark et al. 2018).

quickly turned to women's work. The women, of varying ages including young mothers and older *bubus* (Tok Pisin: grandmothers), complained that women have to "do all the work." Not only do they have to run the household – undertaking all the domestic household duties: cooking, cleaning, laundry and looking after the children – but they also have to go to the garden and look after pigs. Some women said that feeding pigs is a man's job but, because men are "lazy," women now have to do this work as well (although some men I spoke to said that both men and women can feed pigs). Most of the women complained that they had to work from morning to night, while their husbands would spend most of their time chewing *sada* and telling stories, only occasionally going hunting or fishing. For women there was often no clear division of home and work spheres, of work time and rest time; they were constantly multi-tasking. Single mothers and widows had additional burdens of having to complete duties of both men and women.⁷⁸

In discussing *wawahin edi paisoa*, women recognised asymmetrical dependencies in production sequences. While women and men are working in the same productive spheres in the garden, their differentiated roles in the production sequence structure the daily lives of women and men in different ways. As women depend on men to initiate production sequences (clearing and burning land for a garden, cutting a palm for sago production), they may not control their own labour or its products. The initiating tasks of men may be more labour-intensive than those of women, but they also tend to be less diffuse in time, completed within a few hours or days. The work of men also tends to be less vulnerable to the impacts of climate change currently being felt in Suau. Climate change has synergistic impacts on subsistence agriculture sequences that may interrupt the flow of gendered divisions of labour. Work of cutting, clearing and burning is compressed in time, and may be less impacted by climate, while planting and weeding are protracted tasks and may be more impacted by climate change, particularly changing rainfall patterns. Women may also have to travel further to find water for the household.⁷⁹ The

⁷⁸ A single mother may ask her brothers to clear a garden, but usually will do so only if they are unmarried – when her brothers marry, they have responsibilities to their wife. Single men can ask their sisters to do the planting in their gardens, but again typically if they are unmarried. These kinds of relations were common in Silosilo; when Isabel returned to the village, her unmarried brothers (the sons of her mother's sister) cut her a new garden and she gave them rice and cigarettes from her canteen.

⁷⁹ Robinson (2019) also notes the gendered impacts of climate change on the division of labour. She shares stories from women in rural Uganda that express: "Domestic violence is on the rise. Women have

gendered division of labour encompasses the roles of women and men in production sequences, but also the asymmetrical dependencies that may emerge, particularly in the context of missionisation, monetisation and colonisation.

7.3.2 “One-Way” Borrowing of *Alawan* (Witchcraft)

Changes in the practice of witchcraft and sorcery also reflect and contribute to changing gender relations in Suau. Two gendered⁸⁰ bodies of knowledge and practice, *taubalau* (sorcery: male) and *alawan* (witchcraft: female), still exist and are passed from one generation to the next.⁸¹ In Suau, as in other parts of Milne Bay, while sorcery is regarded as set of principally male techniques and witchcraft is largely a female practice, these gender roles are flexible (Kuehling 2005). The English terms ‘sorcery’ and ‘witchcraft’ are commonly used by people in Suau, but the way people here distinguish between these may not neatly fit with the distinction common in anthropological writing, between sorcery as magic that requires external aids (spells, charms and potions) and witchcraft as magic performed without the use of such material props (Evans-Pritchard 1937). In Suau, witchcraft is considered more intimate and is often used within a clan, while sorcery may be more political and used to defend a clan’s interests against outsiders. Witchcraft is seen as expression of an intrinsic talent, while sorcery is seen as requiring extrinsic, exclusive knowledge acquired from others (see also Kuehling 2005: 120). Early anthropological work in Suau indicated that witchcraft was primarily the property of women and that women were intrinsically more capable of magic than men (Armstrong 1922: 8). Women are born with a propensity for witchcraft and any woman who wants to learn the practice could be taught, whereas men do not possess an innate ability for sorcery and sorcerers would usually only pass their trade to a favourite son or nephew. People in Suau explain that women receive their abilities from the *susu* (breastmilk) of

to travel farther and farther to fetch water and firewood. Some men do not understand and beat their wives if they spend too much time away from their homes.” (Robinson 2019: 21).

⁸⁰ Demian (2016a: 21) suggests that the category of ‘sorcerer’ could constitute a gender in itself, distinct from fully human men and women.

⁸¹ These terms are from the dominant Suau dialect but also used in areas where other dialects are spoken. In Suau, *tabusima* is the general word for sorcery/magic, while in the Lausaha language, *ginauli* (literally to do or to make) is also used to talk about magic. Inland areas also use the term *gigibori* (literally heat, but also power and prestige) in relation to the practice of magic (see also Armstrong 1922; Williams 1933).

their mothers. The perception that all women may have supernatural powers was seen to substantiate female authority (Macintyre 1987).

The use of sorcery and witchcraft is largely place-specific and dependent on the past and current practice of each body of magic. In the past, sorcery and witchcraft were seen to be complementary; within a lineage, witches and sorcerers could work together to further shared interests (Macintyre 1987). In some places in Suau, both practices could be used to kill, and sorcerers and witches could work together to cover up killings. During my time in Silosilo, however, people frequently lamented that “sorcery is worse than before.” Significantly, in this area *alawan* (witchcraft) was previously only used by women but now men are using some of these practices. This was described as a “one-way” borrowing where sorcerers are taking practices from witchcraft and “not respecting the order, using it carelessly.” While witches may know how to both kill and heal people, the sorcerers using their magic tend to take only the killing practices and not the healing practices. People are “more exposed than before,” too, because sorcerers are taking practices not only from women but also from other places, and other bodies of knowledge.

Prior to colonisation, women in Milne Bay had considerable respect and authority and were feared as potential witches – “The men fear the women” (Kaniku 1981). Witches were mostly feared for their ability to fly, their mobility and access to the ‘outside’ (Kaniku 1989), and this to power sourced elsewhere. As men have become comparatively better positioned to travel from the village (for example for waged employment), however, women have lost their monopoly over access to the world ‘beyond’ Suau. With men also ‘borrowing’ some of their witchcraft practices, and a consequent decline in the power of witchcraft, the social protections that this power conferred on women has been reduced.

That women had their own source of power does not mean that they did not experience inequality in the past. There certainly were traditions in Suau that discriminated against women,⁸² but there were also examples of respect shown to women – “so the situation

⁸² In the past, women in Suau were subject to many restrictions. Early anthropological reports note that women were secluded after giving birth and had restricted diets that prohibited protein (Williams 1933: 30; Demian 2004: 75). While these rules may have been seen to protect women and provide a source of

evens itself out” (Kaniku 1981). This balancing act is becoming increasingly precarious. As Dickson-Waiko (2001: 59) acknowledges, colonial rule and missionisation produced, “a systematic patriarchal domination [that] was not simply a new means of domination, but added a new dimension to domination.”

This is evident, for example, in the implications for women of how sorcery is used in land disputes. As discussed in Chapter Five, when a sorcerer is ordered to kill an enemy to settle a land dispute he is typically paid with a woman – the wife or sister of the man ordering the killing. If that woman refuses to go with the sorcerer, she risks being killed herself; if the man who incurred the debt cannot find a replacement for her then he will also be killed.⁸³ In this way, “women have no choice” in sorcery deals. In the past women were feared for their witchcraft abilities and could, potentially, defend themselves, but these changes in the practice of witchcraft and sorcery place women in increasingly precarious positions.

7.3.3 Gender-Based Violence

The changes in gender relations that I have described – the emerging asymmetrical dependencies in the gendered division of labour as well as women’s reduced social protections associated with changing practices of sorcery and witchcraft – are necessary to understand experiences of gender-based violence. It is difficult to identify the causes of gender-based violence, but it is important to understand the structural and material conditions that may enable such violence. If a hierarchy of dependence emerges where women have limited access to means of coercion over men, this may make women vulnerable to the actions of men. Paying attention to *wawahin edi pilipili* provides an

power and wellbeing, they may have also contributed to inequalities. Some of these restrictions are no longer as strictly observed but others have persisted. Women explain that now there is “modern life” and “custom is going out,” and yet some taboos remain: for example, men still wash upstream from women because women’s “dirt” is seen as “more powerful” and could make men lazy (see also Kaniku 1981: 189); sisters cannot be “above” their brothers and avoid walking upstairs or sitting on platforms that would place them higher than their brothers.

⁸³ This is linked to the perception that one sorcery-related death will produce three further deaths. For example, people from Silosilo and Kau Kau told me a story about a man who ordered a sorcery killing and committed his unmarried sister-in-law as payment. She refused to go with the sorcerer and was killed. Then the man offered his wife as payment, but she also refused and died the same month. Finally, the husband was killed.

important foundation for understanding experiences of gender-based violence and the lived realities of women in Suau as they are implicated in ongoing processes of change.

Isabel's story highlights the dangers women face in navigating changing gender relations and roles.⁸⁴ As a woman in an official leadership position, Isabel was vulnerable to jealousy and resentment; her husband used violence as a mechanism to reinstate what he saw as proper gender roles and assert male dominance. The exercise of 'power' within acts of gender-based violence in PNG is not isolated to individuals and is acted out through engagement with a wider field of social relations (Hukula 2012: 209). While Isabel had resources, and relations, that enabled her to leave her abusive husband, others do not. In saying this, I recognise how hard it is for women, not just those from Suau, to leave abusive situations. Some women from Suau expressed that relational sociality may make it harder to leave a husband, especially if his family have paid bride price. In Isabel's case, her husband might have been forgiven for this attack if he had compensated her family with a pig. However, as he did not follow this custom (he is not from Suau and also did not pay bride price), Isabel's family supported her decision to cut ties with this man. Relational sociality should not be taken as an inherent good that protects women from gender-based violence – indeed the difficulty and, in some cases, impossibility of severing relationships may keep women entrapped in violent situations⁸⁵ – but such violence cannot be understood without reference to gender relations. Relationships are not didactic – it is never just a man and a woman, but also their relational fields interacting.

While speaking about *wawahin edi pilipili*, a village magistrate in Suau revealed that gender-based violence was common: "Domestic violence, violence against women, wife beating and all that, it happens. Most don't report them because they know if they report them it is a police case and we can arrest them [the perpetrators] and take them to town." While experiences of gender-based violence vary, the magnitude of the stories I heard,

⁸⁴ Macintyre (2012) reports that economically successful women in PNG are subject to jealousy and resentment and may be vulnerable to forms of violence and marginalisation.

⁸⁵ This is not only customary but stipulated under colonial legal system. Under the *Village Courts Act* 1989, a divorce can only be granted when the two families involved agree to it (Demian 2016a: 20).

and witnessed, was overwhelming.⁸⁶ During my time in Suau, for example, a young mother died from HIV/AIDS after her husband, who worked in the city, contracted the disease and transmitted it to her and prevented her from taking treatment.⁸⁷ However, rather than her husband being blamed for her death, the woman's elderly mother came under suspicion of spoiling her daughter through witchcraft. Another woman, who suffered domestic violence, died in childbirth because her husband would not allow her to travel to the hospital to deliver her second baby; despite complications with the first delivery and repeated warnings from local health staff. A different woman fled from her village with her children, to stay with her brother, after her husband repeatedly raped their young daughter. While I was in town, an eleven-year-old girl was raped so brutally she needed emergency surgery and may never walk again. A mother of seven was beaten to death by her husband after his team lost a sporting match. Each of these stories is horrific and heartbreaking in its own right.

These cases cannot be solely understood as isolated acts of violence perpetrated by individuals. As Hukula's (2012) work on sexual violence in PNG emphasises, gender-based violence cannot be extracted from the performance of social relations within which this violence emerges. It is, therefore, important to understand the ways that gender relations are changing, particularly in the context of colonisation and missionisation, and the ways that women and men are negotiating these changes. This is not to say that gender-based violence is a 'modern' phenomenon; I am not arguing that gender-based violence did not exist in the pre-colonial context.⁸⁸ Nevertheless there is evidence that the incidence of gender-based violence in PNG has increased in the postcolonial era⁸⁹

⁸⁶ In 2015, I coordinated the gender-based violence stakeholder network in Milne Bay Province and continued to engage in volunteer work during my fieldwork; as such, I was potentially more exposed to incidents and stories of gender-based violence than I would have been otherwise.

⁸⁷ Research and behavioural interventions around HIV/AIDS have focused on male mobility, where increased risks of HIV transmission were attributed to 'Mobile Men with Money' (Butt 2015).

⁸⁸ Reay's (2014) ethnographic work from the 1950s and 1960s in the PNG Highlands describes female-male relations as fraught with tension and violence and provides an important background to understand what has changed and what has remained the same in terms of gender relations and gender-based violence in other parts of the country.

⁸⁹ Zimmer-Tamakoshi (1993: 81) has disclosed high rates of marital violence among both rural and urban women in PNG, and high incidences of rape combined with low conviction rates. Hermkens (2007) has also reported high rates of gender-based violence, which contributes to HIV/AIDS infection as women are unable to negotiate safe sex. Macintyre (2011: 111) observes that marital rape is a significant problem in PNG and women are often silenced because of bride price obligations. In Suau, Demian (2003: 29) also recognises that domestic violence is common.

(Zimmer-Tamakoshi 1993; Knauff 1999). Analysing gender-based violence is not a question of identifying continuity or rupture, it is a question of both. We must ask how gender-based violence persists in new contexts, new forms and with new meanings (Jolly 2012b: 11). But we must ask, too, how realities of violence intersect with colonial encounters and the rupturing effects of neoliberalism, development and conservation (Lusby 2017: 38).

7.4 Gender in REDD+ and Cool Earth Projects

Forms of global environmental governance such as REDD+ and Cool Earth have long been critiqued for failing to take gender into account and marginalising women from decision-making processes, thereby exacerbating inequalities (Larson et al. 2018). The intersections of socio-economic status and gender often combine to exclude women from the design and implementation of conservation projects (Corbera et al. 2007). A comparative study found that women were less involved in REDD+ decision-making processes than men, even in places where they used the forest as much or more than men (Larson et al. 2015). Assumptions about gender and forests play a role in these processes of exclusion and marginalisation. While there has been increasing attention to gender within REDD+ assemblages, critics consider that current approaches to gender in REDD+ policy making remain simplistic (Westholm 2016).

The Forest Carbon Partnership Facility (FCPF) undertook a “comprehensive study of gender and REDD+” in PNG, with the findings presented in a report on “Improving gender inclusiveness and participation in PNG’s REDD+ strategy and policies” (FCPF 2016). This report concluded that while women in PNG are generally underrepresented as decision makers and in positions of authority, they play key roles in the economy and resource management and are often significantly impacted by any changes in land use and management (FCPF 2016: 1). Women interviewed had the least understanding of REDD+, while male leaders were the most informed (FCPF 2016: 2), which may indicate that women have not been engaged in REDD+ projects to the same extent as men and may, thus, experience different impacts. Though the report encouraged equal participation of women in all stages of REDD+ activities, the REDD+ Technical Working Groups (TWGs) included approximately 20 percent women (FCPF 2016). So far, REDD+

agencies, like the PNGFA and CCDA, have struggled to ensure “equal participation” of women in the Central Suau REDD+ Pilot Project.

In my discussions of gender with the PNGFA, the staff recognised that women and men were not equally involved in decision-making processes. One staff member acknowledged: “We still have to address the gender inequalities in terms of whether in that particular forest area [Suau], there are still some gender inequalities; because I also saw men were talking, but the person who owns the land is a female. So, I suggest men still have some authority over women.” This was particularly apparent in the Incorporated Land Group (ILG) registration process; one of the officers who undertook the ILG registration in Suau revealed that it was mostly men who were involved, and women were “not allowed to speak in front of the men.” To remedy this, “In some cases, if we see that the men are dominating the conversation, we try to separate the groups so then women are free to speak what they want to say. Because they feel that if they speak in front of men folk, the men will not really agree as to what they are saying.” In this way, REDD+ project proponents addressed perceived gender inequalities by separating men and women into different groups. But this process itself, however well intentioned, served to foreground categorical identities.

Staff at the CCDA also recognised that men did most of the talking during their awareness programs and fieldwork in Suau. One officer reported:

We still have this cultural aspect of it where still it’s male dominated, meaning most of the decisions are done by men. However, now that perspective is changing. But still it’s the male that controls the woman to make the decision. So, it could be the brothers or the uncles that help make the decision. ... And then I can see that some women are suppressed by men in terms of ‘when we go in don’t talk.’ ... Now because of that, what we did as a team when we went down [to Suau], we basically separated the different groups, male into one group and women according to age group.

Again, these agencies are making assumptions about gender relations in Suau and separating women and men into different groups. Another staff member discussed the limits to matrilineal land tenure in REDD+ decision-making processes in Suau: “So, they may say it is a matrilineal society and all that, but still I don’t believe that because still the men have an influence in decision making. In a cultural setting, women are not given preference to speak first. Men are given preference to speak first.” However, a member of the Suau Local Level Government (LLG) rejected these assumptions about gender in REDD+ negotiations:

Usually in Suau, where the women are not as educated and not able to speak good English and understand things, they usually allow their children to do the talking on their behalf. Because if the child has got some form of education, they give that right to the child to dominate, to represent whoever the woman is, who is the leader for the landowner. So, the child will more often be involved with his uncles, his mother’s brothers.

Evidently, the assumptions that REDD+ proponents make about gender conflict with local perceptions and performances of gender relations. Isabel’s story also points to the gendered dimensions of negotiation, where it is common for men to speak on behalf of women, but it is women who are influencing the men behind the scenes. It is important to note that access to formal education and proficiency in English are also gendered and impact on negotiation and formal decision-making processes.

These different understandings and enactments of gender have also translated into the proposed benefit distribution system for the Central Suau REDD+ Pilot Project. This proposal “... carves out a place for women’s groups to reclaim the matrilineal authority of these communities (a feature of which the men are also notably proud) and streamline the process of benefit sharing at the same time” (SPC/GIZ 2015b: iv).⁹⁰ In line with this

⁹⁰ This proposal went on to describe the matrilineal land tenure system: “Land is inherited through a flexible matrilineal system, whereby the next of kin is the daughter who inherits the land. The brothers of the women act as spokesperson on their sister’s behalf and do not make decisions on the land. This however is not strictly observed today. There is shift and adaption from patrilineal system today, whereby men are making decisions on land. Currently, there are land disputes due to the changes in the traditional matrilineal land tenure system.” (SPC/GIZ 2015b: 2).

intent, the matriarchs in Suau would be responsible for distributing benefits from REDD+ through community projects. The idea of this approach was to avoid further undermining the matrilineal land tenure system in Suau and eschew “more convenient and modern-day patrilineal residence patterns” (SPC/GIZ 2015b: 3). However, male Principal Landowners (PLOs) disputed this approach to benefit sharing. As I showed in Chapter Five, matrilineal land tenure in Suau implicates both women and men in complex relations around land use and management; indeed, it is typically first-born sons who become PLOs. The relational nature of matrilineal land tenure remains misunderstood by outside project proponents. During the launch event for the Cool Earth project in Wabumari, a local male PLO disputed the project publicly, but Cool Earth staff from the United Kingdom dismissed his statements because he was a man and therefore assumed not to play a role within the local matrilineal land tenure system.

In the Cool Earth project, once again, new positions of authority established by outside interventions have been co-opted by men. While Cool Earth (2015) aligned with Sustainable Development Goal Five – to achieve gender equality and empower all women and girls – in their project in Central Suau, the degree to which this has been achieved remained questionable. The agreement between Cool Earth and the Wabumari community states, “The Association committee should reflect the gender balance of the Community of Wabumari and be representative of the clans of Wabumari,” but the number of women who should be on the board is not specified and staff revealed it was difficult to get women to take up these positions. As such, the committee is predominantly run by men and only men have assumed the roles of President, Secretary and Treasurer. According to Cool Earth staff, women were also less engaged than men in negotiations and decision-making processes; often women would need to leave community meetings early to prepare meals and look after children. One Cool Earth staff member noted that the only female committee member sat on the floor during meetings while everyone else sat on chairs. Few women spoke during such meetings so Cool Earth staff began separating women and men into different groups for discussions.

Moreover, Cool Earth also established a women’s cooperative in Wabumari in October 2016, consisting of approximately 20 members, and awarded them K2,500 (AUD\$1080)

of community funds for income-generating projects like sewing and craft (Cool Earth 2017: 5). A member of this group described, “They bought our sewing machines. So, we start up our women’s group. They help us with money-earning projects. It’s only the women. It’s only the women.” This group has registered as a business group and make meri blouses, clothes and bedding to sell at market (Cool Earth 2018a). The women also produce virgin coconut oil that they sell to soap makers in Alotau and weave mats for the hotels. In this way, Cool Earth have not only created a separate group for women but have reified gender norms, in similar ways to missionaries, by engaging women in activities like sewing and craft. As men have better access to income generating opportunities, establishing the women’s group was intended to offer women a way to earn money, but it does not address the underlying gender relations, and inequalities, at play.

The assumptions of gender underpinning the REDD+ and Cool Earth projects in Suau are primarily categorical – emphasis is placed on the categories comprised of women and men rather than the relations between women and men. While REDD+ and Cool Earth staff both recognised gender inequalities, particularly in decision-making processes and negotiations, they attempted to address this by separating women and men into different groups. Some project proponents fundamentally misunderstood the gendered dimensions of negotiations and the relationality of matrilineal land tenure systems. These interventions, and the assumptions informing them, reify categories of women and men and undermine gender relations.

7.5 The Gendered Violence of Governance

By conceptualising REDD+ and Cool Earth as enacting a form of slow violence, we can pay attention to the incremental and often invisible repercussions of the implicit privileging of categorical assumptions over relational ways of being and knowing. As this thesis has shown, the ongoing, largely imperceptible foregrounding of categorical ways of seeing the world often works to exclude and deny other, relational, practices. In the context of global environmental governance, women in Suau, like Isabel, are increasingly forced to navigate changing gender roles as different assumptions about gender intersect. It is at this intersection that the incremental undermining of gender relations and ongoing marginalisation of women may influence gender-based violence. This is not to say that

relations are an inherent good – the relational sociality in Suau may in some cases make it more difficult for women to leave abusive situations – but to recognise that gender-based violence cannot be understood with reference to gender relations. Women's stories of *wawahin edi pilipili* and their experiences of gender-based violence must, thus, be understood in the context of the slow violence of not only REDD+ and Cool Earth projects, but broader colonial histories and political-economic structures. In practice, different forms of governance may replicate the same assumptions and, in the process, reproduce inequalities.

From this position, it is essential to critically analyse the assumptions of gender at work in REDD+ and Cool Earth projects. Both of these projects in Suau demonstrated striking similarities in terms of the ways they frame gender and reify categories of women and men. A member of the Science and Technology Secretariat, who had participated in the REDD+ Technical Working Groups (TWGs) in PNG, noted the frictions between categorical and relational assumptions of gender:

Gender in the rural context has been complementary; I mean men and women, in many respects, they know that each other's roles are complementary and they kind of provide it on a daily basis. ... But when we wear the lens of outsiders to see these differences between gender, we tend to define it in a sort of inflated way. But when you see the lens from livelihoods and the point of view of the community and family perspective, you see it rather quite differently. ... But there is, you will see, a lot of interesting issues when you are talking about these relationships, it will help you to define roles and responsibilities. ... The male will do certain contributions; the female will do certain contributions. But you will see that they are all kind of interlinked together in some kind of complementary manner.

This insightful assessment captures the relationality of gender in Suau and the 'inflated' categorical definitions of gender from 'outside' REDD+ project proponents. But the 'complementary' roles of women and men in Suau does not mean that gender relations establish them as equal.

Frictions between intersecting assumptions of gender are particularly pronounced around land tenure. While both REDD+ and Cool Earth recognise that land tenure systems in Suau are matrilineal – and, indeed, aim to institutionalise matriliney in their benefit distribution systems – some of their staff fundamentally misunderstand the underlying gender relations. By ‘carving out’ categories of women and men, these projects rigidify gender categories and actually work to undermine the complex and intertwined gender relations within matrilineal land tenure systems. Strathern (1988: 191) recognises that while land tenure in Suau is matrilineal, relations between men and women are nonetheless constrained by patrilineal kinship ideologies, similar to those in Highland regions.⁹¹ Increasing patrilineal influence over land is also coming into conflict with traditional matrilineal systems.

Attempts to formalise land tenure, namely through the ILG process, have worked to instil men in positions of authority as landowners and managers, as observed in other parts of PNG (Minnegal et al. 2015; Beer 2018). While Isabel and other women argued during the REDD+ workshop in Alotau that “women must be prioritised because we are the landowners,” the ILG process in the Central Suau REDD+ Pilot Project was dominated by men. The imposition of categories of gender and landownership undermines relational matrilineal land tenure systems (see also Macintyre 2003). The incremental and invisible ontological changes associated with global environmental governance, and the attrition of gender relations that results, means that women in Suau are increasingly negotiating patrilineal assumptions of land tenure, which may place them in precarious positions.

The actors behind these governance assemblages and the practices they use are not only shifting matrilineal land tenure systems but destabilising processes of negotiation that underpin sociality in Suau. This is particularly evident in the benefit distribution systems of the REDD+ and Cool Earth projects, as discussed in Chapter Six. While women have featured prominently in these benefit distribution systems – the REDD+ project proposed that matriarchs should administer benefits through community projects, whereas Cool

⁹¹ Further, the perception that women from matrilineal societies in PNG experience more gender equality, compared to women from patrilineal societies, is often used to placate or disregard experiences of gender-based violence (Sai 2007; Hukula 2012: 197).

Earth established a separate business group solely for women – this emphasis itself reifies categories of women and men and overlooks the relational inequalities that may emerge. In both cases, project proponents responded to perceived gender inequalities in decision making by splitting women and men into separate groups, thus, marginalising relational processes of negotiation. The assumption that men are dominant because women speak less in public discussions ignores the possibility that women influence how decisions are made; in effect it overlooks the ways that, as we saw with Isabel's story, women engage in negotiations behind the scenes. As in other development projects that make assumptions about what women and men do and therefore position women in certain ways, these interventions have overlooked the relations between women and men and, as a result, may leave women vulnerable to jealousy and violence (see also Macintyre 2003). Indeed, the design of these projects do not reflect the lived realities of women in Suau and the challenges they face in mediating changing gender relations and roles.

7.6 Conclusion

The previous chapters in this thesis explored the intersections between different ontological assumptions within the context of climate change and global environmental governance and illustrated how categorical assumptions have increasingly been privileged over relational ways of being and knowing. This chapter adopted a feminist, political ecology lens to consider the implications of this process for the lived realities of women in Suau. This pattern of subordinating relational sociality in favour of categorical assumptions can be conceptualised as a form of slow violence – a gradual and largely imperceptible process that destabilises gender relations, reifies categories and thus increases precarity.

Using the Suau notion of *wawahin edi pilipili*, this chapter highlighted that gender relations are performed and identified growing asymmetrical dependencies within the gendered division of labour, which were contextualised in the history of colonisation and missionisation. I also explored changing practices of sorcery and witchcraft and how this may reduce the social protections previously afforded to women. Paying attention to *wawahin edi pilipili* provided a foundation to understand women's experiences of gender-based violence within the relational sociality that underpins life in Suau.

The marginalisation of relational ways of perceiving and performing reality in REDD+ and Cool Earth projects undermines matrilineal land tenure systems, processes of negotiation and social protections for women, placing them in increasingly precarious positions. At these intersections, the incremental and invisible undermining of relationality through varied governance interventions may influence gender-based violence. As this thesis examines, the ongoing foregrounding of categorical assumptions of the nature of reality over relational assumptions has significant consequences for the lives of people in Suau.

8. “Development is Always Sickness and Death” – Complicating Stories About Global Environmental Governance

In September 2018, while I was writing this thesis in Melbourne, I got a call from Isabel in Silosilo. Her older sister’s husband Ealua had passed away. The circumstances of Ealua’s death were most unusual. One night, he had gone out fishing with Dom, his brother-in-law. Ealua was a strong sailor and renowned fisherman. During the night, the two men were separated. Dom made it back to Silosilo, but Ealua did not. At first light, the men in the village went out to search for him. A fisherman found his canoe washed up on a small island near Bona Bona. His lifeless body was found wedged in the canoe hull, with blood coming from his nose and ears.

His death was a “planned job.” Ealua’s clan are recognised as the original landowners at Mariawatte and receive royalties from the oil-palm plantation. In the months before his death, there had been discussions about changing the executives of the landowner group. An election was held; Ealua was elected as the chair, his namesake uncle became vice chair and Pearse was chosen to be the secretary. A few days after the election, Ealua died. Following his death, the family investigated who had killed him and how. This process found that Ealua was poisoned by a sorcerer first and then a witch finished the job while he was at sea – sorcery and witchcraft were used together to perform and cover up the killing. They found out that close relatives were involved in this; a young male relative was held responsible, but Ealua’s death was the latest in an ongoing family conflict. He was used “as bait” so that a rival Principal Landowner (PLO) could take over the executive and manage the oil-palm royalties. Like land, in Suau, “development is always sickness and death.”

The family are still fearful of the sorcery and witchcraft surrounding Ealua’s death and the potential for further killings. I was warned about this when I returned to Alotau in February 2019 and was staying with friends in town. Late one night, I woke up feeling a presence above me. The door to my room was

wide open. I always lock the door. The next morning when we got up, the house had no water; the two large water tanks had been drained while we slept. I saw Uncle Tae at the market and told him about the disturbances; he nodded that a witch had visited me, but that it was not malicious, just mischievous. That same evening, my family and other people from Suau had been travelling to Alotau on the dinghy and PMV. The night's events were a warning of their impending arrival, someone was playing tricks on me. When I was reunited with Isabel and our family, discussions quickly turned to Ealua and their precarious position in the village.

As Ealua and his wife were from the same clan, their marriage had broken custom and effectively denied them rights to land in Silosilo, although they continued to live there. Ealua's grandfather, who raised him and his cousin, was a well-known sorcerer and it is rumoured that the two cousins stole some of his magic and put a spell on two girls, sisters, within the clan. The cousins married the sisters, but both marriages were against custom and generated disputes in the village. Now that Ealua has died, his wife may struggle to maintain her rights to live on the land. The family continues to negotiate whether to move back to their motherland near Leileiafa. The future is uncertain.

8.1 Introduction

This thesis began with Dr Caleb's story and the disputed REDD+ plot in Silosilo, with the analogy that REDD+ was like scraping a coconut – a way of extracting wealth from the land and trees – and people in Suau were chickens rushing for the scraps while the middle men took the cream. But it is not just conservation projects that produce these kinds of frictions and uncertainties. This thesis ends with Ealua's story, highlighting the ongoing cycle of land disputes and deaths in Suau, particularly as resource extraction projects exacerbate existing rivalries. In Ealau's story, we can see how the imposition of official positions of authority to distribute benefits from oil-palm projects generated jealousy and competition within his clan, which contributed to his death.

The deaths of Dr Caleb, his nephew Kena and Ealua, as well as my own experiences with visiting snakes and opening doors, emphasise the importance of taking sorcery and witchcraft seriously when investigating land and varied forms of environmental governance in Suau. Taking other ways of perceiving and performing reality on their own terms allows us to question and complicate dominant ways of framing land and trees that underpin climate change mitigation and conservation approaches. These stories capture the themes that run through this thesis: the complex relations between land, trees, sorcery and death and the frictions that emerge as global governance intersects with local lives in Suau.

Listening to the stories people in Suau tell of their land and lives provided an entry point to explore the central research question: *What ontological intersections and inequalities emerge as global environmental governance assemblages, like REDD+, are translated locally in Papua New Guinea?* Ontological assumptions are always intersecting and competing for primacy in complex and changing contexts. In order to govern the environment, REDD+ and Cool Earth project proponents work hard at translation – drawing one world-making project into another (Tsing 2015: 62). To trace this process, I also asked: *What relations and frictions emerge in the REDD+ assemblage in PNG as it draws together diverse assumptions, actors and interests from different contexts?* People's perceptions of REDD+ – including their fears of land, trees and air being stolen – pointed to the awkward, unstable and often unequal (Tsing 2005) ways that REDD+ is translated across difference. However, as this thesis has shown, these frictions highlight how governance practices necessarily impose power to foreground certain assumptions about reality; this privileging and marginalising of assumptions has significant implications for the way people in Suau live, how they perceive and enact their realities.

By investigating: *What epistemological tools are used to reinscribe assumptions that hold together environmental governance assemblages in PNG,* this thesis has shown how forms of governance continue to reify certain assumptions about the world and how we can know it. REDD+ and Cool Earth are expressions of broader governance processes – initiated by colonisation and missionisation and continuing through resource extraction and conservation – which replicate older, colonial forms of governance but entail new

forms of knowledge and technology. Seen in this light, disputes over REDD+ and Cool Earth are not solely about the control of resources but are about the very ways we perceive and enact reality, particularly how we frame and manage environmental problems. While REDD+ and Cool Earth reproduce certain assumptions about climate change and biodiversity loss, which enable and legitimise such approaches to environmental governance, this ‘unified narrative’ (Wickman 2018) comes undone when we open up space for different ways of being and knowing. This thesis examined *How people implicated in the Central Suau REDD+ Pilot Project perceive and perform climate change and varied forms of environmental governance*, to highlight the multiplicity of assumptions at play.

This concluding chapter synthesises the contributions to knowledge – the interrelated empirical, methodological, conceptual and theoretical conclusions – that have emerged in this thesis. After reflecting on the main ethnographic findings and conceptual tools used in the research, I elaborate on how this adds to – and challenges – existing literature, particularly thinking around political ontology and political ecology. In addition to drawing out its contribution to knowledge, I discuss the limitations of this research – namely in terms of the relational/categorical conceptual lens that has been used throughout this thesis and my own positionality as a *dim dim* (white), outsider researcher. I then outline areas for further research and improved research practice. Finally, I address the implications of the research, particularly how it opens up space for other ways of perceiving and performing reality, which may enable different, potentially more ‘equal,’ approaches to climate change mitigation and conservation.

8.2 Contributions to Knowledge

Within this thesis, the contributions to knowledge were interrelated and co-produced. Drawing on political ontology as the unifying theoretical approach, this thesis engaged a number of conceptual tools. The distinction between theory and concept is important here; the underlying theoretical concern of this thesis has focused on ontological assumptions and intersections, but different concepts have been chosen as entry points to analyse these assumptions and intersections in different, but interrelated, ways.

The empirical, ethnographic findings shaped, and were shaped by, the conceptual tools used in the research. I present the empirical and conceptual contributions to knowledge together to highlight these connections between the ethnographic material and the ways that this was framed and analysed in the thesis. The methodological and theoretical contributions were also interconnected – the storytelling methodology was grounded in a political ontology approach and informed by local knowledge transmission processes, but in turn influenced the theoretical findings and contributions to decolonial research agendas.

Theoretical, conceptual and methodological dimensions have been linked throughout the thesis. The use of ‘performance,’ for example, provides a helpful illustration: reality is performed (theoretical), perception is produced through performance (conceptual) and storytelling is the performance of narratives that embody certain assumptions about reality (methodological). This thesis has made contributions to political ecology, geography, anthropology and environmental studies, as well as to the ways we can undertake interdisciplinary research on encounters between global environmental governance and local lives. Interdisciplinary research is about engaging different methods and concepts to reveal new, but partial and situated, understandings where no conceptualisation or analytical entry point is superior to another (Nightingale 2016).

8.2.1 Empirical and Conceptual

Following the outline of the research project, literature review and methodologies in Chapter One, **Chapter Two** introduced the REDD+ program in PNG and set the scene for the underlying problematic of this thesis – what happens when different ways of perceiving and performing reality intersect and what frictions emerge when certain assumptions of reality are foregrounded over others. By examining REDD+ as a governance assemblage – an ongoing process of drawing actors and relations together (Li 2007) – I interrogated the ways that scalar-thinking – that is, ways of understanding the world that pre-define categories of scale and organise these into hierarchies, such as the ‘global,’ ‘national’ and ‘local’ – has become central to governing environmental problems. Through ethnography with key REDD+ agencies and an analysis of the policies, strategies and project design documents, I investigated how scale is used to

stabilise the REDD+ assemblage in PNG. This analysis showed how scalar discourses draw boundaries around arenas of governance, policy making and action that enable and constrain different actors in engaging in decision making. REDD+ actors and policies continually reproduce the ‘global’ and ‘national’ scales as arenas of governance and action. When this translates into practice, for example in the Central Suau REDD+ Pilot Project, local people may be excluded from decision making in favour of actors positioned at the national and global scales, actors who reinforce such scalar-thinking. A Suau elected leader offered a general critique of scalar-thinking and foregrounded the importance of relationships and negotiation: “Rather than making decisions up there, come down and consult with us and see what’s best for us and we can be able to dialogue and share some of those ideas.”

Overall, in this chapter I demonstrated how scalar-thinking has become hegemonic around climate change and may marginalise other ways of perceiving and performing reality. As a counterpoint, I used assemblage-thinking – with its focus on relationality, emergence and multiplicity (Deleuze and Guattari 1987; Mol 2010) – as a lens to examine the complex relations that come together around REDD+, while trying to avoid reinscribing categorical and hierarchical assumptions. I demonstrated how assemblage-thinking can be used to expose the dominance of scalar discourses around climate change mitigation and open up space for considering other frames. Analysing global assemblages as a form of environmental governance offers a way to understand how projects like REDD+ may disproportionately impact communities in ways that may make them less resilient to climate change (see Ogden et al. 2013: 345). Assemblage-thinking has its own limitations – even while criticising ontological categories it is possible to reassert outside assumptions over Indigenous ways of perceiving and enacting reality (Theriault 2015; Todd 2016a) – but it offers an entry point to see relations and shift stories from one context to another (Mol 2010). As such, it is important to recognise that different analytical starting points can profoundly influence research design and understandings, but no concept is better or worse than another (Nightingale 2016).

With the central problematic identified and outlined in Chapter Two, **Chapter Three** introduced the so-called ‘monster’ behind REDD+, which project proponents ‘never

talked about’ – that is, the diverse assumptions about the nature of existence that governance assemblages draw into processes of translation. In this chapter, I examined the ways that REDD+ and Cool Earth have been translated locally and how people in Suau perceive these projects. Here I contextualised the emergence of these projects by locating them within the history of colonisation and missionisation in Suau. Project proponents do work hard at translation, often through site visits, launch events, project design documents, social mapping and ‘awareness’ programs. Nevertheless, storytelling with people in Suau revealed that many did not understand the intent or process of REDD+ or Cool Earth. Often, they expressed fears about these projects and external actors stealing their land, trees and air. In analysing the diverse perceptions of these projects, I highlighted the contingency and instability of reality-making practices that draw different ontological assumptions into co-existence (Blaser 2010; Tsing 2015). Conservation project proponents often blamed disputes and misconceptions around REDD+ on a lack of ‘understanding’ or limited ‘awareness,’ but the translations and perceptions I examined in this chapter suggested deeper ontological disjunctures.

I used the conceptual tools of ‘translation’ and ‘perception’ to analyse the diverse, and sometimes conflicting, accounts of REDD+ and Cool Earth, but these concepts also provided a platform to understand Suau ways of being and knowing on their own terms. While analytical tools like translation have been questioned for subsuming empirical variability, like Jensen (2019) I suggest that translation opens up a way to explore how fragile, emerging assemblages stabilise across difference. This chapter showed that, while there is a strong tendency to misrecognise ontological conflicts (Blaser 2009a: 880), such struggles are becoming increasingly visible around environmental change and governance (Boulton 2016) and can be analysed by paying attention to intersections where different assumptions about reality come into contact and compete for primacy (Blaser 2013b: 548).

In order to further unpack these intersections, **Chapter Four** focused on the ways people in Suau perceive and experience climate change and how this intersects with the assumptions of ‘causality’ and ‘temporality’ that underpin the REDD+ assemblage. I began with the mythological story of Kakotilotilo, which started with the oysters in

Silosilo and ended with a doomed feast on the mountainside. This story details the ways humans and non-humans are connected and how more-than-human forces and custom work to protect these relations. Kakotilotilo, as an embodiment of the relations between people and place, was linked to the ways people in Silosilo understand climate change. In everyday practices of *pilipili dai* (storytelling), people spoke of climate change in terms of rising sea levels, changing rainfall patterns, reduced crop yields in the garden and a general sense of the world becoming less predictable and more uncertain. People often drew distinctions between ‘*dim dim* theory of climate change’ and their own understandings of causal and temporal relations, where climate change was caused by breaking custom, misusing land and not respecting relations with non-human beings.

Foregrounding certain causal and temporal assumptions influences people’s decisions and actions (Dwyer and Minnegal 2007: 558). While people in Suau often foregrounded relational assumptions of climate change, institutional actors typically privileged categorical assumptions, where climate change was caused by greenhouse gas emissions and measured on linear time scales – that is, abstracted, anonymised and removed from human-environment relations. I argued that this privileging of simplified, categorical assumptions of causality may exacerbate the inequalities generated by climate change through assigning disproportionate blame to subsistence agriculturalists and failing to consider broader political economic and colonial contexts. Further, I showed how the foregrounding of categorical assumptions of how and why climate change is occurring marginalises the understandings that people derive from their lived, everyday relations in the world. Stories were shown to offer other ways for the world to be known, but telling stories is always a political act (Anand 2017). As demonstrated in this chapter, recognising that climate science is not singular (Hastrup 2016) and making space for the multiplicity of stories told about climate change may enable alternative approaches to mitigation to emerge.

Turning more explicitly to the REDD+ and Cool Earth projects in Suau, **Chapter Five** centred on land, trees, sorcery and death. The concepts of ‘friction’ (Tsing 2005) and ‘rendering technical’ (Li 2011) were used together to draw out the productive tensions between environmental governance assemblages and local ways of relating to and

managing land and trees. Tracing the story of four generations of the same family and their movement over land through time, this chapter emphasised the complex links between the negotiated and contested nature of land tenure and the ways land disputes can precipitate sorcery-related deaths. Land tenure in Suau is matrilineal – while land is passed through the female line, first-born sons of matriarchs typically act as what is now termed Principal Landowners (PLOs) and have public decision-making roles on land use, meaning both women and men play important roles in land stewardship, roles which come into practice through kinship relations. However, as I illustrated in this chapter, these roles are always negotiable – in disputes over land and trees, the occupation of these roles often becomes open to contestation.

The fluid, mobile, negotiable and political nature of Suau land tenure systems comes into ‘friction’ with processes of ‘rendering technical,’ where REDD+ and Cool Earth projects attempt to make landownership static and inscribe boundaries. By identifying awkward and unstable interactions and disputes, I drew attention to the ways these projects deployed knowledge practices and technologies to reinforce assumptions about the environment and how it can be known and used. I investigated how epistemological tools, like Incorporated Land Group (ILG) processes, maps, satellite imagery and GPS, were used to establish regimes of exclusion that distinguish legitimate and illegitimate land use and users. I argued that these processes – of reifying certain assumptions through the use of epistemological tools – not only put pressure on the livelihoods of subsistence agriculturalists (whose land management practices may be prohibited under conservation interventions), but also contribute to inequalities between different ways of being and knowing.

Taking up the discussion of inequality in the previous chapter, **Chapter Six** drew out the tensions between the different assumptions of ‘equality’ and ‘equity’ (see also Walker 2015) that intersect in the REDD+ and Cool Earth projects in Suau. I used the mythological story of Tauhou to examine the distinctions and ambiguities around reciprocity and trade and how people negotiate equality and equity. Pigs can be given (through negotiations of ongoing relations of reciprocity) or traded (through closed transactions), but people can experience inequalities in those relations or inequities in

those trades. In the past, pigs were predominantly given to others to maintain relations of reciprocity, but increasingly pigs are being traded for other things; they can now be bought and sold (see also Macintyre 1984; Schram 2015). Nevertheless, as this chapter described, giving and receiving pigs still plays a significant role in forming and maintaining social relations in Suau, particularly through mortuary feasts and bride price ceremonies. However, the same pig may be gift or a commodity at different stages in the social life of things (Appadurai 1986), and people may exploit the ambiguities around this slipperiness (Davis 1992).

The analogy of pigs was then extended to investigate benefit distribution systems in the REDD+ and Cool Earth projects in Suau. As these projects impose categories and develop mechanisms to ensure the ‘equitable’ distribution of benefits between supposedly equivalent individuals, this closes down ambiguities and negotiations, which may marginalise relational ways of experiencing inequality. As I described, both projects proposed benefit-sharing systems focused on equity and community-wide benefits, underpinned by assumptions of equivalence and sameness. Considering that personhood in Suau is intimately linked with difference and relations of reciprocity and negotiation (*hai sagu sagu* and *oi’liba*, respectively), it was unsurprising that people disputed benefit distribution systems that considered them in isolation from their social relations. In particular, I detailed how people in Suau disputed the ways that these projects categorised who could and could not receive benefits – for example, Cool Earth’s position that benefits should be given only to people living in Wabumari, not to ‘outside’ landowners. I argued that these interventions contribute to ongoing intersections and frictions between different ways of being and knowing. This attritional undermining of relational sociality in Suau, through waves of colonisation, missionisation, and now conservation, has significant consequences for how people live and how they see the world. In critiquing these categorical – scalar and hierarchical – approaches to benefit sharing, a Suau elected leader insisted on the need for “a balanced kind of involvement and participation.”

Chapter Seven built on the previous chapters and their analysis of intersecting assumptions around environmental governance and discussed the implications of the ongoing privileging of categorical assumptions over relational ways of being and

knowing. Combining the Suau notion of *wawahin edi pilipili* (women's problems) with the concept of 'slow violence' (Nixon 2011), I reflected on how REDD+ and Cool Earth intersect with local lives, through incremental and almost invisible processes. The task here is not to replace 'Western' concepts with their Indigenous counterparts, but to convey the complexity of Indigenous concepts in reference to the context in which they are produced (Strathern 1988: 8). Dually constructed concepts have to be translatable enough to draw comparisons, yet also retain sufficient connection with social realities as they are differently lived to allow reflexive scrutiny of the concepts (Strathern 1987: 5). Through these concepts, I explored the changing gender relations in Suau – the growing asymmetrical dependencies in the gendered division of labour as well as the one-way borrowing of witchcraft that have reduced women's social protections – in the context of colonisation, missionisation, resource extraction and neoliberal agendas.

Focusing on Isabel's story and the experiences of other women, this chapter discussed how women may be vulnerable to gender-based violence as they mediate between changing gender relations and roles (see also Macintyre 2003; Hermkens 2007). Rather than identifying causal links between conservation projects and gender-based violence, this chapter examined how environmental governance regimes reinforce particular assumptions of gender, which may contribute to growing gender inequalities. I noted that the REDD+ and Cool Earth projects in Suau demonstrated striking similarities in terms of the ways they frame gender and reify categories of women and men. By 'carving out' categories of women and men – including separating women and men in discussions, allocating positions specifically for women on committees and creating women's sewing groups – these projects actually work to undermine the complex and intertwined gender relations in Suau. In this chapter, I asserted that the destabilisation of matrilineal land tenure systems, combined with the reification of gender categories and the exclusion of women from processes of negotiation, may leave women in precarious positions where they are exposed to gender-based violence.

The chapters in this thesis explored, each in a different way, how governance operates as an assemblage that draw together actors, assumptions and interests across different contexts and generates frictions that move the assemblage forward. The empirical

material, analysed through a set of conceptual tools, illustrates how ontological conflicts become evident in the points of interaction and daily negotiations around REDD+ and Cool Earth projects. By paying attention to the stories that people in Suau tell of environmental change and governance, we can begin to understand how people perceive and enact their realities. However, as we have consistently seen, REDD+ and Cool Earth do not mesh easily with local ways of being and knowing; project proponents use epistemological tools to stabilise these assemblages and in doing so privilege certain assumptions over others. But REDD+ and Cool Earth are only entry points, expressions of broader processes that foreground and marginalise different assumptions, processes that have significant implications for the lived realities of people in Suau.

8.2.2 Methodological

The contributions to knowledge described above emerged as a result of deliberate choices around the methodological approach used in this research, but the methodology also contributed to the theoretical findings and understanding of how we can engage with certain methods to practice political ontology and further decolonial research agendas. As explained in the introductory chapter, this research involved ethnographic fieldwork, including methods of storytelling, family trees and garden walks, to engage with the lived realities of people in Suau and uncover the diversity of ways of conceiving what exists. As West (2016c: 441) asserts, “Our methods must robustly uncover worldings and new possible worlds, and our old method set and approach will not push knowledge far enough to meet these challenges we face today.” With this in mind, I made methodological choices to open up space for other ways of being and knowing, and to foreground Suau forms of knowledge transmission, thereby contributing to movements towards decolonial methodologies in Oceania (see Smith 2012).

I engaged with local storytelling practices to privilege the ways that people in Suau perceive and perform their realities – through complex relations of reciprocity and processes of negotiation and contestation. I participated in *pilipili dai*, which involved the sharing of stories and *sada* (betel nut), to build relationships with people in Suau and glimpse their assumptions about the nature of reality. By observing storytelling performances, such as those in mortuary feasts and land disputes, I was able to see how

stories mediate relations between people. The methods of family trees and garden walks allowed me to further contextualise these practices of storytelling, observe unfolding relations between people and their gardens, and understand the politics of telling stories, particularly around land.⁹² Each chapter in this thesis began with a story, including mythological stories outlining origins and rationales of customary practices, as well as stories people tell of environmental change and encounters with global environmental governance.

As the same person can tell the same story differently in different contexts, writing up such stories can be problematic as this may ‘fix’ them in place with an authority they otherwise would not carry. Sharing another person’s story also shifts the authority from the individual to the researcher. Because each individual’s experience is unique, over-generalising stories undermines their nuance and complexity (Todd 2014: 231). Throughout the thesis, I emphasised that stories are always partial, contested and open to negotiation – it is the performance and politics of storytelling that is central. Moreover, the stories I have shared in this thesis, and tried to make sense of, are stories that I played a role in constructing, but I did not create the reality in which they were articulated (see also Hoskins 1998: 3).

Storytelling provides a method for alternative conceptions of reality and the environment to be taken seriously, as valid ways of relating to the world rather than as ‘unscientific,’ ‘superstitious’ or ‘backward’ (Nadasdy 2005: 291). Environmental governance regimes often impose assumptions about the environment, society and development, but myths and legends can be used to rethink such assumptions (Hau’ofa 1994). Through storytelling, I complicated the ways that climate change and its management are framed and examined the ontological struggles that are taking place in this context. Here the power of storytelling is not just in engaging with the lived realities of people, but with engaging in Suau forms of knowledge transmission as a decolonial methodology.

⁹² For example, discussions on the family trees of the Sala Sala and Palu Paluta clans exposed intra- and inter-clan tensions around the individuals who claimed principle landowner status, claims to land rights and use, and boundary marks.

The main methodological contribution of this thesis rests in its attempts to further decolonial research agendas. Oceanic scholars have laid the foundations for the decolonial research agenda in the region, presenting politically radical critiques of development and the associated injustices of neo-colonialism (Wendt 1995; Fa'avae 2018). I see decolonising knowledge production as a methodological, theoretical and ethical obligation in research – engaging in storytelling as a methodology, practicing political ontology and pursuing decolonisation as a social justice agenda are all interconnected and co-dependent. While colonialism attempted to enforce a ‘master narrative’ (Solórzano and Yosso 2002), focusing on the politics of storytelling – the diverse ways in which Indigenous peoples use stories to construct their realities – troubles singular accounts. By undertaking research informed by *pilipili dai* practices, I have privileged Suau forms of knowledge transmission and explored the politics and positionality involved in the co-production of knowledge. Movements towards political ontology and decolonial methodologies are necessarily intertwined and interconnected – storytelling is key to both pursuits.

8.2.3 Theoretical

This thesis has made new contributions to thinking around political ontology and demonstrated how to put this into practice, thereby proposing ways of doing political ecology differently and furthering decolonial research agendas. Building on other ontologically-engaged work (West 2006; Blaser 2010; Doane 2012; Mentore 2012; Holbraad and Pederson 2017), I have positioned this research in line with moves towards political ontology, which coalesce from the overlapping and often contradictory strands of ontological theory (Viveiros de Castro 2004; Strathern 2004; Mol and Law 2002). Critiques of the ‘ontological turn’ as a theory that flattens social reality and renders it internally consistent and transparent, such as that of Vigh and Sausdal (2014), emphasise the political and contested nature of reality making. I have used political ontology not only as a way to recognise the multiplicity of ontological assumptions intersecting and competing for primacy, but also to explore the politics around what assumptions are foregrounded, by whom and in which contexts.

Rather than constructing ontologies as bounded, discrete entities, this research investigated how ontological assumptions are always mingling and how people in Suau continually negotiate these assumptions. I do not suggest that ‘Suau ontology’ can be presented in a timeless, monolithic way, nor assume that there is some fixity that turns Suau ontology into an object of knowledge (see Strathern 1988: 16); instead I have focused on the emergence and intersectionality of a multiplicity of ways of perceiving and enacting reality. Suau people are neither ontologically separate from, nor entirely subsumed by, outside interventions, like colonialism, capitalism and global environmental governance (see also Anthias 2017). Indeed, they are deeply implicated in ongoing processes of change, which penetrate into ways of being and knowing. Like all Indigenous people, Suau agents are grappling with global political economies, reworking inherited assumptions, institutions and technologies according to their own interests, but also coming up against limits to what can be imagined or achieved, secured or defended (Slama and Munro 2015: 1). Like everyone, people in Suau are always drawing on older ontological propositions about the world and how it works, but they are also constantly undertaking epistemological practices that produce new forms of understanding (West 2016a).

As Hau’ofa (in Ellis and Hau’ofa 2001: 23) describes:

We've often put our traditions in cages, and so we try to do what we think our elders, the people in the past, did. And we trap our traditions there. We freeze them. Whereas people in the past really lived very much like people in the present. There were always cultures mixing. Things were fluid, they were not frozen. But we froze them.

In response to this freezing, this thesis has recognised the intersectionality and fluidity of ontological assumptions and human practice. I argue that there is agency in ontological change; Suau people actively struggle to encompass what is happening in the world in terms of their own assumptions (see also Robbins and Wardlow 2005), but they may also adopt or develop different assumptions for strategic purposes. As we saw with Jacob’s stories of climate change in Chapter Four – which referenced ‘logging’ as a cause of

climate change but also linked this ‘logging’ to changing customs and relations between people and trees – some people, in some settings, choose to foreground certain assumptions of causality over others. The foregrounding and marginalising of ontological assumptions is always political. In addition to exploring how people in Suau mediate different assumptions about reality, I have drawn attention to the ongoing processes of subsuming Indigenous assumptions that continue to play out through different forms of governance. While the ‘slow violence’ of REDD+ and Cool Earth may not erase local ways of enacting reality, the attritional marginalising of relational sociality does have significant (gendered) implications for the lives of people in Suau. Overall, I have contributed to thinking around political ontology by illustrating how ontological assumptions are always intersecting and highlighting the politics of processes that privilege and marginalise different assumptions within REDD+ and Cool Earth projects.

By putting this thinking into practice, I have demonstrated how to mobilise political ontology. Theoretically, political ontology necessitates that Indigenous assumptions be brought to the fore and, further, used to challenge dominant (colonial) ways of thinking. In practice, this requires that we take Indigenous ways of being and knowing seriously, allowing our own assumptions about the nature of existence to be contaminated and confronted by them. In this research, I applied this approach to sorcery and witchcraft. My early fieldwork experiences of witchcraft, in the form of a visiting snake, mystery illness and magic man, provided an opportunity to glimpse how most people in Suau perceive causality and to suspend my own competing assumptions. After people in Suau saw that I took sorcery and witchcraft seriously, and followed local ways of responding to such incidents, they opened up about their own experiences.⁹³ In addition to recognising how not-always-human actors, like sorcerers and witches, disrupt ontologies, I have also explored how they participate in the performance and contestation of realities across different contexts (see also Chao 2018: 634) – for example, how the practice of sorcery interrupts and becomes implicated in processes of collecting biomass for carbon measurement.

⁹³ In her work on witchcraft in the Bocage, France, Favret-Saada (1997: 31) also noted that being ‘caught’ in spells changed the way she was perceived from an ‘inquirer’ to someone who could speak about, and be told about, witchcraft.

However, as Cepek (2016: 633) acknowledges, the ontological project raises practical and intellectual risks; taking Indigenous ontological assumptions seriously is important, but there are complicated political consequences related to assertions of ‘truth’ or ‘reality’. Rather than making any claims to have understandings of Suau ‘ontology,’ I have focused on encounters and recognised my positionality and partial comprehension of Suau assumptions, further limited by my inadequate understanding of the Suau language. Despite these limitations, I have attempted to foreground peoples’ lives in Suau to interrogate assumptions about climate change and environmental governance. For example, in Chapter Five I foregrounded Suau stories of land and trees, sorcery and death, to complicate and challenge categorical assumptions of the environment that underpin, and are reproduced by, the REDD+ and Cool Earth projects. In writing political ontology, I have attempted to treat concepts and stories as equally empirical and conceptual, necessarily rearranging elements but blurring distinctions to avoid imposing theory on the lives of people in Suau (Jensen 2017).

Practicing political ontology in this way also offers opportunities to do political ecology differently and further decolonial agendas. Like Blaser and de la Cadena (2012: 5), I see political ontology as an imaginary to explore the politics of reality in ways that push political ecology, with its assumptions of the environment and political economy, to think through how, for example, “forests emerge as resources through some practices but also as persons through other practices.” Like Barker and Pickerill (2019), I see ‘doing’ political ecology differently as an active, emergent and evolving process that encompasses decentring researchers as the sources of knowledge production, privileging diverse Indigenous voices and providing embodied and material resistance to colonialism. As demonstrated in this thesis, the connections between political ontology and political ecology offer productive possibilities for exploring ontological conflicts in the context of colonialism and emerging environmental governance assemblages.

This work contributes to efforts in political ecology to analyse REDD+ as an expression of an ongoing colonisation of global forest resources (Doolittle 2010; Carmody and Taylor 2016; Nyambura 2016; Chomba et al. 2016). Further, this research has continued political ecology’s feminist and decolonial focus on illuminating aspects of current

climate change mitigation and conservation projects that could be ‘otherwise’ (see also Harris 2015). However, as Tuck and Yang (2012) argue, decolonisation is not a metaphor – it is not solely about improving research practice through decolonial methods, but is about repatriation of Indigenous land and life.

As I have demonstrated in my analysis of the REDD+ and Cool Earth projects in Suau, these forms of governance cannot be extracted from histories of colonialism and current political economic regimes that continue to uphold the inequalities established during colonialism (see also Scales 2017). More than just placing ‘objects of study’ – like REDD+ and Cool Earth – in colonial histories, I have questioned how these governance assemblages replicate and reify colonial assumptions about reality. Through epistemological processes of ‘rendering technical’ land and trees, I examined how conservation projects reproduce colonial attempts to govern land in Suau by controlling land use, through new technologies and forms of knowledge. Conflicts over environmental change and governance are not solely about the management of natural resources but are about the ways people mediate their realities – the intersections between political ontology, political ecology and decolonial agendas are key to understanding this.

8.3 Limitations

While this thesis has made important theoretical contributions to political ontology and political ecology, the approach taken has certain limitations. A central risk is the potential for distinctions to be read as binaries. In this thesis I have employed a heuristic frame that distinguishes ‘categorical’ and ‘relational’ assumptions, but this distinction should not be taken as constitutive of reality. There is a danger of falling into simple binaries when comparing different ways of being and knowing (Deleuze and Guattari 1987: 13), and an associated risk of romanticising the ‘other.’ Such heuristic devices are useful to navigate the complexity of ongoing processes of change, nevertheless they remain analytic constructs.

Throughout this thesis, when drawing distinctions between categorical and relational assumptions about the nature of reality the focus has been on processes of foregrounding and marginalising. All societies and people make both categorical and relational

assumptions about the nature of reality (Minnegal and Dwyer 2017), but it is important to understand how certain assumptions are privileged by different people in different contexts. As I have shown, people in Suau often relied on relational assumptions to make sense of their world, but this is not to say they do not also make categorical assumptions; indeed, in some cases categorical assumptions came to the fore. For example, when storying about climate change, people would often draw on both relational and categorical assumptions of temporality – they could see climate change in the ways that temporal relations with their gardens and non-human beings were changing, but they also drew on categories of months and seasons to make sense of this. In recognising the mutually-constitutive and logically all-encompassing nature of categorical and relational assumptions, what emerges as salient is not a question of ‘either/or’ but how certain assumptions may overshadow or deny others. Within the REDD+ and Cool Earth projects in Suau, categorical assumptions have become dominant and institutionalised leaving no space to acknowledge or operate through relational alternatives.

Nevertheless, adopting this ‘categorical’ and ‘relational’ frame has limited the other kinds of frames that could be used. For example, instead of categorical and relational typologies, we could consider Descola’s (2013) ontological lenses of totemism, animism, naturalism and analogism. Enforcing typologies as a way to make sense of the world can constrain an understanding of how realities may trouble concepts. For the purposes of this study, it has been useful to frame assumptions as categorical or relational, but we should not overlook other potential frames, nor allow these frames to dictate our understandings of the world.

Another, potentially related, limitation is my positionality in the research process. While the purpose of this research was to investigate encounters between global environmental governance and local lives, I could do so only within my own frames of reference, including the categorical/relational distinction. As Strathern (1999) describes, fieldworkers have dual positions where they are simultaneously immersed in the field and yet inhabit it with the research project in mind.⁹⁴ During fieldwork, I merely glimpsed the

⁹⁴ However, Abu-Lughod (1991) recognises that Strathern’s understanding of the self/other relationship does not fully grapple with the problem of power in anthropology

ontological assumptions that people in Suau negotiate; indeed, Suau people were consistently better than me at recognising and navigating the intersections between REDD+ and Cool Earth and their own lives. This is not to say that outside researchers have no role to play in investigating ontological intersections; they do, but must in the process acknowledge the partiality of their understandings.

I recognise that because of my positionality, my understandings of life in Suau are limited. If we accept Haraway's (1988) thinking on situated knowledges, then feminist research is about acknowledging the limitations and situatedness of embodied knowledge, not aiming for 'objective,' unlocatable knowledge that relies on separating the subject from the object. Subjectivity is multidimensional; knowledge is always emergent and constructed (Haraway 1988). As such, it is important to reflexively and constantly attend to positionality throughout the research process and acknowledge the implications of this for findings – what may be ignored, overlooked, silenced or misunderstood – considering how to sensitively present experiences of people positioned differently (Abu-Lughod 1991; Robinson 1994; Sundberg 2004; Harcourt and Nelson 2015).

For example, while I took sorcery and witchcraft seriously, I do not fully grasp how these practices function. Some people in Silosilo shared their experiences and knowledge of sorcery and witchcraft with me, but as an outsider many elements were not divulged, and I never pushed people to share their secret knowledge. Other anthropologists in PNG, and elsewhere, also note that practice of sorcery may be concealed and local people themselves may not grasp how sorcery functions – this is indeed the function of sorcery (Lindenbaum 1979; Comaroff and Comaroff 1998). Even though I spent considerable time learning about land tenure systems, I am still unaware of much of the complexities and politics that drive land disputes. Knowing the social relations that connect people to each other and to land influences the interpretation of stories (see also Povinelli 1995: 511). Given I was positioned within one family, and seen by other clans accordingly, my understanding of land disputes is not objective or impartial, and some stories may be one-sided. While I learnt one dialect of the Suau language, my grasp of local languages also restricted my understandings not only of people's lives but how they construct their realities. My lack of language proficiency also influenced who was involved in the

research process and meant that I often engaged with local elites who more comfortable speaking in English to an outsider.

In terms of ethics, this research process focused on establishing relations of reciprocity with people and communities. While I put significant effort into ensuring the research process benefited people in Suau, I often struggled to balance my various reciprocal obligations within the community. When storying and undertaking garden walks with individuals, I shared *sada* (betel nut), food and drinks and always purchased food from the gardens visited. When people needed help with school fees, church fundraising, transport fares or buying store goods, I always assisted. I contributed finances and resources to repair the aid post in Silosilo and organised a medical outreach across Suau – including Suau Island, Fife Bay, Silosilo and Konemaia – which ran clinics, undertook a family planning program, trained local health staff and supplied health facilities with medications and equipment.⁹⁵ And yet, despite trying to benefit people in Suau, my presence in the village generated jealousy between individuals and clans. Indeed, my desire to assist precipitated jealousy. My positionality within a particular family unintentionally exacerbated existing disputes within the clan. Sadly, I was not the only one targeted by witchcraft; when a member of my host family became sick it was attributed to my presence, namely the gifting of household goods and solar panels, attracting sorcery. While having a *dim dim* in the family generates a certain status as well as access to material goods and money, it can also generate competition and jealousy. Just like the REDD+ and Cool Earth interventions, this research project intersected with local ways of being and knowing and had unintended consequences.

8.4 Areas for Further Research

This thesis raises a number of questions for further research and points to how research may be practiced differently in the future. While this research focused on the intersections between global environmental governance and local lives in Suau, there is a multiplicity of questions that could be asked around this broad focus. Other questions that have emerged through this research include: how may the ways that people in Suau orchestrate,

⁹⁵ Previously I spent twelve months as a volunteer with the Public Health Division of the Milne Bay Provincial Health Authority (MBPHA) and have volunteered with a local family planning NGO, Spacim Pikinini, since 2017.

use, relate to and govern their environments build resilience to climate change? How may climate change mitigation and conservation initiatives be grounded in Suau ways of being and knowing? These questions may be pursued by investigating local conservation initiatives in Suau. For example, the Isuisu community have initiated a reef conservation project using local customs – relations between people and place as well as social relations within the community – to ban the use of dynamite and nets for fishing on the reef.⁹⁶ Although I was unable to research this initiative in great depth, it would provide an interesting area for future research around marine governance.

The ethnography with REDD+ and Cool Earth institutions also generates interesting areas for further research, including questions about how these actors understand their own work and its impacts on local lives. Building on existing research into the national REDD+ policy assemblage, notably Babon's (2014) thesis, further studies could examine the day to day work of these actors and how they navigate the intersections and encounters identified in this thesis. An interesting starting point that emerged in this research was the ways that middle-class, educated and employed people working within these institutions negotiate their positionality in these interventions and their lives outside them. After developing relationships with some of the staff at CCDA and PNGFA, they showed great interest in the research in Suau and reflecting on their own work and practices. For instance, following a period of fieldwork in Suau, I visited Port Moresby to meet with staff at the CCDA and discuss the research progress; after getting an update on the forthcoming national REDD+ strategy and presenting my preliminary thinking, the conversation quickly turned to sorcery and the staff asked me about my experiences in Suau and if I had any encounters or trouble talking about land in the area. While these officers were from different parts of PNG, this conversation highlighted the complexities involved as they undertake environmental governance work across varied land tenure systems with related sorcery risks.

In terms of research practice, this thesis has pointed to the need for more decolonial work in political ontology and political ecology. While this thesis has made some contributions in engaging with decolonial methodologies, this is only part of the process. Within these

⁹⁶ For another example of community-based marine conservation in PNG, see Aini and West 2014.

disciplines, more focus needs to be placed on the co-production of knowledge and moving away from practices that dispossess people of sovereignty over their knowledge (West 2018a). To decolonise dominant Western practices (Fa'avae 2019), the co-production of knowledge is a first step, but co-authorship needs to follow.⁹⁷ As Nabobo-Baba (2008) argues, we need: "... more research to be done by Indigenous researchers using culturally appropriate framings and methodologies that recognise Pacific . . . world views, cultural knowledges and epistemologies ..." For Hau'ofa (2005: 32), this means raising the "kind of consciousness that would help free us from the prevailing, externally-generated definitions of our past, present and future."

Beyond the fields of political ontology and political ecology, further work is needed to decolonise academia on the whole. Like Sundberg (2014: 42), I see decolonisation as "making political choices about the worlds we wish to enact, choices for some ways of living together over others." Part of decolonisation involves reassessing whose scholarship is framed as important, and thus, published in academic journals, cited by other scholars and included in academic teaching (Ahmed 2013; McGranahan and Rizvi 2016; West 2016b). As Uperesa (2016) rightly asserts, "... there has to be a deep recognition that as institutions universities and professional organisations have been built in ways that favour white, middle class and elite scholarship, often to the detriment of the communities that make that scholarship possible." In acknowledging the power structures within academia and the systems within our institutions that privilege some and exclude others, we can begin to dismantle the structures that reinscribe inequalities. This process also involves valuing different kinds of labour in academia, including care work, community work and activism (Uperesa 2016), as well as ongoing critical reflection on positionality.

However, Smith et al. (2016) recognise the risk that Indigenous research methodologies could become institutionalised and extracted from communities; to mediate this risk it is important that methodologies remain embedded in communities in contexts where they continue to inform identities and ways of living. Decolonisation is not an event; it is an

⁹⁷ To this end, I am working with a former colleague from Milne Bay to co-author an academic journal article developing our ongoing discussions that have informed Chapter Seven.

ongoing and contingent process that must focus on Indigenous sovereignty and the repatriation of land and livelihoods (Tuck and Yang 2012; Banivanua-Mar 2016). Indigenous research projects focused on land and body sovereignty have continued to advance decolonial pursuits in new and innovative ways (de Finney 2014; Sisters Rising 2019). As Todd (2016b) identifies, there are hopeful examples of decolonising work coming out of academia and crossing into popular forums (see for example Tuck 2019). In Oceania, there has also been recent moves towards ‘Island studies as a decolonial project,’ which problematises issues surrounding decolonisation and indigeneity in island contexts (Nadarajah and Grydehøj 2016). This kind of decolonial research offers a promising trajectory not just for political ontology and political ecology, but for the kind of transformative change needed in academia.

8.5 Implications

When I returned to Milne Bay in early 2019, three logging concessions were starting production in eastern and western Suau. The Central Suau REDD+ Pilot Project was still not operational. Cool Earth had initiated another conservation project in western Suau. A company called Blue Ventures were investigating blue carbon projects in Milne Bay. The Suau Local Level Government (LLG) was responding to a proposal to do off-shore gas exploration along the coastline. People in Suau continue to negotiate multiple, often overlapping and competing, forms of environmental governance. REDD+ and Cool Earth are not isolated interventions; they replicate older forms of colonial governance and provide an entry point to examine broader processes of change and ontological intersections. While this research may not have immediate implications for people in Suau, there are findings that may influence the way that projects like REDD+ and Cool Earth are designed, implemented and evaluated.

As part of the ethnography with key institutions, I returned to the CCDA, PNGFA and Cool Earth offices in PNG to report back findings and discuss the projects in Suau. Although I am uncertain whether any of the policy-relevant findings will be taken up by these institutions, this research provides an evidence base for the design of future programs. All of the agencies were interested in ‘awareness,’ and during my meeting with PNGFA one officer asked: “There may be awareness but people still don’t understand –

how do we see results from awareness?” Applying the concepts from this research, I suggested that the focus on ‘awareness’ (a one-way communication of information) should be shifted to translation (a two-way process of establishing a common ground across different contexts). Moreover, I proposed that instead of imposing outside assumptions of how environmental change occurs and how this should be managed, projects should engage and be grounded in Suau ways of being and knowing, particularly in longer-term decision making and project control. If such initiatives are to be implemented successfully and ‘equitably,’ then it is important to understand how people perceive and enact their realities. Rather than assuming that the world comprises of distinct things, and kinds of things, that exist prior to and independent of relations between them (assumptions that underpin categories such as ‘primary’ and ‘secondary’ forest, men and women, ILGs), approaches could be designed to work within the relational sociality of Suau. In this light, it is important to create space for communities to build and maintain enduring relationships among people, place and practice (Montgomery and Vaughan 2018). Overall, environmental governance projects may be better designed to recognise the complexity of local lives (see also West and Brockington 2006: 614) and reflect this complexity in how they are implemented and evaluated.

At the core of this thesis is inequality – not just inequalities associated with livelihoods and land management, but inequalities between different ways of perceiving and performing reality. This thesis has opened up space for other ways of being and knowing to enable different, potentially more equal, approaches to addressing environmental problems. By taking multiple ontologies seriously, in a way that critically reflects on the politics of ontology, this research works to challenge dominant ways of framing and constructing reality (see also Pickering 2017: 145). Through a focus on decolonisation, this thesis has interrupted power relations in the hope of transforming them and increasing possibilities for working across difference and rectifying inequalities (Verran 2002). Ontological inequalities have consequences for the lived realities of people – the ongoing undermining of relational sociality impacts on matrilineal land tenure systems and places women in increasingly precarious positions. As relations to land and trees are rendered ambiguous, and categories of landownership are rendered static, disputes may erupt, and

some people may be dispossessed from their land. Ontological conflicts have very ‘real’ implications for the lives of people in Suau.

Returning to the analogy at the start of this thesis: even if people in Suau were not chickens rushing for the scraps – if they were the ones who received the cream of the coconut, instead of the ‘company and middle-men’ – interventions such as REDD+ would still generate frictions. It is not just the equitable distribution of benefits that is at stake, but the ways that equality and equity are negotiated and established. Even if the disputed conservation plot in Silosilo was not on land that had multiple usage and ownership claims, the plot may still have been disputed. It is not just land use and livelihoods that are at stake, but the ways that people perceive and enact their realities. In recognising just how high the stakes are for people implicated in global environmental governance assemblages, this thesis offers a new way to think about, and critically evaluate, such programs. This is important for the lives of people in Suau as they navigate increasingly uncertain futures.

9. References

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10. Appendices

10.1 Appendix 1 – List of Interviews and Meetings with Institutions

Date	Agency	Location	Type
14/2/2017	PNGFA	PNGFA Office, Hohola, Port Moresby	3 x Interviews
14/2/2017	JICA	PNGFA Office, Hohola, Port Moresby	1 x Meeting
15/2/2017	CCDA	CCDA Office, Avara Annex Building, Port Moresby	1 x Interview
15/2/2017	Science and Technology Secretariat	Fly River House, Gordons, Port Moresby	1 x Interview
16/2/2017	UNDP/FCPF	UNDP Office, Avara Annex Building, Port Moresby	1 x Interview
16/2/2017	CCDA	CCDA Office, Avara Annex Building, Port Moresby	1 x Interview
16/2/2017	NRI	NRI, Port Moresby	1 x Meeting
26/2/2017	PNGFA	PNGFA Office, Alotau	1 x Interview
26/2/2017	Suau LLG	Top Town, Alotau	1 x Meeting
2/3/2017	Eco-Custodian Warriors	Service Delivery Centre, Alotau	1 x Meeting

11/3/2017	Cool Earth	Wabumari	3 x Meetings
28/3/2017	Suau LLG	Alotau	1 x Interview
24/5/2017	Cool Earth	Alotau	1 x Interview
15/6/2017	Department of Lands and Physical Planning	Department of Lands Office, Alotau	1 x Meeting
21/6/2017	Department of Lands and Physical Planning	Department of Lands Office, Alotau	1 x Meeting
13/7/2017	CCDA	CCDA Office, Avara Annex Building, Port Moresby	2 x Meeting
14/7/2017	SPC/GIZ	CCDA Office, Avara Annex Building, Port Moresby	1 x Meeting
14/7/2017	FORCERT	Port Moresby	1 x Interview
19/7/2017	PNGFA	PNGFA Officer, Hohola, Port Moresby	2 x Meetings
20/10/2017	Cool Earth	Driftwood Resort, Alotau	2 x Meetings
30/10/2017	Cool Earth	Driftwood Resort, Alotau	1 x Meeting
30/10/2017	Suau LLG	Alotau	1 x Meeting
31/10/2017	Provincial Forest Management Committee	Alotau	1 x Interview
1/11/2017	PNGFA	PNGFA Office, Alotau	1 x Meeting

2/11/2017	Suau LLG	Transit House, Alotau	1 x Meeting
8/11/2017	JICA	BMobile Building, Port Moresby	1 x Meeting
8/11/2017	CEPA	CEPA Office, Port Moresby	2 x Meeting
16/4/2018	Cool Earth	Cool Earth Office, London	1 x Meeting
24/9/2018	Blue Ventures	Skype	1 x Meeting
30/1/2019	PNGFA	PNGFA Office, Hohola, Port Moresby	3 x Meeting
30/1/2019	CCDA	CCDA Office, Dynasty Tower, Port Moresby	1 x Meeting
31/1/2019	CCDA	CCDA Office, Dynasty Tower, Port Moresby	2 x Meetings
31/1/2019	NRI	NRI, Port Moresby	1 x Meeting
5/2/2019	Cool Earth	Alotau	1 x Meeting
7/2/2019	Cool Earth	Education Milne Bay, Alotau	2 x Meeting
13/2/2019	Suau LLG	Alotau	1 x Meeting
22/2/2019	PNGFA	PNGFA Office, Alotau	1 x Meeting
25/2/2019	Cool Earth	Skype	1 x Meeting

10.2 Appendix 2 – List of Documents Coded in the Discourse Analysis

- Forest Carbon Partnership Facility. 2013 *Readiness Preparation Proposal (R-PP)*. PNG: FCPF and UN-REDD.
- Government of Papua New Guinea. 2010. *Climate-compatible Development Strategy – Second Draft for Stakeholder Comment*. Port Moresby: GoPNG.
2014. *National Climate Compatible Development Management Policy*. Port Moresby: GoPNG.
2015. *Climate Change (Management) Act*. Port Moresby: GoPNG.
2017. *Papua New Guinea National REDD+ Strategy for the period of 2017-2027*. Port Moresby: GoPNG.
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- SPC/GIZ. 2013. *REDD+ Feasibility Study for Central Suau, Milne Bay, Papua New Guinea*. Edited by S. A. Stanley. Suva, Fiji: SPC/GIZ
- 2014a. *Forest Carbon Inventory in Proposed Central Suau REDD+ Area, Milne Bay Province, Papua New Guinea*. Suva, Fiji: SPC/GIZ.
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- 2015b. *Proposed Benefit Sharing System for REDD+ pilot project in Central Suau/Papua New Guinea*. Edited by N. Sullivan. Suva, Fiji: SPC/GIZ.
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2013. *Warsaw Framework for REDD+ - Decisions 9-15 in the 'Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2013.*

2015. *Paris Agreement taken from the 'Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015.*

UN-REDD. 2010. *UN Collaborative Programme on Reducing Emissions from Deforestation And Forest Degradation In Developing Countries – Joint Programme Document (NJP)*. PNG: UNDP, FAO, UNEP and OCCD.