Assessing the potential of voluntary carbon markets as a novel approach to forest conservation in the Melanesian Pacific

Report

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Cover photo: The sun rises over dense rainforest at the edge of the Nakanai Mountains in Pomio District. Early morning fog hangs over the tree canopies and two volcanos are visible in the distance. East New Britain Province, New Britain, Papua New Guinea. © WWF-Pacific / Tom Vierus

Executive Summary

Project overview

The conservation of natural forests is a critical and urgent public policy issue in the Melanesian Pacific countries of Papua New Guinea (PNG) and Solomon Islands, where unsustainable commercial logging has been ongoing for more than 40 years. Alongside environmental damage, logging also brings severe social impacts, particularly at the community level. This means that forest conservation can bring not only environmental benefits: it can also mitigate the significant social harm that the logging industry inflicts upon resource-owning communities.

While forest conservation in the Melanesian Pacific has shifted towards more participatory and community-based approaches, access to sustainable financing for conservation has remained a persistent challenge. The recent emergence of voluntary carbon markets (VCMs) provides an opportunity to overcome this persistent financing challenge, potentially enabling conservation efforts that provide ongoing benefits for both communities and nature.

However, the first wave of forest carbon projects in PNG – predominantly large REDD+ projects[1] – have faced significant criticism centred on community engagement and Free, Prior and Informed Consent (FPIC), benefit-sharing arrangements, and permanence obligations.

Recent years have seen the emergence of smaller scale VCM projects the Pacific which are demonstrating greater success. These projects have a strong focus on community safeguards and have delivered benefits for both forest conservation and local livelihoods.

This study assesses the potential that VCM forest carbon projects offer as a novel approach to address the longstanding challenge of unsustainable and socially damaging logging in the Melanesian Pacific, and how this potential can best be realised, with a focus on PNG and Solomon Islands.

To achieve this aim, the study has the following research objectives:

1. Engage with stakeholders to understand their perspectives on potential opportunities for VCMs and other forest conservation approaches
2. Identify the social, environmental, and economic impacts of logging to inform and reframe debates about forest conservation
3. Using case studies from forest conservation projects (including VCM projects), review and identify ingredients for success as well as lessons from past failures

[1] REDD+ stands for reducing emissions from deforestation and forest degradation, and sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries.

4. Identify the enabling conditions required for VCM approaches to effectively conserve forests and benefit local communities, with a view to distilling policy lessons for best practice
5. Provide recommendations targeted to government decisionmakers and the donor community on the value of VCMs as a mechanism to conserve forests and promote sustainable livelihood alternatives to logging.

The study's approach and methodology engaged 30 stakeholders from government, civil society, and academia across 19 remote interviews in two phases. A co-design approach during the scoping phase, supported by 10 initial interviews and a literature review, refined the study's objectives and identified knowledge gaps in logging, conservation, and VCMs. Four case studies, selected for their diverse and broadly successful conservation approaches, provided core evidence for the study. Key informant interviews added further insights, while a validation workshop with stakeholders helped refine findings and guide recommendations.

Key findings

Impacts of logging in the Melanesian Pacific

The forests of PNG and Solomon Islands hold significant carbon resources and biodiversity but extensive commercial logging has occurred in both countries over the past 40 years, with exports of round logs consistently exceeding estimated sustainable harvest rates. The key driver of logging for both governments and communities is the allure of economic benefits, and logging continues to be an important source of government revenue for both countries (though more significant in Solomon Islands). Communities are drawn in by promises of quick and easy cash payments from logging.

The economic promises of logging have largely not been delivered. Unethical behaviour and corruption have been widespread in the industry in both PNG and Solomon Islands, with both governments and communities being let down. Where benefits are paid to communities, they are often short term and inequitably shared. Attempts at reform in the logging sector have largely failed. Social impacts of logging, often stemming from cash payments, are severe and often highly gendered. Several study participants identified the social costs of logging as the largest impact. Environmental impacts of logging include greenhouse gas emissions, loss of ecosystem services and damage to water catchments and reefs. Even in cases where selective logging is employed, forests are often severely damaged.

There is increasing recognition from the Governments of PNG and Solomon Islands that current rates of logging are unsustainable and must be reduced. Both Governments have made commitments to this effect, but the effect of these remains to be proven.

Forest conservation in the Melanesian Pacific

Forest conservation approaches have evolved over time, shifting to more community-based models which utilise legal instruments, but ongoing funding remains a key challenge. VCMs offer opportunities to meet the funding challenge of forest conservation, while also addressing social issues associated with logging.

The first wave of VCM projects – particularly relatively large REDD+ projects in PNG – were highly problematic and created many of the same social issues as logging. Key problems revolved around FPIC and community engagement, equitable benefit-sharing arrangements, and corruption.

A new wave of relatively small VCM projects is emerging which appear to be far more effective in terms of community engagement and social safeguarding, suggesting that sustainable financing can be achieved without the problems associated with the first wave of REDD+ projects. However, given the novelty of these projects, it remains to be seen if they can deliver sustainable long-term financing for forest conservation.

These relatively small VCM projects also highlight the unique challenge of high upfront costs for VCM projects. This challenge is particularly acute for projects that seek to implement best practice community engagement and FPIC principles. Project developers are reliant on donor and grant funding, and increasingly, private sector finance, to meet these costs.

Ingredients for success in designing and implementing high-integrity VCM projects

Based on four diverse forest conservation case studies from PNG and Solomon Islands (two VCM and two non-VCM), this study distilled four 'ingredients for success' for high-integrity VCM projects in the Melanesian Pacific. These represent key considerations for project developers and policy makers to support high-integrity VCM projects.

1. **Working at an appropriate and pragmatic scale** increases the likelihood of success in VCM projects. The existing evidence shows that smaller projects allow for more effective community engagement, while large-scale projects face greater social complexities and require stronger regulatory frameworks. Once initiated at an appropriate scale, projects can be gradually scaled up over time.
2. **Using the right tools and processes for each community and working with existing governance structures** allows projects to be tailored to the specific needs, governance structures, and conservation interests of resource owning communities.
3. **Supporting transparent information and participatory processes for benefit sharing that encourage the prioritisation of non-cash benefits** helps manage community expectations, mitigate social risks associated with cash benefits, and ensure that the distribution of benefits from VCM projects aligns with community priorities, promoting long term support and equitable outcomes.
4. **Empowering local communities while engaging external support as needed** enhances the long-term success of VCM projects by building local governance and project management capacity, while external partners provide essential financial management and organisational support, fostering sustainable and accountable project ownership.

The enabling environment for high-integrity VCM projects

The Governments of both PNG and Solomon Islands are interested in targeting both the UNFCCC compliance market and VCMs, but there is a recognition that a greater level of government capacity is required to target the compliance markets. To support government capacity in regulation, monitoring and enforcement of carbon markets, it is important for governments to receive revenue from VCM projects.

High-integrity VCM projects need to be supported through an appropriate enabling environment. The need for national VCM regulation in PNG and Solomon Islands was broadly acknowledged by stakeholders, particularly given previous challenges with regulating VCM projects in PNG.

PNG's carbon market regulatory environment is much more developed than Solomon Islands'. The PNG regulatory framework is rigorous and seeks to respond to the issues seen in the first wave of REDD+. There are some concerns about its implementation, including important areas that require clarification, capacity constraints, and challenges for small scale projects to meet the regulatory requirements.

The Government of Solomon Islands has just launched a project to develop a carbon trading policy for Solomon Islands, but this is in the very early stages. There is currently no policy or regulation for carbon trading in Solomon Islands.

Recommendations

Building on the findings and conclusions from this study, the following recommendations are offered for PNG and Solomon Islands government decisionmakers and the donor community.

1. **Melanesian Pacific governments should continue to engage with VCMs as novel approach to forest conservation.** Forest conservation is an urgent issue in the Melanesian Pacific, offering not only environmental benefits but also avoiding the severe social harms inflicted by logging. VCMs offer the potential to overcome persistent financing challenges in the conservation sector.
2. **Regulatory frameworks need to allow for projects to be developed at an appropriate and pragmatic scale**. While regulating large VCM projects is essential to avoid a repetition of the problems that characterised the first wave of REDD+ projects in PNG, it is also essential to make space for small scale projects.
3. **Regulations should allow flexibility to tailor tools and processes to the socio-economic and cultural context of each community.** It is important that regulations allow enough flexibility for tools and processes to be tailored to each community context, including in relation to timelines for community engagement, landowner representation and decision making processes, benefit sharing and grievance redress mechanisms. Flexibility in tools and processes must of course be balanced with clarity and consistency in regulations.
4. **Communities need to be supported to make informed decisions about carbon projects and benefit-sharing and be encouraged to prioritise non-cash benefits.** Carbon, carbon markets, and the scale of associated benefits are poorly understood by communities. Through provision of resources, in local languages and simple terminology, governments, civil society and the donor community can assist communities.
5. **It is essential that communities are supported to govern their own projects** so they can make decisions including how benefits are shared.

6. **The donor community should contribute to upfront financing of high-integrity VCM projects.** Mechanisms like grants or pre-purchases of carbon credits, reduce financial risks associated with these projects, and helps communities to see benefits sooner.

7. **The donor community should continue to support capacity building for governments to develop and implement effective regulation for VCM projects.**

8. **Governments in the region need to share lessons from their experience with VCM projects and regulation.** The donor community could support this process through funding, organising and/or facilitating learning events and dialogues.

Contents

List of acronyms and abbreviations

Acronym/ abbreviation	Definition
ACF	Australian Conservation Foundation
BEST	Benefits from Environmental Services Trust
CBSI	Central Bank of Solomon Islands
CCD	Climate Change Division
CCDA	Climate Change and Development Authority
CEPA	Conservation and Environment Protection Authority
ENB	East New Britain
FPIC	Free, Prior, Informed Consent
GGGI	Global Green Growth Institute
GHG	Greenhouse gases
Ha	Hectares
ICAD	Integrated conservation and development
LEDS	Low Emissions Development Strategy
MCA	Managalas Conservation Area
MCC	Millenium Challenge Corporation
MECDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology
MOU	Memorandum of Understanding
NGO	Non-government organisation
NIHT	New Ireland Hardwood Timber
NRDF	Natural Resources Development Foundation
NRM	Natural resource management
PES	Payment for ecosystem services
PNG	Papua New Guinea
PNGFA	Papua New Guinea Forestry Authority
PWM	Partners with Melanesians
REDD+	Reducing emissions from deforestation and forest degradation, and sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries
RSAC	REDD+ Safeguards Assessment Compliance
SABL	Special Agricultural and Business Lease

Acronym/ abbreviation	Definition
SLUP	Sustainable land use plan
TCCA	Tetepare Community Conservation Area
TDA	Tetepare Descendant's Association
UNFCCC	United Nations Framework Convention on Climate Change
VCM	Voluntary carbon market
WCS	Wildlife Conservation Society
WTO	World Trade Organization
WWF	World Wide Fund for Nature

1. Introduction

Project context

The conservation of natural forests is a critical and urgent public policy issue in the Melanesian Pacific countries of Papua New Guinea (PNG) and Solomon Islands, where unsustainable commercial logging has been ongoing for more than 40 years. In Solomon Islands, where logging has been the mainstay of the national economy, there is now a very real risk that if current logging practices continue unchecked, the productive capacity of forests will be permanently degraded, along with the ecological functions they provide. However, unsustainable logging does not only have adverse environmental impacts. As this study highlights, the negative social impacts of logging have been severe, especially at the community level, meaning that forest conservation brings not only environmental benefits: it can also mitigate the significant social harm that the logging industry inflicts upon resource-owning communities.

Approaches to forest conservation in the Melanesian Pacific have evolved over time, towards more participatory and community-based approaches, but overall, there remains more failures than success stories in PNG and Solomon Islands. An enduring "missing piece" for forest conservation has been the need for sustainable long-term financing, with logging posing a constant threat to conservation efforts, offering the promise of quick cash to communities. The recent emergence of voluntary carbon markets (VCMs) provides an opportunity to overcome this persistent financing challenge, potentially enabling conservation efforts that provide ongoing benefits for both communities and nature.

Globally, VCMs have grown rapidly in size and value (Forest Trends Ecosystem Marketplace 2022). In the Pacific, VCMs are small and nascent but have been growing rapidly, especially REDD+ and avoided deforestation projects (Mackenzie and Allen 2023b).[2] Pacific governments are now beginning to develop policy and governance frameworks for engaging with VCMs given their heightened importance, including for achieving Nationally Determined Contributions (NDCs), and growing concerns about a lack of regulation (Mackenzie and Allen 2023b).

While VCM approaches may offer the potential to overcome the challenge of sustainable financing for forest conservation, VCM projects to date in the Pacific have had their own set of problems, some of which are familiar from logging and other extractive industries such as mining and oil and gas. The first wave of forest carbon projects in PNG – predominantly large scale REDD+ projects involving relatively large volumes of monetary benefits – have faced significant criticism centred on community engagement and Free, Prior and Informed

[2] REDD+ stands for reducing emissions from deforestation and forest degradation, and sustainable management of forests and the conservation and enhancement of forest carbon stocks in developing countries.

Consent (FPIC), benefit-sharing arrangements, and permanence obligations.[3] However, recent years have seen the emergence of smaller scale VCM projects the Pacific which are demonstrating greater success, led by the Nakau Programme's work in Fiji, Solomon Islands and Vanuatu. These projects have a strong focus on community safeguards and have delivered benefits for both forest conservation and local livelihoods.

This study assesses the potential that VCM forest carbon projects offer as a novel approach to address the longstanding challenge of unsustainable and socially damaging logging in the Melanesian Pacific, and how this potential can best be realised, with a focus on PNG and Solomon Islands. It analyses the social, economic, and environmental impacts of logging, reviews the historical trajectory of forest conservation efforts in the region including VCM projects, and identifies critical "ingredients for success" drawn from four forest conservation case studies. Additionally, it describes and analyses the current enabling environments for VCM forest conservation projects in PNG and Solomon Islands, with a particular focus on PNG, which has recently adopted a robust regulatory and governance framework.

The overall finding is that VCM forest carbon projects have the potential to overcome several of the key challenges that have long stymied forest conservation efforts in PNG and Solomon Islands, in particular sustainable long-term financing, but this potential can only be fully realised in the context of an appropriate policy and regulatory environment. The study has also found that while PNG's recently established governance and regulatory arrangements are impressive and necessary in the wake of the controversies with the first wave of REDD+ projects, there are some important concerns in relation to ambiguities, government capacity, and the ability of smaller projects to comply with the regulatory requirements.

These findings are timely, as VCMs in the Melanesian Pacific are growing rapidly and some Pacific governments are in the process of establishing policy and governance frameworks for engaging with VCMs (though regulatory capacity varies between these countries). At the same time, unsustainable logging continues to be a critical challenge for both PNG and Solomon Islands, and there is an urgent need for novel approaches to forest conservation. The study concludes by offering policy-oriented recommendations – for governments and the donor community – that are informed by the study's findings.

Purpose and objectives

The overall aim of this study is to support stakeholders – in particular government decision makers in PNG and Solomon Islands, and the international donor community – to better understand the true social, economic and environmental impacts of commercial logging, and

[3] Permanence obligations require project developers to provide a level of assurance that the carbon sequestered from the project will not be released back into the atmosphere for a given period of time.

the potential of VCMs – as one of a suite of approaches to forest conservation – to provide benefits in terms of both livelihoods and forest conservation.

To achieve this aim, the study has the following research objectives:

1. Engage with stakeholders, including community representatives involved in forest conservation projects, civil society, and government, to understand their views, interests, and concerns on potential opportunities for VCMs and other forest conservation approaches in PNG and Solomon Islands
2. Identify the social, environmental, and economic impacts of logging to inform and reframe debates about forest conservation
3. Using case studies from forest conservation projects in PNG and Solomon Islands (including VCM projects), review and identify ingredients for success as well as lessons from past failures
4. Identify the enabling conditions required for VCM approaches to effectively conserve forests and benefit local communities in PNG and Solomon Islands, with a view to distilling policy lessons for best practice
5. Provide recommendations targeted to PNG and Solomon Islands government decisionmakers and the donor community on the value of VCMs as a mechanism to conserve forests and promote sustainable livelihood alternatives to logging.

The findings from this research are intended to be relevant for a broad audience, including Pacific government stakeholders, local and international NGOs, practitioners and international donors. The research findings provide evidence-based policy insights and recommendations targeted to key government decisionmakers in PNG and Solomon Islands.

Approach and methodology

The research team engaged with a total of 30 stakeholders via 19 interviews with participants from across government, civil society and academia. Interviews were conducted remotely over two key phases that are detailed below.

Scoping phase

Given the strong policy focus of this study, a co-design approach was undertaken through an extensive scoping phase, to ensure that the research is shaped by the needs and perspectives of key stakeholders in PNG and Solomon Islands. As part of the scoping phase, the research team conducted 10 interviews with key stakeholders (17 participants in total). The purpose of these initial interviews was to better understand research priorities and knowledge gaps across the areas of logging, forest conservation, and VCMs in PNG and Solomon Islands.

Findings from the scoping interviews were supplemented by an extensive literature review which summarised academic and grey literature, and distilled knowledge on the following areas:

- Assessing the scale of the logging industries in PNG and Solomon Islands, and identifying their social, environmental, and economic impacts

- Approaches to forest conservation in the Melanesian Pacific and how they have evolved over time
- The size and nature of VCMs in PNG and Solomon Islands, including assessing key policy and regulatory settings for carbon markets.

While the scoping phase broadly affirmed the relevance of this study among key stakeholders in PNG and Solomon Islands, it also informed some refinements to the study's objectives and assisted in clarifying its scope (see below). Key implications from the scoping phase include:

- Reframing the study to look at identifying ingredients for successful VCM projects. A component of the original study design involved analysing the strengths and weaknesses of different approaches to forest conservation. However, the scoping findings highlighted that for both VCM and non-carbon conservation projects, successful projects integrate several different approaches and tools. This makes it challenging to neatly compare VCM projects against other forest conservation approaches. Given this, the study was reframed to focus on identifying the ingredients for success as well as lessons learned from past failures.
- Taking a case study approach. Scoping participants identified several forest conservation case studies, including VCM projects, that stand out as notable examples of successful forest conservation projects. The study design was therefore adjusted to include an analysis of these case studies as a key component in the identification of lessons learned and factors for success.

Key informant interviews

Following the scoping phase, nine key informant interviews (KIIs) were conducted with a total of 13 participants. Interview participants came from across government, donors, NGOs and academia, and had expertise in logging, forest conservation, and/or VCMs in the target countries. These interviews were more analytical in nature than the scoping interviews.

Case studies

A core component of the empirical evidence for this study is based on the review of four forest conservation case studies (see Annex A, B, C and D for detailed case studies):

- PNG Communities BEST REDD – Tavolo Project, East New Britain Province, PNG
- The Managalas Conservation Area, Oro Province, PNG
- Babatana Rainforest Conservation Project, Choiseul, Solomon Islands
- Tetepare Community Conservation Area, Western Province, Solomon Islands.

The case studies were selected on the basis that they represent a diversity of approaches to forest conservation and were identified by scoping participants as important examples of successful, high-profile projects. The case studies were explored through KIIs with experts with knowledge of each case study, as well as a literature review. Findings from the case studies were used to identify ingredients for success and lessons learned (see Section 4).

Validation workshop

Following an initial draft of the report, key findings from this study were shared at a workshop with key stakeholders for validation and discussion. The panel included representatives from FORCERT, Nakau and the PNG Government. This workshop was used to validate and refine the findings of this study, and to guide the development of recommendations (see Section 6).

Scope and limitations

Several research priorities and information gaps were identified by participants which were beyond the scope of this project. These include an interest in conducting an economic cost-benefit analysis of VCM projects compared to logging, the implications of United Nations Framework Convention on Climate Change Conference (UNFCCC) Article 6 on VCMs, as well as technical assessments of carbon stocks in different forest types and forest inventories. While it is not possible to address these topics as part of this research, it is hoped that by providing a qualitative assessment of the full suite of impacts associated with logging and the broader co-benefits of VCM and other forest conservation approaches, the findings from this project can guide stakeholders and inform future assessments of these important topics in the region.

Report structure

Following this **introduction**, the Report contains the following sections:

- **Section 2 (Understanding the wider impacts of logging) -** provides key contextual information on logging in PNG and Solomon Islands to understand the drivers and problems associated with the industry
- **Section 3 (Forest conservation and REDD+ controversies) –** integrates findings from the desk review and interviews on lessons learned from forest conservation approaches and the rise of REDD+ in the region
- **Section 4 (Ingredients for success: designing high-integrity voluntary carbon market projects in the Melanesian Pacific)** – distils lessons on best practice VCM projects from the four case studies in the region
- **Section 5 (Understanding the enabling environment for effective voluntary carbon markets) –** reviews the carbon market regulatory environment in PNG and Solomon Islands and identifies the enabling conditions required for effective VCMs
- **Section 6 (Conclusions and recommendations) –** summarises the key conclusions from this report and provides recommendations for PNG and Solomon Islands government decisionmakers and the donor community on the development of an enabling environment required to develop high-integrity VCM projects.

2. Understanding the wider impacts of logging

Summary of findings – Section 2
Despite significant carbon and biodiversity resources, forests in PNG and Solomon Islands have seen extensive commercial logging for over 40 years, consistently exceeding estimated sustainable harvest rates.
Logging creates environmental damage through greenhouse gas emissions, loss of ecosystem services and damage to water catchments and reefs. Even in cases where selective logging is employed, forests are often severely damaged and may be permanently degraded.
Logging is driven by promises of economic benefits, providing significant revenue for both governments (though more significant in Solomon Islands) and short term cash for communities who lack infrastructure and services.
Widespread unethical behaviour and corruption in the logging sector have meant that the economic promises have not materialised, with government revenue foregone and communities receiving only short term and inequitably shared payments.
Social impacts of logging are severe (viewed by some participants as more serious than the environmental impacts), with payments from logging creating community tensions, undermining traditional governance structures, and leading to substance abuse, sexual exploitation and human trafficking. These impacts are often highly gendered.
Previous attempts at reform in the logging sector have largely failed. Both governments are increasingly recognising that current logging rates are unsustainable and have made commitments to reduce them, but the effect of these remains unproven.

This section provides an overview of the logging industries of PNG and Solomon Islands, including the political economy factors that have driven unsustainable levels of commercial logging over many decades. A key dimension of this political economy is that significant amounts of government revenue have been forgone and the economic benefits from logging have not been shared equitably. This section further highlights that logging causes not only significant environmental damage, but also has severe social impacts. Against this backdrop, current government priorities for the forestry sectors of both countries are also considered.

Logging the forests of PNG and Solomon Islands

The Pacific houses considerable terrestrial and marine ecosystems that are globally significant for their biodiversity and carbon mitigation value. Pacific communities are custodians of a ‘higher ratio of carbon sequestration potential per capita than any region of comparable size’ (Carbon Market Institute 2021:16). PNG is home to the third largest rainforest in the world and houses almost 7% of the planet’s biodiversity (Raman 2023). The carbon mitigation potential of PNG and Solomon Islands is especially significant due to their large forest and mangrove habitats.

Despite these important forest ecosystems, extensive commercial logging of natural forests has occurred in both PNG and Solomon Islands over the past 40 years or so. According to Global Forest Watch, between 2002 and 2023, Solomon Islands lost 147,000 ha of primary forest and PNG lost 943,000 ha (University of Maryland and World Resources Institute n.d.). Figure shows the annual volume of round log exports from Solomon Islands and PNG over the period 1999-2023.[4]

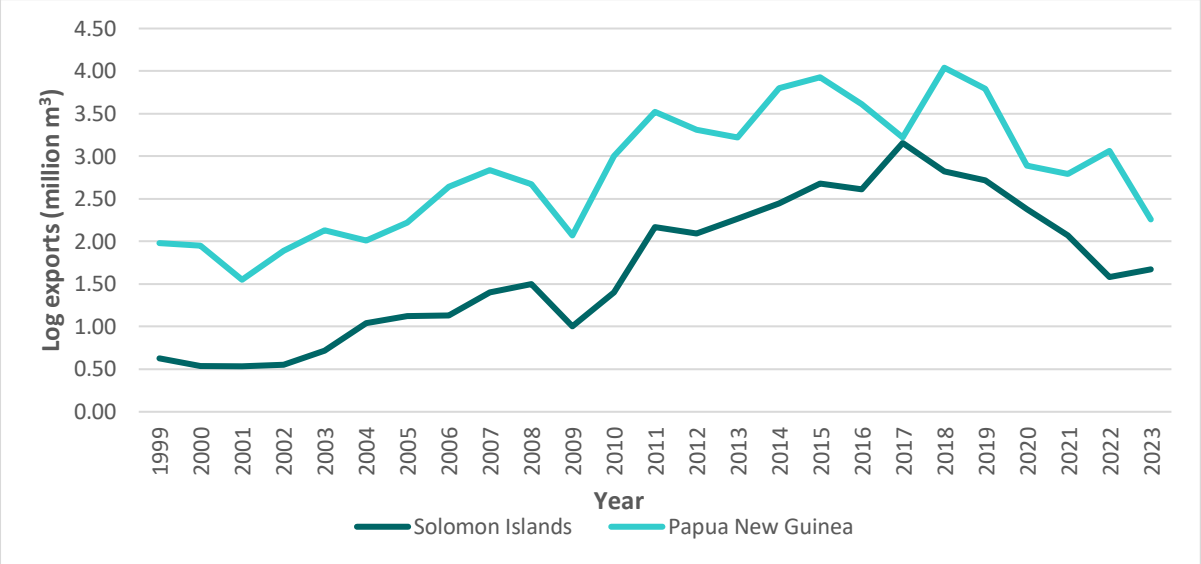

Figure 1: Round log exports from Solomon Islands and PNG over the period 1999-2023. Source: PNGi Forest Portal (n.d.) and Central Bank of Solomon Islands (2023).
Note: The Solomon Islands data from 2011-2023 is based on estimated volumes from Special Authority to Export approvals, rather than actual export data. These estimates are historically higher than registered export values.

The ongoing logging of PNG and Solomon Islands forests has generated important environmental, economic and social impacts.

Environmental impacts

This level of unsustainable commercial logging has caused substantial environmental damage. Deforestation in the Pacific is a leading source of carbon emissions and loss of biodiversity, with an estimated 77% of Solomon Islands' greenhouse gas emissions being a result of forestry and land use change (Solomon Islands Government 2020).

In Solomon Islands, estimated sustainable harvest rates have been consistently exceeded for the past several decades. The Solomon Islands National Forest Policy provides an estimated sustainable harvest rate of 250,000 m^3 per year (Solomon Islands Government

[4] Accurate round log export data is difficult to obtain, especially in the case of Solomon Islands where export data frequently differs across different databases. Central Bank of Solomon Islands data is used here as the most authoritative national source, noting that since 2011 these have been based on estimates. Anecdotal observations from experts engaged in this study suggest that while log exports declined in both PNG and Solomon Islands during and after the COVID pandemic, volumes have recently begun to increase again.

2020). As seen in Figure 1, harvests have consistently exceeded this as well as other estimated sustainable levels.[5] In 2017 – the peak of log exports in Solomon Islands – the approved export amounts were almost 13 times higher than the National Forest Policy figure of a 250,000 m^3 sustainable harvest rate (Figure 1).

Clear-felling practices in Solomon Islands have diminished the capacity for forests to regenerate and have had negative impacts on lagoons and offshore reefs from severe run-off (Bennett 2000). Interview participants emphasised the severity of logging impacts on local water catchments and reefs, and the loss of critical ecosystem services like water filtration. For instance:

> Logging causes a lot of environmental damage to soil and to water... The water from the rivers here flows directly into the sea... So, there's a lot of that sediment that just gets directly washed into the sea and there it also causes damage. The environmental damage to rivers and to the sea through sedimentation, that's very high, I would say that's probably one of the highest costs [from logging]. – Nakau, Manuel Haas

Selective logging can also have significant negative environmental impacts. A study from several sites in PNG found that 40-70 percent of the trees in a logged-over forest are killed or fatally damaged by selective logging operations (cited in Filer 2013). The continuing practice in Solomon Islands of repeated, short-cycle logging of secondary forests is likely to permanently degrade the productive capacity of forests, as well as their ecological functions (SKM 2011), making forest conservation a critical public policy priority.

Economic impacts

The allure of logging

The key driving force behind government support for logging in these countries, despite the severe environmental impacts, is the economic opportunities afforded by this industry. In both PNG and Solomon Islands, logging has traditionally been a key industry, with the export of timber providing an important source of national revenue.

For Solomon Islands, forestry has long been considered the ‘economic mainstay’ of the economy and round logs are the country’s main export (Piringi 2023:2). According to the WTO, wood and wood products made up 67% of Solomon Islands exports in 2020 (WTO 2022). Logging is a major contributor to government revenue (though reported figures vary

[5] Estimates of the sustainable harvest level for Solomon Islands vary, with the Central Bank of Solomon Islands reporting that annual sustainable harvest would be 350,000 m^3 in 2000, 255,000m^3 in 2003 and 300,000 m^3 in 2004. Montgomery (1995:1) noted that estimates of sustainable harvest yields are built on assumptions of cutting cycles (often 50 years), and when cutting occurs more frequently than assumed, the sustainable yield estimates are ‘very much theoretical’.

greatly) provides about 20% of the total employment in Solomon Islands (Minter et al. 2018; Solomon Islands Government 2020).

In PNG, logging has not been as significant to the national economy relative to Solomon Islands, with timber products making up only 3.2% of PNG's exports according to the WTO (2019). Nonetheless, logging is an important source of government revenue; the PNG Forest Authority reported government earnings of K2.67 billion between 2008 and 2018 from log export taxes and development levies (Lea 2022). In 2022, it was estimated that approximately 8.5 million ha were covered by active selective logging concessions on customary land, with around another 2 million ha covered by active or inactive clear-felling concessions (Filer 2022).

For landowners, the incentive to allow commercial logging is the promise of cash payments and associated modernity. Writing about extractive industries in PNG, Lea (2022:35) explains:

> Modernity brings consumer goods, the cash economy, services provided by hospitals, educational institutions, and modern transportation systems, and so on with it. For PNG, these are the phenomena that define modernity; and the cash economy associated with mining, energy extraction, and logging is often seen as the key to access this modern world.

In both Solomon Islands and PNG, landowners typically receive payments from timber royalties and may also gain roads and other infrastructure which are built by the timber companies as part of their operations (Filer 2022b). The lack of economic opportunities and access to basic infrastructure and services for most landowners makes it very hard to think long-term about livelihoods. This tendency for short-term thinking about logging also makes it hard to view the forest as a regenerating and enduring resource when used sustainably.

> There are few sources of money in many rural areas. Money from logging is often vital to communities and hard to turn down. – British High Commissioner to Solomon Islands, Tom Coward

Failure to deliver on promises

However, the overarching view is that the full economic benefits of logging have not been realised for governments or communities in PNG and Solomon Islands. In the case of PNG, the 1989 *Inquiry into Aspects of the Forest Industry* (the 'Barnett Inquiry') documented extensive corruption and mismanagement in PNG's forestry industry, describing 'the reckless destruction of forests and a plan to systematically cheat (the landowners) of their rightful profits' (Dinnen 1997:8).

Similar patterns have been observed in Solomon Islands, where there has been a very close connection between logging and politics since the 1980s (Allen 2011). This has seen the direct involvement of politicians in the industry, as directors of landowner companies, and the extensive use of bribes and inducements by foreign logging companies to influence

government policy and circumvent the rules (Dauvergne 1999). Such practices have resulted in significant lost or forgone revenue for governments. For example, transfer pricing (the deliberate undervaluing of log exports) leads to immense losses of export tax revenue, potentially up to US$100 million per year in PNG, and up to SI$1-2 million per week in Solomon Islands (Allen 2011; Filer 2022b).

At the community level, logging often comes with promises of employment opportunities and infrastructure development, but in reality, the jobs tend to be temporary and poorly paid, and promised infrastructure is low quality or does not eventuate. FORCERT's Peter Dam reflected on the underwhelming development benefits of logging in PNG:

> [The government are] always giving the argument of the logging company, helping them to bring the services to the rural communities and to create jobs. But, in practice, what we end up with is mainly roads that are only used for the time of the operation and jobs that are only temporary and very badly paid.

Logging proceeds tend to be primarily received and controlled by a select population of well-connected, wealthy people and those with political influence, offering only modest, short-term benefits to the majority of local landowners. In Solomon Islands, 'the economic benefits of logging have typically been captured by foreign – mostly Malaysian – companies, national- level politicians, and local "big-men"' (Allen and Porter 2016). Evidence shows that benefits are short-lived and not shared equally, and that marginalised groups such as women and youth are likely to be disadvantaged (Allen and Porter 2017, Macintyre and Foale 2004, Minter et al. 2018). The result of these unequitable benefit sharing arrangements is that very limited money from logging makes it to the community levels, constraining the opportunities for meaningful economic impact:

> The community members they get a little bit of [the money from logging], but it's very little… for most people it's insignificant I would say. It just comes as quickly as it goes… I mean it's something you can spend like in a day. – Nakau, Manuel Haas

Similar patterns of exclusion from the benefits of logging were also observed in PNG:

> The benefits don't come down right to the communities. Young girls in the school… young boys… mothers – the vulnerable groups – they don't benefit from the royalty payments. So, when the company leaves, the destruction is faced by the communities. Those who don't have a say in decision-making, are really affected. – Representative from FORCERT

In addition to issues with benefit sharing, logging can also come at an economic cost for local communities who often rely on ecosystem services from forests for local livelihoods. When a forest is logged unsustainably, it can be permanently depleted, meaning that the provision of ecosystem services declines or ceases. This is particularly the case when

premature re-entry into previously harvested areas occurs, before the forest has had time to recover from the initial logging (as described by Minter et al. 2018).

> After a few rounds of logging… the timber resources are gone, they're depleted. So, any chance of having sort of a sustainable forest management scheme with regular income from sustainable forest management will also be inhibited by that. – Nakau, Manuel Haas

Social impacts

The social impacts of logging in PNG and Solomon Islands are severe and were typically viewed by interview participants as the most severe impacts of logging. Large injections of cash from logging tend to cause tensions between and within customary landowner groups, leading to conflict and the erosion of social cohesion, as seen in other NRM sectors in Melanesia (see for example Allen 2013). The presence of logging (and logging camps) is also associated with substance abuse, social disorder and conflict, crime, human trafficking and sexual exploitation of both adults and children (Allen et al. 2013; Minter et al. 2018; Save the Children 2015). As explained by Manuel Haas of Nakau: 'You name it, logging creates all the worst impacts for local communities.'

Logging can tear apart the social fabric of customary groups and undermines traditional governance structures. Allen et al. (2013:XI) stated that in Solomon Islands, 'the most significant determinant of community cohesion and harmony' was the presence or absence of natural resource development, particularly logging. Logging royalties are often paid to entities such as Incorporated Land Groups (ILGs) (in PNG) and Landowner Companies (in PNG and Solomon Islands) – structures used to represent customary landowners in sharing development benefits. However, decision-making within these governance structures is often dominated by an 'overall mighty chairman', according to FORCERT's Peter Dam. This undermines traditional governance structures underpinned by complex social relations dependent upon marriage, land tenure and access to resources.

Nakau's Manuel Haas explained that trust in traditional governance structures is also being undermined in Solomon Islands due to logging:

> In these communities where logging has been operating for a while, some lost a little bit their traditional ways and their traditional governance systems also because often the chiefs are involved in logging and then they get more out of it than regular people... It creates a situation of mistrust and separation within the community and that leads to people being demotivated in keeping up with traditional governance…

The social impacts of logging are often highly gendered. Participants from both countries reported increased prostitution, trafficking of women and girls, gender-based violence and teen pregnancies. Filer (2022) highlights that most of the 8-9,000 logging industry employees in PNG are men, and logging income is considered 'masculine' because cutting

trees is traditionally men's work (Filer 2022). The likely outcome of this arrangement is that 'men are liable to control most of these [logging] benefits while women bear most of the environmental costs' (Filer 2022: 40).

Government priorities for the logging industry

Despite the wide array of well documented issues associated with logging, attempts at reforming the forestry industry in both countries have largely failed. In PNG, the World Bank initiated reforms in the 1990s to address the issues raised in the Barnett Inquiry, but evidence of corruption and mismanagement has continued (Stanley 2018) and commercial logging interests were deeply implicated in the Special Agricultural and Business Lease (SABL) scandal that was the subject of a Commission of Inquiry in 2011-2012 (Filer 2017). In Solomon Islands, two new regulatory instruments – the *Forest Act 1999* and the *Forest Bill 2004* – were drafted, but never enacted, likely due to opposition from the logging lobby (Minter et al. 2018). There is now increasing recognition from the governments of Solomon Islands and PNG that current rates of logging are unsustainable and must be reduced. However, the degree to which policies and regulation will curtail logging remains unclear.

Solomon Islands

In Solomon Islands, logging has been described as a 'sunset industry' amidst predictions that commercially exploitable forest resources would soon run out.[6] The 'imminent collapse' of round log exports from Solomon Islands has been repeatedly predicted since about 2009 (Minter et al. 2018). Despite these ongoing warnings, the Solomon Islands Government continued to increase logging export approvals until 2017, after which time the logging industry began to decline. Interview participants noted that there is now a growing recognition that the government will need to develop alternative industries to fill the gaps in employment and government revenues, and some observers have pointed to the possibility of a shift from logging to mining (Allen and Porter 2016, Haque 2013, Tagini 2013).

The Solomon Islands Government has been working to build a policy framework for sustainable logging, though notably did not endorse the COP26 Glasgow Leaders' Declaration on Forests and Land Use in 2021 (a commitment to halt and reverse forest loss and land degradation by 2030). In 2020, the Solomon Islands Ministry of Forestry and Research published the *National Forest Policy 2020*, which was focused on achieving a sustainable forestry industry. The vision of the policy is that 'forest resources and ecosystems are sustainably and responsibly managed for the benefit and resilience of all Solomon Islanders' (Solomon Islands Government 2020:5). The Policy also refers to a Logging Sustainability Policy which was apparently developed in 2018 to set reduction targets for timber exports but does not appear to be publicly available.

[6] Estimates for the timing of exhaustion vary from the late 2020s (Piringi 2023) to 2036 (Global Witness 2018). Such estimates have been continually proven incorrect due to false assumptions about adherence to sustainable logging practices (SKM 2011).

One participant from the Solomon Islands Government indicated that the Logging Sustainability Policy set a target to limit logging exports to below 700,000 m^3 per year. This would represent a significant decline, noting that exports have exceeded this value every year since 2003 (Figure 1). According to consultations, a priority of the new Government, which was elected in April this year, is to reduce log export levels to a sustainable level. The Government has promised to review the Logging Sustainability Policy as part of its '100 Days Program' - a series of targeted actions and measurable goals that the government aims to achieve within the first 100 days of its administration.

Papua New Guinea

While logging accounts for a greater portion of the national economy in Solomon Islands, the total volume of logging in PNG is greater. Data from the PNGi Forest Portal (n.d.) indicates that logging exports have declined overall since their peak in 2018 (see Figure 1).[7] This supports the commitments from the Government of PNG to ban logging by 2030 made at COP26 in Glasgow (Nangoi 2021).

During the interviews, Government representatives spoke to the use of conservation 'set asides' within logging concessions as an effective mechanism for limiting impacts of logging. There are sparse references to this practice in the literature. It reportedly occurs as part of the Forest Management Agreements (under the *Forestry Act 1991*) which are used to transfer timber rights (PNGFA n.d.). In a 2019 voluntary country report to the United Nations Forum on Forests, it is stated that PNG sets aside 10% of forest concessions for conservation under these Forest Management Agreements (PNGFA 2019). However, the implementation and effectiveness of this practice is unclear.

The Prime Minister of PNG, James Marape, has previously promised that his government is 'committed to stopping all round log exports by 2025', an announcement that has been met with criticism due to similar (unsuccessful) commitments from the Government since the 1990s (Filer 2022a). One participant from PNG explained that the Government continues to shift goals around ending log exports and has promoted downstream processing without a sound understanding of what is required to make downstream processing work. Professor Colin Filer shared similar scepticism, noting: 'the Government has been trying to force the logging industry to process logs onshore... but large-scale downstream processing is not economically viable'.

[7] The PNGi Forest portal gives unique access to data about large-scale forest management in Papua New Guinea since 1993. The portal combines basic details about individual logging concessions with information on log export volumes, logging company ownerships and the findings from official governance investigations and reports. The data has been derived from a variety of sources including publications from the PNG Forest Authority, the Log Export Monitoring Reports compiled by SGS PNG Limited (a company owned by SGS Australia, a division of the global Société Générale de Surveillance based in Switzerland), published and unpublished research findings including from the Australian National University, the company records held by the PNG Registrar of Companies and other reports as acknowledged in the document database.

3. Forest conservation and REDD+ controversies

Summary of findings – Section 3
Forest conservation approaches have evolved over time, shifting to more community-based models which utilise legal instruments, but ongoing funding remains a key challenge.
VCMs offer opportunities to meet the funding challenge of forest conservation, while also addressing social issues associated with logging.
The first wave of VCM projects – particularly relatively large REDD+ projects in PNG – were highly problematic and created many of the same social issues as logging. Key problems revolved around FPIC and community engagement, equitable benefit-sharing arrangements, and corruption.
A new wave of relatively small VCM projects is emerging which appear to be far more effective in terms of community engagement and social safeguarding, suggesting that sustainable financing can be achieved without the problems associated with the first wave of REDD+ projects. However, given the novelty of these new projects, it remains to be seen if they can deliver sustainable long-term financing for forest conservation.
These relatively small VCM projects also highlight the unique challenge of high upfront costs for VCM projects. This challenge is particularly acute for projects that seek to implement best practice community engagement and FPIC principles. Project developers are reliant on donor and grant funding, and increasingly, private sector finance, to meet these costs.

As explained in Section 2, logging has significant negative impacts beyond the environmental damage done to forests. This means that forest conservation can provide not only environmental benefits but can also mitigate the significant social harm that commercial logging inflicts on communities. For forest conservation to achieve these benefits, however, it must be implemented effectively.

This section examines how forest conservation approaches have evolved over time in PNG and Solomon Islands, including the recent advent of VCM projects. It outlines the opportunities VCMs offer, the problematic first wave of VCM projects (especially REDD+ in PNG), the new wave of high-integrity VCM projects, and the challenges to their implementation. The purpose of this section is to provide important context for assessing the potential of VCM approaches to forest conservation in PNG and Solomon Islands.

Overview of forest conservation in PNG and Solomon Islands

A shift towards community-based conservation

Approaches to forest conservation in PNG and Solomon Islands have evolved over time. Early conservation efforts focused on setting up protected areas that excluded landowners – dubbed ‘fortress conservation’ (Henning 2015; Jupiter 2017). However, in the 1980s and 1990s, issues of weak enforcement, minimal local involvement and local desires for economic development led to a shift towards more community-based models of conservation, including integrated conservation and development (ICAD) approaches

(Anderson 2005; Henning 2015). ICAD projects were deployed in the Melanesian Pacific with the aim to create income streams for landowners from activities such as eco-tourism, non-timber forest products and biological research (Henning 2015). However, these approaches were found to be based on unrealistic expectations and often failed (Anderson 2005; Henning 2015).

Despite the shortcomings of these early ICAD projects, the greater focus on community-based conservation models has continued, setting the stage for new models which tie conservation outcomes with community benefits, including VCMs. These new models typically integrate multiple different approaches and tools. For example, a conservation project can include an integrated conservation and development focus, obtain protected area status or a conservation deed, and incorporate payment for ecosystem services (PES) into the project's design.

Across both PNG and Solomon Islands, existing forest conservation projects are typically focused at the community-level, with a clear emphasis on livelihood benefits. This partly reflects the customary land tenure systems which dominate in PNG and Solomon Islands, requiring development projects to engage with customary landowners. In navigating the complexities of community-based conservation, NGOs and donors were identified as key actors in supporting and mobilising communities to undertake conservation.

Legal instruments supporting forest conservation in PNG and Solomon Islands

Alongside the shift towards community-based conservation, there has been an increased use of legal instruments to support forest conservation. Protected areas have been a particularly important tool for forest conservation in Solomon Islands and PNG. In some cases, protected areas have also been used to help develop VCM projects. Protected areas provide legal recognition which helps to demonstrate the permanence of the project and provides a legal basis to challenge illegal logging in the project site. In Solomon Islands, the relevant pieces of legislation are the *Protected Areas Act 2010* and the *Protected Areas Regulations 2012*. The *Protected Areas Act 2010* authorises the Minister for Environment to create protected land and sea areas which provides greater protection than standard environmental law. The *Protected Areas Regulations 2012* provides mandated rules and regulations such as the prohibition of logging and mining. However, local tribes are able to develop their own Conservation Management Plans to outline their rules and guidelines for land management in the project area.

In PNG, the *Protected Areas Act 2023* was passed by parliament in February 2024 but is not yet publicly available. The Act provides a legal framework for working with customary landowners to designate protected areas and is designed to enable longer-term conservation, conservation over larger areas, and better recognition of Protected Areas (Raman 2024). The Act also outlines three innovative funding mechanisms designed to support the management of protected areas: a biodiversity offset scheme, a Biodiversity and Climate Fund, and a small grants program, which communities can directly access to fund their conservation efforts (Raman 2024). The new legislation is intended support the goal of designating 30% of PNG's land and sea as protected areas by 2030 – known as '30 by 30' (Raman 2024). Significant work is needed to achieve this goal, with less than 4% of land and 1% of sea in PNG currently designated as protected areas (Raman 2024). Concerns have been raised over the Conservation and Environment Protection Authority's (CEPA) ability to

effectively administer the process outlined in the Act, and whether funding and benefits will reach communities (Raman 2024).

Financing remains the key challenge for forest conservation

Financing of forest conservation remains a key issue. Participants reported that most approaches to forest conservation, especially at the community-level, require external funding from donors. When funding stops, these projects are often not financially sustainable. For example, the Bauro Highlands Conservation Area – a community conservation project created to resist threats of logging in Solomon Islands – was initially very successful but was heavily subsidised by Conservation International (Keppel et al. 2012). When this external funding support was withdrawn, the conservation program dissolved (Keppel et al. 2012).

Furthermore, the economic promises of logging companies – even if rarely fulfilled – mean that logging and other natural resource management (NRM) development projects are seen to be in direct competition with forest conservation (including VCM projects). As Ecological Horizon's John Read noted, 'at the end of the day, if the landowners aren't seeing benefits [from conservation], many will resume speaking to logging companies'. This underscores the need for forest conservation to offer sustainable livelihood benefits to landowners.

In the context of PNG, this reliance on donor fundings for forest conservation is heightened by a lack of government capacity and funding, as well as a failure of previous market-based mechanisms. Professor Colin Filer argues that the failure of market-based mechanisms for forest conservation in PNG is evidenced through attempts at eco-forestry and eco-tourism:

> Attempts to promote eco-forestry and eco-tourism as ways to achieve forest conservation, I think everyone would now agree that they didn't actually have that effect. So, market instruments don't seem to be particularly effective. It means basically that you have got to do it with free money from donors.

However, another market-based mechanism for forest conservation – VCMs – have emerged, potentially offering a sustainable financing mechanism for conservation efforts.

The rise of VCMs in the Melanesian Pacific

According to data recorded in voluntary carbon standards' registries, there are currently 13 registered VCM projects in the Pacific, totalling 2,927,823 credits issued, with 14 more under development (see Figure 2).[8] PNG hosts the majority, with five active VCM projects and seven under development. According to data recorded in carbon standards' registries, PNG

[8] This figure only uses publicly available data from voluntary standard's registers and project databases on projects that are either established or listed as under development as of August 2024. Data on credits issued may not always represent the most up to date figures. There are also several projects under development in the Pacific that are not listed on voluntary standard's registers and are subsequently not included in this analysis.

accounts for a little over two thirds of the credits issued in the Pacific. REDD+ projects are dominant in PNG and account for the vast majority of VCM credits that have been issued, with this pattern expected to continue.

Figure 2: Map of registered and planned voluntary carbon projects in the Pacific and Timor-Leste.

There is only one active VCM project in Solomon Islands, with no VCM projects listed as being under development on voluntary carbon standards' registries. The one existing registered project is the Babatana Rainforest REDD+ Project, which was set up by Nakau and is certified through the Plan Vivo carbon standard (Keane et al. 2021). While there are no other projects in Solomon Islands currently listed as being under development, there are several projects in early design and scoping stages. A new project – the Viru Harbour project in Western Province - is currently being developed by Nakau under the US Millenium Challenge Corporation (MCC) (Solomon Islands Government 2023).

Opportunities offered by VCMs

VCMs have the potential to overcome the challenge of ongoing funding for forest conservation through providing sustainable financing via sale of carbon credits. Most interview participants saw this as the primary strength of VCMs. VCMs also theoretically offer safeguards against many of the social issues associated with logging and other extractive industries through requirements of voluntary carbon standards and some national government regulations (see Section 5). These requirements relate to Free, Prior, Informed Consent (FPIC), participation of women, and benefit sharing, as part of a range of safeguards to protect customary landowners and are relatively unique when it comes to NRM development projects.

However, despite the opportunities offered by VCMs to overcome many of the problems associated with logging and previous forest conservation approaches, VCM projects have come with their own set of challenges. The history to date with VCMs (particularly REDD+ in PNG) has shown that VCM projects can cause significant issues. Nakau's Manuel Haas reflected that poorly implemented VCM projects can have similar negative impacts as logging:

> Other projects… do minimal consultations, they do minimal sort of participatory activities with the communities. If you keep [community consultation and participation] at a minimal level, you could probably get tribes, if you just talk to the chiefs, you know what I mean? But then it would be a bit like logging… what's the difference then between the approach… you would probably cause similar disruption in the community.

The story of REDD+ so far

Discussions around REDD+ in the Pacific have largely centred on PNG, where projects have been plagued by controversy and largely unsuccessful to date. This first wave of REDD+ projects in PNG have been the subject of several scandals, including allegations of corruption, nepotism, and dishonest conduct right up to the highest levels of government. These projects were characterised by land disputes and the emergence of 'Carbon Cowboys' – imposters making unauthorised and fraudulent deals with customary landowners under the guise of REDD+ projects (Filer and Wood 2012). In the development of these projects, poor governance, lack of attention to community safeguards, and failure to properly consult with communities have caused widespread problems (Babon 2011; Babon and Gowae 2013; Filer et al. 2023).

Benefit sharing was another fraught issue in the first wave of REDD+ projects in PNG. The New Ireland Hardwood Timber (NIHT) project has faced heavy criticism for the lack of transparency and effectiveness in the distribution of project benefits to local beneficiaries (Long et al. 2023). The project has provided direct cash payments to a large number of beneficiaries, however, there is confusion around how many beneficiaries actually received a payment, and of these beneficiaries, which were actually entitled to these payments (Filer et al. 2023). The payments have been broadly perceived as unsatisfactory by participants who reported receiving only 200 Kina (80 AUD), which likely pales in comparison to the benefits from logging concessions also operating in the project area (Long et al. 2023).

A key characteristic of REDD+ in the Melanesian Pacific has been the development of large-scale projects in PNG (see Figure 3). The two operational REDD+ projects in PNG, and the majority of the projects under development, cover large areas and often incorporate multiple clans. For instance, the proposed project area for the Integrated REDD+ Project 1 being developed by Kanaka Management Services covers 1.3 million ha of land 'an area larger than the entire country of Vanuatu — covering parts of four different provinces' (Filer et al. 2023: 56). If validated and verified, the project would be 'by far the largest forest carbon project to date under the VCS [Verified Carbon Standard]' (Filer et al. 2023: 56). Given past challenges with landowner identification and representation in VCM projects, this raises questions for the integrity of future projects being developed in the region.

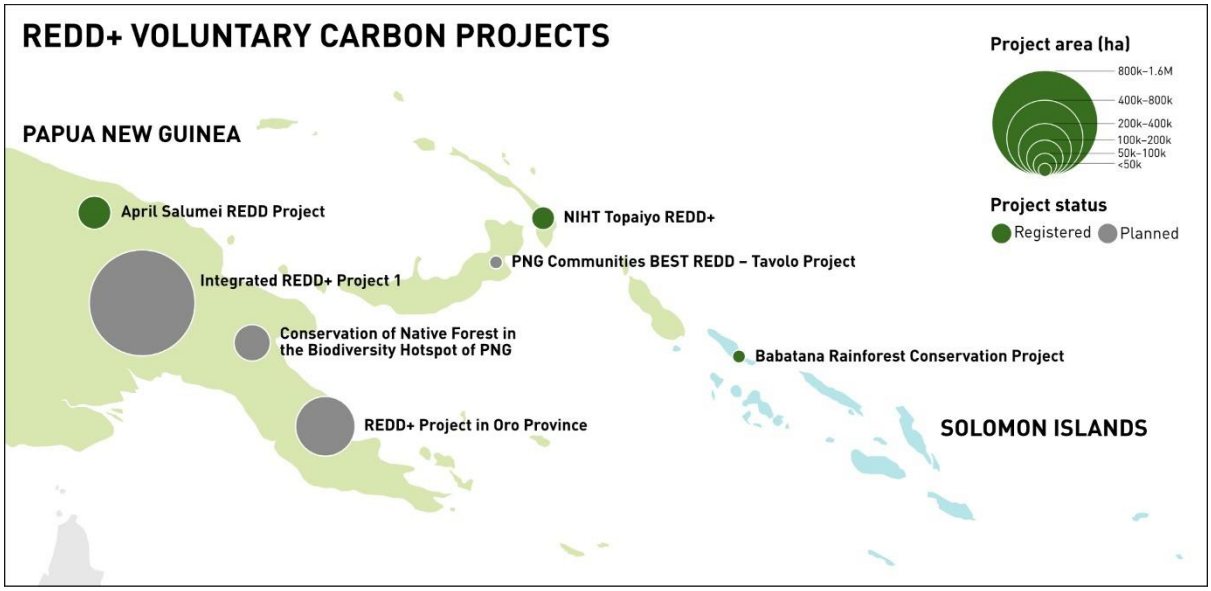

Figure 3: Map showing relative scale of planned and registered VCM projects in Solomon Islands and PNG.

Note: Project sizes are not to scale with the background map.

While the attention has predominantly been on PNG, and PNG's carbon market is much larger, many of the same challenges with establishing REDD+ projects also exist in Solomon Islands. These include being able to effectively identify customary landowners and represent them in a governance structure that provides equitable benefit sharing arrangements (Carbon Market Institute 2021; Lyons et al. 2019).

A new approach for VCMs

Despite the largely negative experience of REDD+ to date in PNG and Solomon Islands, there is evidence emerging from some new projects with a more positive story regarding forest conservation and community experiences. In comparison to the large scale of the first wave of REDD+ projects, these newer projects are much smaller in size and are characterised by their emphasis on positive community engagement and impacts. Nakau has implemented several high-integrity VCM projects across the Melanesian Pacific, including the Babatana project in Solomon Islands (see Annex C) which has received considerable praise for its design and success (Chandler 2024; Lyons and Walters 2023). Similarly, FORCERT's PNG Communities BEST REDD – Tavolo Project (see Annex A) has been regarded by some experts as demonstrating a promising approach for REDD+ projects in PNG, especially for community engagement and safeguarding local communities (Filer et al. 2023).

These projects are seen as positive examples of the potential of VCMs for forest conservation in PNG and Solomon Islands, though there are some important caveats. Foremost of these is that the ability of these small projects to offer sustainable financing over the long-term is yet to be proven. While the Babatana project has been registered since 2021 and has generated 87,115 credits, the Tavolo Project is yet to trade credits due to delays in verification.

Furthermore, these newer VCM projects have highlighted a funding challenge that is unique to all VCM forest projects, but especially challenging for those that seek to implement best practice approaches to FPIC and community engagement: the relatively high upfront costs involved in designing and implementing projects. Noting that it often takes several years before any income is generated from the sale of carbon credits, most VCM projects are still reliant on donor and grant funding to cover these up-front costs (Mackenzie and Allen 2023b). That said, private sector finance is increasingly playing a role in meeting establishment costs. This has been the case with FORCERT's Tavolo REDD project, which received pre-financing from Dutch Energy company, Green Choice, who have purchased EUR €200,000[9] of credits in advance to help share benefits with the Tavolo Community members while the project waits for approval (see Annex A). Here, the role of the private sector through pre-financing has been critical for maintaining community interest in the project during the design and implementation phase.

While it remains to be seen if this new wave of smaller high integrity projects can deliver sustainable long-term financing for forest conservation, they do offer a model that has the potential to conserve the forests of PNG and Solomon Islands while addressing many of the social impacts and governance issues associated with logging and the first wave of REDD+ projects. The next section looks more closely at the factors that have contributed to the emerging success of two of these newer projects, as well as the relative success of two well-established non-VCM forest conservation projects.

[9] Approximately AUD $323,803.

4. Ingredients for success: designing high-integrity voluntary carbon market projects in the Melanesian Pacific

Summary of findings – Section 4
Working at an appropriate and pragmatic scale will increase the likelihood of success in VCM projects. The existing evidence shows that smaller projects allow for more effective community engagement, while large-scale projects face greater social complexities and require stronger regulatory frameworks. Once initiated at an appropriate scale, projects can be gradually scaled up over time.
Using the right tools and processes for each community and working with existing governance structures allows projects to be tailored to the specific needs, governance structures, and conservation interests of resource owning communities.
Supporting transparent information and participatory processes for benefit sharing that encourage the prioritisation of non-cash benefits will help manage community expectations, mitigate social risks associated with cash benefits, and ensure that the distribution of benefits from VCM projects aligns with community priorities, promoting long term support and equitable outcomes.
Empowering local communities while engaging external support as needed will enhance the long-term success of VCM projects by building local governance and project management capacity, while external partners provide essential financial management and organisational support, fostering sustainable and accountable project ownership.

Realising the full potential of VCMs for forest conservation will require careful management and implementation and learning from existing experience. Against the backdrop of the problematic first wave of REDD+ projects and the evolution of forest conservation towards more participatory and livelihood-based approaches, this section examines four case studies to distil lessons on best practice ("ingredients for success") for high-integrity VCM projects.

Two of the case studies are of recent high-integrity VCM projects in PNG and Solomon Islands, with consideration given to why and how they have been able to overcome some of the key issues that have problematised the first wave of REDD+ projects. Recognising that positive characteristics of successful VCM projects also overlap with non-VCM projects, two case studies are also included of successful non-VCM projects. It is also relevant to note that the two non-carbon projects are considering the VCM as an option for sustainable financing in the future. The case studies present a diversity of conservation approaches based on project type, maturity, scale, and geography. All four case studies have been identified by interview participants and in the literature as successful and important examples of conservation for the region. A summary of the case studies is provided in Table 1, with detailed descriptions of each provided in Annexes A to D.

Table 1: Overview of forest conservation case studies

Name	PNG Communities BEST REDD – Tavolo Project	Managalas Conservation Area	Babatana Rainforest Conservation Project	Tetepare Community Conservation Area
Type	Avoided deforestation VCM project	Large community conservation area	Avoided deforestation VCM project	Community conservation area
Location	East New Britain (ENB) province, Papua New Guinea	Managalas Plateau, Oro Province, Papua New Guinea	South Choiseul, Solomon Islands	Tetepare Island, Western Province, Solomon Islands
Area	21,782 ha	360,000 ha	6,863 ha	11,880 ha
Tools and approaches	REDD+, Wildlife Management Area, Conservation Deed, Sustainable Land Use Plan, Participatory High Conservation Values Assessment Tool, Community Conservation Laws	Conservation Areas Act 1978 (now repealed), Sustainable Land Use Plans	Forest carbon project (REDD+), Protected Area, Conservation Management Plan	Marine protected area and terrestrial protected area (agreed by local landowners), eco-tourism
Overview	The Tavolo Project, a REDD VCM initiative in East New Britain (ENB) province, involves the Tavolo Community, which holds 21,164 ha of customary land. Threatened by logging and agricultural conversion, the community formed the Tavolo Community Conservation Association and partnered with FORCERT to trial payments for ecosystem services (PES). The project, with a 30-year crediting period starting in January 2019, aims to reduce or remove an estimated 6,028,743 tCO2e of greenhouse gas emissions annually. It is listed with Verra for registration and verification approval.	The Managalas Conservation Area (MCA), PNG's largest conservation area, was declared in 2017 after more than 30 years' work by local communities and conservation organisations. The MCA protects against threats of logging and agriculture, and safeguards sustainable use of forest resources for the 21,000 local people. Funding challenges have emerged, but an EU-funded initiative now supports conservation and sustainable livelihoods. While the long-term sustainability of the MCA remains unproven, the community engagement process is considered a major success.	The Babatana Rainforest Conservation Project, launched in 2014 and registered with Plan Vivo in 2021, is the only operational VCM project in Solomon Islands. It has generated 87,115 credits so far, with an expected annual average of 17,423 credits over its 30-year duration. In 2019, the Sirebe Tribe established the first official Protected Area in Solomon Islands as part of the project. Five other Indigenous communities have since joined the Babatana project, working towards developing their own forest conservation and carbon projects.	The Tetepare Community Conservation Area (TCCA) was established by the Tetepare Descendants Association (TDA) to protect the island from logging, with support from INGOs. Covering the entire island (marine and terrestrial), the TCCA restricts resource extraction to subsistence and artisanal use, with some no-take zones. It also hosts the Tetepare Island Ecolodge, offering financial benefits like school scholarships and employment. Despite these efforts, funding remains a challenge, and the project is exploring voluntary carbon markets (VCMs) as a sustainable financing option.

Ingredients for success

1. Working at an appropriate and pragmatic scale

The experience to date with forest conservation projects in PNG and Solomon Islands shows that community engagement, including the conduct of FPIC and participatory project planning with local communities, can "make or break" the success of a project. In the Melanesian Pacific – where customary landownership is fluid and often disputed – effective community engagement is very difficult to achieve at a large scale. This was one of the problems seen in the first wave of REDD+ in PNG (see Section 3).

There is evidence to suggest that community engagement is often most effectively done at the tribal or clan level. A cornerstone of the high-integrity approaches taken by FORCERT's Tavolo REDD Project in PNG and Nakau's Babatana project in Solomon Islands is extensive community engagement and participatory design of governance and benefit-sharing arrangements. An important feature of these projects is that they operate at a relatively small scale, with project areas of less than 22,000 ha and 6,863 ha respectively. This stands in stark contrast to other active and under development REDD+ projects in PNG, several of which are more than 25 times the size of the Babatana project (and in one extreme case 191 times the size).

Although these smaller projects are still new, and to some extent remain to be proven, they have overcome many of the issues associated with the first wave of REDD+. Consultations indicated that there is seen to be a link between project scale and the ability to conduct effective community engagement. Representatives from Nakau and FORCERT emphasised that limiting the number of clans involved reduces the challenges associated with bringing together clans who would not otherwise normally work together. Smaller projects enable the relationship building and participatory processes needed to succeed, while at larger scales, the social complexities become difficult to manage.

Importantly, having been initiated at an appropriate scale to enable effective community engagement, it is possible for projects to then gradually scale up over time. For example, Nakau began working with one tribe in the Babatana project, but five other Indigenous communities have since joined the project. Similarly, while FORCERT's Tavolo project is intended to be a pilot in a program that will enable several different communities to receive PES in the future, initial community engagement has started on a small-scale with one community at a time (FORCERT 2021).

Experience to date with VCM projects PNG suggests that for large-scale projects to be successful in both conserving forests and preventing negative social impacts, there is a need for rigorous and carefully enforced regulations. This is what PNG is trying to achieve through its new regulatory framework for VCM projects, but the capacity to enforce the framework is a point of concern (see Section 5 for a more detailed discussion of PNG's new regulatory framework).

This is not to say that it is impossible to have successful, large scale forest conservation projects. The Managalas Conservation Area covers about 360,000 ha – an area larger than several of the REDD+ projects in the Melanesian Pacific – and is home to some 22,000

households, including an estimated 152 clans (Stepano 2017; Underhill-Sem et al. 2024).[10] Despite its relatively large size and population, the community consultation and engagement process is seen as a key success in this project. However, there were divisions within the population about the conservation area, and it took over 30 years of work before the conservation area was officially declared. Such an extended timeframe would likely impose economic challenges in the case of a VCM project.

Ultimately, the evidence to date on VCMs in PNG and Solomon Islands indicates that smaller projects are more likely to be successful in achieving forest conservation and positive impacts for communities. However, this will be an evolving space as governments develop and implement regulation designed to enable effective large scale projects.

2. Using the right tools for each community and working with existing governance structures

Resource owning communities (including those within PNG and Solomon Islands) are not homogenous, and it is important to use the right tools and processes to promote forest conservation for each community. Across the case studies, a variety of tools and processes have been used to facilitate forest conservation within each community's unique context.

In many cases, working with a community that has a genuine commitment to conserving their forests is an important determining factor in the success of conservation projects. In carbon projects, this can assist in set up processes and may offer better assurances in relation to permanence. In all four case studies, the communities had a long-standing interest in conservation prior to the establishment of formal forest conservation projects. Indeed, in the cases of Managalas and Tetepare, it was the landowners themselves who set the conservation efforts in motion.

To assess the level of community commitment to conservation, FORCERT uses a 'community selection matrix' to assess the likelihood of a positive outcome from partnership with communities, which includes a requirement for communities to demonstrate their interest and commitment to sustainable resource management. However, in cases where such communities have already taken action to conserve their forests, there may be challenges in meeting the additionality requirements of carbon standards. This is why, according to Michael Dyer of Nakau, it is essential to also use strong tools to assess eligibility and feasibility of carbon projects and to communicate this clearly with the community from the outset. For this purpose, Nakau uses a 'site selection toolkit' which assesses site eligibility and suitability.

Across the Melanesian Pacific, disputes over land and demonstration of land tenure are key challenges for the design and implementation of VCM projects. In recognition of this challenge, sustainable land use plans (SLUPs) have been deployed as a successful tool to allow communities to make shared decisions about land use while avoiding disputes about

[10] These estimates are from 2011.

land ownership and boundaries, particularly in PNG. SLUPs were used successfully in the case of both the Managalas Conservation Area and the Tavolo REDD project to support community land use planning, and a similar tool (a Conservation Management Plan) was deployed in the Babatana Rainforest Conservation Project. These land use planning tools provide formal support for meeting performance obligations under carbon standards.

Determining the appropriate processes to work with in each community is often related to the traditional governance structures. In PNG and Solomon Islands, community governance structures are embedded in tribal and clan systems. In designing and implementing governance structures for forest conservation projects, it is important to work within these traditional systems where possible to minimise disputes and enhance broader cultural benefits. Across the case studies, consultations typically occurred at the clan or tribal level. In the Tavolo REDD project and the Babatana Rainforest Conservation project, the management committee is comprised of clan and tribal representatives respectively.

In the Managalas case, the SLUPs were developed through existing community governance systems which helped to solidify the clans' commitment to conservation. The alignment of this process with traditional governance of land use was highlighted by a representative from the Managalas Conservation Area as a key reason behind the success of SLUPs in the project.

In some cases, building relationships with local visionary leaders is an essential part of the processes in establishing a high-integrity VCM project. The presence of a strong and influential leader who sees the value in conservation and can advocate for conservation is significant in fostering broader community support. In the case of the Babatana Rainforest Conservation project, a local chief's son acted as a 'visionary leader' in support of conservation and his role was described as 'the determining factor for success' by Nakau's Manuel Haas.

3. Supporting transparent information and participatory processes for benefit-sharing that encourage the prioritisation of non-cash benefits

While carbon credits are a largely foreign and poorly understood concept in the Pacific, research participants noted that communities have often already heard about forest carbon, or even accessed online information about carbon pricing and forecasts. This creates a problem where communities may have unrealistic expectations of receiving large sums of money 'from the sky'.

There is also a risk of communities expecting money to arrive quickly, when in reality, extensive studies and assessments need to be completed before a VCM project site can be identified as viable. From there, it can take years to progress from initial project scoping through to the successful generation of carbon credits. It took eight years after project activities began for the Sirebe Tribe to receive their first payment from carbon credits in the Babatana project. Similarly, verification of the Tavolo REDD project in PNG has been significantly delayed due to changes in the carbon standard's requirements. Because logging poses a constant threat to forest conservation, offering the promise of quick and easy money, it is essential that landowners are given appropriate information to have realistic expectations about the benefits from VCM projects.

The two VCM case studies show that to manage expectations and maintain community support, it is useful to focus on sustainable livelihoods and non-market benefits rather than carbon credits, particularly in the early stages of a project. FORCERT, for example, intentionally tries to keep the focus away from carbon trading during early community consultations and instead focuses on assessing the communities' support for conservation and their potential to work well with FORCERT. For Nakau, the carbon component of projects is seen as just the 'icing on the cake', with the core value for communities being the non-market co-benefits. According to Alex McClean of Nakau, for the local communities, 'the carbon is close to irrelevant. What matters to them are improvements to their life and livelihoods' such as jobs for rangers and empowerment of women (quoted in Chandler 2024). Keeping the focus on co-benefits and sustainable livelihood activities helps to maintain community support for projects amidst delays and carbon credit price fluctuations while also adding to the overall positive impact for communities.

While keeping the focus on non-market benefits is useful there may be community expectations of some direct cash payments from VCM projects. However, the experience from logging and other extractive industries in the Melanesian context is that cash benefits can cause significant social problems (see Section 2). For VCM projects to avoid causing these social problems, it is important to partner with communities to establish an agreed plan for benefit-sharing – ideally with communities agreeing to a non-cash benefit model.

Among project developers involved in this study, there is a clear preference for non-cash benefits, such as investment in community infrastructure projects and school fees, as delivering benefits in this way mitigates some of the risks associated with cash. However, both Peter Dam (FORCERT) and Michael Dyer (Nakau) emphasised that the community should be the ones who determine the benefit-sharing plan. The project developer should support the process and provide information to inform a good decision. Peter Dam noted that communities will usually have seen the impacts of cash benefits from logging in nearby communities and reflecting on that can encourage communities to support non-cash benefits. Alex McClean of Nakau noted an important distinction between 'non-cash benefits' and 'benefits in kind provided by project developers'. The latter are often comprised of promises from the developer to pay for infrastructure (e.g. roads or schools), which often do not eventuate. 'Non-cash benefits' may include infrastructure, but the funds should be managed by the community through their own institutions (such as those set up for the Tavolo and Babatana projects).

In the Babatana Rainforest Conservation project, Nakau consulted widely with the community to develop an equitable benefit-sharing plan, which has allowed funds from carbon credits to be used for a range of livelihood purposes such as paying local rangers, paying for school fees and building community infrastructure. Five per cent of the funds are directed to a women's saving club, promoting a more equitable distribution of benefits. For the Tavolo REDD project, the benefit-sharing model is based on the Communities Benefits from Environmental Services Trust designed by FORCERT. The trust is intended to be a long-term and independently managed fund to support community conservation efforts through generating income from environmental services. The Tavolo community decide on how the revenue is allocated and this model allows for financial support to families without the challenges of direct cash payments. The positives of non-cash benefits are also recognised in other non-VCM conservation projects, for example, the income from the

ecolodge on Tetepare Island is used to fund ranger salaries and a scholarship program for school aged children.

4. Empowering local communities while engaging external support as needed

Capacity building of local people and organisations is identified as a key benefit from VCM projects and indeed a requirement for their long-term success. Throughout all the case studies there has been a great deal of work done, guided by participatory processes, to empower communities to govern their own projects. In the case of the Babatana Rainforest Conservation project, the local Sirebe community are the project owners through Sirebe Community Company Ltd – a locally owned company designated to represent customary landowners. This is also the intended outcome for the Tavolo project, with FORCERT planning for a slow transfer of responsibility to the Tavolo Community Conservation Association.

Interview participants also reported that VCM projects bring a range of unique capacity building benefits for local communities. Representatives from Nakau and FORCERT highlighted that the auditing and certification requirements of VCM projects help build the organisational capacity of conservation projects. The benefits of this capacity building are heightened in high-integrity projects that have a strong focus on establishing good governance structures, and benefit-sharing arrangements, and in doing so, build capacity in administration and project management skills that did not previously exist.

Amidst this process of capacity building, there is an important role for external stakeholders in supporting communities. Nakau and local partner NGOs play an important role in supporting the management of finances and building the capacity of the Sirebe Community Company Ltd. Nakau's Manuel Haas says this is readily accepted and appreciated by the local project participants. Similarly, for Tetepare Island, it has been helpful to have external people managing project finances who are removed from local *wantoks* and cultural systems which can create pressure to mismanage finances. Government stakeholders also play a role as external supporters for VCM projects. FORCERT has found it important to engage with sub-national level government stakeholders in PNG, with involvement from lower-level government stakeholders in the Tavolo project helping to garner community interest and respect.

5. Understanding the enabling environment for high-integrity voluntary carbon markets

Summary of findings – Section 5
It is a critical time for engaging with VCMs in PNG and Solomon Islands. The need for national VCM regulation in PNG and Solomon Islands is broadly acknowledged, particularly given previous challenges with regulating VCM projects in PNG.
PNG's carbon market regulatory environment is much more developed than Solomon Islands', with a carbon market regulation soon to be finalised, and a broader policy and set of guidelines published.
The PNG regulatory environment is rigorous and seeks to respond to the issues seen in the first wave of REDD+. There are some concerns about its implementation, including areas that require clarification and challenges for small scale projects to meet the requirements.
The Government of Solomon Islands has just launched a project to develop a carbon trading policy for Solomon Islands, but this is in the very early stages. There is currently no policy or regulation for carbon trading in Solomon Islands.
The Governments of both PNG and Solomon Islands are interested in targeting the UNFCCC compliance market and VCMs, but there is a recognition that a greater level of government capacity is required to target the compliance markets.
To support government capacity in regulation, monitoring and enforcement of carbon markets, it is important for the government to receive financial benefit from VCM projects.

Beyond project-level design factors, high-integrity VCM projects need to be supported through an appropriate enabling environment. This section reviews the current enabling environments for VCMs in PNG and Solomon Islands. It describes the governance arrangements for voluntary carbon markets in both countries, drawing on policy documents and interview data to shed light on the intent of VCM policy and regulation in each country, as well as ongoing challenges.

Given the more developed state of PNG's policy and regulatory environment for VCMs, this section also analyses the suitability of PNG's new VCM governance framework in the context of the ingredients for success for high integrity VCM projects distilled in Section 4 – particularly project size. This sets the stage for the next and final section, which presents key considerations for supporting the development of an optimal enabling environment for high-integrity VCM projects in the Melanesian Pacific.

Policy settings and regulation for VCMs in PNG and Solomon Islands

With the logging sector in decline, and increasing acknowledgement from the governments of Solomon Islands and PNG that current rates of logging are unsustainable (see Section 2), this is a critical opportunity for the Governments of PNG and Solomon Islands to engage

with VCMs to help facilitate a pivot away from a reliance on logging. As explained by Tom Coward, British High Commissioner to Solomon Islands:

> The logging sector's decline creates an urgency for new ideas. Voluntary carbon markets could be an important part of this.

Across the Pacific, carbon markets are undergoing rapid transformations. Recent negotiations on Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement, which were finalised at the COP 26 in November 2021, have implications for how Pacific governments seek to engage with and regulate carbon market activities (Mackenzie and Allen 2023a). These changes in international agreements, coupled with greater calls for regulation of VCMs, have resulted in a shift to greater coordination between voluntary and compliance markets and greater regulation of VCMs. However, significant capacity constraints remain as Pacific governments grapple with how to effectively regulate VCMs.

There is broad agreement amongst the interview participants that there is an important role for the government to play in VCMs focused on regulating, approvals, and monitoring and enforcement. This recognition of the need for governments to regulate VCMs occurs against the backdrop of the now widely acknowledged problems of project developers engaging directly with customary landowners (Long et al. 2023; Filer and Wood 2012). Project developers were not opposed to regulation, instead seeing an opportunity for effective regulation to provide greater certainty around government policy settings, something that is much needed in the Pacific. The need for regulation was also recognised by government stakeholders too.

To help incentivise a transition away from logging and to sustain the VCM over the long-term, interview participants also reported that it is important that the government receives a financial benefit from VCM projects. In light of this, significant resourcing and capacity building is required to ensure that government can not only effectively regulate VCMs, but also to see the benefits VCMs can offer as on approach to transitioning away from a reliance on unsustainable rates of logging.

CCDA's Gwen Sissiou talked about previous challenges with regulating VCM projects which could bypass the state and engage directly with landowners:

> Verra can just register these projects. They don't really need to get an approval from the government… that project, even if you say put it on hold, it still gets registered. So that's the practicality of the voluntary carbon market…

Considering these challenges, CCDA is seeking to have greater regulatory oversight:

> We are trying to make our role to ensure that whoever that investor is must come work with us to approach the communities and get the communities to really agree to the project... And if it's done well, I think the VCM can really have a big role to play in developing our country. – Gwen Sissiou, CCDA

PNG and Solomon Islands are at markedly different stages in the development of a carbon market regulatory environment. PNG is on the verge of enacting carbon market regulation and has developed a broader policy and set of guidelines to bolster its enabling environment, while Solomon Islands is at the very beginning of a process to develop carbon trading regulations.

Papua New Guinea carbon market regulatory environment

The Government of PNG is currently finalising a significant overhaul of its policy and legislation on carbon markets, driven partly by past scandals associated with the early REDD+ projects. Ongoing challenges with VCM projects led the government to impose a moratorium on new VCM projects in March 2022. The moratorium is designed to give the Government time to finalise its new carbon market regulation, audit existing VCM projects, and ensure that these projects adhere to PNG's National Approach under the UNFCCC compliance system. There has also been a more concerted effort from the Government of PNG to use both compliance and voluntary carbon markets to achieve development objectives, including the achievement of Nationally Determined Contributions (NDCs).

CCDA is the lead government agency responsible for coordinating all climate change related policies and activities in PNG, including carbon trading. The key regulation for carbon markets in PNG - the *Climate Change (Management) Carbon Markets Regulation* - is currently in the final stages of validation and is expected to be enacted this year. The Regulation will establish a framework for the administration of carbon markets, the project approval and registration process, identification of carbon rights, benefit-sharing, and the transfer and sale of carbon credits. Once the regulation is enacted, the moratorium on VCM projects will be lifted.

The principal legal framework for the regulation of climate change related issues in PNG consists of the *Climate Change (Management) Act 2015* and amendments made in 2021. These Acts, coupled with the forthcoming Regulation, set the foundation for PNG's regulation and legislation for carbon market activities. The Government has also developed detailed REDD+ guidelines – including on FPIC, benefit-sharing and distribution, and grievance redress mechanisms – to encourage good practice in project design, implementation, and monitoring.

PNG's regulatory environment appears targeted towards large-scale, national-level, REDD+ projects. CCDA has set up a regulatory framework and REDD+ strategy focused on a national-level approach to developing REDD+ credits targeted for the UNFCCC compliance market. However, Gwen Sissiou from CCDA reported that recent changes and continuing uncertainty over international negotiations and rules stemming from Article 6 of the Paris Agreement, especially regarding the eligibility of national-level REDD+ credits under Article 6.4, mean that CCDA is unclear on whether it can trade national and jurisdictional-level

REDD+ credits.[11] As a result, CCDA is focusing, for the time being, on voluntary markets, along with bilateral agreements to trade credits with Japan and Singapore. Furthermore, the regulation, including the guidelines, will still apply to VCM projects.

The new regulations are rigorous and ambitious, often going beyond the requirements of international carbon standards. They aim to directly confront many of the problems from the first wave of REDD+ projects in PNG, particularly through giving the state a strong mediating role in the encounter between project developers and landowners. This is an impressive government response to a challenging issue, and interview participants were supportive of having greater regulation and policy certainty in PNG.

However, key informants also shared some concerns and questions about the regulations. Representatives from FORCERT shared their concerns that the consultation process on the regulation had been rushed without proper consideration of comments submitted by stakeholders from all sectors, and that several of the regulatory requirements duplicate what is required by voluntary carbon standards, adding unnecessary administrative burden to project developers. Given the new regulations have not yet been enforced, it remains to be seen how project developers will be expected to manage potential duplication or address requirements which exceed those of carbon standards.

Some areas of the regulation also require clarification. For example, the Carbon Market Regulation and the National FEDD+ FPIC Guidelines mention the requirement to undertake social mapping but very limited detail is provided on what is expected, beyond that is expected to be conducted in collaboration with the national and provincial lands office. There is also need for further clarification around how benefits and revenue are defined. The National REDD+ Benefit Sharing and Distribution Guidelines require the following benefit sharing arrangement:

- Customary landholding community = minimum of 60%
- Project developer = maximum of 40%
- CCDA = 7%
- Sub-national government levels = between 3-5%

The minimum total requirement of 10% to government (split across national and sub-national) is likely to be higher than elsewhere in the Pacific. It is assumed that this share will need to be paid from the project developer ‘maximum’ of 40%, which could present challenges for covering project costs.

[11] According to Carbon Market Watch, ‘avoided emissions’ are not eligible to generate carbon credits under Article 6 (Crook 2023). However, definitions and interpretations of emissions avoidance and emissions removals remain blurry for avoided deforestation projects and may be accepted as part of Article 6. As part of Article 6.2, countries may choose to define avoided deforestation projects as emissions reductions relative to a historical baseline. However, due to the greater regulatory oversight inherent in Article 6.4, it is not yet clear whether avoided deforestation projects would qualify (Crook 2023).

Concerns have also been raised about the capacity of some government stakeholders to participate in some elements of the procedures. The new regulation and accompanying guidelines assign key regulatory responsibilities to national-level government entities that are yet to be established. They also assign important regulatory functions to sub-national governments, for example, Project Concept Notes must be approved by provincial governments and landowner investigation studies must be conducted in conjunction with provincial and district land officers. The capacity of sub-national governments varies widely in PNG but is generally regarded as being relatively weak, leading to concerns about their ability to perform these functions – concerns that have been acknowledged by CCDA. Finally, all interview participants, including government representatives, highlighted challenges with government capacity (in both PNG and Solomon Islands) to conduct monitoring and enforcement in relation to carbon market regulations.

There are also real concerns about the ability of small-scale projects to meet the comprehensive and potentially demanding regulatory requirements, which appear designed for large-scale REDD+ projects where economies of scale can be achieved. Some of these requirements are likely to be challenging to meet in the context of VCM projects that may not have access to the finance and resources required. CCDA has acknowledged that small projects can be more successful socially, but the high costs of meeting government requirements place a greater burden on small projects.

Throughout the project development process, government reviews and approvals are required at multiple stages, including from national level committees, as well as provincial governments. For example, Benefit Sharing Agreements with community participants must be approved by the National Climate Change Board.[12] There is a risk that this approval process causes significant delays for project developers.

Taken together, these regulatory requirements may present a challenge to the development of smaller-scale projects which prioritise community engagement, participatory planning and equitable benefit sharing arrangements, over operating at a scale that achieves the necessary economies of scale to be highly profitable. This represents a key barrier in PNG's enabling environment to the development of high-integrity VCM projects.

Solomon Islands carbon market regulatory environment

The Government of Solomon Islands has indicated an interest in engaging with VCMs, and compliance markets (MECDM 2023a). This interest is evidenced through the development of the *Solomon Islands REDD+ Readiness Roadmap 2014-2020*, and Solomon Islands NDCs which state that Solomon Islands intends to participate in the international carbon markets (MECDM 2023b). Further, the Solomon Islands Low Emissions Development Strategy (LEDS) (MECDM 2023a: 46) recognises the potential that carbon markets could play in forming 'part of the solution to excessive logging and forest loss'.

[12] Climate Change and Development Authority (2023) National REDD+ Development Guidelines

Several ministries are involved in governing aspects of Solomon Island's nascent carbon market. The Ministry of Forestry and Research (MoFR) is leading REDD+. However, work on a draft carbon policy and the Protected Areas Act sits within the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM). Government capacity to develop the necessary policy settings and regulation is a key challenge, which has been recognised by the Government itself. For instance, the MoFR REDD+ unit that was established in 2015 initially had four staff members but currently only has two staff.

The Global Green Growth Institute (GGGI) has been providing technical assistance to the Climate Change Division (CCD) of the MECDM and produced an Issues Paper designed to inform the development of a carbon trading policy for Solomon Islands (MECDM 2023a). The Issues Paper outlines the following objectives identified for the Government to establish carbon trading:

- Realising benefits for resource owners and communities
- Achieving national and global mitigation targets
- Regulating carbon projects.

In October 2024, the Solomon Islands Government launched the Solomon Islands Carbon Trading Policy Project. This project is being led by MECDM and the MoFR, with technical support from GGGI, and financial support from the Governments of New Zealand and Ireland. According to the Solomon Islands Government (2024) press release, the project aims to:

> - Increase the Solomon Islands Government and other stakeholders' knowledge and understanding about international carbon markets and how the Solomon Islands [sic] might be best able to position itself to maximise and ensure the fair distribution of the potential benefits including to women and other marginalised groups.
> - Identify the optimal institutional and governance arrangements to support carbon trading and the equitable distribution of benefits in the Solomon Islands.
> - Develop an inclusive, well consulted and transparent Carbon Trading Policy that will provide a clear signal to the international market and local communities of what the Solomon Islands Government's intentions are with respect to carbon trading.

The next step in the project is to begin stakeholder consultations, which are planned to start in November 2024 (Solomon Islands Government 2024).

UNFCCC compliance market

The Governments of both PNG and Solomon Islands are interested in targeting the UNFCCC compliance market and VCMs, but there is a recognition that a greater level of government capacity is required to target the compliance markets.

Gwen Sissiou and Eunice Dus from CCDA explained that CCDA would like to have a national approach to REDD+ projects that target the UNFCCC compliance market that operates alongside VCM projects in the future. CCDA's own guidelines outline the intention

to align VCM projects with national and jurisdictional level REDD+ activities through nesting (CCDA 2023). However, Gwen Sissiou reported that this would require greater clarity on international Article 6 regulations as well as greater capacity across government to develop a robust national accounting framework to avoid double counting, as well as a formal framework for nesting.

In Solomon Islands, findings from the GGGI Issues Paper posit that a compliance market appears to meet all the national policy objectives, but it is beyond current government capacity to administer, while VCMs are possibly within government capacity to administer but do not meet all government objectives (MECDM 2023a). One participant from Solomon Islands explained that the Solomon Islands Government is primarily interested in trading on the compliance market but there will likely still be VCM projects in the future.

6. Conclusions and recommendations

Summary of findings – Section 6

Conclusions:

- Viable alternatives to logging are urgently needed
- Forest conservation projects have struggled to access sustainable financing, but VCMs can overcome this problem
- When done poorly, VCM projects can cause similar social problems to logging
- The research found four key 'ingredients for success' for high-integrity VCM projects in PNG and Solomon Islands
- An enabling regulatory environment is needed to support high-integrity VCM projects in the Melanesian Pacific.

Recommendations:

1. Melanesian Pacific governments should continue to engage with VCMs as novel approach to forest conservation.
2. Regulatory frameworks need to allow for projects to be developed at an appropriate and pragmatic scale, including creating space for small projects.
3. Regulations should allow flexibility to tailor tools and processes to the particular socio-economic and cultural context of each community.
4. Communities need to be supported to make informed decisions about carbon projects and benefit-sharing and encouraged to prioritise non-cash benefits.
5. Communities need to be empowered to govern their own projects.
6. The donor community should contribute to upfront financing of high-integrity VCM projects.
7. The donor community should continue to support capacity building for governments to develop and implement effective regulation for VCM projects.
8. Governments need to share learnings from their experience with VCM projects and regulation.

Several key conclusions emerge from the findings of this study. These conclusions have important implications for the way that VCMs are understood as a novel approach to forest conservation in the Melanesian Pacific.

Conclusions

Viable alternatives to logging are urgently needed. Unsustainable commercial logging in Solomon Islands and PNG has caused extensive environmental and social damage and has failed to deliver the promised economic benefits. Ongoing attempts at reform have failed to address these problems, and, in the case of Solomon Islands, there is a real risk of forests becoming permanently degraded because of logging. Forest conservation offers not only environmental benefits but can also mitigate the significant social harm that commercial logging inflicts on resource owning communities, making it an urgent public policy issue.

Forest conservation projects have struggled to access sustainable financing, but VCMs can overcome this problem. Forest conservation approaches in the Melanesian Pacific have evolved towards more community-based, participatory models. Legal instruments have played an increasing role in supporting forest conservation, but sustainable financing for conservation (including livelihood benefits for communities) have remained the 'missing piece'. VCMs offer an opportunity to access sustainable financing for long-term forest conservation but also come with their own financing challenge in the form of the relatively high cost of establishing projects.

When done poorly, VCM projects can cause similar social problems to logging. As demonstrated by the first wave of REDD+ projects in PNG, VCM projects are not a simple solution or panacea for forest conservation. When designed and implemented poorly, they can cause similar social problems to logging, with resource owning communities being disrespected and exploited for profit.

The research found four key 'ingredients for success' for high-integrity VCM projects in PNG and Solomon Islands:

1. Working at an appropriate and pragmatic scale
2. Using the right tools and processes for each community and working with existing governance structures
3. Supporting transparent information and participatory processes for benefit sharing that encourage the prioritisation of non-cash benefits
4. Empowering local communities while engaging external support as needed

An enabling regulatory environment is needed to support high-integrity VCM projects in the Melanesian Pacific. PNG is relatively advanced in developing a robust regulatory framework for high-integrity VCM projects, but the impact of this remains to be proven and stakeholders have raised concerns about ambiguities, capacity constraints and the ability of smaller scale projects to be able to conform to the regulatory requirements. PNG's experience will serve as a real test case, providing important lessons for other Pacific countries, including Solomon Islands.

Recommendations

Building on these conclusions and the broader findings from this study (including perspectives shared in the validation workshop), we have developed the following eight recommendations for PNG and Solomon Islands government decisionmakers and the donor community.

1. Melanesian Pacific governments should continue to engage with VCMs as novel approach to forest conservation.

Forest conservation is an urgent issue in the Melanesian Pacific, offering not only environmental benefits but also avoiding the severe social harms inflicted by logging. VCMs offer the potential to overcome persistent challenges that have affected non-VCM conservation efforts thus far. As such, government should continue to engage with VCMs as a novel approach to forest conservation. To realise the full potential of VCMs, it is essential

for the engagement with VCMs to be appropriately regulated and supported, in line with the other recommendations detailed below.

2. Regulatory frameworks need to allow for projects to be developed at an appropriate and pragmatic scale, including creating space for small projects.

While regulating large VCM projects is essential to avoid a repetition of the problems that characterised the first wave of REDD+ projects in PNG, it is also essential to make space for small scale projects. Some international carbon standards (including Plan Vivo) now define 'macro' and 'micro' projects based on the emissions reductions generated (often related to project area), with slightly different requirements based on the category a project is in. The Governments of PNG and Solomon Islands should consider including a similar mechanism in their regulatory frameworks, to ensure that it continues to be feasible to develop small scale VCM projects, which this study has found are more likely to be high-integrity, and offer important lessons for carbon, conservation and natural resource management sectors more broadly.

3. Regulations should allow flexibility to tailor tools and processes to the socio-economic and cultural context of each community.

Communities in PNG and Solomon Islands are very diverse, and experience with high-integrity VCMs shows that different tools and processes will suit different contexts. These tools and processes are best understood by the community themselves, and by project developers in cases where there is a strong relationship. It is important that regulations allow enough flexibility for tools and processes to be tailored to each community context. This includes timelines for community engagement, landowner representation and decision making models and processes, and benefit sharing and grievance redress mechanisms. A positive example of this flexibility is seen in PNG's REDD+ FPIC Guidelines, which acknowledge that ensuring legitimate landowner representation is essential. In view of the fact that different representation models will be appropriate in different contexts, the Guidelines provide flexibility for a range of options for representation.[13] Flexibility in tools and processes must of course be balanced with clarity and consistency in regulations.

4. Communities need to be supported to make informed decisions about carbon projects and benefit-sharing and encouraged to prioritise non-cash benefits.

While conducting FPIC processes is the responsibility of project developers, governments and the donor community can support landowners to make informed decisions through the provision of accessible information. Study participants emphasised that carbon, carbon markets, and the scale of associated benefits are poorly understood by communities.

[13] That said, there appears to be a contradiction between the FPIC Guidelines, which indicate that Customary Landholders and Local Communities (CLLCs) may be represented as an Association, Business Group, Land Owner Company or ILG, while the *Climate Change (Management) Carbon Markets Regulation* define CLLCs as being registered as an ILG. Restricting landowner representation to ILGs would be problematic given the widely acknowledged problems with this mechanism (see Allen 2013).

Through provision of physical and online resources, in local languages and simple terminology, governments, civil society and the donor community can assist communities. This could include encouraging reflection on previous community experiences of the impacts of direct cash payments. There may be opportunities to mandate the provision of certain resources or training as part of FPIC processes, as well as to mandate limits on the provision of direct cash benefits to project participants.

5. Communities need to be empowered to govern their own projects.

For communities to make decisions about carbon projects, including determining how benefits are shared, it is essential that they are supported to govern their own projects. Ideally, this means that the community are the legal owners of the carbon project, through formation of an appropriate business entity, allowing the community to retain ownership of the carbon credits until they are sold to a buyer. Landowners can be supported to develop the relevant skills, and governments should consider implementing requirements for communities to be legal project owners after a certain period of time.

6. The donor community should contribute to upfront financing of high-integrity VCM projects.

Our study suggests that high-integrity VCM projects offer the greatest benefits for communities, but also carry the proportionally greatest burden from upfront costs. Funding from the donor community, through mechanisms such as grants or facilitating pre-purchase of carbon credits, reduces financial risks associated with these projects, provides the time and resourcing needed to ensure the establishment processes are equitable, and helps communities to see benefits sooner.

7. The donor community should continue to support capacity building for governments to develop and implement effective regulation for VCM projects.

The donor community has already been involved in supporting Pacific governments to develop regulatory frameworks for VCM projects, as recently seen in the case of Solomon Islands. This support should continue and expand, with a long-term view to building government capacity to implement these frameworks once they have been developed (including enforcement and monitoring).

8. Governments need to share lessons from their experience with VCM projects and regulation.

The Government of PNG now has experience with a variety of VCM projects, and with the process of developing a rigorous regulatory framework for carbon trading. They are nearing the end of the regulatory processes that the Solomon Islands Government is just beginning, and it is essential that there is an ongoing dialogue between the two Governments to allow for shared learning. Although the two countries are certainly not the same, they do share some similar cultural and political features, which offers excellent opportunities for co-learning. There is also scope to share learnings with and between other Melanesian governments, notably Vanuatu and Fiji. The donor community could support this process through funding, organising and/or facilitating learning events and dialogues.

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Annex A: Case study – FORCERT's PNG Communities BEST REDD – Tavolo Project

Project type	Avoided deforestation VCM project
Location	Tavolo community, East New Britain (ENB) province, Papua New Guinea
Conservation tools and approaches	REDD+, Wildlife Management Area, Conservation Deed, Sustainable Land Use Plan, Participatory High Conservation Values Assessment Tool, Community Conservation Laws

Figure A 1: Lausus village, one of the three villages within the Tavolo REDD Project area. Source: Treevive n.d.

FORCERT's PNG Communities BEST REDD – Tavolo Project ('Tavolo REDD Project') draws on several approaches and tools to conserve forests from planned deforestation. The Tavolo Community is made up of 14 clans, spread over three villages (Lausus, Tavolo and Mukus), who hold customary land rights to a total area of 21,164 ha in East New Britain province (FORCERT 2021). This area has faced ongoing threats from large-scale logging and conversion to large-scale agriculture plantations, and the Tavolo community approached FORCERT in 2007 to enquire about options for conservation and sustainable livelihood benefits (FORCERT 2021). They organised themselves under the Tavolo Community Conservation Association and committed to sustainable management of their land.

The community originally designated 2,400 ha of their land under a Wildlife Management Area (WMA) to protect their forests from a logging concession and has since put their combined land area under a sustainable land use plan (SLUP), aimed at zoning land for

certain uses and avoiding encroachment on forest land, and even reallocating some areas of agricultural land to be converted back to forest (FORCERT 2021). In 2019, after delays in trying to extend the WMA, the Tavolo Community put their whole sustainable land use plan area under a Conservation Deed, which provides formal recognition of the community's decision to dedicate certain areas of land for conservation (FORCERT 2021).

The Tavolo Community is now working with FORCERT to implement the Tavolo REDD Project, which is a multi-pronged strategy based on payments for ecosystem services (PES) to pursue conservation and protection of the rainforest. The activities of the project include:

- Obtaining an official court or government decision to declare logging permits and project plans null and void for existing logging threats
- Tavolo Community Conservation Association developing and implementing Community Conservation Laws
- Developing and implementing sustainable land use plans, focusing on forest conservation, small-scale ecoforestry and sustainable small-scale agriculture
- Participating in the PNG Communities Benefits from Environmental Services Trust (BEST) to provide financial benefits, funded through obtaining Forest Stewardship Council certification, Fairtrade certification, Verified Carbon standard (VCS) and Climate, Community & Biodiversity Standard (CCBS) validation and verification, and sale of carbon credits
- Obtaining formal protection status for forests under the REDD project

Regarding the VCM component, the Tavolo REDD project has not officially been registered, nor has it traded any credits, and for this reason any lessons should be treated with caution. Despite this caveat, the project been regarded by some experts as demonstrating a promising approach for REDD+ projects, especially for community engagement and safeguarding local communities (Filer et al. 2023).

FORCERT states that the project has a crediting period of 30 years, with estimated annual GHG emission reductions or removals of 3,033,581 tCO2e, commencing from the project start date of January 2019 (figure yet to be approved by Verra). The Tavolo REDD project remains in the final stage of review by Verra, with the status listed as having requested registration and verification approval. The process of certification has been delayed significantly, since the project design was first submitted to Verra in 2019, due to the auditor taking a full year to produce its final validation and verification report, and Verra updating their project approval process in response to widespread public criticism over a lack of integrity in their projects. These delays have presented significant challenges to the project, especially for managing community expectations around anticipated project benefits. To help navigate these delays, FORCERT has received pre-financing from Dutch energy company, Green Choice, who have purchased EUR €200,000[14] of credits in advance to help share benefits with the Tavolo Community members while the project waits for approval.

[14] Approximately AUD $323,803.

The pre-finance of EUR €200,000 has enabled some benefits to flow to community members. Benefits have included the construction of permanent housing, as well as support for school fees and families participating in the project. The Tavolo Community has also used the finance for a court case to nullify a Forest Clearing Authority and the underlying Special Agricultural Business Lease that overlaps the project site. Beyond the benefits from the pre-finance, the process of seeking VCS-CCBS validation and verification has enhanced the organisational capacity of the Tavolo Community.

Lessons learned

The link between project scale and effective community engagement

A key feature of the Tavolo REDD Project, which differentiates it from the other REDD+ projects that are active and under development in PNG, is its relatively small scale (see Figure 3). The project covers an area of less than 22,000 ha, and the Tavolo Community Conservation Association is comprised of two wards that had a combined population of 1,088 in the 2011 census (Filer et al. 2023). Given that the other REDD+ projects being designed and implemented in PNG are significantly larger, and have run into significant challenges when it comes to effectively engaging with customary landowners, the relatively small scale of the Tavolo REDD project affords some important advantages for community engagement.[15] Not only is it logistically simpler to undertake FPIC and general community consultation activities, but the reduction in the number of clans involved reduces the challenges associated with bringing together a large number of clans that would not otherwise normally work together.

Focusing on a shared understanding of land use rather than land ownership

A central feature of the project's approach to conservation is the participatory development of a sustainable land use plan (SLUP). The SLUP only demarcates external land boundaries and does not demarcate internal community land boundaries. In doing so, this model of land identification and planning shifts the focus away from who owns which parcels of land to an agreed upon plan for land use in the project site. It is believed that the sustainable land use plan and conservation deed will be sufficient to meet Verra's requirements around demonstrating permanency – which is typically demonstrated through evidence of secure land tenure (Mackenzie et al. 2024).

Choosing a conservation-oriented community group from the outset

The Tavolo Community have had a long-term interest in conservation, making them well-suited to meeting the requirements of developing a VCM project. Notably, the Tavolo community members had already engaged FORCERT to explore conservation options, and had formed a business entity, the Tavolo Business Group, prior to developing a VCM project

[15] While the project is intended to be a pilot in a program that will enable several different communities to receive PES in the future, initial community engagement has started on a small-scale with one community at a time (FORCERT 2021).

(Filer et al. 2023). The fact that a cohesive community governance structure was already formed reduced challenges with FPIC and identification of project beneficiaries, and reduces the risk of disputes (Mackenzie et al. 2024).

To further aid the process of participant selection, FORCERT uses a 'community selection matrix' to assess the likelihood of a positive or sustainable outcome from any particular partnership with community groups. As part of this process, communities need to demonstrate 'strong interest and commitment to sustainable management of their land and resources' (FORCERT 2021:38). Before any monetary benefits from third parties are considered, the community needs to undertake a High Conservation Values Assessment, develop Community Conservation Laws, and commence a participatory community sustainable land use planning process (FORCERT 2021). This approach demonstrates the importance of establishing a foundation of community cohesion and commitment to project goals – through a comprehensive screening and feasibility assessment – prior to discussing the distribution of project benefits.

Align with traditional governance structures

An important feature of the Tavolo REDD project is the alignment of the Tavolo Community Conservation Association with the traditional governance structures of the community. The Association's management committee is comprised of clan representatives. This has helped keep traditional governance structures intact and maintain community cohesion. Though, this is likely made easier due to the small number of clans participating in the project and the long-term commitment of the Tavolo Community to conserving the forest to begin with.

Cashless benefit sharing model

The project's benefit sharing model has a strong focus on providing cashless community benefits. The model is based around the PNG Communities BEST designed by FORCERT. The trust is intended to be a long-term and independently managed fund to support community conservation efforts through generating income from environmental services, with the sale of carbon credits described as 'the most likely source of income in the short term' (Filer et al. 2023:44).

The Tavolo Community has decided on the following revenue distribution split (FORCERT 2021:12):

- 10-15% to Government (5% Local Level, 3% District, 1% Provincial & 1% National)[16]
- 20% to supporting organizations (FORCERT and Face the Future)
- 65-70% to the landowning community.

Peter Dam shared that since agreeing on a 10% government tax, government requirements have since been introduced under the Climate Change Management Act and National

[16]

REDD+ Benefit Sharing & Distribution Guidelines stipulating that 7% revenue from each credit must be paid to CCDA and a minimum of 1% to each of the subnational government levels. However, the Tavolo Community have indicated a preference for giving a higher proportion of revenue to lower-level government due to the perceived greater transparency over how that revenue will be used, and the expected support of neighbouring communities for their project, resulting from the local benefits from the usage of this tax. Consequently, the project is yet to finalise the exact total government percentage share, which is expected to become 15%, with the Tavolo Community's share reducing to 65% (Personal communication with Peter Dam 11 Dec 2023).

The Tavolo Community have decided to allocate their share of project revenue into the following funds:

- Community service projects
- School fee/education
- Health care costs
- Support for family income earning options
- Community organization (legal entity) management costs
- Emergencies
- Investment.

While the benefit sharing and distribution model preferences non-cash community benefits, it still provides financial support to families and individuals for areas such as subsidising school fees, health care, and providing financial support to families to meet direct family needs and to develop and support income earning opportunities.

FORCERT prefers to avoid cash payments due to risks of creating dependency, division, discrimination, and exclusion but also recognises that often community members are still interested in cash payments. To help focus the benefit sharing and distribution plan on non-cash benefits, FORCERT encourages the community to consider past experiences with direct cash payments from logging and oil palm, which can help highlight to community members the challenges with cash payments (Mackenzie et al. 2024).

The benefit sharing and distribution model also incentivises commitment and compliance among community members located in the project site. The benefit sharing model focuses on funds that directly impact the lives of community members in the project site, as this helps guarantee the permanence of their commitment. It also means that 'benefits should be guaranteed for the full 30-year period of the project, with their annual release being linked to evidence of the community commitment under the project, i.e. their continued compliance with their sustainable land use plan and community conservation laws' (FORCERT 2021:13). However, the model does allow for 'genuine existing clan members living elsewhere to still be considered in the benefit sharing' through the education, health, or family business support funds, as decided upon by the clans involved (FORCERT 2021:13).

This benefit sharing model has also been formally recognised by CCDA as practical learning experience for Government decision makers in PNG (FORCERT 2021:86).

Engaging with sub-national government stakeholders

FORCERT has found it important to engage with sub-national level government stakeholders. The project has benefited from involving lower-level government stakeholders as part of community engagements as they can help garner community interest and respect. In situations where lower-level government is interested, it can also be useful to sign a MOU to foster local support for a VCM project (Mackenzie et al. 2024).

Managing community expectations

Community members may have unrealistic or misguided expectations around the benefits that they will receive from carbon credits. To mitigate against this risk, FORCERT advises keeping the focus of community engagement on building community interest in developing a sustainable land use plan, of which potential payments for ecosystem services (including carbon trading) should only be one of the minor income earning land use and management options. FORCERT intentionally tries to keep the focus away from payments for ecosystem services (carbon trading) during early community consultations and instead focuses on assessing the communities' support for conservation and their potential to work well with FORCERT. However, FORCERT acknowledges this can be challenging to do in practice as recently some communities are engaging FORCERT with an interest in carbon trading from the outset (Mackenzie et al. 2024). FORCERT also emphasised the importance of including non-market approaches to deliver livelihood benefits for community members as part of maintaining community support and interest in the project.

Uncertainty in VCMs

Despite the many positive lessons that the Tavolo REDD project demonstrates for developing high-integrity VCM projects in PNG, FORCERT is cautious about promoting VCMs due to the significant time and resources required, along with the considerable uncertainty that project developers are still facing. Reflecting on this, FORCERT's Peter Dam noted:

> I'm very mindful of looking at voluntary carbon market projects, especially in settings like Solomon Islands and Papua New Guinea, where it's crucial that you spend a long time with the community, with community engagement, proper FPIC, all of that. And then we can end up with a very uncertain end result… I think you need to be very mindful of making a very good assessment about whether you want to go for it [carbon trading] in the first place

Notwithstanding these challenges, the relative success of the FORCERT model to date stands in stark contrast to the well-publicised failures of the larger REDD+ projects in PNG and offers important insights for VCM projects in the PNG context.

Annex B: Case study – Managalas Conservation Area

Project type	Large community conservation area
Location	Managalas Plateau, Oro Province, Papua New Guinea
Conservation tools and approaches	Conservation Areas Act 1978 (now repealed), sustainable land use plans

Figure B 1: Small village on the Managalas Plateau where Raggiana birds of paradise gather to display and court. Source: Schimel 2019.

The Managalas Conservation Area (MCA), located in Oro Province of Papua New Guinea, is one of the largest conservation initiatives in the country, covering approximately 360,000 ha (Stepano 2017). The MCA is mostly located on the Managalas Plateau, situated 1300 meters above sea level, but also encompasses some lower and higher altitude areas. The area is renowned for its rich biodiversity, including the rare Queen Alexandra's Birdwing Butterfly (Underhill-Sem et al. 2024; Schimel 2019). The MCA is also home to about 22,000 households, including an estimated 152 clans, 11 tribes, 60 villages and 49 settlements

(Underhill-Sem et al. 2024)[17]. According to Underhill-Sem et al. (2024:2), 'community leaders have long recognised the value of the physical, cultural and social environment of this area', but have faced the tension of wanting to support conservation while also needing income to pay for services like schooling and health care.

The journey to establish the MCA began over 30 years ago, driven by community leaders, and supported by non-governmental organizations such as Partners with Melanesians (PWM) and Rainforest Foundation Norway (Underhill-Sem et al. 2024). Although strong local leadership was present, there was disagreement within communities about the conservation area. People living in the more remote Western areas of the Plateau were almost unanimously supportive of the conservation efforts, and many of the leaders of the conservation effort were from these areas (Schimel 2019). Those living in the east of the Plateau – where there is a larger and rapidly increasing population – were less supportive, with concerns about the implications of 'locking up' more land (Schimel 2019).

In 2016, government representatives from an eastern district filed a petition with the national government to stop consideration of a conservation area for the plateau (Schimel 2019). The petition was unsuccessful, and the MCA was declared on November 29, 2017, under the *Conservation Areas Act 1978* (The National 2017). This designation protects the area from large-scale agricultural and logging operations, while still allowing local communities to use forest resources sustainably (Erickson-Davis 2017; Stepano 2017). The gazettal of the conservation area was celebrated as a real success story in community-led conservation in PNG.

However, there have been ongoing challenges in regard to financing for the conservation area. According to report from the Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), funding was withdrawn soon after the gazettal of the MCA, creating a 'vacuum of support' (Evans 2024:para 8). The poor condition of roads throughout the MCA was creating a significant barrier to the original plans of promoting sustainable livelihoods through marketing of cash crops and tourism development (Schimel 2019). Attempts to explore VCMs as an income source, led by Partners with Melanesians, were reportedly blocked by the Provincial Government, who indicated that they would lead the pursuit of this option instead.

The most recent development for the MCA is that CIFOR-ICRAF – in partnership with the PNG Government – is implementing the Managalas component of the EU-funded Forestry-Climate Change-Biodiversity (EU-FCCB) Nexus Programme (CIFOR-ICRAF n.d.). This project will run from 2023-2027 and 'seeks to enhance conservation outcomes whilst developing livelihood outcomes for local communities' (CIFOR-ICRAF, n.d.:1). One of the goals of the project is ensuring that in the long term, the MCA is self-sustaining in terms of management funding, supported by sustainable farming initiatives (CIFOR-ICRAF n.d.). Partners with Melanesians has not been included in this new work, and there is no discussion of VCMs as a financing option in project documentation.

[17] These estimates are from 2011.

Ultimately, the ongoing sustainability of the MCA is yet to be proven, with sustainable livelihoods and financing seen to be the key issues. Deforestation for oil palm plantations and illegal logging are seen to be major threats to the MCA, as these offer communities an alternative source of income.

Lessons learned

Local leaders with conservation values

The pre-existing conservation values of local leaders in Managalas was a key enabler in the creation of the MCA, particularly amidst community division about conservation. This meant that there was the buy-in and commitment from local leaders needed to progress work in setting up the conservation area. Importantly, these local leadership structures were integrated into the management system of the MCA and provided with capacity building and financial support for management.

Because the process of setting up the conservation area has taken so long, there is now an issue where the original leaders are ageing. According to the project manager for the CIFOR-ICRAF project:

> It took so long to get the conservation area gazetted, so the people who led that process are ageing or have passed away, and the younger generations feel less ownership of the concept of conservation…. There's a big concern that it's going to just fade away as the older generation passes on. (Evans 2024:paras 11-12)

Efforts to build support for conservation among the younger generation are underway, including a school-based program and creation of a traditional learning centre (Evans 2024; Schimel 2019).

Long-term relationships between community and supporting organisations

The long-term involvement of Partners with Melanesians and Rainforest Foundation Norway – over more than three decades – was essential in supporting the establishment of the MCA. Partners with Melanesians were strongly engaged in conducting community consultations and gaining support for the conservation area from the communities and leaders who were originally hesitant. The willingness of these organisations to engage in the conservation work in Managalas for such a long period was important as it allowed time for the appropriate assessments, surveys and consultations needed to meet requirements under the *Conservation Areas Act*.

Use of appropriate regulation to provide protection

The work in Managalas was focused not only on generating community support for conservation values but also on gaining legal protection for the area under relevant legislation (i.e. the *Conservation Areas Act*). Although this was an onerous and time-consuming process, the Act provides clear legal protection from large-scale agriculture and logging operations, though not explicit prohibition of mining (Erickson-Davis 2017).

There is some uncertainty, however, as the *Conservation Areas Act* has now been replaced by the new *Protected Areas Act*, which was released in 2024 (Raman 2024). At this stage, it is unknown how the *Protected Areas Act* will be applied to the MCA, and the protections it will afford.

Sustainable livelihoods and financing are needed to ensure ongoing support for the MCA

The continuation of the MCA requires ongoing financing and sources of sustainable livelihoods for residents. With a young and rising population, there is increasing pressure on land and resources, and some reports of young people ignoring traditional prohibitions on *tambu* areas and expanding gardening areas (Schimel 2019). Partners with Melanesians were able to provide some sustainable agricultural technologies to support rice farming, bee keeping and aquaculture, and had plans to expand cash crop markets (such as coffee and vanilla). However, these efforts were stymied by poor condition of roads. This has also been a barrier to development of a tourism industry (Schimel 2019).

Annex C: Case study – Nakau's Babatana Rainforest Conservation Project

Project type	Avoided deforestation VCM project
Location	South Choiseul, Solomon Islands
Conservation tools and approaches	REDD+, Protected Area, Conservation Management Plan

Figure C 1: The Kolombangara River, which runs through the Babatana Rainforest. Source: Lyons and Walters 2023 (photo by Peter Walters).

On South Choiseul in the Solomon Islands, tribes from the Babatana language group have engaged with Nakau to protect their rainforests from logging and support their community through a range of livelihood benefits from forest conservation. The Sirebe Tribe were the first tribe to participate in the Babatana Rainforest Conservation Project implemented by Nakau, with project activities launching in 2014 (Nakau 2024). The Sirebe Tribe developed a Conservation Management plan to conserve their forest and was the first tribe to ever establish an official Protected Area in Solomon Islands, which occurred in 2019. Seven other Indigenous communities in the Babatana rainforest have since joined the project, with three having achieved Protected Area status (Nakau 2024). A total of 6,863 ha of rainforest is currently legally protected across the Babatana forests (Nakau 2024).

All involved communities are working towards verified forest carbon projects and the Sirebe Tribe registered a carbon project with Plan Vivo in 2021. According to Plan Vivo, the REDD+

project has so far generated 87,115 credits and is expected to generate an average of 17,423 credits each year over the 30-year duration (Plan Vivo n.d.). The other communities do not yet have operational carbon projects.

The Babatana Project has been developed using the Nakau methodology. Nakau has developed several forest carbon VCM projects across the Melanesian Pacific that are characterised by a strong focus on community livelihood benefits, fostering local ownership, and a respect for customary governance structures. The project is certified under the Plan Vivo Standard, a key feature of which is the requirement that a minimum of 60% of income from the sale of credits must go to the local participants (Plan Vivo n.d.). For these reasons, the project has been regarded by experts as a 'regionally significant example of best practice for carbon projects' (Chandler 2024).

As the only operational VCM project in Solomon Islands, the Babatana project has been pivotal in showcasing forest conservation as an alternative to logging for rural communities in Solomon Islands:

> The realisation that there is a good way to maintain your forest: you don't have to sell your timber, for people to actually start understanding and believing in that, I think that's something that Babatana has contributed to greatly, it has contributed to putting forest carbon on the map – Manuel Haas, Nakau

The success of Babatana has generated considerable interest for VCM projects in Solomon Islands, and more VCM projects are expected to be operational soon. However, Nakau's Manuel Hass observed that a challenge is that some tribes have already logged their forests, meaning that forest conservation through REDD+ is no longer an option.

Lessons learned

Small-scale projects enable effective community engagement

The small-scale nature of the Babatana Project is a key characteristic in its high-integrity approach. The extensive FPIC, community engagement and participatory design of governance and benefit-sharing arrangements is only made possible by operating at a relatively small-scale. The project only covers a small rainforest area, including 27 households who are primary rights owners (Chandler 2024). Nakau's Manuel Haas underscored that Nakau's approach to developing smaller projects at the tribal level is essential in the context of the Melanesian Pacific. Smaller projects enable the relationship-building and participatory processes needed to succeed while at larger scales, the social complexities become unmanageable. While the Babatana project has been able to expand over time, with the addition of seven new tribes, this process is slow and time-consuming.

'Working at the speed of trust'

The extensive and participatory approach to FPIC and community consultation is a cornerstone of Nakau's methodology. Nakau's Michael Dyer reflected on the approach to community engagement, saying 'working at the speed of trust' is key. While this has enabled Nakau to develop high-integrity projects in challenging contexts such as Solomon Islands, it

takes considerable time to get a VCM project from design to operation. The Babatana Project was first launched in 2014, but it was not until approximately eight years later that the Sirebe tribe received the first payment for their credits. This highlights the need to develop broader co-benefits as early as possible to maintain community interest and local buy-in (Mackenzie and Allen 2023c).

The importance of local visionary leaders

The Sirebe tribe was united in its vision for forest conservation from the outset. The role of a visionary local chief's son who could see the value in forest conservation and was able to convince the tribe was key. Importantly, this leader was able to work with local NGO and co-developer of the project, the Natural Resources Development Foundation (NRDF), to begin developing the project.

Facilitating local ownership

A cornerstone of Nakau's projects is supporting customary landowners to legally become project owners. Nakau supported the Sirebe Tribe to form a community company, the Sirebe Community Company Ltd, which represents the tribal group in the conservation and business activities as part of the project. The Sirebe Tribe provides the mandate for the Sirebe Community Company Ltd to manage the project on behalf of and in close collaboration with customary landowners. The Sirebe Community Company Ltd retain ownership of the caron credits until sold to a buyer, but appoints Nakau as their agent to sell credits on their behalf. The Sirebe Community Company Ltd also has the primary say in how the revenue from carbon credits flows back to the community. This structure helps VCM projects overcome some of the criticisms of VCMs as a mechanism that perpetuates extractive colonial dynamics in Indigenous communities (Chandler 2024).

Using Protected Areas as a legal instrument to demonstrate permanence

Creating a Protected Area is a requirement as part of Nakau's methodology for VCM projects in Solomon Islands. Receiving Protected Area status over the project site helps demonstrate permanence – the idea that any carbon sequestered through forest protection will be done so for the long-term. Going through the steps to establish a Protected Area also requires local communities to demonstrate commitment to the projects long-term objectives.

Under the *Protected Areas Act* in Solomon Islands, each Protected Area has mandated rules and regulations such as the prohibition of logging and mining. However, local tribes can develop their own Conservation Management Plans to outline their rules and guidelines for land management in the project area. This is very similar to the approach in PNG of developing a Sustainable Land Use Plan (see Annexes A and B).

Employing local rangers

Effective monitoring is a key part of the ongoing forest conservation. The Babatana Project employs local project participants to work as rangers to monitor the project area. Rangers play a key role in measuring and monitoring changes in forest conditions, which can then be verified by independent auditors and against satellite imagery (Chandler 2024). They also patrol the project boundaries. The rangers are officially endorsed by the government,

empowering them to perform functions such as making arrests. This employment of local rangers provides a further livelihood benefit for local communities in areas where paid employment is often very hard to secure, while enhancing the conservation value of the project.

Safeguarding communities through good governance and benefit sharing arrangements

The outcome of Nakau's extensive community engagement and project design phase is the establishment of governance and benefit sharing arrangements that safeguard communities. The Sirebe Tribe has received five quarterly payments since 2022, and similar payments are expected to flow to neighbouring tribes as they get verified (Chandler 2024). To mitigate against the risk of disputes that are commonly associated with an influx of cash payments into communities in Solomon Islands, Nakau seeks to have as many community members involved in the development of the project's benefit sharing arrangements as possible. This increased transparency helps avoid some of the problems with inequitable benefits seen in logging projects. Nakau and the local NGO NRDF also play an important role in supporting the management of finances and building the capacity of Sirebe Community Company Ltd, something that Nakau's Manuel Haas says is readily accepted and appreciated by the local project participants.

Preference for non-cash community benefits

A key aspect of safeguarding local communities in the Babatana Project is a preference for non-cash community benefits. Since selling their carbon credits, the Sirebe tribe has followed their local benefit sharing plan, which has used these funds for a range of livelihood purposes such as paying local rangers, paying for school fees and building community infrastructure such as sanitation facilities and a community hall (Nakau 2024). Importantly, the tribes use of the funds reflects their own priorities (Chandler 2024).

This focus on community development benefits rather than cash payments reduces the risk of disputes and provides longer lasting benefits, as Manuel Haas explains:

> We always encourage them [local project owners] to not give out any cash payments because cash payments, they just trickle down to almost nothing. If you pay individual community members in cash… once you divide it among a couple of hundred people or even a thousand people, not much is left of the quarterly payments. And then it's just spent very quickly. So, a lot of the communities actually agree, they don't want cash payments.

Importantly, these non-cash benefits tend to be more equitable for women, who are traditionally marginalised from the cash benefits provided by logging. Chandler (2024) finds that the situation for women in the Sirebe tribe is 'radically different from that of women from forest communities that have been logged'. Five percent of the Sirebe tribe's payments from the project ($2,360 every quarter) go to the Sirebe women's savings club. The women's club

uses these funds to ‘pay their children’s school fees, buy materials for their food gardens, invest in bakery projects and bee keeping, and run their phones’ (Chandler 2024).

Carbon is just the ‘icing on the cake’

The Babatana Project reflects an ethos for developing high-integrity projects in the Pacific whereby co-benefits are viewed as the core benefits of these projects. This is especially the case from the perspective of local project participants. In rural settings with limited economic opportunities, the long-term income from carbon financing is a significant benefit, but equally important is avoiding the destructive social impacts of logging.

Annex D: Case study – Tetepare Community Conservation Area

Project type	Community Conservation Area
Location	Tetepare Island, Western Province, Solomon Islands
Conservation tools and approaches	Marine protected area and terrestrial protected area (agreed by local landowners), eco-tourism

Figure D 1: The Tetepare Island Ecolodge nestled among the forest. Source: Tetepare Ecolodge Facebook Page 2021, photo by Gerald Rambert.

Tetepare Island, located in the Western Province of Solomon Islands, is the largest uninhabited island in the South Pacific, covering an area of 11,880 ha (Read et al. 2010).[18] The island is renowned for its extensive old-growth rainforests and rich biodiversity, including several endemic or rare species (Moseby et al. 2012). Historically, Tetepare was inhabited until the mid-1800s, when its residents fled due to sickness and fighting (Gjertsen and Stevenson, 2005). Aside from a now-defunct copra plantation, Tetepare Island remains

[18] The presence of the ecolodge on Tetepare Island means that there are some people present but the island is broadly seen as 'uninhabited', as the permanent population abruptly deserted the island about 200 years ago.

under customary land ownership and retains over 96% of its old growth rainforest (Gjertsen and Stevenson 2005; Moseby et al. 2012).

The key logging threat for Tetepare Island emerged in the mid-1990s, when the Tetepare Original Land Owners Association (TOLOA) gained support from one group of descendants to apply for a timber concession license. In 1995, they requested a license for extraction of 100,000 cubic metres of timber per year (Gjertsen and Stevenson 2005). This application was successfully challenged and delayed by a different group of descendants, who went on to form the Friends of Tetepare group in the following year. The Friends of Tetepare, with help from WWF, developed a management plan for the island, and in 2002, the two landowner groups (TOLOA and Friends of Tetepare) came together to form the Tetepare Descendant's Association (TDA) (Gjertsen and Stevenson 2005).

The TDA, a registered Charitable Trust, represents the descendants of the island's original inhabitants, who are spread across the Solomon Islands (mostly on other islands near Tetepare) (Gjertsen and Stevenson 2005). The TDA is the largest landowner association in Solomon Islands, with over 3,000 members (Moseby et al. 2012). The mission of the TDA is to unite landowners, collectively manage Tetepare Island, conserve its natural resources, prevent commercial extraction and poaching, research and document its natural and cultural heritage, discourage resettlement, and promote sustainable ventures and community projects among members (Gjertsen and Stevenson 2005).

The TDA has received support from various stakeholders, including the Sustainable Forestry Conservation Project (EU), WWF, Australian Volunteers International, American Museum of Natural History and Wildlife Conservation Society (WCS) to undertake conservation actions and encourage sustainable development (Keppel et al. 2012). There is a Marine Protected Area (MPA), and, on the island, resource extraction is only permitted for subsistence and artisanal use (Moseby et al. 2012; Read et al. 2010). An article published in 2013 noted that these protected areas were "enshrined in the Provincial Resource Management Ordinance" and that the TDA was working to also register them "under new national protected area legislation, including the formulation of a comprehensive ridge-to-reef management plan" (Jupiter et al. 2013:32). At the time of consultations, the application for national park status was ongoing but not resolved.

The TDA has established the Tetepare Island Ecolodge, which channels profits directly into conservation efforts (including funding 12 local rangers), and supports local communities by providing employment opportunities and funding for a scholarship program for school-aged children (Keppel et al. 2012). However, the resourcing provided from the ecolodge declined significantly during the COVID-19 pandemic and has struggled to rebuild. The TDA also maintains a field research station and previously secured an annual scientific research permit from the Solomon Islands Ministry of Education, allowing them to host international researchers undertaking work on Tetepare Island (Argument et al. 2009). John Read shared in consultations that this funding has not been renewed for the past decade, and there is currently insufficient resourcing to even resource patrols.

The TDA's efforts have been recognised internationally, and the case of Tetepare Island is often upheld as a key success story for community-based conservation. Keppel and colleagues (2012:114) state:

> Since its formation, the TDA has transformed from a local landowners organisation to a world-class community-based conservation organisation responsible for one of the largest integrated land and marine conservation initiatives in the South Pacific.

There are several enablers of important lessons to be learned from the success of the Tetepare Island Community Conservation area, which are unpacked below.

Lessons learned

Strong local leadership and governance

Strong local leadership and governance systems have been essential in the success of conservation on Tetepare Island. Having a clear governance structure and strong local leadership means that it is more difficult for logging companies to gain approval than in the typical case where they work directly with families or individuals.

Being formed through the combination of the pro-logging TOLOA and the anti-logging Friends of Tetepare, the TDA represents a variety of viewpoints, and has established effective processes for decision-making (Gjertsen and Stevenson 2005). The TDA has an executive committee which meets once or twice per year to make recommendations on all TDA matters and a management team that is responsible for day-to-day operations (Jupiter et al. 2013). The TDA remains accountable to the community through processes such as annual reporting of conservation monitoring information which then informs community decisions about seasonal closures (Jupiter et al. 2013).

Ability to provide real economic benefits

To effectively combat the threat of logging, the conservation program needed to offer a genuine alternative source of economic benefits and offer sustainable livelihoods. Income generated through the ecolodge has been used to fund a scholarship program for school fees of children of locally based TDA members. The ecolodge also funds salaries for rangers on the island who oversee and enforce conservation rules and offers casual employment for other community members (Jupiter et al. 2013). However, as noted above, the income from the conservation area (ecolodge, research grants etc.) have declined in recent years, and the operation of the Tetepare conservation program remains largely dependent on external funding from donors (discussed below).

Ongoing external support

Despite being community-led, the Tetepare conservation program has been strongly supported by external partnerships throughout its operation. International organisations have provided financial and technical assistance, while partnerships with research institutions have assisted in implementing monitoring and management programs. However, funding has been reduced since the COVID-19 pandemic, and conservation work has been reduced as a result.

Tetepare has also benefited from support from external individuals, such as John Read and Katherine Moseby, who act as advisors to the TDA. John Read reflected that having advisors who are not embedded in local *wantok* and family systems can help mitigate issues of poor financial management and misappropriation of funds in cases where local staff are pressured by family and *wantok* networks for resources.

The TDA has been exploring other sustainable finance mechanisms to secure long-term conservation and developing funding, including considering carbon trading through REDD+ and VCMs. To date, carbon trading has not been pursued due to issues with getting landowner agreement. John Read explained:

> … it doesn't matter if you're a carbon training company or a logging company or a mining company, if you walk into a village and say we want to do this and it's all this money, all of a sudden you get the division, money makes it all crazy and it makes fights…

Appropriate systems to enforce conservation rules

The enforcement of conservation rules in the Tetepare conservation program has been significantly strengthened through the implementation of appropriate systems developed with local input. The TDA has instituted a set of graded sanctions for violations of management rules, where first offenders receive a public warning and family counselling, second offenders choose between labour or a fine, and third offenders are suspended from the association for two years, losing their eco-tourism revenue (Jupiter et al. 2014).

This system has been effective in improving compliance because it is locally scaled and developed with direct community input, ensuring that the sanctions are culturally appropriate and respected (Jupiter et al. 2013). The establishment of clearly marked management zones and signage, along with the training and employment of local rangers to monitor marine, freshwater, and terrestrial resources, further supports the enforcement of these rules (Jupiter et al. 2013).

Island remoteness

In addition to careful design and implementation of the conservation program at Tetepare, the success of the program is due at least in part to the unique inherent characteristics of Tetepare Island. Jupiter et al. (2013:33) explain:

> While the achievements of Tetepare are numerous and laudable, the success is largely achieved due to the unique factors of island remoteness and distance from potential resource users and commercial markets. The management scheme is therefore not likely replicable in areas with high population density and development. The potential for a self-funding mechanism through eco-tourism and other community ventures may ensure sustainability.

This means that although lessons can be taken from this case, this program would likely be very difficult to replicate in other locations.