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RESCCUE

FEASIBILITY STUDY OF FINANCIAL AND ECONOMIC MECHANISMS FOR INTEGRATED COASTAL MANAGEMENT IN KADAVU, FIJI



Photo credit: Suzie Greenhalgh – Opportunities for certified organic production

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Overview of the objectives and components of RESCCUE projet :

The *Resilience of Ecosystems and Societies to Climate Change* (RESCCUE) project is a regional project implemented by the Secretariat of the Pacific Community.

The overall goal of RESCCUE is to contribute to increasing the resilience of Pacific Island Countries and Territories (PICTs) in the context of global changes. To this end RESCCUE aims at supporting adaptation to climate change (ACC) through integrated coastal management (ICM), resorting especially to economic analysis and economic and financial mechanisms.

The RESCCUE project operates both at the regional level and in one to two pilot sites in four countries and territories: New Caledonia, Vanuatu, Fiji and French Polynesia.

RESCCUE is funded primarily by the *French Development Agency* (AFD) and the *French Global Environment Facility* (FFEM) for a duration of five years (01/01/2014 to 31/12/2018). The total project budget is 13 million Euros, including 6.5 million Euros from AFD/FFEM and about the same in co-funding.

RESCCUE Project sites in Fiji are Ra Province and Kadavu Province. Ra has about 95 communities and Kadavu 73 communities. The following are the RESCCUE components that will be implemented in these two sites.

It is structured around five components:

Component 1: Integrated coastal management – supporting ICM implementation through ICM plans, ICM committees, and management activities concerning both terrestrial and marine ecosystems, capacity building and income generating activities.

Component 2: Economic analysis – using economic analysis to support coastal management and policy decisions.

Component 3: Economic and financial mechanisms – setting up economic and financial mechanisms to generate additional and sustainable funding for ICM: review of options (payment for ecosystem services, taxes, user fees, trust funds, quota markets, offsets, labels...); feasibility studies; implementation; monitoring.

Component 4: Capitalization, communication, dissemination of project outcomes in the Pacific – going beyond pilot sites activities in order to have impacts at the regional level, by fostering experience sharing between sites, cross-sectoral expertise, and communication and dissemination of the project outcomes.

Component 5: Project management – implementing and coordinating the project, by providing technical assistance, organizing local and regional steering committees, conducting audits and evaluations (mi-term and ex-post), etc.

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Abbreviations and Definitions

| | |
|---------------|---|
| BioGro | Organic certification organization based in New Zealand. They certify organic products in the Pacific to a number of global standards |
| FJD | Fijian dollars |
| Kava | Kava (<i>Piper methysticum</i>), also known as <i>Yaqona</i> in Fiji, is a crop of the western Pacific. The roots of the plant are used to produce a drink with sedative, anesthetic, euphoriant, and entheogenic properties. Kava is consumed throughout the Pacific Ocean cultures of Polynesia and some parts of Micronesia for its sedating effects. Its active ingredients are called kavalactones |
| KYMST | Kadavu Yaubula Management Support Team |
| LCR | Landcare Research |
| LMMA | Local marine managed area |
| PGS | Participatory guarantee system |
| REDD | Reduced Emissions from Deforestation and Forest Degradation |
| RESCCUE | Project name, representing the activity of 'Restoration of ecosystem services and adaptation to climate change' |
| USDA | United States Department of Agriculture |
| USP | University of South Pacific, Institute of Applied Sciences |
| VAT | Value added tax |
| <i>Yaqona</i> | See kava above |

EXECUTIVE SUMMARY

The RESCCUE project is seeking to explore the feasibility of implementing economic/financial mechanisms to support the on-going financing of conservation activities on the Island of Kadavu, Fiji.

Yaqona (or kava) production is the main commercial activity for most households. In most villages, at least 50% of all households grow *yaqona* for commercial purposes.

Three potential economic/financial mechanisms for Kadavu are explored within this assessment:

- User fees/levies: leveraging the unique biodiversity and natural resources on and around Kadavu.
- Environmental markets: financial incentives to improve environmental stewardship.
- Eco-labelling: incentive to grow crops in an environmentally sustainable manner to maintain, protect, and/or improve the current state of native and agricultural ecosystems.

The options were first compared using a rapid market assessment from which eco-labelling emerged as the only promising mechanism. Eco-labelling, in particular the organic certification of *yaqona* was further examined to evaluate the operational, regulatory and legal, reputational, market and product, and financing risks and opportunities. In addition, a cost-benefit analysis of organic certification was undertaken in conjunction with the University of Wisconsin. The analysis identified that organic certification of *yaqona* was a feasible option for Kadavu.

According to exporters, the biggest demand for organic *yaqona* is likely to come from the US, at least initially. The regulatory and legal risks and opportunities assessment identified the most likely and easier route to being able to certify to the US organic standards is to first certify to the Canadian Organic Standard as this process is easier than trying to meet the USDA requirements. Once a product has been certified using the Canadian Organic Standard the organic equivalency agreement between Canada and US can be used to obtain the USDA certification. So, while there is no known demand for kava exports into Canada it will be the most efficient route to US certification.

The certification of *yaqona*, however, is untested and will require approval from the Canadian government if it is to be certified against the Canadian Organic Standard as well as from the BioGro Company itself. These both require formal request processes.

In addition to certification approval processes there are risks and opportunities for RESCCUE that need to be considered:

- Opportunity – RESCCUE and RESCCUE project partners lead the first certification process for organic *yaqona* globally.¹ This may have positive reputational benefits for leading and promoting a new revenue stream for a potentially large global market for Pacific Island Nations, especially if the health benefits become more widely known and sort after.
- Risk – The potential risk to RESCCUE, LCR and USP also needs to be acknowledged. Should *yaqona* become certified as organic with the test case being led by these organisations and additional substantiated health claims arise then there is reputational risk for these organisations. The new medical studies noted earlier, though, appear to have assuaged the current claims of health damage; instead showing health benefits.

¹ There were no other certification processes for *yaqona* uncovered during this assessment.

The organic certification for *yaqona* will not be pursued until RESCCUE approves the Fiji RESCCUE team's continued activities to certify organic *yaqona*.

Moving to certification

If RESCCUE approval is forthcoming some of the key requirements and subsequent steps to achieve an organic certification and to produce an export-quality product include:

1. Formal request process for the certification of *yaqona* production as organic

With RESCCUE approval we will commence the formal process of approaching the Canadian government to certify *yaqona* as organic. At the same time a formal request will be made to BioGro to also certify *yaqona*.

2. Creation of a farmer group

A group-certification model is recommended to reduce the financial and compliance burden on small-scale *yaqona* growers. For ease of audit and management (especially initially), the members of the farmer group should be located in the same geographic vicinity. The recommendation is that the initial farmer group should come from a district with significant *yaqona* production and that have experience with selling to export wholesalers in addition to a desire to be organically certified. The district of Nabukelevu is one such district. Lami Kava purchases most of their *yaqona* for processing from Nabukelevu district, mainly because of the high quality of their dried *yaqona*. In addition, at the ecosystem services workshops in July 2016, the chief of Daviqele village stated that the whole district of Nabukelevu wants to go organic.

3. Registration

Registration takes a minimum of 36 months.

4. Fulfilling the certification requirements

A number of requirements must be satisfied before a group certification can be issued. For BioGro certification, this includes:

- Internal control systems for the group and competent system manager/personnel.
- Required documentation, including a complete list of group members, maps/sketches of field locations, farm/field records, signed member agreements, and yield estimates.
- An internal inspection protocol (to be developed, documented, and implemented for the group).
- The monitoring and documented conversion process. Given that the farmers likely to be identified for membership in the group will not be using chemicals, it is possible that a retrospective certification could be made, particularly if records are available.
- Process to remove non-compliant members from the group.
- Process to accept new members into the group.
- Risk assessment procedures are developed and in place.

5. Building farmer capacity

There were a number of areas identified for building the capacity of farmer to meet the requirements for organic certification as well as supplying *yaqona* to international markets. These areas include:

- Maintaining product quality. The newly released Fijian *Yaqona* Standard (Ministry of Agriculture 2017) and Fijian Kava Quality Manual (Ministry of Agriculture undated) provide some guidelines on how to improve and maintain quality. Partnerships with other organisations (e.g. PIFON) could be developed to deliver this training.
 - Understanding what being part of a certified organic farmer group means, including understanding the requirements of organic *yaqona* production, understanding that records are required to be kept for auditing purposes, and understanding that the group as a whole (which is the certified entity) is responsible for the compliance of all operators and the audit process.
 - Keeping detailed records to high standards and completing required documentation.
 - Understanding markets, including basic knowledge on how export markets work (supply and demand, price points, impacts of price volatility) and risks and opportunities of supplying an export market (quality, stable supply, record keeping, market expectations).
6. Working with export processors to certify their processing facilities as organic and developing relationships to market organic kava produced with Kadavu *yaqona*.

The proposed actions to implement a *yaqona* organic certification system after RESCCUE approval are:

| Action | Timeline | Who |
|--|---|---|
| Formal request to Canadian government and BioGro to certify <i>yaqona</i> as organic | With RESCCUE approval | LCR |
| Initial BioGro consultation meeting Meeting to scope the steps and expand on the requirements for meeting the BioGro certification requirements for Kadavu. There is a fee associated with this meeting, and the meeting will also involve providing greater details on the requirements to the implementation team | By June 2017 | USP (as technical lead for overall implementation) KYMST representative (as lead for Kadavu implementation) LCR (as the liaison with BioGro and co-drafter of templates/protocols to fulfil certification requirements) |
| Solicit farmers to be part of the first grower group | By September 2017 | KYMST |
| Identify group manager | By September 2017 | KYMST (to identify relevant person(s)) |
| Farmer workshops to outline the requirements for organic certification and confirm membership of grower group | By December 2017 | USP (as technical implementation lead) KYMST (as Kadavu implementation lead) |
| Training workshops designed and undertaken on topics identified (see Section 6.1). External organisations to assist with training will be determined based on training needs and necessary expertise. | Between September 2017 and July 2018 | USP (as technical lead) External organisations as needed |
| Registration documentation finalized (see above for the necessary material required) | By March 2017 | USP (as technical implementation lead) KYMST representative (as Kadavu implementation lead) LCR (as co-drafter of templates/protocols to fulfil certification requirements) |
| Mentoring of farmers during certification | On-going | USP (as technical lead for overall implementation) KYMST representative (as lead for Kadavu implementation) |
| Certification | Depends on registration date and compliance | Group manager Farmers KYMST |

1. INTRODUCTION

Economic and financial mechanisms hold the promise of providing sustainable financing for environmental and conservation actions. A variety of mechanisms can be applied. However, not all mechanisms are appropriate for all contexts, and in some instances, there may be few or no mechanisms that are appropriate to current conditions in an area. The aim of this assessment is to explore what, if any, economic/financial mechanisms are applicable to the current conditions on Kadavu Island, Fiji, to support on-going environmental improvement.

Background

Kadavu Island, 96 km south of Suva, covers 408 km² and is the fourth largest island in the Fiji Group after Viti Levu, Vanua Levu and Taveuni. The island is 58 km long and 14 km wide at its widest point (Figure 1).

Kadavu is volcanic in origin with the landscape being generally steep. The highest point is Mt Washington (Nabukelevu province) at 838 meters above sea level. Kadavu lies across the direction of the south-east trade wind with its southern shore windward such that the southern side of the island is more exposed and experiences higher rainfall than the northern side.

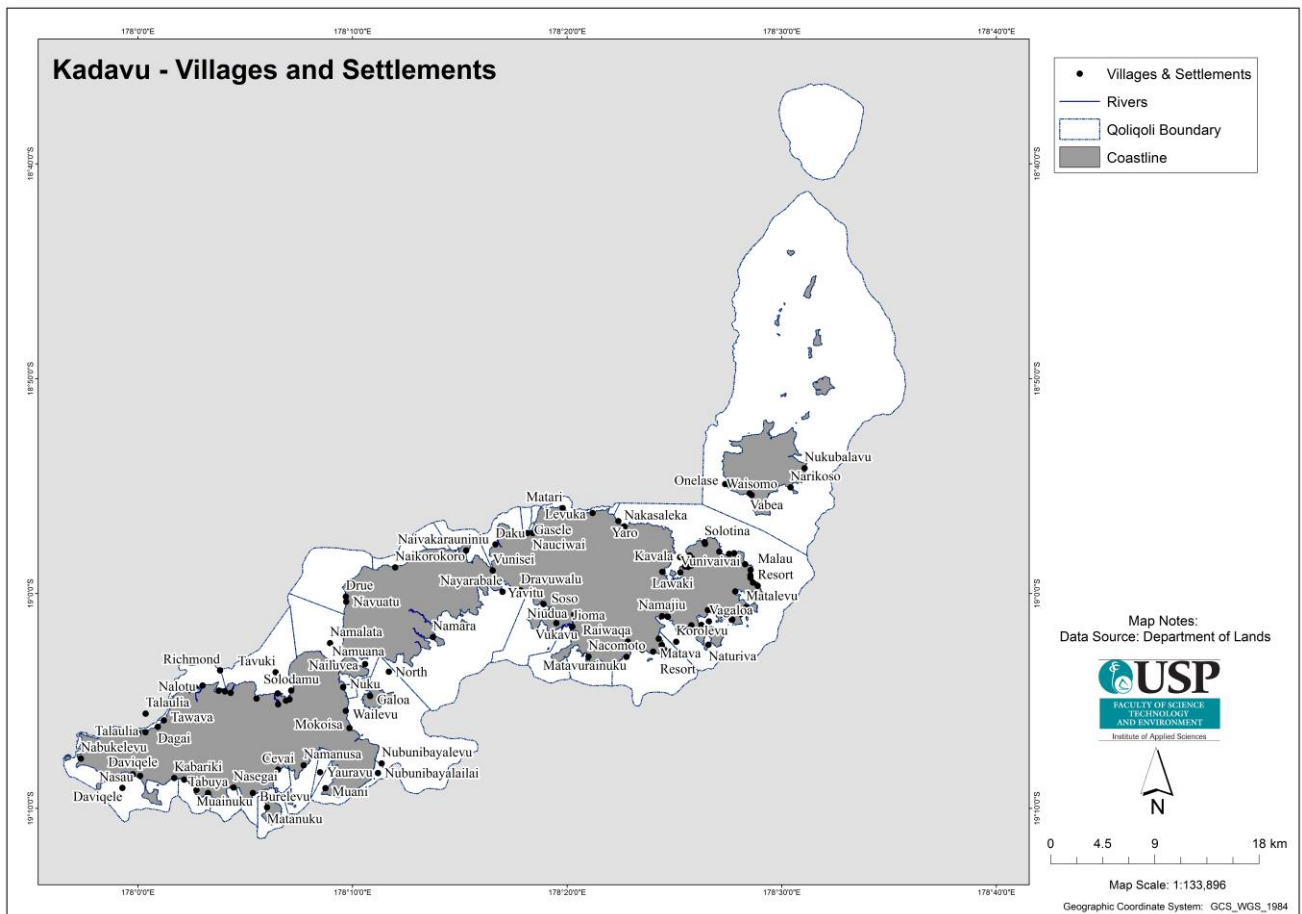


Figure 1 Kadavu villages and settlements

There are 9 districts in Kadavu province, with the main centre, Vunisea, lying in Tavuki district. There are two ports: Vunisea, which also hosts the islands only airstrip; and Kavala in the Nakaseleke district to the north of the main island. There is a limited road network, with the predominant mode of transportation to most areas being by the sea (Fig. 2).

The Great Astrolabe Reef is located in the northern area of Kadavu and is one of the largest barrier reefs in the world. There is also a network of local marine managed areas (LMMAs) situated around Kadavu aimed at meeting local-scale conservation and fisheries needs. More details on the LMMAs can be found in Korovulavula (2016), Wendt (2012) and Wendt et al. (2016). There are eleven tourist resorts/accommodation places on the island, most located near the Great Astrolabe Reef (see Appendix 1).

Yaqona (or kava)² production is the main commercial activity for most households (Fig. 6). For most villages, at least 50% of all households in the sample grow *yaqona* for commercial purposes (Greenhalgh et al. 2016).

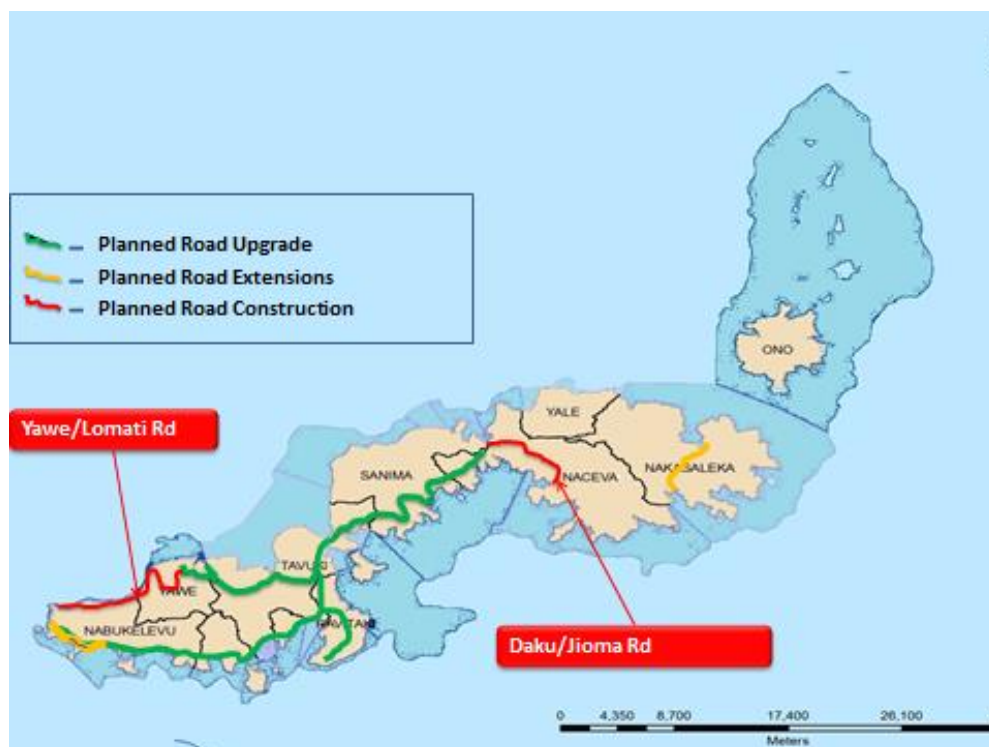


Figure 2 Existing and planned road network for Kadavu (Source: Kadavu Provincial Administrator 2017)

² Throughout this report, the term *yaqona* is used to refer to the unprocessed plant, while kava is used to refer to the processed product.

2. OVERVIEW OF ECONOMIC AND FINANCIAL MECHANISMS³

There is no widely agreed definition or classification of economic and financial mechanisms (Greenhalgh & Selman 2014; Billé & Marre 2015). RESCCUE have developed a basic framework for these mechanisms (see Table 1) that uses four categories to differentiate between mechanisms. Two categories describe the primary objectives of the mechanisms and two categories distinguish mechanisms based on who pays.

Table 1 RESCCUE classification of economic and financial mechanism

| <div style="text-align: center;">What for?</div> <div style="text-align: left;">Who pays?</div> | Economic mechanisms Primary objective: provide incentive(s) to limit harmful behaviours to biodiversity and ecosystem services | Financial mechanisms Primary objective: generate funding to cover administrative or management costs for biodiversity and ecosystem services conservation or restoration (one-off or regular payments) |
|--|--|---|
| Polluter pays An agent pays because he degrades biodiversity and ecosystem services | Tax, ecotax (to change behaviour) Quotas, markets Eliminate harmful subsidies | Tax, ecotax (to generate funding) Offset Trust funds (filled by polluters) Compensation of environmental damage Royalty Usage fee, user fees, licence fees Tax (tourism, cruise ship) |
| Beneficiary pays An agent (or a representative) pays to benefit from ecosystem services and biodiversity conservation or restoration | Payment for ecosystem services Conservation agreements (involving a payment) Conservation easements REDD+ Label Subsidies Reverse auctions | Private/public donations Land acquisition Trust funds (filled by beneficiaries) Green lottery Entrance fees to protected areas User fee, licence fees Taxes (airport, tourism tax, cruise ship) Debt-for-nature swap |

Source: from Billé & Marre 2015.

Another useful and relatively common way to describe mechanisms is whether the mechanism is price-based or market-based (or rights-based) (Fig. 3). Price-based mechanisms directly change price, while market-based mechanisms indirectly influence price through markets. Price-based mechanisms rely on explicit price signals to motivate changes in behaviour. There are two common types of price-based mechanisms – taxes that place a penalty on those who degrade ecosystem services and

³ Note: this section is taken directly from Greenhalgh and Mangubhai (2016).

subsidies that provide rewards to reduce negative impacts on ecosystem services (Greenhalgh & Faeth 2001).

Market-based mechanisms refer to the creation of a market-like mechanism to determine the price paid for an environmental outcome (Morrison & Greig undated). These mechanisms encourage behaviour through market signals rather than through explicit directives such as pollution control levels or methods (Stavins 2001). Market-based mechanisms have some key theoretical advantages over stand-alone regulation or price-based economic mechanisms, especially in efficiency and cost-effectiveness in improving environmental quality and meeting environmental goals (e.g. Tietenburg 2006).

This type of classification is also useful as it provides insights into the types of signals a mechanism may provide to incentivise conservation actions. In this report, we look broadly across the range of different economic/financial mechanisms to see how they may be applicable to conservation efforts in Kadavu, Fiji.

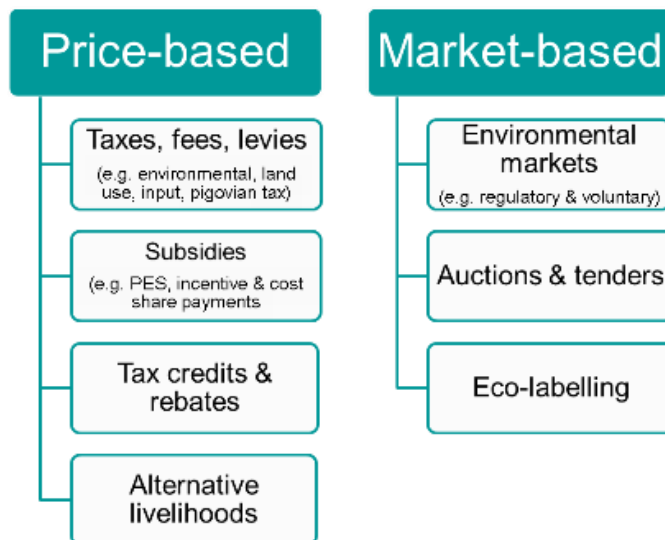


Figure 3 description of price based and markets based mechanisms

3. EXISTING ECONOMIC AND FINANCIAL MECHANISMS IN FIJI: AN OVERVIEW⁴

Economic/ financial mechanisms are currently being used to address some environmental issues in Fiji. A majority of the mechanisms in place are price-based mechanisms that rely on the tourism sector and, to a lesser extent, on private companies. Outlined below are a range of mechanisms currently in operation in Fiji. This list is not exhaustive.

3.1 Taxes, fees, levies: Environmental levies

3.1.1 Fiji Environmental Levy and Airport Departure Tax

The 2016 Budget for Fiji introduced an Environmental Levy that reinforces the government's commitment for the right to a clean environment for all Fijians. The levy would predominantly target visitors staying in luxury accommodations and who come to enjoy the natural beauty and recreational opportunities in Fiji. Tourism operators will have to pay a small additional charge to support environmental protection programs (Fiji Revenue and Customs Authority 2016). However, it is not yet clear how these funds will be used (Isoa Korovulavula, USP, pers. comm., 10 June 2016; Susana Waqainabete-Tuisese, CI, pers. comm., 11 June 2016; Yap et al. 2016).

The Environmental Levy will be levied at 6% on the 'turnover' of prescribed service providers (which are listed under the Schedule of the Environmental Levy Act). In this instance, 'turnover' means the total charges for prescribed services billed to consumers. The levy is effective from 1 January 2016 (Fiji Revenue and Customs Authority 2016). It is still unclear how this fund will be used to provide grants, seed funding, or other forms of support for the establishment of economic and financial mechanisms to support environmental conservation.

There is also an environment levy within the Airport Departure Tax, which is currently FJD10. The revenue from this tax also goes into the government's consolidated revenue fund with no specific targeting of this revenue for environmental purposes (Yap et al. 2016).

3.1.2 Challenges and opportunities for expansion

The environmental Levy has been established by a legislative act that provides the required legal mandate for the implementation of such a levy. If this revenue is used to support environmental conservation, then the levy may provide a sustainable financing mechanism with which to establish and maintain a range of conservation initiatives. On the other hand, if this revenue goes into the consolidated revenue funds and is not targeted toward conservation, then there is likely to be little environmental benefit. Currently, these levy funds are not being used to fund conservation.

3.2 Taxes, fees, levies: Marine user fee systems

3.2.1 Shark Levy, Shark Reef Marine Reserve

This voluntary contribution system began in 2003 as an agreement between two villages who owned traditional rights to Shark Reef (located between Viti Levu and Beqa Island) and a dive operator. The dive operator was granted access to the area in return for villagers not fishing on parts of the reef. The dive operator collected a voluntary daily park contribution (currently FJD20 per diver; Beqa Adventure Divers 2016) from each visitor, which was split equally between these two villages.

⁴ Note: portions of this section are taken directly from Greenhalgh and Mangubhai (2016).

The marine reserve at Shark Reef was formally established in 2004. Since then, other villages have joined the initiative leading to an expansion of the protected area. They also receive a donation from the tourism revenue. Other incentives included in the agreement are dive master training for villagers, training of fish wardens to monitor the area, and the dive operator acting as the intermediary with the relevant Fijian authorities, helping to procure moorings and markers and assisting villages in the monitoring of protected areas (Brunnschweiler 2010).

3.2.2 Namena Marine Reserve

The Namena Marine Reserve is located between Viti Levu and Vanua Levu in the traditional fishing grounds of the Kabulau Community. The community not only wanted to protect its marine fisheries from over-exploitation due to poaching and poor management, but also wanted to develop tourism to provide a sustainable income for the community. To meet the costs of managing the area (e.g. patrols, moorings, and fuel) they established a voluntary donation (FJD30/person) for those who visited the park. The donation supports tertiary scholarships.

Challenges still exist from the lack of adequate enforcement and laws to protect marine protected areas (Namena Park Reserve 2016). This reserve suffered substantial damage during Cyclone Winston (Mangubhai 2016) and it is currently unclear whether the resort, which provided substantial clientele, will reopen (Namena Island Dive Resort 2017).

3.2.3 Challenges and opportunities for expansion

As long as there is a charismatic resource about which visitors care and are willing to pay to visit, voluntary contributions to conservation have the potential to provide regular income streams to communities. One factor to consider with voluntary contributions, however, is the local uniqueness of the place/species visitors are paying to see/use and the number of potential visitors.

The overall cost of the experience is also likely to be an issue for some visitors, whose costs may already include airfares, accommodation, and meals as well as the cost of experiences. Costs are becoming an issue in Fiji. Taxes (VAT, Service Turnover Tax, and Environmental Levy) paid by tourists have risen from 15.5% to 25% (or 61%). Excise and import taxes have increased causing wine prices, for example, to increase by 53%, and departure taxes have been raised. The cost base has also increased (e.g. for building supplies, fruit, and vegetables), which is passed on to visitors (Lal 2016). These cost increases all raise the holiday costs for tourists, who compare Fiji with other destinations, suggesting that the tourism industry's appetite for new user fees may be limited. The rising costs for tourism were a concern expressed by Helen Sykes (resort support consultant, pers. comm., 4 May 2016) in terms of maintaining visitor numbers and the future of these kinds of fees.

The Regulation of Surfing Areas Decree 2010 (hereafter 'Surfing Decree') has also made the continued and expanded use of this kind of mechanism challenging. This decree 'enables unrestricted access to any surfing area (where surfing is defined as surfing and any water sport) by all persons, including tourists, hotels, and businesses engaged in providing and promoting surfing or any other water sport' (Fiji Government 2010). This decree thus makes it difficult for communities to lease, license, or use some other instruments in relation to surfing areas, broadly defined.

3.3 Subsidies and grants: Trust funds

3.3.1 Sovi Basin Trust Fund

The Sovi Basin Trust Fund was established as an endowment fund to provide financial sustainability of the Sovi Basin Protected Area in the Naitasiri and Namosi provinces of Viti Levu over the long term.

The total amount targeted for the capitalisation of the Trust Fund is USD4.25 million (National Trust of Fiji 2013). The Trust Agreement was signed in 2010 with an initial endowment of USD3.627 (from contributions from Fiji Water and Conservation International's Global Conservation Fund (Yap et al.)). The funds are invested in an offshore account – HSBC Trustee (Singapore) Ltd (Susana Waqainabete-Tuisese, pers. comm., 15 June 2016). The GEF4 (PAS4: Forest Conservation and Protected Area Management Project in Fiji) is also contributing USD0.25m into the Sovi Basin Trust Fund. The first set of dividends from the Trust was paid to the communities in 2015 (Susana Waqainabete-Tuisese, pers. comm., 29 June 2016).

The Trust Fund supports 3 areas:

- Annual royalty and lease payments to Sovi Basin Protected Area landowners.⁵ These payments include an annual lease fee and an annual timber royalty (for standing trees) in lieu of timber harvest. This lease amount is determined by the *iTaukei* Land Trust Board (TLTB).
- Annual contributions to the Community Conservation and Development Fund. The fund's purpose is to provide benefits to the six-landowning village communities.⁶ Not all members of the landowning villages are landowners, so to ensure that all village members have an incentive to protect the area, the fund has been set up to finance community projects. Depending on the accrued interest of the Trust Fund, an equal amount is disbursed annually to all communities.
- Management budget for the National Trust of Fiji, which manages the protected area (National Trust of Fiji 2013).

The protected area, which the Sovi Basin Trust supports, took approximately 9 years to establish. Conservation International began its engagement with the local communities in 2003 and acquired a five-year development lease from the Sovi Basin's landowners in 2005. A 99-year lease for the Sovi Basin Protected Area was signed in 2012 between National Trust of Fiji (NTF) and TLTB (National Trust of Fiji 2013). The original size of the protected area was 23 400 ha but 7096 ha have been given to a mining interest (under the Section 11(2) of the Mining Act [Cap 14]⁷). The size of the protected area is now 16 304 ha (Susana Waqainabete-Tuisese, pers. comm., 15 June 2016).

3.3.2 Challenges and opportunities for expansion

Establishing Trusts for on-going conservation of the environment has merit, although it is too early to assess the effectiveness of the Sovi Basin Trust Fund in terms of delivering community and conservation benefits. However, based on the learnings to date, the successful establishment of Conservation Trusts should have:

- Legal protection status for the land/marine area which the trust supports to ensure there is an ability to legally enforce the conditions of any agreement. Establishment likely requires:
 - Sufficient time to engage with landowners to jointly define and agree to the conditions of

⁵ The land within the area is communally owned by 13 mataqali: Buasauni, Buluya, Nabukebuke, Nakaulevu, Nakulasa, Naitavuni, Namataniqavi, Nasava, Nawaisomo, Tabaivunaqumu, Vetawa, Waibasaga, and Waituitui. Sovi Basin landowners are resident in six villages: Delailasikau, Nadakuni, Naivucini, Namosi, Naseuvou, and Nukusere. None of these villages is located within the SBPA but in a number of river valleys adjacent to the SBPA. The villages of Namosi and Nukusere are within the Province of Namosi. The four remaining villages are within the Province of Naitasiri.

⁶ These villages are Delailasakau, Nadakuni, Naivucini, Namosi, Naseuvou, and Nukusere.

⁷ www.paclii.org/fj/legis/consol_act_OK/ma81/

any protected area agreement, e.g. expectation for the community (such as no logging), expectation of the management entity (such as payments to the community), and building trust and understanding between the parties.

- Enforceable lease agreements (or similar arrangements) between resource owners and an independent manager of the protection area.
- Establishment of a governance structure and management entity.
- An initial source of funds/endowment of sufficient size to provide an on-going revenue stream to manage the protected area and to meet any of the financial obligations laid out in the legal agreement.
- Strong governance structure for both the management of the trust and the protected area.

Without these conditions in place, it is less likely that these trusts will be successful.

3.4 Subsidies and grants: Environmental grants

3.4.1 Mamanuca Environment Society

This initiative can loosely be classified as a financial instrument because funds and personnel are being provided to support efforts to protect and restore dry forest habitat on Malolo Island, on which Fijian crested iguanas have been found. This species was previously believed to be extinct on the island. Fiji Airways is one of the major sponsors of the initiative (Mamanuca Environment Society 2016).

3.4.2 Challenges and opportunities for expansion

Grants rely on funding agencies (e.g. bilateral, government, private sector, and philanthropic organisations) to provide on-going funding to support initiatives. Funding via grants may be uncertain in the medium- to long-term, and the amount and longevity of the investment will depend on the strategic direction of the funding agency and the amount of funding available. If a larger amount of funding is available, then trust funds or something similar could be established to provide a reliable funding streams into the future (also see Section 3.3). The size of this revenue stream may be small and will depend on the performance of financial markets. In this situation, transparent and effective governance structures are required.

3.5 Environmental markets: Carbon market

REDD and REDD+ are global initiatives to stop tropical deforestation. They emerged under the United Nations Framework Convention on Climate Change in 2007, and there are now many nations developing their 'readiness' to receive payments for reducing deforestation against a business-as-usual baseline.

Fiji submitted a Readiness Preparation Proposal (R-PP) to the Forest Carbon Partnership Facility in 2013 and has received a four-year readiness grant to implement the R-PP and to develop its REDD+ strategy. The readiness grant will fund the implementation of the R-PP, which began in 2014 and is expected to last 4 years. It is likely that Fiji will develop a subnational-level programme through pilot projects that will later be nested into a national programme. National pilot projects are underway in Emalu, Navosa province (Viti Levu) and Vinuvia (Vanua Levu). There are also community projects being implemented by Conservation International in Ra Province (Viti Levu) and by Live and Learn on Drawa (Vanua Levu) (the REDD desk 2016).

3.5.1 The Nakavaudra Forest Carbon Project

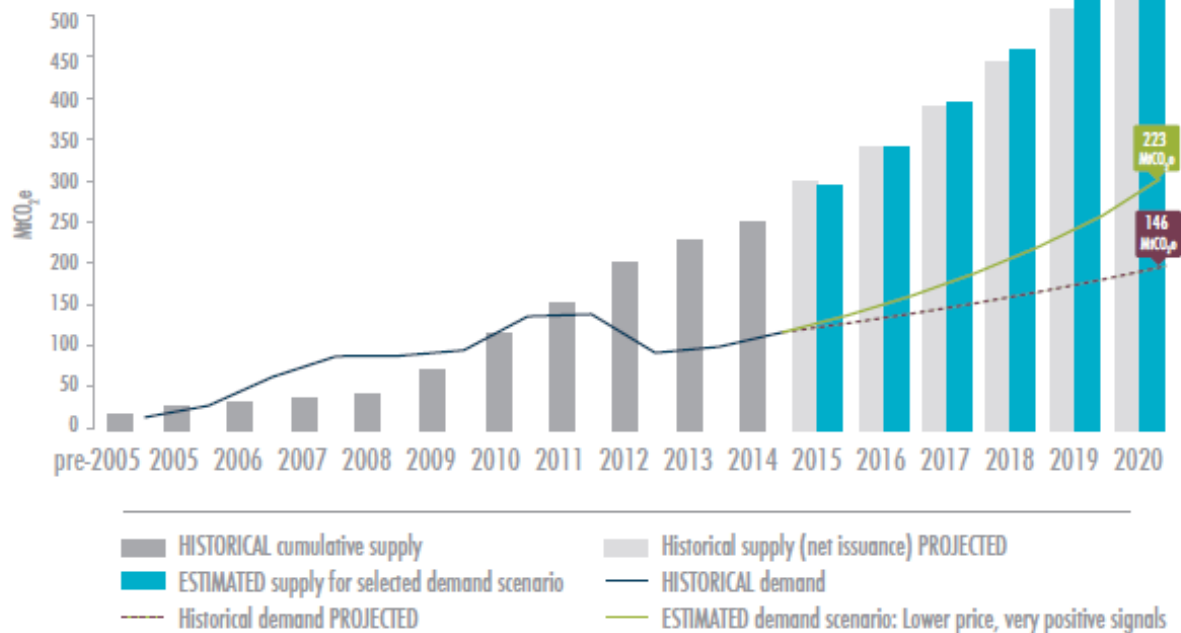
The Nakavaudra Forest Carbon Project in Ra Province is an integrated, multiple-benefit project to generate offsets to meet Fiji Water's carbon commitment, to create a buffer around the Nakavaudra Range rainforest, and to establish a restoration project that provides employment (through restoration activities in the short term) and sustainable timber harvest in the longer term. The project involves the planting of hardwood timber species for community income generation as well as native species on steeper slopes. This project is expected to be verified against the Climate, Community, and Biodiversity Standard and Verified Carbon Standard (Conservation International 2016).

3.5.2 Drawa Community REDD+ Project

The Drawa Community REDD+ Project, Vanua Levu, involves changing land use from logging to forest protection with carbon. The area is protected by a 30-year perpetually renewable lease covenant; landowners have given up their rights to harvest timber and instead will sell carbon offsets. This project will generate 22,764 carbon credits annually, with the first issuance expected in the first quarter of 2017. Credits are certified to the Plan Vivo Standard (Ekos 2017).

3.5.3 Challenges and opportunities for expansion

Most REDD+ projects rely on a solid demand for their credits to remain viable. To date, most of this demand has come from voluntary buyers and bilateral government deals as the compliance offset market for carbon has been slow to develop. While demand has been increasing, the sheer volume of supply far outweighs the demand for these credits (Fig. 4) (Forest Trends Ecosystem Marketplace 2015). This oversupply will be an on-going risk to these projects in the short- to medium-term (and possibly longer).



Notes: Estimates based on historical voluntary offset demand growth rate (9%) and historical offset issuance growth rate (30% year on year) after subtracting 1) non-issued volumes (est. 40% of potential supply); 2) retirement (average 40% of issued supply); and transacted volumes (variable, based on historical transactions). Projections assume a 10% annual project (and thus new supply) "dropout" rate; -7.2% average decrease in demand for given policy and price scenario; and -17.5% baseline decrease in supply for given policy and price scenario.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2015*.

Figure 4 Historical voluntary offset (or credit) supply and demand including estimated future supply and demand based on assumption of lower prices but very positive policy signals

3.6 Ecolabels

3.6.1 Fiji's tuna industry

In 2012, the Fiji Tuna Boat Owners Association (FTBOA)'s albacore longline fishery was certified as sustainable by the Marine Stewardship Council (MSC). This certification was not only the first fishery to be certified in Fiji, but it was also the first tuna longline fishery in the world to be certified (MSC 2016). The key opportunity with MSC certification is the potential to develop new markets in countries with high demand for certified sustainable seafood (WWF 2012).

3.6.2 Challenges and opportunities for expansion

This type of mechanism depends on the ability of an industry/area/organisation to meet certification requirements on an on-going basis and on markets being prepared to either pay a premium for these products or to give preferential access for these products in their market. To achieve scale, these mechanisms often rely on many small operators individually meeting the standards/requirements of the ecolabel.

4. ENVIRONMENTAL AND CONSERVATION ISSUES: AN OVERVIEW

A range of environmental and conservation issues and challenges in Kadavu were identified through district ICM meetings, through a series of participatory workshops on ecosystem services held at the district level, through household surveys conducted across Kadavu, and through meeting with local officials.

Through the ecosystem services workshops, the environmental issues and resources were spatially mapped (see Greenhalgh et al. 2016). Coastal inundation, poaching in *qoliqoli* (community marine areas), sedimentation of the coastal zone (particularly related to road development), and water source contamination/supply were noted by many villages and districts as important environmental issues. While burning was not noted as being important by communities, it was noted as a problem by Ministry of Agriculture staff on Kadavu. There was also a heavy dependence on *yaqona* for commercial cash cropping. It was noted in a number of the strategy sessions associated with the participatory ecosystem services workshops that some districts were interested organic agriculture production and also that there seemed to be an increasing use of chemicals, mostly herbicides, for agricultural production.

Within the terrestrial and marine space are some important areas of biodiversity. In the Nakasaleka and Nabukelevu districts are forested areas rich in endemic species, including Kadavu Shining (Musk) Parrot, Kadavu Honeyeater, Kadavu Fantail, and Whistling Dove (Masibalavu & Dutson 2006). The northern part of the island is home to the Great Astrolabe Reef, which is noted for its rich sea life. Species such as the large potato cod spawn off Sanima Province and the general health of the reefs around Kadavu is considered sound.

As the Integrated Coastal Management (ICM) Plan for Kadavu is still being finalized, we will be using the observations from the district ICM meetings, district-level ecosystem service workshops, household surveys, and meetings with local officials as a basis for identifying potential economic and financial mechanisms.

5. FEASIBILITY OF ECONOMIC AND FINANCIAL MECHANISMS

Of the possible mechanisms to consider (Table 2/Fig. 3) the more appropriate mechanisms in the Kadavu context include:

- User fees/levies: leveraging the unique biodiversity and natural resources on and around Kadavu.
- Environmental markets: financial incentives to improve environmental stewardship.
- Eco-labelling: incentive to grow crops in an environmentally sustainable manner to maintain, protect, and/or improve the current state of native and agricultural ecosystems.

These mechanisms are examined further in this assessment. The initial feasibility screening is based on a rapid market assessment to eliminate those mechanism with a limited (or no) viable market (Table 2). An assessment of the risks and opportunities is then undertaken. To carry out these assessments a number of people and organisations were consulted and they are listed in Appendix 1.

Table 2 Summary of assessment components used for the feasibility assessment

| Assessment component | Elements |
|--|--|
| Initial screening: Market assessment | Supply of environmental good/service Demand for the environmental good/service |
| Extended assessment: Risks and opportunities | Operational risks and opportunities Regulatory and legal risks and opportunities Reputational risks and opportunities Market and product risks and opportunities Financing risks and opportunities |
| Cost-benefit analysis | Net present value of options |

5.1 Market Assessment

The market assessment examines the potential supply and demand for the environmental goods and/or services being enhanced/created/protected through the use of economics or financial mechanisms. If the supply and/or demand is not regular or is limited in size or lifespan then the mechanism is not considered feasible in this assessment for on-going conservation purposes. Enforcement and implementation challenges are also considered within the rapid assessment.

5.1.1 User fees/levies

This mechanism charges a fee or levy on resource users. In the Kadavu context, there are four key resource users to which a fee/levy could be applied: tourists/visitors with primarily non-consumptive uses of the natural environment (the exception would be fishing), farmers who utilise the land to grow crops or to graze livestock, fishers who predominantly fish in the in-shore fishery, and the communities who will soon start harvesting the planted pine. Fees or levies are only considered for the commercial use of resources, not where the resource is used for subsistence purposes.

- a) *Coral reefs, beaches, natural areas:* There is a good supply of coral reefs, beaches, and natural areas in Kadavu (Table 3). However, the Surfing Decree (Box 1) makes it difficult for communities to lease, license, or use some other instruments in relation to surfing areas (where surfing is defined as surfing and any other water sport). It should be noted that there is an informal fee arrangement in place when divers dive in areas outside their resort’s dive sites. However, diving outside resort dive sites is not common given the number of excellent dive sites accessible to each resort (Dive manager, Matana/Dive Kadavu, 25 July 2016).

Box 1: Regulation of surfing areas decree 2010 (Fiji Government 2010)

Section 6(1) Any person may, whether individually or in a group, access and use any surfing area for the purposes of surfing or any water sport, without obtaining any permit or approval from any person and without the payment of any monies or any compensation to any person, for the use of any such surfing area.

In terms of demand by visitors/tourists to use these resources, there are 11 resorts/accommodation places in Kadavu ranging from the basic to 6-star luxury (See Appendix 2). Visitor statistics are not available specifically for Kadavu. However, the 'others' category in the visitor statistics (which includes Kadavu) indicate room occupancy is approximately 20% in those areas (Fiji Bureau of Statistics 2017). Based on our conversations with Matana Resort, this estimate is reasonable (Selini Nasaica, Matana/Dive Kadavu, 20 July 2016). Travel to Kadavu is restricted to five direct flights per week from Nadi to Kadavu and one direct flight per week from Suva to Kadavu on small planes to Vunisea (Fiji Airways 2017), private sea plane, helicopter flights, and the cargo/passenger ferry from Suva. The International Visitor Survey 2014 noted that the vast majority of visitors visited outlying areas of Fiji for rest and relaxation (~80%) (Tupou Moeofo, Tourism Fiji, pers. comm., 28 April 2017).

Given the relatively limited number of visitors, limited access, and the implications of the Surfing Decree, the implementation of a visitor fee or levy is not considered to be feasible at this time. The situation on Kadavu is quite different to Vatu-i-Ra, especially in terms of access for tourists. The number of potential tourists will be always restricted by the limited number of flights or boats to Kadavu. In Vatu-i-Ra the access to the area and number of potential visitors is likely to grow over time given it is located on Viti Levu, the main entry point into Fiji. In Kadavu there is also an informal dive fee operating but there is not anything similar in the Vatu-i-Ra.

- b) *Agricultural land*: While *yaqona* is commercially grown, remaining agricultural production is largely subsistence. The land used for agricultural production is owned and managed by communities. While some land that is currently forested could be converted to agricultural production (Table 4), the ownership structure and the large number of subsistence farmers mean that it would be difficult to collect any levy or fee on the use of agricultural land for commercial production, particularly in those less accessible areas. This mechanism is also a regulatory mechanism and therefore typically perceived less favourably than voluntary mechanisms, such as eco-certification which is described later. For these reasons we do not consider this option to be feasible.
- c) *Fishery*: The in-shore fishery is owned and managed by communities. Each village has its own *qoliqoli* of which a certain portion has typically been set aside as a no-take zone (or locally-managed marine areas; LMMAs). As with the agricultural land, there is a mix of subsistence and commercial fishing. The state of the fishery is mixed, and poaching is considered a challenge (Table 3). Approximately 65% of villages in the household survey conducted in 2016 indicated that poaching was a challenge, with 86% of those villages that perceived poaching as being a challenge believing it is getting worse. Greenhalgh et al. (2016) provides more information on fish consumption, fisheries, and LMMAs.

There was also some uncertainty by communities as to their ability to enforce any fishing restrictions in LMMAs caused by the Surfing Decree. Given the ownership structure, the large number of potential users of the fisheries, and variability of when fishing is occurring, who is fishing, and the amount caught, it would be difficult to implement a user fee or levy. Therefore, we do not consider this option to be feasible.

There is some big game fishing around Kadavu but similar to the coral reefs, beaches and natural areas above a fishing fee would be limited by the visitor numbers. Therefore, such a fee is not considered any further.

d) *Forestry*: Pine was widely planted across Kadavu (Fig. 5). Many of these pines are at harvestable age and a portable sawmill has been bought in to process the pine (Kadavu Provincial Administrator, pers. comm., July 2016). The actual area under pine is not known and it is not yet clear whether all the pines will be harvested or whether the areas being harvested will be replanted. The cost of transporting the pines is expected to be high, and there are challenges with loading the pines onto sea transport. Therefore, there have been community discussions on the use of the harvested pine for local construction instead of sending the logs to Suva or other markets (Isoa Korovulavula, pers. comm., April 2017). It is expected that the supply of this resource is therefore limited over the long-term, and it would not be feasible to place a levy or fee on the harvested timber.

Table 3 Resources on Kadavu

| Resource | Resource User | Resource condition |
|---|----------------------|--|
| Coral reefs, beaches, natural terrestrial areas | Visitor/tourist | The general condition of these areas are being maintained (pers. comms, community members in ecosystem service workshops, July 2016). However, some degradation has been experienced in specific circumstances (e.g. building of roads) and also through coastal inundation (Greenhalgh et al. 2016). |
| Exotic forest | Foresters | Much of the areas planted for pine is ready for harvest. |
| Agricultural land | Village/communities | 6–42% of the class 1 and 2 land is being used for agricultural purposes (Table 4). It is generally believed by community members that the condition of land is being maintained (pers. comms, community members in ecosystem service workshops, July 2016). Communities note land slips and erosion in some areas due to livestock grazing and cropping. There is also an increasing use of fertilisers and herbicides in some areas, which may indicate changes in production practices rather than a decline in land condition (Greenhalgh et al. 2016). |
| Ocean/reef fishery | Villages/communities | The health of the fishery is mixed. Responses by community members indicated that health is declining in some areas/species and improving in other areas/species. Poaching is perceived to be an increasing threat (Greenhalgh et al. 2016). |

Table 4 Agricultural statistics for Kadavu Island (Source: Kadavu Provincial Administrator, 2017)

| Districts | | Population Demography | | | | Arable Land & % of Usage | | | | | Average Yaqona per Farmer | Yaqona Plants (qty) | Yaqona Value (FJ\$) |
|--------------|------------------|-----------------------|---------------|----------------------|---------------------|--------------------------|---------------|---------------|-------------------------------|---------------|------------------------------------|---------------------------|------------------------|
| Tikina | No. of Vlg | No. of Household | Population | 19- 55yrs Male | Existing Farmers | Class 1 | Class 2 | Total | Total Used Land (ha) | % of usage | | | |
| Nabukelevu | 11 | 460 | 2,266 | 512 | 366 | 191 | 1,287 | 1,478 | 465 | 31% | 375 | 137,250 | 4,117,500 |
| Yawe | 6 | 138 | 717 | 186 | 142 | 104 | 830 | 934 | 390 | 42% | 880 | 125,000 | 3,750,000 |
| Ravitaki | 8 | 221 | 786 | 196 | 246 | 347 | 1,342 | 1,689 | 452 | 27% | 673 | 165,500 | 4,965,000 |
| Tavuki | 10 | 315 | 1,427 | 299 | 333 | 410 | 2,428 | 2,838 | 438 | 15% | 1,135 | 378,000 | 11,340,000 |
| Sanima | 11 | 302 | 559 | 131 | 534 | 177 | 2,215 | 2,392 | 258 | 11% | 215 | 115,000 | 3,450,000 |
| Naceva | 6 | 131 | 1,450 | 579 | 110 | 463 | 2,975 | 3,438 | 434 | 13% | 559 | 61,500 | 1,845,000 |
| Yale | 5 | 122 | 343 | 352 | 92 | 87 | 1,120 | 1,207 | 192 | 16% | 302 | 27,750 | 832,500 |
| Nakasaleka | 12 | 251 | 2,446 | 72 | 333 | 528 | 3,016 | 3,544 | 480 | 14% | 627 | 208,750 | 6,262,500 |
| Ono | 6 | 154 | 741 | 176 | 132 | 189 | 2,027 | 2,216 | 143 | 6% | 114 | 15,000 | 450,000 |
| Total | 75 | 2,094 | 10,695 | 2,503 | 2,288 | 2,496 | 17,240 | 19,736 | 3,252 | 16% | 539 | 1,233,750 | 37,012,500 |

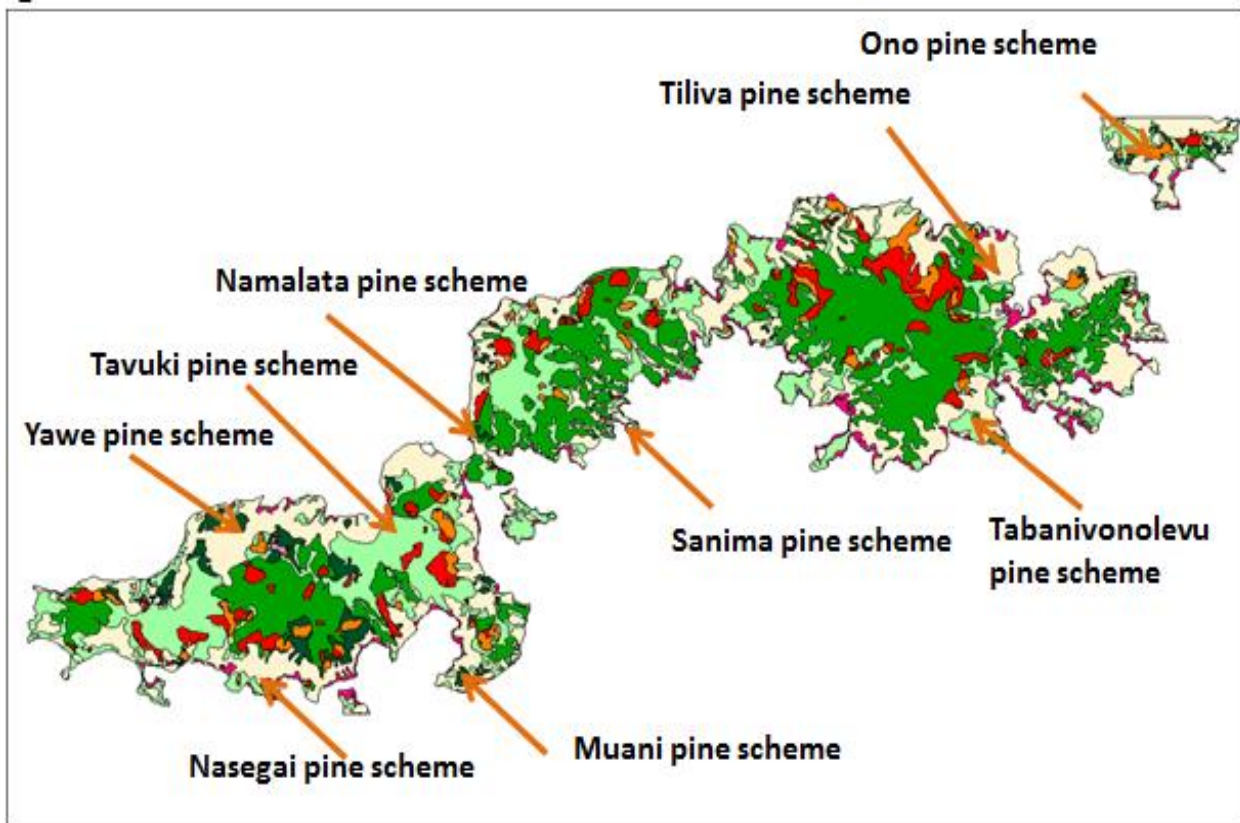


Figure 5 Planted pine in Kadavu (Source: Kadavu Provincial Administrator, 2017)

5.1.2 Environmental markets

Three environmental markets are considered:

- Biodiversity offsets/market related to development
- Carbon market through a reduction in burning and/or clearance of forested land for agriculture.
- Water quality market related to degradation from farming and road development.

5.1.2.1 Biodiversity offsets

There is little private development⁸ on Kadavu and therefore little pressure on biodiversity. The one exception would be the proposed road development. This development is government-financed to support the economic development of the area. For this type of market, the government would be the buyer and the community would be the supplier of alternative areas of biodiversity protection. There are a number of points to consider with this mechanism in this context:

- The community needs for improved transport access to many areas is likely to override decisions on whether to build roads or not.

⁸ Agricultural development is considered community development as land is not being sold to outside investors who then benefit from commercial production.

- Environmental impact assessment requirements have been strengthened for infrastructure development projects (Department of Environment, pers. comm., 26 April 2016).
- The roads are unlikely to pass through the areas of high terrestrial biodiversity.
- Coastal zone impacts are likely to dominate, e.g. impacts of sedimentation.

5.1.2.2 Water quality markets

Water quality is perceived to be quite good for most of the island. There were some exceptions noted in the ecosystem services workshops in July 2016 where water quality issues were mentioned in relation to past road development and where farms were upstream of drinking water sources. For this mechanism the buyers would be communities and therefore are not likely to participate in any formal market. Sources of contamination from farming areas can be addressed through moving farming fields and the Department of Environment has been notified of the on-going sedimentation issues related to the road. This mechanism is not pursued further due to the localised nature of the impacts and the challenges with legacy issues that would not be addressed through this kind of market.

5.1.2.3 Carbon markets

The REDD+ carbon market, if any, is the most likely environmental market to evolve in Kadavu. As noted in the section on user fees and levies above, there is uncertainty about the likelihood of replanting after pine is harvested. There are two areas known for high terrestrial biodiversity, namely Nabukelevu and Nakasaleka (Korovulavula 2016). For a REDD+ project to be viable, there needs to be a threat of loss. While there was some indication of pressure on forested areas for agricultural expansion, communities surrounding these areas of high biodiversity indicated in the ecosystem workshops conducted in July 2016 that they understood the value of these areas and would not expect these areas to be cleared in the future. In addition, as indicated in Section 3, the expected supply of these types of credits exceeds the current demand and future demand is uncertain.

Therefore, environmental markets mechanisms are not considered any further in this feasibility assessment.

5.1.3 Eco-certification

Yaqona is the most commonly grown commercial crop and would be the mostly likely candidate for eco-certification (Greenhalgh et al. 2016). The supply of *yaqona* is increasing in Kadavu and there is additional land that could be utilised for *yaqona* production (Table 4). The interest in organic production is also quite high in Kadavu with the chief of Daviqele village stating that the whole district of Nabukelevu wants to go organic (Nabukelevu Ecosystem Services Workshop, July 2016).

The demand for kava (*yaqona*) has been increasing globally, predominantly based on demand from the US market (Donny Jason Lee, Lami Kava, pers. comms, 27 April 2017). Some concerns were raised by Lami Kava about the high price of *yaqona* currently being sought by Kadavu farmers, which has led to a reduction in their exports to the US; demand in the domestic market, however, has remained steady. There is an expectation that prices will stabilise again once the perceived and actual shortages related to Cyclone Winston have been corrected (Donny Jason Lee, Lami Kava, pers. comms, 27 April 2017).

Exporters indicated there is a likely demand for certified organically grown *yaqona*, and some exporters (Agricultural Marketing Authority, A1 Kava and Spices, Lami Kava) are already only sourcing *yaqona* from areas that are more likely to be organic. One exporter, the Agricultural Marketing Authority, stated that they no longer buy *yaqona* from Vitu Levu or Tavenui because of the expected use of chemicals; instead, they buy from the outer islands (but not Kadavu). Based on the July 2016 household survey most *yaqona* is grown without the use of chemicals, but there was concern

about chemical use increasing as the size of area being farmed increased (participatory ecosystem service workshops, July 2016; Losalini Leweniqila, pers. comm. April 2017).

Given there is a ready supply of *yaqona* already grown without chemicals and an indirect indication through the choice of islands to buy *yaqona* that organically grown *yaqona* is preferred, organic certification could be a feasible mechanism to pursue for Kadavu.

5.2 Risks and Opportunities

There are five categories of risks and opportunities considered in the further assessment of organic certification – operational, regulatory and legal, reputational, market and product, and financing.

5.2.1 Operational risks and opportunities

The biggest operational risk to the eco-certification of *yaqona* is if there is a growth in the use of chemicals during production. In Kadavu, only a small number of farmers currently use chemicals, mostly herbicides. For example, of the 264 households that responded in the July 2016 household survey, only 11 reported using chemicals. Of these, seven farmers used chemicals on *yaqona* (Table 5). This did not include the largest *yaqona* farmer in Kadavu who does use chemicals (Alexander Nasau, pers. comm. July 2016). There is some risk that this percentage may increase if the production of *yaqona* increases, primarily due to the need to manage more efficiently aspects of the production system such as weed control as the area of *yaqona* increases. While this is a risk, the already large area of *yaqona* traditionally produced without chemicals and the perceived quality of the *yaqona* grown in the island by exporters also represent opportunities. They provide the island with a base of farmers who could more quickly be certified. Other opportunities related to other processed agricultural products include coconut oil or honey, which could also be certified as organic. Certification of these products is important to consider because diversified agricultural systems provide greater resilience into the future. On the market side, having the ability to supply a range of products for export has advantages for distributors who seek multiple products (Joe Fauvao, Pacific Trade and Invest, pers. comm., 1 May 2017).

There are natural disaster risks from events such as cyclones and droughts. Such risks apply to all agricultural production in the region.

Table 5 Number of farmers using chemicals (Source; Kadavu household survey, 2016)

| District | No. of farmers using chemicals | No. of farmers using chemicals for <i>yaqona</i> |
|-------------------------------|--------------------------------|--|
| Sanima | 1 | |
| Nabukelevu | 3 | 2 |
| Nacea | 2 | 2 |
| Yawe | 1 | |
| Tavuki | 4 | 3 |
| TOTAL farmers using chemicals | 11 | 7 |
| Total farmers | 264 | 186 |

5.2.2 Regulatory and legal risks and opportunities

The Kava Bill (2016) was introduced to establish a Kava Council. The council's purpose is to develop, promote, and implement initiatives, guidelines, and standards aimed at regulating the cultivation,

processing, transportation, and marketing (domestic and export) of kava. It would also have power to register a *yaqona* grower, *yaqona* processor, and kava importer and exporter. This bill will provide greater safeguards to protect and enhance the kava industry. The bill's implementation rules could provide an opportunity to promote those traditional production systems for *yaqona* that do not involve chemicals.

There are regulatory risks associated with the importation of kava into some countries (Table 6). Import restrictions, however, have changed greatly in recent years as research has shown the health benefits of kava (Sarris 2009, LaPorte 2011, Sarris et al. 2011, Sarris et al. 2013a, Sarris et al. 2013b). The earlier reports on liver toxicity that led to import restrictions have been linked to the use of *yaqona* leaves which are not used in traditional Pacific kava preparations. As a result of this new research that shows the benefits and lack of side effects from using traditional preparations of *yaqona* roots has led most countries to lift their import bans.

Health risk perceptions (from past claims) and import restrictions will pose a risk for the ability to certify *yaqona* as organic. *Yaqona* falls into the 'grey' certification area much like hemp did a number of years ago and there does not yet appear to be any test case for the certification of *yaqona*.

The most likely and easier route to being able to certify to the US organic standards is to first certify to the Canadian Organic Standard as this process is easier than trying to meet the USDA requirements. Once a product has been certified using the Canadian Organic Standard the organic equivalency agreement between Canada and US for food products can be used to obtain the USDA certification (Akiko Nicolas, BioGro, pers. comm. 1 May 2017). However, kava is currently considered as a pharmaceutical product and not a food product in Canada. Therefore, this route is not available for kava and a USDA organic certification would be required to meet the US organic certification requirements (Akiko Nicolas, BioGro, pers. comm. June 2017).

Table 6 Countries with restrictions on Kava imports

| Country | Regulation |
|-------------------------------------|---|
| Australia | Travellers to Australia can import 2 kg of kava in their luggage |
| Switzerland, France and Netherlands | Sale of the kava plant is regulated |
| Germany | Sale of kava as a medicine is regulated (personal possession is allowed) |
| Poland | Outright ban on kava |
| United Kingdom | It is a criminal offence to sell, supply, or import any medicinal product containing kava for human consumption. It is legal to possess kava for personal use and to import it for purposes other than human consumption (e.g. for animals) |
| New Zealand | When used traditionally, kava is regulated as a food under the Food Standards Code. Kava can also be used as a herbal remedy that is regulated by the Dietary Supplements Regulations |
| Canada | Health Canada restrictions on kava were lifted in 2012 |
| United States | Importation is allowed for medicinal and direct consumption |

5.2.3 Reputational risks and opportunities

There is already an expectation by some exporters that the *yaqona* they purchase is grown without chemicals. As noted above the Agricultural Marketing Authority buy from the outer islands (but not Kadavu) to avoid *yaqona* that may have been grown using chemicals. This indicates that even if there was no price premium for organic *yaqona* market access could become an issue in the future where

buyers expect that *yaqona* is traditionally grown without the use of chemicals. Organic certification would provide the export market with the assurance of how *yaqona* is grown. While there is no information on the actual amount of *yaqona* sold or traded domestically (due to the large informal market that operates), it was noted by one processor that the use of chemicals in *yaqona* production did not seem problematic for domestic consumers (Donny Jason Lee, Lami Kava, pers. comms, 27 April 2017). In other words, organic kava is unlikely to have much local demand, especially if there was a price differential.

The Kava Bill is also aimed at safeguarding the kava industry and will provide some legal oversight for the management and development of the kava industry in Fiji.

5.2.4 Market and product risks and opportunities

As noted above, the domestic *yaqona* market currently doesn't appear to discriminate between *yaqona* grown with and without chemicals. While consumer preferences may change in the future there was no consumer survey undertaken of local *yaqona* consumers to determine if they had a preference for organically produced *yaqona* or already expected *yaqona* to be grown without the use of chemicals. Collecting this information is challenging given the lack of baseline data and the need for an education process on the benefits of organic before eliciting this type of information.

Demand for *yaqona* grown without the use of chemicals is expected to come from export markets such as the US. If the European market expands (i.e. if more countries have less restrictive regulations), then we expect this market to prefer *yaqona* grown without the use of chemicals as well (Donny Jason Lee, Lami Kava, pers. comms, 27 April 2017; Willer and Lernoud 2017). In these markets, organic certification could ensure market access and provide a unique marketing advantage over *yaqona* produced in other parts of Fiji or in Pacific Islands.

The market risk that may arise is that the certification process will add additional cost to the production of *yaqona*. This additional cost will need to be passed onto the wholesaler/retailer. Depending on the corresponding increase, prices may increase beyond what the market is prepared to pay. Lami Kava has indicated that US export markets are not prepared to buy kava when the farm-price is around FJD100/kg (the farm-price in March 2017). At the longer term farm-price average of FJD35–45/kg, demand for *yaqona* was high. This demand dropped when prices significantly increased. A higher market price, however, has not been tested with consumers for *yaqona* that is organically certified.

The price premium for any organic product is challenging to quantify as this information is not often collected. However, Nemes (2009) noted that price premiums were a key determinant of organic farms being more profitable than conventional farms. The USDA Economic Research Service (USDA ERS 2017) also track organic prices and show that organic versus conventional agriculture prices show price premiums typically in excess of 50% for fruit and vegetables.

5.2.5 Financial risks and opportunities

There is a cost to organic certification. This cost includes auditor payments as well as costs to farmers to keep the farming records required by auditors. In the long-term, these costs could be incorporated into the *yaqona* price. However, in the short-term, the financial cost of the initial audit fees and the setup of the systems to ensure the provenance of organic products will need to be borne by farmers.

The financial opportunities related to higher sale prices are less clear as the market demand for organic kava has not been specifically tested. As noted above, exporters believe there is likely a market in the US, and potentially in Europe (Donny Jason Lee, Lami Kava, pers. comms, 27 April 2017). We

know that there is a price point for kava above which export markets will no longer pay, causing markets to seek alternative suppliers. In the US market, for example, this price is currently around FJD100/kg at the farm-gate. While it is unclear whether there will be a price premium for organic certified *yaqona* price premiums do exist for many organic products (Research Institute of Organic Agriculture and IFOAM 2016). Therefore, it is reasonable to expect similar trends for organic certified *yaqona*. Section 5.3 provides an overview of a cost-benefit analysis for organic *yaqona* for Kadavu.

A larger question for kava exports, however, involves market access. As noted in the reputational risks and opportunities section, the export market already perceives that *yaqona* is grown in the traditional manner without chemicals. Therefore, access to the export market in the future may rely on being able to demonstrate credibly that *yaqona* production practices do not involve the use of chemicals. There are also expected environmental benefits from any avoided degradation that would be related to any increase in the use of chemicals (e.g. to water, native vegetation) and avoided health effects from the improper use of chemicals.

5.3 Economic assessment

A cost-benefit analysis was prepared by the University of Wisconsin in conjunction with LCR. The purpose of the cost-benefit analysis was to examine the net present value of implementing an organic certification program for *yaqona* farmers on Kadavu (Stassel et al. 2017). Three options were examined in the analysis:

- Establish a participatory guarantee system (PGS) that would allow farmers to locally market their *yaqona* as organic. This is what underpins the Organic Pasifika mark.
- Certify the *yaqona* to a private organic standard through a third-party certifying organization. For this analysis, BioGro, a certification company based in New Zealand, was used.
- Certify the *yaqona* to USDA organic standards, which would allow the *yaqona* to be exported to the United States. This analysis assumes BioGro could also certify to the USDA organic standards (which it can via the organic equivalency agreement for food products between Canada and the US).

The primary costs in the analysis were incurred through the process of meeting the organic certification standards. These costs include certification and administrative costs; opportunity costs for farmers through additional paperwork, inspections, and labour; and loss in yield for farmers who switch from inorganic farming methods.⁹ Export costs are also included in the analysis for those farmers who choose to export their *yaqona*. The primary benefits in the analysis are the revenue increase for farmers from the price premium for certified organic goods and consumer surplus in markets abroad. There are also benefits associated with environmental preservation and the avoided costs of herbicide and fertilizer.¹⁰

While all three options produce positive benefits for at least some levels of farmer participation, the model results showed certifying to the BioGro standard will produce the greatest net social benefits at every level (Table 7). Thus, the recommendation is that an organic certification programme that uses an international Kadavu standard such as the BioGro standard (or equivalent standard) be implemented for *yaqona* on Kadavu.

⁹ Given only a small number of farmers are currently using chemicals, this cost is only applied to the scenario where all 2199 farmers are participating.

¹⁰ As above, these costs are only associated with the scenario where all 2199 farmers are participating.

Table 7 Estimate Net Present Value (including social benefits) for the organic certifications of yaqona on Kadavu Island based on the number of framers being certified

| Number of Farmers ^a | NPV (FJD) | | | | |
|--------------------------------|------------|-----------|-----------|------------|------------|
| | PGS | BioGro | USDA | BioGro* | USDA* |
| 2199 | -1,246,012 | 1,928,808 | 3,048,977 | 83,200,000 | 61,500,000 |
| 1984 | 19,978 | 4,065,597 | 4,484,436 | 82,900,000 | 57,400,000 |
| 1000 | 37,015 | 1,311,652 | 1,736,347 | 24,800,000 | 20,200,000 |
| 500 | 44,469 | 699,779 | 923,993 | 12,400,000 | 10,600,000 |
| 100 | -8,362 | -28,579 | 3,123 | 2,197,465 | 1,972,794 |

BioGro* and USDA* are the NPVs generated when considering consumer surplus in international markets.

a: there are 2199 farmers on Kadavu

The NPV for the PGS varies with the level of farmer participation. With only 100 farmers participating, the administrative costs are too high to accrue net benefits resulting in an average NPV of -\$8,362. At full farmer participation the NPV is also negative due to the high administrative costs as well as the yield losses of some farmers having to switch from non-organic to organic. For 500, 1000, and 1984 farmer participation, the NPV is positive but decrease with more participants as the modest anticipated price premiums do not offset the higher administrative costs of additional farmers. For the PGS there is an initial one-time set up cost to establish the system and export revenue from the US or Europe are not included as the PGS is not recognised in those areas/regions.

With BioGro, the NPV was positive for all levels of farmer participation except 100 farmers. The negative NPV when 100 farmers are participating results from the higher costs associated with a small number of farmers. With the economies of scale associated with higher farmer participation these costs, on a per farmer basis, are lower. The assumed price premium ranged from 0 to 30% for the sales to New Zealand. With the USDA standard, the costs are similar to those of BioGro, but there is a higher assumed price premium to reflect a higher expected price premium for the US (compared to New Zealand). The price premium ranged from 10 to 30% for the USDA standard. There is no initial set up cost for the BioGro or USDA standards as the certification bodies and organisations already exist.

When the consumer surplus in international markets is considered the NPV for both the BioGro and USDA standards are significantly higher.

6. ORGANIC YAQONA – CONCEPT TO REALITY

Outlined below are the steps necessary to develop an organic *yaqona* certification system for Kadavu (or areas within Kadavu).

6.1 Steps to establish certified organic *yaqona*

A number of steps are required before a product is certified as organic. The most practical route in Kadavu is a group certification, as most *yaqona* farmers are small-scale. The additional step needed for group certification is that the group must develop a coordinated marketing approach and also nominate a group manager. With group certification, the number of farmers to be audited each year by the BioGro Organic Standard is provided in Table 8.

BioGro, rather than one of the Australian certification organisations, was approached as they are based in New Zealand, where kava importation is relatively straightforward. Australia,¹¹ which does not strictly ban kava, has legal structures surrounding kava that make importation for commercial purposes difficult (note: individuals can import up to 2 kg of kava without an import licence) (Australia Government 2017).

BioGro's International Programme certifies to the Japanese Agricultural Standard, Pacific Organic Standard, Canadian Organic Regime,¹² Canada Organic Equivalency Agreement, USDA Organic Regulations, Soil Association Certification (UK), EU third country recognition programme, and Doalnara Certified Organic Korea. Advice from BioGro for the US is to certify to the Canadian Organic Standard and use the US-Canada equivalency agreement to gain US organic certification. Given that the US has had the biggest growth in export kava markets in recent years (Donny Jason Lee, Lami Kava, pers. comms, 27 April 2017), this is an important consideration.

Certifying for the US will preclude being able to use a PGS that aims to provide a credible organic guarantee to consumers seeking organic produce through direct participation of farmers and consumers in the organic guarantee process. To obtain an Organic Pasifika PGS Seal, the PGS must use the Pacific Organic Standard as the production standard (SPC 2011), which has a different certification standard to that needed for the US (Stephen Hazelman, POETCom, 18 July 2017).

As noted in the regulatory and legal risks and opportunities the certification of *yaqona* is untested and will require approval from the Canadian government if it is to be certified against the Canadian Organic Standard as well as from the BioGro Company itself. These both require formal request processes.

In addition to certification approval processes there are risks and opportunities for RESCCUE that need to be considered:

- Opportunity – RESCCUE and RESCCUE project partners lead the first certification process for organic *yaqona* globally.¹³ This may have positive reputational benefits for leading and promoting a new revenue stream for a potentially large global market for Pacific Island Nations, especially if the health benefits become more widely known and sort after.
- Risk – The potential risk to RESCCUE, LCR and USP also needs to be acknowledged. Should *yaqona* become certified as organic with the test case being led by these organisations and additional substantiated health claims arise then there is reputational risk for these organisations. The new medical studies noted earlier, though, appear to have assuaged the current claims of health damage; instead showing health benefits.

The organic certification for *yaqona* will not be pursued until RESCCUE approves the Fiji RESCCUE team's continued activities to certify organic *yaqona*.

¹¹ Australian Certified Organic (ACO) is another certification organization, however, who also certifies products in the Pacific to a range of standards. www.aco.net.au

¹² The Canada Organic Regime is implemented by the Canada Organic Office (COO), part of the Canadian Food Inspection Agency (CFIA). The framework for the COR is the Organic Products Regulations of 2009 (OPR 2009) which set out requirements for organic product labeling and the various actors and infrastructure for implementation. The OPR 2009 require mandatory certification to the Canada National Organic Standard for agricultural products represented as organic in international and inter-provincial trade, or that bear the Canada organic logo.

¹³ There were no other certification processes for *yaqona* uncovered during this assessment.

If RESCCUE approval is forthcoming some of the key requirements and subsequent steps to achieve an organic certification and to produce an export-quality product include:

1. Formal request process for the certification of *yaqona* production as organic

With RESCCUE approval we will commence the formal process of approaching the Canadian government to certify *yaqona* as organic. At the same time a formal request will be made to BioGro to also certify *yaqona*.

2. Creation of farmer group

A farmer group would be established to reduce the financial and compliance burden on small-scale *yaqona* growers. For the BioGro Organic Standard, this is called 'group certification'. For ease of audit and management (especially initially) the members of the farmer group should be in the same geographic vicinity. For this reason, creating a farmer group that consists of a group of villages in close proximity or in a single district would be the most practical approach. Once the process to establish an organic farmer group in Kadavu has been tested, this farmer group could be extended to include new growers or new groups established. The number of farmers that would need to be audited in a grower group depends on the number of farmers in the group (Table 7).

Table 8 Number of audits for group certification required by BioGro (Source: Organic Standards, 2009)

| No. of farmers | No. of farmers sampled each year | Plus audit of group manager's administration | Total number of audits |
|----------------|----------------------------------|--|------------------------|
| 10–11 | 10 | 1 | 11 |
| 12–19 | 10 | 1 | 11 |
| 20–29 | 10 | 1 | 11 |
| 30–39 | 14 | 1 | 15 |
| 40–99 | 20%, minimum 16 | 1 | 17–21 |
| 100–199 | 15%, minimum 21 | 1 | 22–31 |
| 200+ | 5%, minimum 21 | 1 | 22+ |

The recommendation is that the initial farmer group comes from a district or collection of villages with significant *yaqona* production (Fig. 6) and that that have experience with selling to export wholesalers. The district of Nabukelevu is one such district. Lami Kava purchases most of their *yaqona* for processing from Nabukelevu district mainly because of the high quality of their dried *yaqona*. As noted earlier Nabukelevu district also has an interest in being organic.

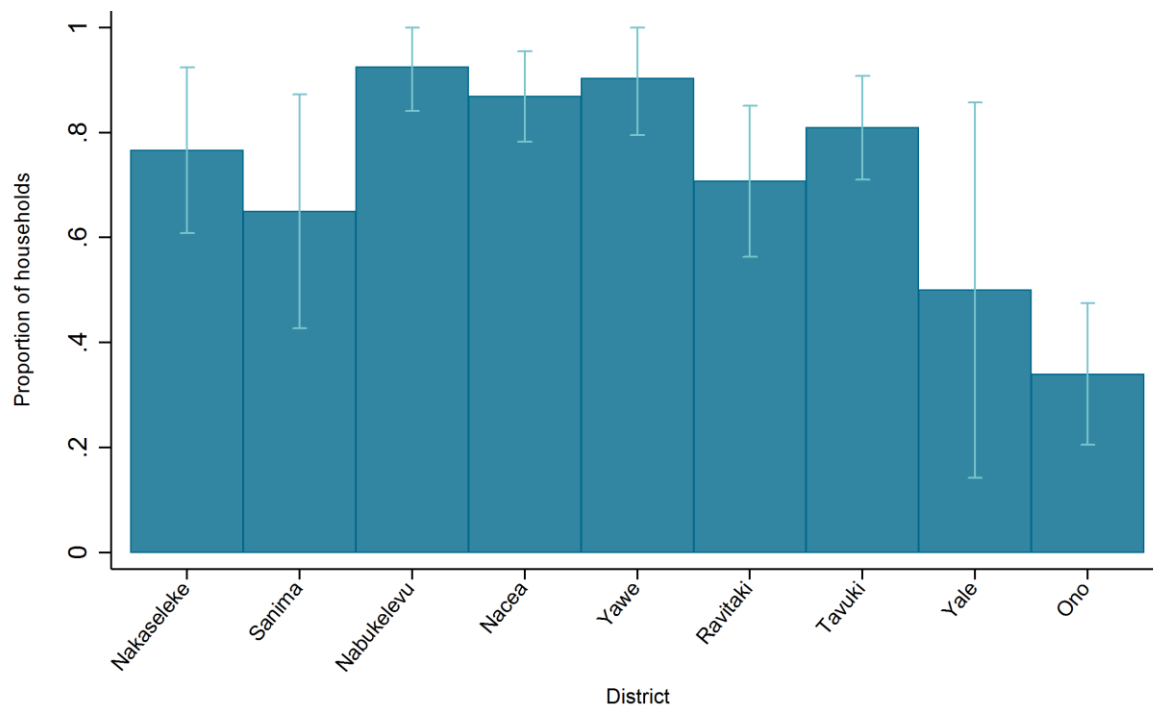


Figure 6 Proportion of households growing yaqona by district in Kadavu

3. Registration

Registration takes a minimum of 36 months from the start of registration to harvest of the product. However, if there are adequate records, it is possible for some countries to certify a product retrospectively for up to 2 years (Eljay Maunder, BioGro, 1 May 2017). A list of information required to register under BioGro is outlined in Section 4.2.6 of the Certification module of the BioGro Standards (BioGro 2009).

4. Fulfilling the certification requirements

A number of requirements must be satisfied before a group certification can be issued. For BioGro certification, these include:

- Internal control system for the group and competent system manager/personnel
- Documentation, including
 - Complete list of group members
 - Maps/sketches of field locations
 - Farm/field records
 - Signed member agreements
 - Yield estimates
- An internal inspection protocol (to be developed, documented and implemented for the group)

- The monitoring and documented conversion process. Given the farmers likely identified for membership in the group will not be using chemicals and if records are available, there is also a possibility that a retrospective certification could be made
- Process to remove non-compliant members from the group
- Process to accept new members to the group
- Risk assessment procedures are developed and in place.

Other certification standards have similar requirements. The processes and protocols will have to be designed and implemented as part of the certification process.

5. Building farmer capacity, in particular

- Maintaining product quality. The newly released Fijian *Yaqona* Standard (Ministry of Agriculture 2017) and Fijian Kava Quality Manual (Ministry of Agriculture undated) provide some requirements on how to improve and maintain quality. Partnerships with other organisations (e.g. PIFON) will be developed to deliver this training.
- Understanding what being part of a certified organic farmer group means
 - Requirements of organic *yaqona* production
 - The records that are required to be kept for auditing purposes
 - The group as a whole (which is the certified entity) is responsible for the compliance of all operators
 - The audit process
- Record keeping
 - Type of records to be kept
 - Standard of record keeping
 - Filling in the required documentation
- Understanding markets
 - Basic knowledge on how export markets work (supply and demand, price points, impacts of price volatility)
 - Risks and opportunities of supplying into an export market (quality, stable supply, record keeping, market expectations).

6. Working with export processors to

- certify their processing facilities as organic
- develop a relationship to market organic kava produced with Kadavu *yaqona*.

6.2 Action plan

The proposed actions to implement a *yaqona* organic certification system after RESCCUE approval are:

| Action | Timeline | Who |
|--|---|---|
| Formal request to Canadian government and BioGro to certify <i>yaqona</i> as organic | With RESCCUE approval | LCR |
| Initial BioGro consultation meeting Meeting to scope the steps and expand on the requirements for meeting the BioGro certification requirements for Kadavu. There is a fee associated with this meeting, and the meeting will also involve providing greater details on the requirements to the implementation team | By June 2017 | USP (as technical lead for overall implementation) KYMST representative (as lead for Kadavu implementation) LCR (as the liaison with BioGro and co-drafter of templates/protocols to fulfil certification requirements) |
| Solicit farmers to be part of the first grower group | By September 2017 | KYMST |
| Identify group manager | By September 2017 | KYMST (to identify relevant person(s)) |
| Farmer workshops to outline the requirements for organic certification and confirm membership of grower group | By December 2017 | USP (as technical implementation lead) KYMST (as Kadavu implementation lead) |
| Training workshops designed and undertaken on topics identified (see Section 6.1). External organisations to assist with training will be determined based on training needs and necessary expertise. | Between September 2017 and July 2018 | USP (as technical lead) External organisations as needed |
| Registration documentation finalized (see above for the necessary material required) | By March 2017 | USP (as technical implementation lead) KYMST representative (as Kadavu implementation lead) LCR (as co-drafter of templates/protocols to fulfil certification requirements) |
| Mentoring of farmers during certification | On-going | USP (as technical lead for overall implementation) KYMST representative (as lead for Kadavu implementation) |
| Certification | Depends on registration date and compliance | Group manager Farmers KYMST |

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8. APPENDICES

Appendix 1. People and/or organisations consulted for the assessment

| Person/Organisation | Topic |
|---|---|
| POETCom (Stephen Hazelman) | Pacific organic standards and organic production in the Pacific |
| KYMST | Status of organic certification on Kadavu, what steps have been taken to date, perception of organic production on Kadavu |
| Kadavu chiefs/households | Willingness to certify production as organic |
| Alexander Nasau (larger farmer on Kadavu) | Impressions on organic farming |
| Ministry of Agriculture (Ilimeleki Kalyanuyanau and Jemesa Uluinayau) | Ministry's organic initiatives and stance on organic production |
| PIPSO | Assistance to new agribusiness initiatives, who could help support the move to organically certified kava |
| A1 Kava and Spices | Demand for organic kava production, general insights into kava markets |
| Lami Kava | Demand for organic kava production, general insights into kava markets |
| Agricultural Marketing Authority | Demand for organic kava production, general insights into kava markets |
| Bilo Sinai | Demand for organic kava production, general insights into kava markets |
| Pacific Islands Trade and Invest | Demand for organic products and kava |
| PIFON | Training options to assist with farmer training |
| Department of the Environment (Sandeep Singh) | Potential issues with organic certification from an environmental perspective |
| PHAMA | Kava manual and standard and follow up training to improve the quality of kava production |
| BioGro | Process to certify a product as organic |
| Tourism Fiji | To obtain visitor statistics for Kadavu |

Appendix 2. Kadavu tourist/visitor resorts and accommodation

The resorts and accommodation establishments on Kadavu include:

| Resort/accommodation | No. of rooms | Location | Activities offered |
|---|---|--|--------------------------------------|
| Tiliva Resort | 1 honeymoon bure 5 deluxe garden bures | Nakaseleka District | Diving, surfing, fishing |
| Matava Resort | 10 bures (5 honeymoon and 5 ocean-view) | Naceva District | Diving, surfing, fishing |
| Papagengo Resort Fiji | 15 bures | Malawai Bay, Sanima District | Fishing, diving (can be arranged) |
| Matana Beach Resort – Dive Kadavu | 10 accommodation bures | Sanima District | Diving |
| Waisalima Beach Resort and Dive Centre | 9 bures | Nakaseleka District | Has diving |
| Nagigia Island Resort | 10 bures | Nagigla Island near Ono Island, Ono District | Diving, surfing, fishing |
| Koromakawa Resort | 1 × 2-bedroom cottage | Ono Island, Ono District | Diving, fishing |
| Molaniki Resort (currently closed) | 4–5 bures | | |
| Cooksley homestay | 6 bedrooms | Tavuki District | |
| Mai Dive Astrolabe Reef Resort | 1 × 2-room lodge 3 bures 2 family bures | Ono Island, Ono District | Diving, fishing |
| Oneta Resort | 5 bure (2 persons) 1 × 6-bed bure | Ono Island, Ono District | Diving, fishing |
| Kokomo Resort | 5 luxury residences, 21 beachfront villas | Kokomo Island, Ono District | Diving, fishing, |