



Contribution of
**Marine Conservation
Agreements**
to Biodiversity Protection, Fisheries
Management and Sustainable
Financing in Fiji

**Contribution of Marine Conservation Agreements to Biodiversity Protection,
Fisheries Management and Sustainable Financing in Fiji**

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- Aqua-trek (Pacific Harbour)
- Barefoot Manta Island Resort
- Beqa Adventure Divers
- Botaira Beach Resort
- Jean-Michel Cousteau Resort Fiji
- Lawaki Beach House
- Namena Marine Reserve
- Namotu Island Resort
- Shangri-La's Fijian Resort & Spa
- Takalana Bay Resort / Moon Reef Dolphin Watch
- Treasure Island Resort
- Waitabu Marine Park
- Vatu-i-Ra Conservation Park

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CONTENTS

Acronyms	5
Frequently Used Fijian Terms	5
Executive Summary	6
Recommendations.....	8
1. Introduction	10
1.1 What are Marine Conservation Agreements?	10
1.2 Study Objectives	12
2. Methodology	13
3. Enabling Conditions For MCAs In Fiji	17
3.1 MCA Strategies and Objectives	17
3.2 Threats Addressed by MCAs.....	23
3.3 Agreement Mechanisms	24
3.4 Providers and Beneficiaries	27
3.5 Incentives (Monetary vs. Non-Monetary)	30
3.6 Actual vs. Perceived Benefits.....	34
3.7 Conditionality	35
3.8 Governance.....	36
3.9 Enforcement.....	37
3.10 Monitoring and Evaluation.....	39
3.11 Laws and Policies	43
4. Case Studies	45
Case Study 1: Large-scale ecosystem-based parks formed by communities, supported by dive tourism: Namena Marine Reserve and Vatu-i-Ra Conservation Park	46
Case Study 2: Community owned ecotourism business: Waitabu Marine Park	50
Case Study 3: Community initiative to create employment stability: Vuda and Waya Qoliqoli	54
Case Study 4: Locally-owned private resorts: Lawaki Beach House and Botaira Resort	57
Case Study 5: Partnership between a large resort, an NGO, and the community: Cuvu Marine Protected Area, Shangri La's Fijian Resort and Spa	61
Case Study 6: Management plan by resource owners supported by tourism operator: Jean-Michel Cousteau Resort Fiji	65
Case Study 7: Reserves declared for protection of Megafauna: Shark Reef, Drawaqa/Naviti Manta Channel, Moon Reef	67
Case Study 8: Foreshore Licence or Lease: Waivunia Marine Park, Namotu Island Resort and Yadua Island	73
Case Study 9: Statutory (gazetted) Marine Reserves: Wakaya and Shark Reef Reserves	77
Case Study 10: Non-tourism-related MCAs: Seacology.....	80
5. Conclusions	82
6. Recommendations	84
7. References	86
8. Appendices	89
APPENDIX 1. List of tourism operators approached for this survey.....	89
APPENDIX 2: Matrix used to interview tourism operators	93

ACRONYMS

CBD	Convention on Biological Diversity
CORAL	Coral Reef Alliance
COTS	Crown-of-Thorns Starfish
EBM	Ecosystem-Based Management
ECAF	Environment and Climate Adaptation Fund
ECAL	Environment and Climate Adaptation Levy
EDO	Environmental Defenders Office
FLMMA	Fiji Locally-Managed Marine Areas Network
FSP	Foundation for the Peoples of the South Pacific
GEF	Global Environment Facility
KRMC	Kubulau Resource Management Committee
iTLFC	<i>i-Taukei</i> Lands and Fisheries Commission
MCA	Marine Conservation Agreement
MES	Mamanuca Environment Society
MPA	Marine Protected Area
NGO	Non-Government Organisation
OISCA	Organisation for Industrial, Spiritual and Cultural Advancement
PCDF	Partners in Community Development Fiji
PES	Payment for Ecosystem Services
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USP	University of the South Pacific
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature
TNC	The Nature Conservancy
TNCI	<i>Tikina</i> Naviti Conservation Initiative
TRC	Tourism Recreation Conservation Consultants

FREQUENTLY USED FIJIAN TERMS

<i>Bose ni Tikina</i>	District Council
<i>Mataqali</i>	Social unit, clan or lineage, subdivision of a <i>Yavusa</i> clan
<i>Qoliqoli</i>	Traditional fishing ground
<i>Tabu</i>	Prohibition, used here to identify a traditional no-fishing zone
<i>Tikina</i>	District, an administrative sub-unit of a Province
<i>Turanga ni Koro</i>	Elected or appointed administrative head of a village
<i>iTaukei</i>	Ethnically native Fijians, holders of traditional land and fishing rights

EXECUTIVE SUMMARY

The marine environment is a vital resource for Fiji's tourism, yet industry and community efforts to conserve and improve it have largely gone unrecognised, and are under-utilised in Fiji's tourism marketing. The Wildlife Conservation Society and Marine Ecology Consulting conducted a study between 16 March and 30 October 2017 to document the degree and scale to which Marine Conservation Agreements (MCAs) are being used in coastal waters in Fiji, and what contribution they are making to biodiversity conservation, fisheries management and sustainable financing.

Marine Conservation Agreements are “any formal or informal understanding in which one or more parties commit to delivering explicit economic incentives in exchange for one or more other parties committing to take certain actions, refrain from certain actions, or transfer certain rights and responsibilities, to achieve agreed-upon ocean or coastal conservation goals”.¹

The study focuses on partnerships involving local communities with land-sea tenure rights and the tourism sector. It concentrates on the experiences and perceptions of the tourism sector, some of whom are local operators and resource owners. Documenting the motivations and opinions of the community resource owners was outside the scope of this study, and could usefully form the basis of a companion study to better understand their perceptions and commitment to the MCAs, and the direct and indirect benefits they receive.

A total of 115 members of the tourism sector in Fiji, and one non-profit organisation were contacted for this study, and the key findings of the report are summarised below:

- Fiji is known as a leader in community-based marine conservation, but the contribution of MCAs has largely gone unrecognised. Fiji's social and customary tenure systems provide a unique foundation for the establishment of MCAs between traditional leaders and their communities and the tourism sector.
- A number of tourism operators and communities, and one non-profit organisation have worked on MCAs for many years, all of which include some type of Marine Protected Area (MPA). These agreements contribute to Fiji's national marine conservation goals, and protect specific areas important to vulnerable megafauna and sensitive ecosystems.
- Most tourism operators in Fiji acknowledge that a pristine marine environment is one of the most important resources in attracting tourists to Fiji, and are willing to spend resources protecting it.
- Of the 81 tourism operators that participated in the survey, 56 (69%) had been involved, were involved, or were becoming involved, in some form of MCA, all of which focused on establishing temporary or permanent no-fishing zones or MPAs. Many of these are long-term investments, some dating from the mid-nineties, with informal agreements originating before that, when the resorts were first built.

1 The Nature Conservancy (2010); www.mcatools.org

- Tourism-related MCAs included an estimated 266.25 km² (26,625 ha) of MPAs, of which 210 km² (21,000 ha) comprised deep water and offshore reefs within two large no-take reserves (Namena Marine Reserve and Vatu-i-Ra Conservation Park), and the remaining 56.25 km² (5,625 ha) comprised mostly shallow fringing reefs and slopes. Other types of MCAs were the two statutory (gazetted) reserves, Shark Reef and Wakaya, which included buffer zones around the MPAs where certain types of fishing gear were not allowed. An additional 400 km² of reef were within 15 MCAs established by a non-profit organisation Seacology² who offered an exchange of benefits for conservation contracts.
- Only 16 (28%) of the tourism-related MCAs included explicit economic incentives to the resource-owning local communities such as some level of payment, provision of infrastructure, or employment opportunities directly related to marine conservation. The remaining 40 (72%) supplied less quantifiable benefits such as sustainable marine resources and/or general employment in the tourism sector. However, the 16 MCAs with explicit economic benefits included the Namena Marine Reserve and Vatu-i-Ra Conservation Park, and encompassed 83% of the total marine environment protected under tourism-related agreements.
- Most of the MCAs relied on verbal and written agreements from local resource-owners, utilising traditional practices such as no-fishing *tabu* areas over an indefinite period. Others had completely informal courtesy agreements that local people would not fish immediately in front of the resort. Only 9% were supported in law. Around half of the tourism operators were happy with their current agreements, although they would welcome measures to further formalise and map their MPAs. The other half would like to have assistance with more formal protection agreements, or would be content with mapping and recognition from the Ministry of Fisheries in order to legally exclude their MPAs from commercial fishing licences. Only eight operators, with MCAs covering 13.15 km² of marine environment, said that they would like to progress to Foreshore Leases or Statutory (gazetted) Reserves.
- Enforcement of MPAs was mostly carried out by resort staff, supported by authorised Fish Wardens, with measures taken against poachers relying much more on traditional authority than on legal action. In many cases tourism operators who had strong familial ties to the local villages reported that they found it difficult to refuse requests for fishing exemptions, while operatives from outside the local community were more willing to enforce the no-fishing rules as long as they had the backing of the traditional authorities. This is based on the views of tourism operators, and further research would be required to validate this perception.
- Where monitoring was conducted, ecological status and guest perceptions were much better documented than socioeconomic impact. Only a small number of operators utilised the information gathered for active management or tourism promotion. Many projects would be improved by greater monitoring and documentation of MCA effectiveness, both ecological and socioeconomic.
- Many tourism operators without MCAs were interested in starting new, or refreshing lapsed agreements, but were unable to find consistent and supportive advice on how to go about this. There is a need for national guidelines to assist both the tourism sector and local communities establish MCAs that create win-win situations for all those involved, while contributing to Fiji's national and international commitments towards biodiversity protection and sustainable fisheries.

2 www.seacology.org/projects/pacific/

Recommendations

Many members of the tourism sector are already playing a vital role in marine conservation. Promoting the engagement of tourism operators in MCAs can deliver benefits for the tourism industry as a whole, specific operators, local communities and conservation. Key recommendations for policy makers, tourism operators and communities, and partners are provided below.

Policy makers

The government plays a key role in providing the enabling environment to establish, regularise and promote MCAs. Key recommendations for policy makers are:

- Recognise the role and contribution of MCAs nationally to biodiversity protection, fisheries and sustainable financing.
- Provide support to tourism operators and local communities wishing to formalise their agreements, and enforce their MPAs.
- Ensure all commercial fishing licences issued by the Ministry of Fisheries prohibit fishing within MPAs established through MCAs.
- Develop a recognition programme to encourage operators to improve and expand their MCAs. This may include a rating system that acknowledges those with best practice enhancement projects and tangible community benefits.
- Formulate a national tourism marketing plan to raise international awareness of Fiji's role in leading community and tourism-based marine conservation, and highlighting operators with MCAs.
- Explore opportunities for utilising the Environment and Climate Adaptation Levy (ECAL) revenues to support MCAs involving the tourism sector through partnerships with Ministries of Fisheries, Environment, and of Industry & Trade and Tourism, NGOs and tourism operators. This could include making finance available to, for example, establish and monitor MPAs, offer workshops on environmental conservation for village communities and resort staff, or train and support patrols by Fish Wardens.
- Ensure all MPAs established under MCAs are included in national (e.g. National Biodiversity Strategy Action Plan and Implementation Framework) and international (e.g. Aichi targets under the Convention on Biological Diversity) reporting on conservation targets.

Tourism operators and communities

Where tourism operators and communities are actively engaged in conservation through MCAs, highlighting these efforts could add value to existing marketing strategies. Key recommendations for tourism operators and communities are:

- Ensure the “rules” of the MCAs are acceptable to both the tourism sector and local communities, with clear consequences if those rules are breached.
- Engage the local village community in management and monitoring training and recognition programmes such as environmental awards, local government and community awareness, and media attention.
- Incorporate MCA-related activities into guest programmes, to highlight the role of the tourism sector in conservation.
- Highlight MCAs on websites and in marketing, and engage in regional marketing to showcase conservation efforts in Fiji as a whole. Explore opportunities to apply for international conservation-related awards and certificates.

Partners

There is a need for more standardised information about the establishment, governance and monitoring processes for MCAs to ensure that projects are sustainable into the long term and offer actual benefits. Key recommendations for MCA partners are:

- A "Best Practice" guideline to inform both tourism operators and communities on the available mechanisms for MPA formation, and give examples of MCAs that could be used as models.
- Assist with the formation of a network similar to the Fiji Locally-Managed Marine Area network structure, where tourism operators can share lessons and advice, offer each other support and information, and give or get access to scientific advisors.
- Promote methods for evaluating progress and benefits of MCAs, including both ecological and socioeconomic factors.

Coral reefs in the Vatu-i-Ra Seascape attract divers and photographers from all over the world. © Cat Holloway



1. INTRODUCTION

Fiji's culture, economy, and its citizens' well-being are highly reliant and centered on coastal ecosystems and the services they provide. Poor land-based practices and increasing demands for cash income and material goods, coupled with a growing population and improved access to markets, have led to a substantial increase in pressure on coastal resources. The country has undergone rapid changes in growth and development and the coastal ecosystems are increasingly threatened by a number of anthropogenic activities, (e.g., overharvesting and overexploitation of land and sea resources, mining, coastal development), as well as natural disasters and climate change (Mangubhai et al. in press). Lack of financial and human resources, weaknesses in legislative support for coastal management, and decades of poor or neglected management means that many of Fiji's coastal resources, especially fisheries resources, are overexploited.

Government regulation on spatial aspects of marine area protection, or restrictions on fishing gear restrictions, fish harvest or other types of human use of coastal and marine resources, are often necessary but insufficient in effectively managing marine resources. They can be difficult and expensive to implement and enforce and as the regulatory process is often slow and inflexible, requiring a lengthy process to change them. They can be perceived as confrontational as they often revolve around restricting and banning certain practices, and can have inadequate process transparency and buy-in from all involved stakeholders including resource users (Jones 2012; Gaymer et al. 2014).

Voluntary agreements, in very special cases, can be powerful forces for achieving conservation and human well-being goals, where there is a clear alignment of incentives between the parties involved in the agreement (Wiley et al. 2008). Marine Conservation Agreements have emerged, under certain conditions, as a strong form of effective voluntary agreements and have been used in at least 13 countries towards conservation outcomes (Teneva and Mangubhai 2016a).

1.1 What are Marine Conservation Agreements?

Marine Conservation Agreements (MCAs) are “any formal or informal understanding in which one or more parties commit to delivering explicit economic incentives in exchange for one or more other parties committing to take certain actions, refrain from certain actions, or transfer certain rights and responsibilities to achieve agreed-upon ocean or coastal conservation goals” (TNC 2010; www.mcatools.org).

MCAs can contribute to maintaining ecosystem services³, by protecting sites from incompatible activities, or by ensuring marine use is done in a sustainable way. MCAs must have a conservation goal, and strategies to achieve that goal may include the establishment of protected areas, prohibiting the use of destructive fishing gear, or agreements not to harvest endangered species (Udelhoven et al. 2010). Explicit economic incentives need not be financial and MCAs are not required to have a monetary component or money exchange between providers and beneficiaries, with some arguing those agreements where there is little to no financial incentive are more effective (e.g. Udelhoven et al. 2010). MCAs that specifically involve monetary transactions between buyers and sellers of a particular marine resource use or practice can also be referred to as “Payments for Ecosystem Services” (PES).

³ “Ecosystem services” are the diverse benefits people around the world derive from processes and functions of different ecosystems. They are divided into four main categories: (i) provisioning (e.g. food, drinking water); (ii) regulating (e.g. carbon sequestration, oxygen production, coastal protection); supporting (e.g. water filtration, food webs, nutrient cycling); and (iv) cultural (e.g. recreational, spiritual) (*Millennium Ecosystem Assessment 2005*).

MCA can be entered into by governments, local communities, indigenous groups, private sector and NGOs, and there are increasing examples in the Coral Triangle (Udelhoven et al. 2010) and Eastern Tropical Pacific (Udelhoven et al. 2011) of MCAs making positive impacts ecologically and socioeconomically.

There are several core components to MCAs (adapted from Wunder 2005):

- a. **agreement mechanisms**, which can be any formal or informal contractual arrangement;
- b. **conservation goals** that contribute to biodiversity conservation, fisheries management, or sustainable financing for conservation; well-defined ecosystem service maintenance through a form of marine use area likely to secure that service;
- c. **right-holders** (one or more parties) which hold certain rights over natural resources and can enter into an agreement;
- d. **clearly defined parties to agreement** referred to as providers and beneficiaries;
- e. **voluntary transaction** in which parties voluntarily commit to taking certain actions, refraining from certain actions, and/or transferring certain rights and responsibilities in exchange for conservation-oriented entities;
- f. **explicit incentives** (whether direct or indirect, monetary or non-monetary); and
- g. **conditionality** where the agreement is maintained only if provider continues to supply service.

Many of the enabling conditions or factors for success, particularly those involving trust and technical capacity, will be shared between providers and beneficiaries in an MCA. Some of the main factors are: (i) perceived benefit from the MCA; (ii) functional financial management infrastructure; (iii) effective governance; (iv) compliance with resource rules set forth in the MCA; (v) desire to conserve nature; (vi) clear legal structure; (v) performance-based payments; and (vi) monitoring and evaluation (Teneva and Mangubhai 2016a).

There is currently no information available in Fiji on the extent and scale to which MCAs are being used, how effective they are, and what contribution they make to biodiversity conservation, fisheries management and/or sustainable financing for natural resource management. For example, MCAs where the parties have established marine protected areas (MPAs) are not accounted for when the Fiji Government reports on protected areas⁴ to the Secretariat for the Convention on Biological Diversity (CBD). As such MCAs lack recognition in Fiji, as well as globally, as a tool for conservation to complement other more conventional management strategies.

4 The CBD defines protected areas as 'a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.'

1.2 Study Objectives

The Wildlife Conservation Society (WCS) and Marine Ecology Consulting conducted a study between 16 March and 30 October, 2017, to document the degree and scale to which MCAs are being used in coastal waters in Fiji, and what contribution they make to biodiversity conservation, fisheries management and sustainable financing. The study focuses on partnerships involving local communities with land-sea tenure rights and the tourism sector, and summarises:

1. Key characteristics and scope of MCAs, and their potential role in achieving conservation outcomes in Fiji;
2. The enabling conditions for MCAs in Fiji that result in both positive ecological and socioeconomic outcomes;
3. The laws, policies or mechanisms under which MCAs are established;
4. The organizations and agencies responsible for and capable of implementing project-specific MCAs;
5. The costs, incentives and sustainable financing for MCAs;
6. A series of studies showcasing the range of MCAs that operate in Fiji; and
7. Key lessons learned and best practices for MCAs in Fiji that result in biodiversity conservation, fisheries management and/or sustainable financing, with benefits both for tourism and local resource owners.

Complex highly diverse coral reefs draw tourists to Fiji from all around the world. © Stuart Chape



2. METHODOLOGY

In 2016, there were 395 licenced hotel properties in Fiji (Ministry of Industry & Trade and Tourism 2016), ranging from two-room homestays, city business and conference hotels, to large coastal resorts. From this list 115 tourism-based coastal properties and dive operators were approached by telephone and email to establish their willingness to participate in the study (Appendix 1). These 115 tourism operators were selected as properties on the coast who were marketed principally to overseas clientele, for whom the marine environment was an important tourism resource. Those catering primarily to business and domestic markets were not approached.

Of the 115 contacted, 81 (70%) responded positively, and interviews were scheduled with general managers. The Fiji field representative for Seacology, a non-profit organisation working with community MCAs was also interviewed, and their website consulted (see Case Study 10).

A template was developed to interview and gather information from resource owners and tourism operators (Appendix 2). Conversations were held in person, on site when possible, or over the telephone. Each interview took around 30 minutes to cover the main topics, but many operators were keen to volunteer further information which was gathered as additional notes. Interviews also included staff involved in activities and water sports and, in some cases, members of environment committees.

Resource owners who had direct involvement in tourism MCAs either as partners or managers were consulted where available, but not surveyed extensively. It is important to note that due to insufficient funding, this study was not able to fully document the community perceptions and motivations of MCAs, and would require further research to better understand their commitment to the MCAs, and the benefits they receive.

The interviews covered the following topics (see Appendix 2 for details):

Tourism infrastructure:

- Tourism operation name
- Resource owner's name (clan/village)
- Key informants name, position, contact
- Resort ownership (lease/freehold, operator's origin and company structure)
- Resort type (budget/midrange/high end/boutique)
- Average annual occupancy (percent) and capacity at maximum occupancy

Protected area description:

- Conservation partners/advisors
- MCA strategy (e.g. MPA, gear restrictions, species restrictions)
- Agreement type (traditional/legal, with or without compensation)
- Duration of MCA
- Location map and estimated size of area covered by the MCA
- MCA features (e.g. physical area, ecological features, main tourism uses)
- Ecosystem improvements (e.g. reef enhancement or refurbishment)

Compensation and benefits:*To resource owners:*

- Direct financial (frequency and recipients)
- Indirect financial support (projects and infrastructure)
- In kind (capacity building, ecosystem improvement, social benefits)

To tourism operators:

- Direct financial (income generating guest activities, donations)
- Indirect financial opportunities (marketing for operation and/or region)
- In kind (resource improvement, staff awareness, community relations)

Monitoring and enforcement:

- Measures of success (e.g. ecological and socioeconomic surveys)
- MCA rules and regulations for tourism and community
- Enforcement (i.e. level of surveillance and action)
- Poaching (level and type)
- Future structure (i.e. desire for more formal government recognition)

A number of case studies were prepared to showcase the diversity of MCAs in Fiji (see Chapter 4). Each case study was submitted to the tourism operators pre-publication for verification and approval. Financial information was treated as confidential and was only released with the full consent of the operators concerned.

Resorts were categorised on the basis of price range, guest capacity, average annual occupancy and ownership status (Tables 1–3). A large range of tourism operations took part in the study, representing all categories of resorts found in Fiji, showing that MCAs were in place across all resort types, although most participants were budget to mid-range with a capacity for more than 41 guests (i.e. backpacker and family resorts).

Seven operators did not have accommodation (dive operators, marine parks and one uninhabited island) and so are not included in this section. Of the remaining 49 with accommodation, 41 (84%) provided information on guest capacity. The majority of those surveyed (68%) had capacity for more than 40 guests. Only 21 of the 50 accommodation providers provided information on occupancy levels. Of those, 8 had an average annual occupancy of over 75%, 8 were between 51 and 75%, and 5 had 50% or less.

Table 1. Price range categories of tourism operations involved in the survey. "Other" consisted of operations without hotels or resorts (i.e. 2 dive operations, 4 marine parks, and 1 uninhabited island). Number = number of tourism operators that responded to the survey.

Operation type	Number	Percent
Resort, hotel or lodge, budget	19	34%
Resort, hotel or lodge, mid-range	18	32%
Resort, hotel or lodge, high-end	6	11%
Resort, hotel or lodge, boutique/ luxury	6	11%
Other	7	13%

Table 2. Guest capacity of tourism operations. Number = number of tourism operators with accommodation properties that responded to the survey.

Maximum guest capacity, including day trippers	Number	Percent
Fewer than 20 guests	8	20%
21–40 guests	5	12%
41–200 guests	18	44%
More than 200 guests	10	24%

Table 3. Categories of ownership of tourism properties involved in the survey.
*Local ownership includes investors originating overseas but now Fijian citizens.
Number = number of tourism operators that responded to the survey.

Operation type	Number	Percent
Freehold / overseas private	9	15%
Freehold / overseas corporate	1	2%
Freehold / local* private (incl. private consortium)	6	15%
Freehold / local* corporate	0	0%
TLTB lease / overseas private	4	10%
TLTB lease / overseas corporate	5	12%
TLTB lease / local* private (incl. private consortium)	9	22%
TLTB lease / local* corporate	5	12%
Community <i>mataqali</i> lease or local rights area	5	12%

Detailed maps were not available for most areas covered by the MCAs, including the MPAs which tourism operators and local communities have established. Maps of MPAs were drawn from on-site handheld Global Position System (GPS) or landmark descriptions, and are approximate only. The 56 MPAs included in the study totalled an estimated area of 266.25 km² (26,625 ha) of reef system, of which almost 80% or 210 km² (21,000 ha) was made up of deep water and offshore reefs within two large MPAs (i.e. Namena Marine Reserve and Vatu-i-Ra Conservation Park) and the remaining 56.25 km² (5,625 ha) mostly of shallow fringing reefs and slopes.

Seacology has taken part in 15 MCAs across Fiji, all involving formation of MPAs as part of exchange of benefits for conservation contracts. According to their website descriptions, these cover over 400 km² of marine environment, but detailed maps or descriptions were not available to confirm this information.



Figure 1. Location and approximate area of Marine Protected Areas in Fiji established through Marine Conservation Agreements (MCAs). Red = MCAs that are currently active. Yellow=MCAs in formation. Green= MCAs that have lapsed.

3. ENABLING CONDITIONS FOR MCAS IN FIJI

3.1 MCA Strategies and Objectives

Fiji's tourism market relies heavily on the perception of a pristine coastal environment. The image of Fiji that is projected by Tourism Fiji campaigns and tourism operator marketing strategies is that of clean beaches, palm trees, and clear water full of healthy colourful coral and schooling tropical fish. According to national statistics, 75% of visitors to Fiji swim and 60% snorkel in the sea fronting their selected resort, and about 12% of visitors specifically visit to go SCUBA diving (Ministry of Industry & Trade and Tourism 2006).

The importance of this resource is not lost on tourism operators, who in many cases have gone to great lengths to protect and conserve the marine resources around their properties in MPAs, some of them for longer than 20 years (Table 4). At a time when Fiji's coral reefs are under increasing threat from global climate change and local pressures such as overfishing and coastal development (Mangubhai et al. in press), and in an area where there are limited resources for environmental protection, locally-based tourism operators can provide longstanding support to conservation measures that benefit both themselves and local communities.

MCAs may be structured to include a variety of conservation strategies, but in Fiji, most involve the creation of MPAs, some with varying degrees of ecosystem enhancement, such as coral planting or giant clam restocking. The only sites with any other form of MCA were the two statutory (gazetted) reserves, which included buffer zones around their MPAs where certain types of fishing gear were not allowed (see Case Study 9).

3.1.1 Duration of agreements

The majority of tourism-related MCAs in Fiji were established in the last ten years and are indefinite in duration.

The majority (65%) of tourism-related MCAs in Fiji have been created within the last 10 years, but 15 were started more than 10 years ago, and 3 of those more than 20 years ago (Table 4). The majority of agreements (67%) do not have a defined duration and the agreements will last as long as the tourism operation is in business. Three are indefinite but the agreements have to be renewed every year (Table 5). The three permanent agreements represent two statutory (gazetted) reserves, and one village-based project.

Seacology has been forming MCAs in Fiji since the year 2000, most of them for initial 10 year periods, with an option to renew (see Case Study 10 Seacology). The projects are simple no-fishing agreements for the stated period of the MCA (usually 10 years). However, as there are no monitoring records for these MPAs, it is impossible to say how many of them are still in force.

Table 4. Length of tourism-related marine protection to date. Number = number of tourism operators that responded to surveys.

Length of MPA establishment	Number	Percent
In last 5 years	12	29%
6–10 years ago	15	36%
11–15 years ago	8	19%
16–20 years ago	4	10%
More than 20 years ago	3	7%

Table 5. Planned duration of tourism-related MCAs. Number = number of tourism operators that responded to surveys.

How many years MPA is proposed	Number	Percent
Indefinite	24	67%
2–5 years	4	11%
Renewed annually for indefinite period	3	8%
Permanent	3	8%
More than 5 years	2	6%

3.1.2 Conservation strategies included within MCAs

Most marine conservation agreements in Fiji focus on the establishment of marine protected areas that restrict fishing and other activities in certain marine areas.

Of the tourism operators surveyed, 56 (69%) were using MCAs to form MPAs within the customary fishing grounds of local communities in the area. However, not all of these were currently active. Five had lapsed due to community conflicts, or changes in tourism management, and three were in formation at the time of survey, awaiting ratification. There were simple "no-fishing" MPA agreements, without any other clear rules in 48% of the established MCAs, while the other 52% had more detailed MPA agreements involving bans on reef walking, shell collecting, or use of motorised water sports as well as fishing. Four of the operations were focused on specific 'megafauna' encounters such as sharks, manta rays, or dolphins, and in addition to their basic rules and regulations, had best practice guidelines in place to minimise or avoid disturbing breeding, feeding and resting habitats.

Of the tourism operators, 45%, mostly those with more complex MCA strategies, took part in active reef enhancement projects such as coral planting or giant clam restocking (Table 6). Many of the other operators stated their intention to start such projects in the near future. At least 20 (36%) tourism operators also organised the removal of predatory crown-of-thorns starfish (COTS), *Acanthaster planci*, from coral reefs when there were outbreaks.

*Dive operator Alex Garland measures farmed giant clam *Tridacna gigas* at Tokoriki Island Resort. © Tokoriki Diving*



In addition, four operators were engaged in mangrove planting. One was within the protected area (see Case Study 5 Shangri La's Fijian Resort) and three others, Beqa Adventure Divers, Uprising Resort and Outrigger Resort on the Coral Coast of Viti Levu, sponsored mangrove planting projects in villages as part of a carbon-offset programme ("[Mangroves for Fiji](http://www.mangrovesforfiji.com)" www.mangrovesforfiji.com) or supported mangrove planting by an NGO (OISCA). More tourism operators are expressing interest in similar programmes.

*Mangrove planting at Serua Island, sponsored by the Uprising Resort.
© Uprising Resort*



Eighteen had specifically added "no fish feeding" to their rules to avoid any environmental impacts of regularly adding food to a reef ecosystem, while 16 offered regular fish feeding as an activity. Feeding activities were mostly aimed at children and confined to shallow waters immediately off the beach, mainly involving the crescent grunter, known locally as *qitawa* (*Terapon jarbua*), but four were for income generation (e.g. shark feeding in Beqa Lagoon and the Yasawa Islands).

Seven operations, on beaches where hawksbill turtles (*Eretmochelys imbricata*) regularly nest, marked and protected nests and allowed hatchlings to make their way naturally into the sea at the time of their emergence, without handling or containment. Four operations raised turtle hatchlings in ponds where they formed a guest attraction, and later tagged and released them in conjunction with the Ministry of Fisheries.

Table 6. Marine Conservation Agreement strategies used by tourism operators in Fiji. Note that operators may employ more than one strategy at their site. Number = number of tourism operators who mentioned each strategy.

Strategy	Number	Percent
No-fishing plus at least two other conservation strategies	29	52%
Active reef enhancement projects	25	45%
Simple no-fishing agreement	27	48%
Turtle natural hatching and emergence	7	13%
Specific species viewing best practices	4	7%

3.1.3 Objectives of Marine Conservation Agreements (MCAs)

The main objective of most MCAs in Fiji are to maintain the health of natural resources to sustain tourism revenues and for use in general marketing campaigns.

Of the 56 tourism operations with MCAs, 70% of respondents stated that the single main reason (or objective) for establishing MPAs were to maintain the health of the resource for tourism sustainability. Over 50% stated that the main reasons for establishing MPAs were directly related to marketing and guest perception (Table 7). Over 50% of operators used the areas in complimentary guest activities such as snorkelling, and to raise guest awareness of the need to conserve the marine environment. Just under half (45%) also wanted to raise staff awareness.

Twenty-seven percent of tourism operators used the marine environment to reinforce their image as environmentally sustainable or as eco-tourism, and 27% had direct income-generating activities related to their marine protection (Table 7). However, only 18% of them directly used the presence of a protected area in their marketing strategies, and most of these were MPAs created to cater to specific niche market tourism; 9% for specific megafauna (e.g. sharks, dolphins, manta rays), and 5% for specific SCUBA diving and snorkelling trips to community-managed reef areas. Only 6% considered the MCA as part of a regional marketing strategy.

Biodiversity conservation was an objective for 41% of operators, and 14% wanted to support research (Table 7). Some tourism operators (27%) saw the creation of the protected area as contributing to stronger relationships with their local community, and used it as an opportunity to raise awareness of the need for environmental management within those communities. Other objectives mentioned by 5% or less of operations were prevention of spear-fishing around guests, and general guest safety while in the water, privacy of guests while on picnic beaches, fulfilment of some obligations under corporate social responsibility programmes, and provision of secure boat moorings to prevent anchoring.

Seacology's stated mission is to "protect the threatened habitats of the world's islands by working directly with local communities to both conserve their natural resources and improve their quality of life."

For the *iTaukei* resource owners, the objectives of these MCAs are less well defined, and are frequently seen as simply one of the requirements of having an employer in the area. In areas where the community are more informed and aware of the benefits of marine protection, they acknowledge that the MPA is improving and creating sustainable fishing resources for the community. However, documenting community motivations was outside the scope of this study, and would require further research to better understand their perceptions and commitment to the MCAs, and the benefits they receive. Further research to better understand community motivations could provide important lessons for future tourism-related MCAs as community commitment to the MCA is likely to be an important determinate of its effectiveness. Only 25% of tourism operators with MCAs stated that raising community awareness was a specific objective of their MCA. Raising community awareness of the multiple benefits of MCAs beyond revenue from leases and employment could be an important strategy in enhancing its effectiveness.

Table 7. Objectives of Marine Conservation Agreements from the perspective of Fiji tourism operators. Number = number of tourism operators who mentioned each objective.

Objective	Number	Percent
Sustainability of natural resources as a tourism attraction	39	70%
Marketing of pristine environment	31	55%
Used in non-income-generating guest activities	30	54%
Raising guests' awareness of environmental conservation	30	54%
Raising staff awareness of environmental conservation	25	45%
Sustainability of natural resources for biodiversity conservation	23	41%
Income-generating guest activities	15	27%
Marketing as environmentally sustainable or ecotourism	15	27%
Improved relationships with local community	15	27%
Raising community awareness of environmental conservation	14	25%
Direct marketing involving protected area	10	18%
Support of research	8	14%
Niche market trips for specific megafauna	5	9%
Niche market trips to community-managed areas	3	5%
Safety of guests involved in watersports	3	5%
Regional marketing opportunities	3	5%
Fulfills corporate social responsibility requirements	2	4%
Guest privacy (picnic beaches etc.)	2	4%
Security of boat moorings	2	4%

3.2 Threats Addressed by MCAs

Coastal reefs face a multitude of threats including over-fishing, sedimentation of rivers, and poor land and waste management. MCAs in Fiji focus almost exclusively on coastal waters, and do not address land-based impacts.

While many of Fiji's offshore reefs are still in healthy condition, coastal reefs in populated areas are under threat from overfishing, sedimentation of rivers and pollution from poor land and waste management (Mangubhai et al. in press). Overfishing on shallow fringing reefs is usually the result of regular subsistence, and small scale commercial, fishing for the local market (Hunt 1999; Veitayaki et al. 2014). These practices are important to rural communities without many other income-generating opportunities, but have resulted in localised depletion of reef resources, such as finfish and invertebrates, to below breeding densities in many areas (Lalavanua et al. 2017; Lee et al. 2018). If such practices continue, there is a strong likelihood that some of the local fisheries will collapse (Bell et al. 2009), and that the attraction of coastal reefs for tourism will diminish.

While large marine managed areas (MMAs) are needed to address ecosystem health and productivity, even small LMMAs such as those fronting resorts can offer breeding sanctuaries for targeted fishing species, and thereby improve local ecosystems and fishing resources (Cohen and Foale 2013; Jupiter et al. 2014). Some tourism operators have active restocking programmes such as giant clam or coral farming to improve the condition of the natural resources affronting their resort as part of their MCAs.

Although the declaration of a no-fishing area does not address land-based threats to adjacent marine environments, some agreements include improved environmental management of the tourism sector, and support of community initiatives to address some of the other issues. While specific questions about threats to reef health were not included in the survey, many operators volunteered concerns about different aspects of coral reef use (Table 8). These concerns included destructive fishing, overfishing, littering, as well as damage from tourism and boating traffic. There were also concerns relating to guest safety and security.

Table 8. The main threats highlighted by tourism operators as motivation for establishing Marine Conservation Agreements in Fiji.

Threats
Overfishing, particularly of herbivorous schooling fish, leading to algal overgrowth
Destruction of nursery grounds of certain species, particularly black tip reef sharks
Commercial fishing of ecologically important animals such as sea cucumbers
Coral breakage during gleaning activities on shallow reefs
Coral breakage due to uncontrolled tourist reef walking
Coral breakage from uncontrolled boat anchorage and traffic
Rubbish and litter left on the reef and beaches
Threats to snorkelling guests' safety from spearfishers and fishing boats
Threats to resort security due to uncontrolled access via the beach areas

3.3 Agreement Mechanisms

The most common form of MCAs are traditional verbal or documented tabu areas. MCAs in Fiji therefore rely heavily on the traditional ownership rights and traditional management of fisheries resources. Fifty-one percent of all tourism operators are content with their current MCA arrangements while 49% would welcome more formalisation of their agreements.

In Fiji, while the ownership of the physical sea bed below the high tide mark is vested in the government, the traditional access rights of the land owning community to the fishing resources are recognised, leading to a complex system when it comes to conservation, use and management of that resource (Sloan and Chand 2016). Traditional authorities can agree that their community will stop fishing on a section of reef (e.g. through a *tabu*), and this can be an effective and relatively simple way to declare a no-fishing area. However, it often takes government involvement to enforce protection from those outside the community.

Five main mechanisms have been used to create MCAs in Fiji (Table 9):

- **Informal Agreements:** Subsistence fishing is primarily done by the local land owning unit, such as a village or larger community. Some, particularly those with interests in the tourism development of an area, are willing to stop fishing to enhance sustainability of employment.
- **Verbal or Documented Tabu:** Traditional fishing rights means that individual communities can enter into conservation agreements without extensive formal processes. This can be done by a traditional leader or by a consortium of the heads of the fishing rights owning clans (*mataqali*), declaring an area “no-take” or *tabu*. This may be recognised by the traditional council (e.g. *Bose ni Tikina*), and observed by fishing rights owners in the vicinity.
- **Exclusion from Commercial Fishing:** Traditional *tabu* areas may become part of the Fiji Locally-Managed Marine Areas (FLMMA) network to aid in community-based management. It is also possible to register a *tabu* area with the Ministry of Fisheries to exclude the area from commercial fishing licences.
- **Foreshore Lease or Licence:** The ownership of the physical foreshore is vested in government, and may be leased or licensed (usually for development or aquaculture use) through the Ministry of Lands and Mineral Resources. This has been investigated as a mechanism to strengthen the legal status of MPAs (FELA and EDO 2017). Note that currently only one foreshore lease (Yadua Island) and two foreshore licences (Namotu Island and Waivunia Marine Park) agreements exist for tourism related MPAs. It involves abrogation of fishing rights for the duration of the lease or licence, and an annual payment to government.
- **Statutory "Gazetted" Reserve:** Under Section 9 of the Regulations of the Fisheries Act 1942, the Minister of Fisheries may declare areas as statutory protected reserves for the purpose of “prescribing areas and seasons within which the taking of fish is prohibited or restricted, either entirely or with reference to a named species”. This has been used to create statutory reserves with fishing restrictions, fully recognised in the government gazette. It involves permanent abrogation of fishing rights by the local communities.

Table 9. Types of tourism-related Marine Conservation Agreements currently in force. Number = number of tourism operators that responded to the survey.

Agreement	Number	Percent
Verbal <i>tabu</i>	30	54%
Documented <i>tabu</i>	16	28%
Informal	5	9%
Legal lease or licence	3	5%
Statutory "gazetted" reserve	2	4%

3.3.1 Informal Agreements

The most common forms of MCA are informal or verbal traditional *tabu* agreements (63% all together), with some written agreements with local communities (29%) (Table 9). From the community perspective, the advantage is that they ultimately retain control of the resource after the agreement ends. The weakness is that these agreements rely on the traditional authority and consensus of the community, and there is little legal protection from poaching activities.

These areas usually do not have any detailed agreement other than the traditional commitment not to fish, which includes collection of anything (fish, invertebrates, algae, coral rock, etc.) from the reef, and normally results in community members not entering the area at all. The non-fishing structure is simple, and means that anyone entering the area may be challenged. However, there may be exclusion clauses to these agreements, such as allowing collection of traditionally important organisms at certain times of the year, or allowing limited fishing at the chief's request. Limited openings and allowances make governance more of a challenge, particularly after changes in tourism operators' management or staffing, which may lead to lack of institutional memory of the agreement. Additionally, fishers from outside the local community may not recognise the traditional fishing ground owners' authority and may continue to fish.

3.3.2 Verbal or Documented *Tabu*

There are 16 reported *tabu* areas with written documentation. These are mostly letters from a traditional leader formalising a traditional *tabu* arrangement. Again, there may be exclusion clauses to these agreements, such as allowing collection of traditionally important organisms at certain times of the year, or allowing limited fishing at the chief's request. Such letters have been sent to the Ministries of *i-Taukei* Affairs, Tourism, and Fisheries, as well as to the FLMMA network, local provincial office and the *Tikina* Council for recognition, and have been referred to as *Tikina* leases; however, such a designation does not appear to be recognised outside those councils. If there are agreed financial or indirect benefits involved, these may be mentioned in the letter, but are unlikely to be documented in detail.

In some areas, specific recognition from the Ministry of Fisheries has been sought in order to exclude commercial fishing. In others, a similar agreement has been reached with a traditional leader whose permission must be gained before the Ministry issues a fishing licence. In these cases, the *tabu* is mapped and described, and a clause inserted into the fishing licence excluding the area from the permit to fish.

The 15 MCAs established by Seacology appear to fall under the category of "documented *tabus*", as there is a written contract between Seacology and the community to provide a tangible benefit to a community, such as a new school building or health clinic, in exchange for the community establishing marine reserves, but no recognition in law (see Case Study 10 Seacology).

3.3.3 Foreshore Lease or Licence

For leases and licences, the resource owners are legally required to give up their fishing rights for the term of the agreement before a lease or licence can be issued (FELA and EDO 2017). In this case a waiver form from the Ministry of Lands and Mineral Resources must be signed by the heads of each *mataqali* involved, and may involve a written financial compensation agreement on which the waiver is conditional, and which would be administered through the government.

After a fishing rights waiver has been signed, a lease or licence may be granted by the Ministry of Lands and Mineral Resources. Leases can be used to exclude public access from an area, while a licence can be used to undertake an activity but cannot be used to exclude public access. The terms of the lease or licence state the length of time the agreement would stand, and the uses to which the reef would be put. To date two licences (see Case Study 8 Namotu Island and Waivunia Marine Park) have been granted for the purpose of forming MPAs, with terms of five years (with option to renew) at a rental of FJ\$100 per annum. Only a single lease has so far been granted for this purpose, with a term of 98 years at a similar rental (see Case Study 8 Yadua Island). The rent is paid to government, not to the community.

3.3.4 Statutory "Gazetted" Reserve

Under "gazetting" the rules and regulations of each statutory reserve are clearly stated under law, including details of the species to be protected, and the penalties for those breaching them. There may be additional regulations relating to other aspects of protection, such as littering and anchoring. PES or other benefit agreements are not included in the rules and regulations, must be independently negotiated and documented.

3.3.5 Preferred Mechanisms

Operators were asked whether they would like government to have a more active part in formalising MPAs, and if so, what type of agreements they would aspire to. Approximately half were content with their existing agreements, while the other half would prefer greater formalisation (Table 10). Many did not feel that they had sufficient information about the possible options to express an opinion, but would welcome more information.

The request for more formal protection comes predominantly from the tourism industry, who would like to see better legal protection from poaching (Table 11), although some communities are also in favour of the measure, and one had actually leased a section of its own *qoliqoli* for utilisation in tourism projects (see Case Study 8 Waivunia Marine Park). The disadvantage is the removal of control of the resource from the traditional owners.

Those who would like to have more formal agreements largely favoured registration with the Ministry of Fisheries and exclusion from commercial fishing licences (41%), as well as more Fish Warden training for staff. Eight operators said they would like to work towards legal solutions such as gazetting or foreshore lease/licences, but others were concerned about the loss of traditional fishing rights under such agreements. Five wanted to improve their informal or lapsed MCAs with renewed verbal or documented *tabu* agreements.

Table 10. Tourism operators who would welcome more formalisation of MCAs. Number = number of tourism operators that responded to the surveys.

Would like more formal MPAs	Number	Percent
No	18	51%
Yes	17	49%

Table 11. Number and types of MCAs that tourism operators would welcome. Some operators would welcome more than one type, progressing over time.

MPA type	Number	Percent
Recognition by Fisheries and exclusion from fishing licences	9	41%
Statutory (gazetted) reserve	5	23%
Foreshore lease or licence	3	14%
Traditional verbal <i>tabu</i>	3	14%
Documented <i>tabu</i> agreement or fishing rights waiver	2	9%

Only eight operators, representing MCAs covering 13.15 km² of marine environment, or 5% of the total MCA area, said that they would like to progress to Foreshore Leases/Licences or Statutory (gazetted) Reserves.

3.4 Providers and Beneficiaries

In general, for tourism-related MCAs in Fiji, providers of conservation measures are traditional resource owners and beneficiaries are tourism operations and their clients. Communities also benefit from improved fish stocks in MPAs that spill over to other parts of their traditional fishing grounds. Wider population benefits accrue from general employment, income generation and taxation in the tourism and fisheries sectors.

Most MCAs work with third parties that provide advice and guidance on the establishment and monitoring of MPAs. Third party involvement is likely to be an important determinant of whether or not ongoing monitoring and reporting of effectiveness takes place which can be a contributing factor to MPA sustainability.

MCAs must have clear providers of conservation measures and beneficiaries to function and be successful (Wunder 2005). Due to the land-sea tenure arrangements in Fiji, the primary providers in the MCAs in coastal areas in Fiji are the communities with access rights to their fishing grounds (*qoliqoli*). These providers (i.e. communities) worked directly with the beneficiaries (i.e. tourism operators or non-profit organisation) in the area without assistance, or with one or several government and non-government organisations (NGOs) that provided advice and training in particular aspects of the MCA, such as setting up an MPA, coral planting or biological surveys.

Usually the traditional resource owners are the primary beneficiary of any financial or in kind benefits of MCAs, with the exception of the foreshore lease or licence fee, which is paid to the Ministry of Lands and Mineral Resources. This is so, even in the case where the resource owning community leases a section of its own foreshore. However, fees for lease and licences issued for conservation purposes are usually fairly nominal and in most cases around FJ\$100 per annum, with the money going directly to government.

The specific beneficiary of direct financial benefits or community support varies from community to community. Some protected areas may be within a single chief's jurisdiction, others may belong to one or more villages. Each agreement will be separately negotiated, and care must be taken to ensure the correct group receives the benefits, or conflict may result.

Equity issues within communities need careful consideration. In the past, cash payments or personal benefits given to individual or single families have resulted in the larger community refusing to recognise the conservation agreement. Currently, there are growing examples of MCA projects working towards greater transparency and accountability, with voluntary payments made into community-owned bank accounts (e.g. Shark Reef Marine Reserve) or educational trust funds (e.g. Namena Marine Reserve, Vatu-i-Ra Conservation Park).

The Fiji tourism industry as a whole, as well as the specific operators involved in MCAs and their clients are the most obvious direct beneficiaries of the ecosystem improvements associated with successful MCAs, particularly those utilised for guest activity and marketing campaigns. However, the traditional resource owners also benefit from these improvements, as many rely on healthy fisheries resources for food and livelihoods, and therefore on the improvements to breeding stocks provided by, for example, an MPA. A larger beneficiary is also the greater Fijian society, which benefits indirectly through the tourism or fisheries sector in terms of employment, revenue generation and government benefits delivered by taxation in these sectors.

Thirteen of the tourism operators interviewed worked only with the local communities on their MCAs. The remaining 43 operators worked with at least one, and in some cases more than one partner organisation, as well as the community (Table 12). A total of 22 partner organisations were identified during the study, many of which were involved with more than one MCA (Table 13). These were predominantly NGOs and private sector companies involved in conservation.

Thirteen projects were advised by a NGO formed and supported by tourism operators of a particular region, the Mamanuca Environment Society (MES). Eighteen MCAs had some involvement from government ministries (predominantly the Ministry of Fisheries), and two were involved with the University of the South Pacific (USP).

Seacology does not appear to have worked with any NGO or private organisation, but did say that the Ministry of Fisheries had been present at some meetings.

Table 12. Types of partner organisations involved in Marine Conservation Agreements in Fiji. Number = number of partner types identified in 43 MCAs. Some MCAs involved more than one partner.

Type of partner organisation	Number	Percent
Non-governmental organisation	26	43%
Government	18	29%
Private sector	15	25%
Educational establishment	2	3%

Grey reef shark in the Namena Marine Reserve. © Cat Holloway

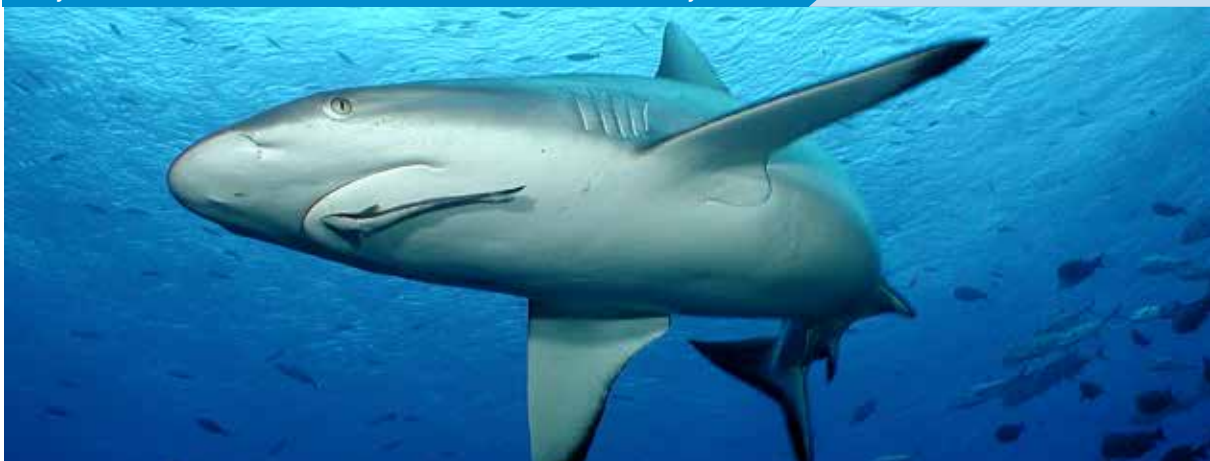


Table 13. Partner organisations providing advice and training on specific aspects of Marine Conservation Agreements. Number = Number of projects with involvement from each organisation.

Partner organisation	Name	Number
Government	Ministry of Fisheries	17
	National Trust of Fiji	3
	Ministry of Environment	1
	Ministry of Lands and Mineral Resources	1
NGO	Mamanuca Environment Society (MES)	13
	Fiji Locally-Managed Marine Areas (FLMMA) network	6
	Coral Reef Alliance (CORAL)	3
	Wildlife Conservation Society (WCS)	2
	Organisation for Industrial, Spiritual and Cultural Advancement International (OISCA)	2
	World Wide Fund for Nature (WWF)	2
	Conservation International (CI)	1
	Partners in Community Development, Fiji (PCDF)/Foundation for the People of the South Pacific (FSP)	1
	Whale and Dolphin Conservation Society (WDCS)	1
	Private sector	Resort Support/Marine Ecology Consulting
Advice from other tourism operators		5
Specialist staff at tourism operation		4
Reef Explorer Fiji Ltd.		1
Tourism Recreation Conservation Consultants (TRC)		1
Walt Smith International (aquarium trader)		1
Other	University of the South Pacific (USP)	2
	United Nations Development Programme (UNDP)	2

This list is not exclusive – there may be some omissions or confusion on the part of operators who did not remember exact details. For example, the FLMMA network is commonly confused with Ministry of Fisheries as they often work together, and organisations advising on sub-projects may not have been listed.

3.5 Incentives (Monetary vs. Non-Monetary)

Direct financial payments are mostly confined to larger marine reserves and parks and specific megafauna viewing activities. Most MCAs include in-kind benefits only. As most MCAs in Fiji rely on traditional governance arrangements, thorough knowledge of the local context is an important prerequisite for the successful establishment of an MCA, particularly one involving direct financial payments.

Direct payments can be a source of conflict if not dealt with transparently. The potential for conflict is a stated reason for not including direct financial payments in MCAs. Direct payments may not always be best suited to Fiji's egalitarian cultural context. Where direct payments are used, transparent accountability mechanisms should be in place to minimise potential conflicts.

Incentives are core to the success of MCAs and should be in place for both the providers and beneficiaries (Wunder 2005). Incentives for MCAs can take on a number of different forms, as summarised below (from Teneva and Mangubhai 2016a):

1. **direct financial payments**, typically compensation for opportunity cost of otherwise developing or using the resource (e.g., profits from fish catch, profits from logging, etc.);
2. **financial support** for community development and infrastructure, including but not limited to schools, hospitals, roads, equipment that allows more sustainable harvesting practices;
3. **in kind payments**, including goods, knowledge transfer, capacity-building in exchange for conservation; and/or
4. **rights recognition**, including land rights, fishing access rights, and quota allocation.

Direct financial payments, financial support and in-kind payments occur in MCAs in Fiji (Table 14). However, the last category, rights recognition, is not necessarily applicable to Fiji where traditional fisheries ownership rights are already recognised, and are not necessarily strengthened by MCAs. Ecosystem and fishing resource improvements are considered beneficial to neighbouring fishing communities, and are included as an in-kind benefit.

Sixteen (28%) of the tourism-related MCAs provided explicit economic incentives to the resource-owning local communities involving some form of payment, provision of infrastructure improvements, or income-generating opportunities directly related to marine conservation. However, these 16 MCAs included the two largest MPAs, Namena Marine Reserve and Vatu-i-Ra Conservation Park, which together encompassed 83% of physical marine environment protected under tourism-related agreements (220 km²).

The remaining 40 sites (72%) supplied less quantifiable benefits such as sustainable marine ecosystem resources, non-marine related community support programmes, and contributed to the stability of general tourism-related benefits such as land lease payments and employment in the tourism sector.

Of the ten sites that paid direct financial contributions, one had lapsed, one was formed but payments had not yet started, and one was currently in the proposal stage.

Table 14. Number and types of incentives offered to communities involved in Marine Conservation Agreements. Notes, one offered two types of incentives.

MCA type	Number	Percent
Direct financial payments	10	18%
Community income-generating opportunities	3	5%
Financial support of community projects	3	5%
In-kind benefits and ecosystem improvements	41	72%

The Manta Channel offered two types of financial benefit; direct financial support to landowners as a percentage of income from manta-viewing activities as part of land-lease payments, and income generating opportunities to community businesses (see Case Study 7 Manta Channel). Of the direct financial payment MCAs, six were based on per-head use of marine parks, or specific megafauna viewing activities (Table 15). Four were paying regular amounts into community trust funds or communal accounts (see the marine parks, reserves and megafauna attractions of Case Studies 1, 2 and 7). One was waiting for finalisation of its trust fund to begin receiving similar contributions (see Case Study 1 Vatu-i-Ra Conservation Park), and the resource owners and users of another were involved in discussions of a similar scheme at time of writing.

Four tourism operators made direct payments to a single chief, and it was not clear if other members in the community also benefited. Details of payment amounts are not available. Two were one-off payments at the start of the project, and two were continuing payments, either monthly or annual, to be paid for the duration of the agreement. One of the latter has been discontinued due to conflicts over *qoliqoli* ownership, and the protection has been removed.

Three offered direct employment and business opportunities to the communities themselves: resorts in the area of the Naivulatola or Waivunia Marine Conservation Area on Vanua Balavu (see Case Study 8, Waivunia Marine Park) train and employ local village members as snorkel guides within the conservation area; and Waitabu village on Taveuni has been running its own snorkel business within the marine park for over 15 years (see Case Study 2, Waitabu Marine Park). At the Waitabu Marine Park, visitors are charged FJ\$50 per head for a guided snorkel trip and village visit, providing an average annual gross income of just under FJ\$10,000 per year.

Manta Channel in the Yasawa Islands. © Thomas Vignaud



Table 15. Examples of user-related voluntary financial contributions as part of Marine Conservation Agreements.

Project	Tourism feature	Type of user	Donation per head	Other
Namena Marine Reserve	Coral reefs	SCUBA divers	FJ\$30	Dive tags paid and provided by NGO
Lawaki Beach House	Coral reefs	Snorkellers	FJ\$10	
Beqa Adventure Divers	Sharks	SCUBA Divers	FJ\$25	Monthly payment for protection of other dive sites
Aquatrek	Sharks	SCUBA Divers	FJ\$20	Monthly payment for protection of other dive sites
Vatu-i-Ra Conservation Park	Coral reefs	Park Visitors	FJ\$15	Initial contribution from NGO for first year
Naviti Manta Channel	Manta rays	Snorkellers	Under discussion	Land lease payments percentage gross turnover, including from Manta trips Business opportunities to communities

The Manta Channel also offers direct income-generating opportunities to community-based tourism operators who offer their own snorkeling trips into the area at around FJ\$40 per head (varies between operators). It was estimated that in 2015 Manta Channel snorkel trips, by multiple operators, generated FJ\$220,080 (Fiji Manta Ray Project 2015; see Case Study 7, Manta Channel).

Three operators supported community development projects in relation to conservation-themed activities within the MPAs, (see Case Studies 5, Shangri-La's Fijian Resort and Spa and 7, Takalana Moon Reef Dolphin Encounter), one of which (Hideaway Resort) had lapsed after a change of resort ownership (Table 16). Many other tourism operators also support community projects, but as part of their general relationship with the villages, rather than specifically related to marine resource use.

The remaining 40 MCA sites which did not offer direct or indirect monetary incentives nevertheless stated that communities received in-kind ecosystem improvement benefits from having a protected area looked after by the tourism operation. Specific marine ecosystem projects at community sites were supported by 13 tourism operators (23%), and community education and awareness in issues related to marine conservation were supported by 14 operators (25%).

Table 16. Examples of financial support for community development from MCAs.

Project	Activity	Donation per user	Purpose
Takalana Moon Reef	Dolphin encounters	Percentage of income: 5% to community, 10% to school	For conservation projects and education support decided by the operator.
Shangri-La's Fijian Resort	Mangrove planting and reef restoration	FJ\$30-50 per family taking part	School projects, and the Naqeledamu women's centre community projects, decided by the operator
Hideaway Resort*	Coral planting	FJ\$5 per head	Taqaqe Environmental Trust Fund for environmental projects

* Project currently lapsed as coral planting not underway after a change of resort ownership.

Few of the tourism operators ran such programmes themselves, preferring to delegate this role to another organisation. Nine operators were members of a tourism-supported local NGO, the MES; one worked through a "voluntourism" organization, Beqa Adventure Divers through Projects Abroad; another supported an international NGO mangrove planting project, Outrigger Fiji Beach Resort through OISCA.

Shangri-La's Fijian Resort and Spa and the Jean-Michel Cousteau Resort Fiji had their own in-house ecosystem enhancement projects in community sites, and four (Shangri-La's Fijian Resort and Spa, the Jean-Michel Cousteau Resort Fiji, Takalana Moon Reef Dolphin Encounter and Beqa Lagoon Resort) operated their own community education programmes.

Seacology MCAs all involved infrastructural benefits for the community in return for agreements not to fish in the designated MPA. Money was not given to the community, but to builders and providers to create the infrastructure. The 15 communities who agreed to MCAs received 18 benefits, some for renewing the agreement after the end of the original negotiated period. Ten received new community halls, four got upgrades or repairs to community halls, two had a kindergarten or school improvement, one got electrical infrastructure for the village, and one received a patrol boat to police the MPA (see Case Study 10, Seacology).

Assessing the advantages and disadvantages of direct financial payments for MCAs in Fiji is complex. Many tourism operators currently rely entirely on traditional agreements and goodwill. When asked whether they would be prepared to enter into direct financial payments for conservation agreements, many tourism operators said no, as they saw it as a source of potential conflict. Others said that they would consider it in return for more formal, enforceable, MPA agreements. A few saw it as a method of ensuring compliance to protection agreements, which may not be enforceable by other means.

The majority said that they would have considered direct payments more favourably in the past, but the imposition of the new Environment and Climate Adaptation Levy (ECAL), made it impossible for them to expend further finances on environmental programmes.

On the 1 January 2016 a new Environmental Levy of 6% of gross turnover income came into place for providers of "prescribed services", mainly those engaged in the hospitality and recreation sectors, including tourism accommodation and watersports providers (Environmental Levy Act 2015). On the 1 August 2017 this was raised to 10% of gross turnover, and renamed the Environment and Climate Adaptation Levy (ECAL) (Environmental Levy (Budget Amendment) Act 2017).

This levy is paid into an Environment and Climate Adaptation Fund (ECAAF), with the stated objectives:

- a. promote conservation of the forests, flora, fauna, wildlife, ecosystems and biodiversity of Fiji;
- b. provide funding to assist programmes, projects and activities associated with climate change, including climate change mitigation and adaptation activities; and
- c. engage in any environment or climate change related activity approved by the Minister.

From these statements, it is the understanding of many tourism operators that marine conservation projects would be supported from their contributions to this fund. Because of this, some have delayed starting new projects, either due to reduced income, or awaiting government initiatives.

Suggestions for uses of the ECAL levy from tourism operators included:

- Establish and monitor MPAs;
- Offer workshops on environmental conservation for village communities and resort staff;
- Train and support Fish Warden Patrols; and/or
- Offer credits to tourism operators against ECAL as an incentive to form well monitored and effective MCAs.

One limitation of providing financial support for community projects in exchange for conservation is that the benefits may tend to be those which the tourism operators wish to provide, rather than those possibly more desired by the resource owners. This is particularly true of business opportunities and support of village projects, but also applies somewhat to direct financial payments, which many tourism operators prefer to be made into transparent trust funds with specific uses such as education or environmental projects, but which community members may prefer to be unlimited.

Confusion and conflict often arise from a lack of transparency and accountability, as well as differing priorities between the parties. In the absence of clear and firm agreements on the management of funds, conflicts can easily arise, particularly if payments are only made to part of a community, not the whole. While tourism operators generally prefer to see funds used for environmental and educational purposes, communities may prioritise individual income, or contributions to traditional, or religious bodies, or provincial levies.

In some cases, for example the Vanua Davutukia and the Korolevu-i-Wai Marine Protected Areas (V. Bonito, pers comm) on the Coral Coast on the west of Viti Levu, villages have set up MPAs with a view to developing their own tourism-related income generation, but have not been supported by their local tourism providers, possibly due to lack of insurance and health and safety protocols, or marketing opportunities, which they did not understand. When this happens, conflicts easily arise, and can create resentment between the tourism operators and the resource owners. It can take long-term careful negotiation to remedy such situations and create a project that truly benefits all parties.

There are some examples that suggest that direct financial compensation may not always be the strongest mechanism for sustainability of MCAs in Fiji. At one Coral Coast resort the commitment not to fish the MPA disintegrated after a change of ownership meant that the resort no longer conducted income-generating coral planting guest activities and consequently stopped payments to a community environmental trust fund; at another, the chief actually came to the resort asking for the agreement to be broken, because the income was causing conflicts over ownership of the resource. Several resorts in this area said that they would not support direct financial payment MCAs as they see them as a source of potential disagreements and community conflicts.

3.6 Actual vs. Perceived Benefits

An MCA is a means to an end. The establishment of an MCA is the first step in realising the benefits of marine conservation measures. Ongoing monitoring and third party guidance is useful in tracking and reporting on benefits. Keeping expectations about the level of possible benefits realistic can also influence their success and community commitment to the MCA.

The focus of many stakeholders is often the establishment of an MCA with the assumption that if an agreement is reached to prevent fishing in an area, the job is done and the benefits assured. However, there can be a difference between the expected benefits and those that actually eventuate. In some cases, particularly where agreements are informal and undocumented, and no monitoring is carried out, no-fishing agreements may provide privacy and security for guests but they may not really contribute much to eco-system enhancement, or restoration of fishing resources. In others, a formal MCA contract may be issued, with statements of what is to be conserved and the concrete benefits that will accrue to the resource owners, but there may be no follow up to ensure that conservation is being practiced, or plans for long-term sustainability.

Seacology has made contractual agreements with 15 communities to create MPAs (a total area of over 400 km²), mostly for 10 year protection periods, in return for financial investments in community infrastructure such as community halls (see Case Study 10 Seacology). However, some of these projects have not been heard of by other practitioners in the area, and as there is no reportage of progress to any government or non-government agency, there is no guarantee that any of these

MPAs are, in fact, fully observed. Even when the MPAs are upheld there are limitations to their success. With no monitoring of progress of the MPA, there is no reinforcement of the ecological benefits to community. Consequently, at the end of the contractual period, (or if the benefit fails) most communities feel they can fish the MPA, or require another benefit to extend the protection.

3.7 Conditionality

The use of direct payments to embed conditionality into MCAs may not be a good fit for the cultural context in Fiji. As most MCAs rely on traditional governance, social pressures for transgressions appear to be a successful method of enforcing MCAs. Expectations should be realistic so as not to avoid disappointment that can damage the long term commitment.

The primary advantage of direct financial compensation agreements is that there is a clear route to conditionality: if the protection is not maintained, payments can be stopped, and vice versa. This is made extremely clear in some projects with direct business arrangements (see Case Studies 1, Namena Marine Reserve and Vatu-i-Ra Conservation Park and 7, Shark Reef).

In Waitabu village on Taveuni Island, the presence of an income generating activity within the *tabu* area reinforced the villagers' commitment to marine protection in the face of temptation to fish the increasing resources. Sharing the benefits of the project has helped stop poaching by some neighbouring communities from whom benefits can be withdrawn if fishing starts again (see Case Study 2, Waitabu Marine Park).

No specific examples could be found in Fiji of payments or benefits ceasing as a result of a breach of the terms of the MCA. At least two projects failed when agreed payments ceased: one when a change in tourism ownership led to a cessation of income generating activities; a second at the request of the local chief who perceived that payments were causing community conflicts. In others, disappointment at lower-than-expected income has led to weakening of commitments, and regular poaching.

Where MCAs rely more on community project support and in-kind benefits, there is less conditionality, and the perception that the benefits stem directly from marine protection may weaken if not regularly reinforced. However, social pressures exerted through reporting poachers to the local community leaders, the chief or *Turaga ni Koro*, can also be powerful drivers of compliance (discussed further in 3.9, Enforcement).

Where an MCA provides a tangible benefit to a community, such as a new school building or health clinic in exchange for the community's support in establishing marine or reserves, it is not possible to remove the benefit if the community ceases to observe the protection. If the infrastructure offered in the exchange ceases to be a benefit (for example if a boat sinks, solar power breaks, a community hall is damaged, or even at the end of the negotiated period), the community may perceive the bargain to be broken and may resume fishing.

3.8 Governance

As most MCAs in Fiji rely on traditional tabu arrangements the identification of the correct resource owners and mapping of the resource management area is an important first step in the establishment of an MCA. The establishment of clear and transparent management arrangements that engage the whole community in the design of the MCA are important factors in the effectiveness of MCAs in Fiji.

Good governance is critical to conservation success (Stern 2008). Specifically for MCAs, there must be no doubt as to who are the relevant land or resource owners, who is responsible for which resources, who has which access rights to which areas, and which authorities have jurisdiction in different locations. The governance structure must ensure transparency and inclusivity in decision-making, and must also work with the financial management entity responsible for the fund in order to coordinate fairness and effectiveness in decision-making and fund disbursement.

In Fiji, good governance depends on the correct identification of the resource owners, and the willingness of everyone within the community to form and uphold the agreement. It is very important to have accurate mapping and description of MPAs to ensure that all relevant resource owners are involved in MCAs, although it does not mean there cannot be conflicts and disagreements. Traditional fishing grounds are registered with the *i-Taukei* Lands and Fisheries Commission (iTLFC), to whom disputes may be taken. Once the resource owners (in the case of Fiji, the providers) are properly identified, the type of agreement dictates how transparent and enforceable the agreement will be, and whether all aspects of the agreement are likely to be documented.

The different forms of MCA have different properties and levels of documentation of the agreement (Table 17). The Namena Marine Reserve, Vatu-i-Ra Conservation Park and Shark Reef Marine Reserve, specifically formed as tourist attractions, have detailed management plans stating the exact conservation measures taking place, and the precise rules and regulations for use of the park, including best practice guidelines for divers, snorkelers and boat users. Two have formed trusts with specific objectives, and a board of trustees to oversee proper use of funds, and one has separate contractual agreements with the communities (see Case Studies 1, Namena Marine Reserve and Vatu-i-Ra Conservation Park, and 7, Shark Reef Marine Reserve). The Waitabu Marine Park, a village-based project, has a management plan lodged with FLMMA and the Ministry of Fisheries, and is set up as a cooperative business with a committee which keeps detailed accounts and oversees the use of the generated income (see Case Study 2, Waitabu Marine Park).

Hawksbill turtle in Vatu-i-Ra Conservation Park. © James Begeman



Table 17. Examples of the main features of Marine Conservation Agreements in Fiji.

Agreement type	Documentation of commitment to conserve	Detailed description of conservation measures	Documentation of payments or other benefits
Informal and verbal <i>tabu</i> agreements	No	No	No
Documented <i>tabu</i> agreements	Yes	Maybe - sometimes limited to specific species	Not usually, sometimes mentioned in principle, but rarely in detail
Exclusion of commercial fishers	Yes	Not applicable as fishers fully excluded	No
Management plan and trust fund	Yes	Yes	Yes
Fishing rights waivers	Yes	Not applicable as fishers fully excluded	May be attached to a compensation agreement
Leases and licences	Yes	Yes	Fee payments to Government
Statutory (gazetted) reserves	Yes	Yes	No

3.9 Enforcement

Most tourism operators perceived poaching to be low and largely confined to subsistence fishing from within the local community. Resort staff and Fish Wardens play a critical role in enforcing MCAs. Further training offered by the Ministry of Fisheries to certify additional resort staff and community members as Fish Wardens could help to strengthen enforcement. Tourism operators perceive that their involvement – as external parties without family ties to the area – can sometimes assist in enforcement.

3.9.1 Poaching

Across Fiji poaching (i.e., unauthorised fishing) within MPAs is a problem, ranging from occasional incursion by local subsistence fishers, through deliberate contravention by sub-groups of communities at times of conflict, to commercial harvesting from fishers outside the community. This was not quantitatively assessed, but tourism operators were asked to give their empirical view of poaching level (Table 18), and origin of poachers (Table 19) that frequent MPAs established under MCAs. Not all operators had information or gave their opinions.

Table 18. Level of poaching in the Marine Protected Areas established under a Marine Conservation Agreement. Number = number of operators who offered an opinion on levels of poaching. Not all operators offered information.

Level of poaching	Number	Percent
Low	20	59%
Medium	6	18%
High	8	24%

Table 19. Origin of poachers in the Marine Protected Areas established under a Marine Conservation Agreement. Number = number of operators who offered an opinion on the origins of poachers. Not all operators offered information.

Origin of poaching	Number	Percent
From local community	20	71%
From outside the local community	8	29%

In most cases (59%) poaching was at quite low levels, mostly from the local community for subsistence purposes, although some reported that communities had ceased to obey the *tabu* at all and were actively fishing, some for commercial purposes such as sea cucumber collection. This usually seemed to be related to disputes over land ownership or payments, or was due to lack of other fishing grounds. Several reported night fishing with spear guns at the more remote edges of larger MPAs. Where poaching levels were high, it frequently involved small scale commercial fishing boats from outside the community, usually at night. Another reported problem was tourists collecting shells and corals from the water, particularly (but not only) those from China.

3.9.2 Enforcement

Fish Wardens play an important role in the enforcement of the Fisheries Act 1942. They are appointed by the Permanent Secretary for the Ministry of Fisheries and have the legal power to:

- order a person to display their fishing licence, gear or catch;
- board and search fishing vessels; and
- take the offender, the vessel, gear, and catch to the nearest police station or port if they reasonably suspect that an offence has been committed.

Obstructing a Fish Warden from boarding and searching a vessel is a criminal offence. Training is given by the Ministry of Fisheries, and may be to community members or resort staff, or both. While having Fish Wardens does not change or strengthen the legal status of the MPAs they are patrolling, it does mean that they have more powers to enforce the existing rules, especially against licensed commercial fishers.

Table 20. Personnel involved in enforcement of tourism-related MPAs. Number = number of stated enforcement mechanisms. Tourism operations may have more than one type personnel involved in enforcement.

Who enforces protection	Number	Percent
Non-Fish Wardens on staff	32	60%
Fish Wardens on staff	9	17%
Fish Wardens in community	9	17%
Other members of the community	3	6%

Seven operations either did not enforce protection, or there was no available information about enforcement. Of the operations that did enforce their protected areas, 77% of enforcement was done by resort staff, 17% with formal Fish Warden training and certification from the Ministry of Fisheries, 60% without formal Fish Warden certification (Table 20). 17% of enforcement was carried out by trained and certified Fish Wardens from the local community, and 6% by community members without Fish Warden training.

Table 21. Reportage of poaching activities. Number = number of stated reportage mechanisms. Tourism operations may carry out more than one method depending on origin of fishers.

Who enforces protection	Number	Percent
Report to community	27	55%
Deal with in house	16	33%
Report to Police or Fisheries Officer	6	12%

Enforcement was effective to different degrees. Sixteen operators said that they simply asked fishers to leave, 17 would report local fishers to the traditional authority in the village (usually the *Turaga ni koro*, but in some cases the Chief) and 6 said they would report fishers who came from outside the community (normally small scale commercial fishing boats) to the Police or Fisheries Officer (Table 21).

Comments made by tourism operators suggested that enforcement may be more effective in areas where tourism operators do not have close familial ties with the local community. In the Yasawa Islands, where there are multiple budget and backpacker resorts owned and operated by community members, some MPAs have either failed completely and are no longer observed, or managers find it difficult to refuse requests from traditional authorities to allow fishing, while those operated by managers from outside the area appear to be better observed. However there is a fine line between voluntary observance and enforcement, and the most successful MPAs are in areas where relationships between the tourism operators and community leaders are long term and strong.

An example of the usefulness of tourism in enforcement of MCAs comes from Beqa Island, where some *tabu* areas formed in 2010 have been discontinued due to inability to police and enforce in the face of fishing from outsiders. Two of the *tabus* remain functional due to their location in front of resorts, whose owners and staff continue to monitor and challenge poachers.

3.10 Monitoring and Evaluation

Most MCAs in Fiji include MPAs for which existing Monitoring and Evaluation frameworks can be used to track the changes observed throughout. Where ongoing monitoring is occurring it is largely confined to the physical monitoring of reef populations. Limited tracking of socioeconomic progress occurs. Partnerships between NGOs and private sector operators can support ongoing monitoring.

Monitoring and evaluation (M&E) is necessary to track the interventions or activities, and ultimately the success of MCAs towards the specified biophysical and socioeconomic goals and objectives that were agreed upon by the involved providers and beneficiaries. When monetary transactions are present in the MCA (i.e. a PES), it becomes arguably even more important to have a clear and detailed M&E plan because monetary aspects of the agreement can skew incentives for participation in the agreement (Mangubhai and Teneva 2016b).

The majority of MCAs documented in Fiji used MPAs as their main conservation strategy. For MPAs, LMMAs, and *tabu* areas, there are already existing frameworks with ecological, socioeconomic, and political indicators to assess management effectiveness in Fiji (Govan et.al 2008; Gurney and Darling 2017). More recently M&E guidelines have been developed for evaluating MCAs (Teneva and Mangubhai 2016b), and have been successfully tested in Ra Province (Nand et al. 2017).

Most operations (59%) concentrated on physical monitoring of the reef populations, either regular or occasional, and informal monitoring of tourism satisfaction levels from Trip Advisor and social media comments left by guests (Table 22). Only 4 (7%) MCA sites, established specifically for tourism, had

carried out any form of socioeconomic monitoring to examine the benefits to the communities – Beqa Adventure Divers at Shark Reef (Brunnschweiler 2010; Lowe 2016), the Vatu-i-Ra Conservation Park (Nand et al. 2017), the Namena Marine Reserve (Jupiter and Egli 2011; Goetze et al. 2011; WCS unpublished data), and Waitabu Marine Park (Sykes and Reddy 2009).

Monitoring team at Waitabu Marine Park. © Helen Sykes



Table 22. Number and types of monitoring carried out at sites with Marine Conservation Agreements. Some MPAs have more than one type of monitoring.

Monitoring type	Number	Percent
Tourism satisfaction	33	59%
Regular biological	18	32%
Occasional biological	15	27%
Socio economic (community)	4	7%

3.10.1 Biological monitoring:

Of the tourism operators surveyed, 59% stated their sites had some form of biological monitoring, but only 32% had regular monitoring, either by scientific partners or on-staff biologists. The remaining 27% was opportunistic, when research or educational teams visited.

Several operations, particularly in the Mamanuca and Yasawa islands, have an on-staff marine biologist, or support a local NGO, the MES, which carries out regular reef health monitoring, and reports back to the resorts for inclusion in management plans. MES also carries out water quality monitoring to assist in sustainable practice for its member resorts.

Since 1998, when it was first formed, biological monitoring in the Waitabu Marine Park has been carried out by the community themselves, led by a scientific partner (Resort Support/ Marine Ecology Consulting) over a period of 20 years. The monitoring has shown the long term progress of the MPA in improving the ecosystem and marine life stocks (Sykes and Reddy 2009). Fish numbers, size, and diversity improved within 3 years of the start of protection. Hard coral cover remains higher, and algal cover lower, than in the neighbouring fishing grounds, and invertebrates such as giant clams *Tridacna* spp., known locally as *vasua*, increased to form a breeding population within 5 years.

Monitoring of Namena Marine Reserve is carried out by WCS and Marine Ecology Consulting supported by NAI'A Cruises Fiji. WCS has collected data on benthic cover and reef fish biomass from 2008–2009 (Jupiter and Egli 2011), 2010–2011, 2014–2016 (WCS unpublished data). Species which are normally targeted by local fisheries had nearly 90% higher abundances in Namena Marine Reserve compared to the areas open to fishing (Goetze et al. 2011). Using stereo baited remote underwater video systems, the abundance and biomass of sharks was approximately two and four times greater in shallow and deep locations, respectively, within the Namena Marine Reserve compared to adjacent fished areas (Goetze and Fullwood 2012). Coral cover within the reserve has remained fairly stable except for 2010 when Cyclone Tomas hit Fiji, and then in 2016 when Category 5 Tropical Cyclone Winston caused widespread damage to coral communities in the northern part of the Vatu-i-Ra Seascape, including the Namena Marine Reserve (Mangubhai 2016).

Dive sites in the Vatu-i-Ra Conservation Park have had several years of coral cover monitoring by Marine Ecology Consulting supported by NAI'A Cruises Fiji, and ecological monitoring of the entire Park has been carried out by WCS since 2016 (with data for some sites dating back to 2012). Cyclone Winston did extensive damage to the south western side of the Park, but the northern dive sites suffered little damage and breakage and will continue to draw divers to the area (Mangubhai 2016; Nand et al. 2017).

At Shark Reef Marine Reserve there has been a long term shark tagging and monitoring programme carried out by international scientists, who have been able to prove that bull sharks leave the reefs to breed in river estuaries at certain times of year (Brunnschweiler et al. 2011). In addition, fish specialists have contributed a list of fish species to the records of Fiji's reef fish (Earle et al. 2012), and a baseline study of reef health was carried out in order to record future changes (Sykes 2014).

The Whale and Dolphin Conservation Society has carried out photographic monitoring of spinner dolphins *Stenella longirostris* at Moon Reef, and identified 56 individual dolphins, 70% of whom were seen repeatedly, establishing that the dolphins seen there are a resident population, and that their main use for Moon Reef is as a resting place (Cribb et al. 2012).

The Manta Trust, working with on-staff marine biologists at Barefoot Manta Resort, have been recording the number of sightings and establishing the number of individual manta rays seen in the Naviti manta channel (63 individuals as of 2015), and using tagging to find that some rays travel as far as Kadavu and Namena (Fiji Manta Ray Project 2015). In addition, resort staff carry out regular biological monitoring of the reefs around the channel.

3.10.2 Socioeconomic monitoring

Only four sites had engaged in any form of socioeconomic monitoring, and these were conducted by outside scientists, not by tourism operators themselves, although supported by the operators and communities.

- The Waitabu village project took part in a baseline socio-economic survey compiled by the FLMMA network in 2007, and has annual surveys of visitor numbers and income. Results showed a strong community commitment to conserving the resource, the importance of the MCA for food security and income generation, and a positive attitude to conservation.
- Beqa Adventure Divers' methods of providing financial benefit in exchange for fishing rights is well documented (Brunnschweiler 2010). Preliminary results of postgraduate research on the socio-economic impacts of the project included reducing destructive fishing and overfishing by providing livelihoods for local fishers and their communities, and fully conserving coral reefs, fish stocks, and sharks by integrated coastal management (Lowe 2016).

- The Kubulau Resource Management Committee (KRMC) monitors and administers the contributions made by tourism operators to the Namena Marine Reserve trust fund. CORAL produces and pays for the tags given to divers who support the park. From these contributions the park supports Fish Warden Trainings and educational scholarships. WCS conducted socioeconomic surveys in 2008–2009 (WCS unpublished data) and 2016 (Kim et al. 2017).
- At the Vatu-i-Ra Conservation Park, baseline socioeconomic monitoring was collected by WCS in 2016 (Nand et al. 2017), with indicators from the M&E Framework developed for newly established MCAs in Fiji (Teneva and Mangubhai 2016a, adapted from Gurney and Darling 2017). The survey is designed to detect the socioeconomic impact of the MCA, and to determine whether the money generated through voluntary contributions will be able to cover the costs of park management and monitoring in the future. Repeat surveys are planned for 2018 and 2020.

3.10.3 Tourism satisfaction

No tourism operator interviewed had included the state of the marine environment in their regular guest surveys, which normally concentrate on room and resort facilities and service. None, apart from those that specifically utilised MPAs for their sole attraction, such as the megafauna dives and the specific diving/snorkelling parks had attempted to establish whether the presence of an MPA affected guests' choice of the operation, or to quantify the financial value the MPA might have had.

However, many had monitored guest comments on feedback engines such as Trip Advisor, and on social media, and certainly noticed if guests had a poor impression of the reefs used for snorkelling and recreation. Negative comments about the state of the reefs were a commonly stated reason to engage in marine protection. In future, it would be interesting to try and include the value, monetary or otherwise, that guests and potential guests place on the presence and effectiveness of an MPA in regular tourism satisfaction surveys.

Seacology does not engage in any formal biological or socioeconomic monitoring, but the field representative based in Fiji does check on the progress of the infrastructure benefit.

Underwater seascapes at Naigani. © Nick Hobgood



3.11 Laws and Policies

An assessment of the legislation relevant to MCAs in Fiji encompasses both the laws relating to the conservation of marine areas and marine resources, including MPAs, as well as the laws defining the rights over these areas and resources of the entities that may enter MCAs, namely resource owners or users, and other entities (government, NGOs or private entities).

3.11.1 Constitution of Republic of Fiji 2013

The Constitution for Fiji recognises the customary right of access to marine resources, but the State retains ownership of inshore fishing areas and resources, and of foreshore lands. The Constitution only guarantees a right to compensation or payment of royalties for infringement of customary fishing rights if such infringement is a result of mining operations.

3.11.2 Surfing Areas Decree 2010

The Regulation of Surfing Areas Decree 2010 was established to “liberalise access to any surfing area in Fiji for the purpose of tourism and recreation” for the purpose of promoting tourism. The Decree allows “unrestricted public access to any surfing area”, defined as “those reefs or other foreshore or offshore areas in Fiji, together with any surrounding areas which are used or utilized for surfing or any water sport.”. It also provides for “any interest in any surfing area to be absolutely vested in the Director of Lands on behalf of the State.”

The Decree expressly prevails over any inconsistent law and unequivocally nullifies any existing instrument of title, including leases or licences, without any compensation payable to any person. As a result, any exclusive right of access by resort operators and their guests that may have been claimed on the basis of a foreshore or wet lease, are void. Although the Decree does not make any specific reference to the customary rights, the wording unequivocally outlaws the practice of resource owners charging surf operators (and tourism operators in general) a fee for authorizing the use of their traditional fishing grounds. The decree has made the continuation and expansion of MCAs challenging because it makes it difficult for communities to lease, license or use some other instruments to manage marine areas and resources within their customary fishing areas. Any payments as part of MCAs must be voluntary to comply with the Surfing Areas Decree (2010).

3.11.3 Fisheries Act 1942

The Fisheries Act 1942 regulates the near shore fisheries in Fiji and recognises the customary right of *iTaukei* to fish in traditional fishing grounds. A fishing permit is not required for subsistence fishing by a community member in that community’s own fishing ground, or for them to fish for trade or business as long as they only fish with a line from the shore, or with a spear, or have been granted an exemption. However, a permit is required to fish fishing grounds that belong to other communities (Sloan and Chand 2016). Section 9 of the Fisheries Act provides the Minister of Fisheries with the authority to make regulations relating to the conservation, protection, and maintenance of fish stocks and the prohibition of the taking of fish in specific areas or during specific times.

There are currently two marine reserves in Fiji that have been established under Section 9 of the Fisheries Act (FELA and EDO 2017):

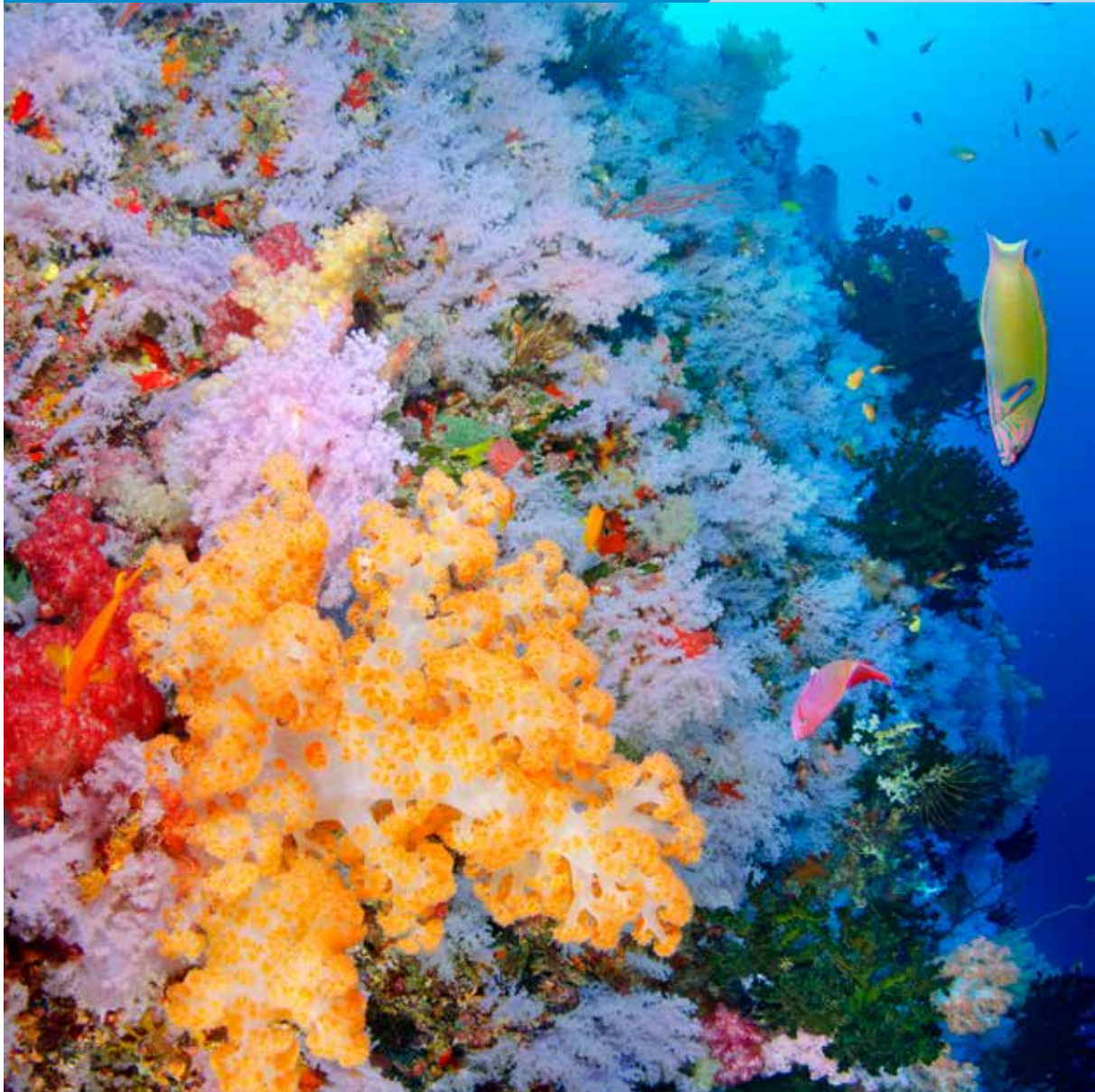
- The Shark Reef Marine Reserve in Serua, Central Division, established by the Fisheries (Shark Reef Marine Reserve) (Serua) Regulations 2014; and
- The Wakaya Marine Reserve on Ovalau, Eastern Division, established by the Fisheries (Wakaya Marine Reserve) Regulations 2015.

The Fisheries Act however does not prescribe the payment of any compensation to customary resource owners, either as compensation for the waiver of fishing rights when an MPA is established, or for approving to the right to fish in their traditional fishing ground to another entity. The practice of 'goodwill payment' by which an applicant for a permit to fish in a customary fishing ground would pay an agreed sum to the community, has been discontinued but is to be replaced by a regulatory compensation regime.

3.11.4 State Lands Act 1946

The State Lands Act 1946 states that the foreshore and soil under the water of Fiji belong to the state. Under this Act, leases can be used to exclude public access from an area (e.g. resorts operating on the foreshore), while a licence can be used to undertake an activity but cannot be used to exclude public access. The Department of Lands has, in recent years, granted two foreshore lands licences and one lease for creating MPAs to date, but the legality and applicability of these in the context they are being used is unclear and the Department has discontinued the practice of issuing State Lands licences for MPAs.

Diverse colourful soft corals attract tourists from all over the world to the Vatu-i-Ra Seascape. © Joseph Tepper



4. CASE STUDIES

Case Study 1

Large-scale ecosystem-based parks formed by communities, supported by diving tourism: Namena Marine Reserve and Vatu-i-Ra Conservation Park

Case Study 2

Community owned ecotourism business: Waitabu Marine Park

Case Study 3

Community initiative to create employment stability: Vuda and Waya Qoliqoli

Case Study 4

Locally-owned private resorts: Lawaki Beach House and Botaira Resort

Case Study 5

Partnership between a large resort, an NGO, and the community: Cuvu Marine Protected Area, Shangri La's Fijian Resort and Spa

Case Study 6

Management plan by resource owners supported by tourism operator: Jean-Michel Cousteau Resort Fiji

Case Study 7

Reserves declared for protection of Megafauna: Shark Reef, Drawaqa/Naviti Manta Channel, Moon Reef

Case Study 8

Foreshore Licence or Lease: Waivunia Marine Park, Namotu Island Resort and Yadua Island

Case Study 9

Statutory (gazetted) Marine Reserves: Wakaya and Shark Reef Reserves

Case Study 10

Non-tourism-related MCAs: Seacology

CASE STUDY 1

Large-scale ecosystem-based parks formed by communities, supported by dive tourism: Namena Marine Reserve and Vatu-i-Ra Conservation Park

The Namena Marine Reserve and Vatu-i-Ra Conservation Park are an exception to most other tourism-related protected areas in Fiji, as they cover full reef ecosystems, including small islands, passages, deep reefs and ocean, as well as shallow reefs and slopes. Together, they make up almost 80% of the area in Fiji protected by local communities in partnership with the tourism industry. These areas are popular dive destinations for both local and international guests.

Namena Marine Reserve

Established in 1997, this 60.6 km² no-take marine reserve protects coral reef habitats within an extensive barrier reef system extending into the Vatu-i-Ra Passage, and surrounding Namenalala Island, a seabird and turtle nesting site (Fig. 2). The Namena Marine Reserve was established through a *tabu* by the traditional leaders of Kubulau District in Bua Province with the support of locally-based SCUBA dive tourism operators, particularly Moody's Namena Island and Jean-Michel Cousteau Resort Fiji. It was established to address the threat of overfishing, particularly from the tuna pole and line vessels prevalent in the early 1990s. Two NGOs, WCS and CORAL have been instrumental in the establishment of the marine reserve with the 10 villages in Kubulau District, bearing some of the initial and ongoing transaction costs (e.g. monitoring, printing of dive tags). The management of the reserve is currently carried out by the Kubulau Resource Management Committee (KRMC) which was established in 2005 to oversee the implementation of the Kubulau District Ecosystem-Based Management Plan which includes the Namena Marine Reserve (WCS 2009, 2012).

In 1998, through a verbal agreement with local land-based tourism operators including Moody's Namena Island, Jean-Michel Cousteau Resort Fiji, Koro Sun, and Namale Resorts, and dive operators including Sea Fiji and liveaboard operators NAI'A Cruises and Sere ni Wai (Fiji Aggressor), and later including Namena Divers and the Fiji Siren liveaboard ship, divers were given the option of making a voluntary contribution (currently FJ\$30 per diver) in return for an annual dive tag.

Contributions are collected by the tourism operators and are paid into a trust fund, which is used to cover management costs for the reserve, and to provide tertiary education scholarships to selected children from the district. The board of trustees comprise members of the community and representatives from the tourism industry. The dive tag, produced and paid for by CORAL, has provided at least 160 scholarships to children from Kubulau District, three bus shelters, maintenance of moorings, and supported Fish Warden trainings (CORAL 2009). Upwards of 1500 dive tags were sold annually in recent years. The flow of benefits between providers and beneficiaries is shown in Figure 4.

Coral reef monitoring has shown that coral cover has remained fairly stable, with a 17.3% decline following Cyclone Tomas in 2010, and 20.6% decline following Cyclone Winston in 2016 (Mangubhai 2016; Mangubhai et al. in press). Fish biomass has been consistently above 1000 kg/ha in the reserve from 2009–2016 (WCS unpublished data), indicative of healthy fish communities (MacNeil et al. 2015). WCS currently bears the cost of the long-term biological monitoring to measure the impact and success of the reserve.

The Namena Marine Reserve is 14 km offshore, and as such has some natural protection from local community subsistence fishing, but is vulnerable to large fishing boats from the mainland. Although community resource owners have long-term commitments to the Reserve, the reefs are too far offshore for them to regularly monitor and police. From the establishment of the Reserve until 2013, the owners and staff of Moody's Namena EcoResort on Namenalala Island were the principal enforcement agency of protection of the area. In particular they were assiduous in the protection of seabird and turtle nesting sites on the island, as well as preventing anchoring and fishing on the dive sites.

In 2013, the resort changed hands, and then closed following extensive damage from Cyclone Winston in February, 2016. Although a local day-boat dive operation has technically taken over enforcement and monitoring of the park, bearing this transaction cost themselves, informal reports suggest that without a continuous and conscientious presence on the island, poaching is on the increase.

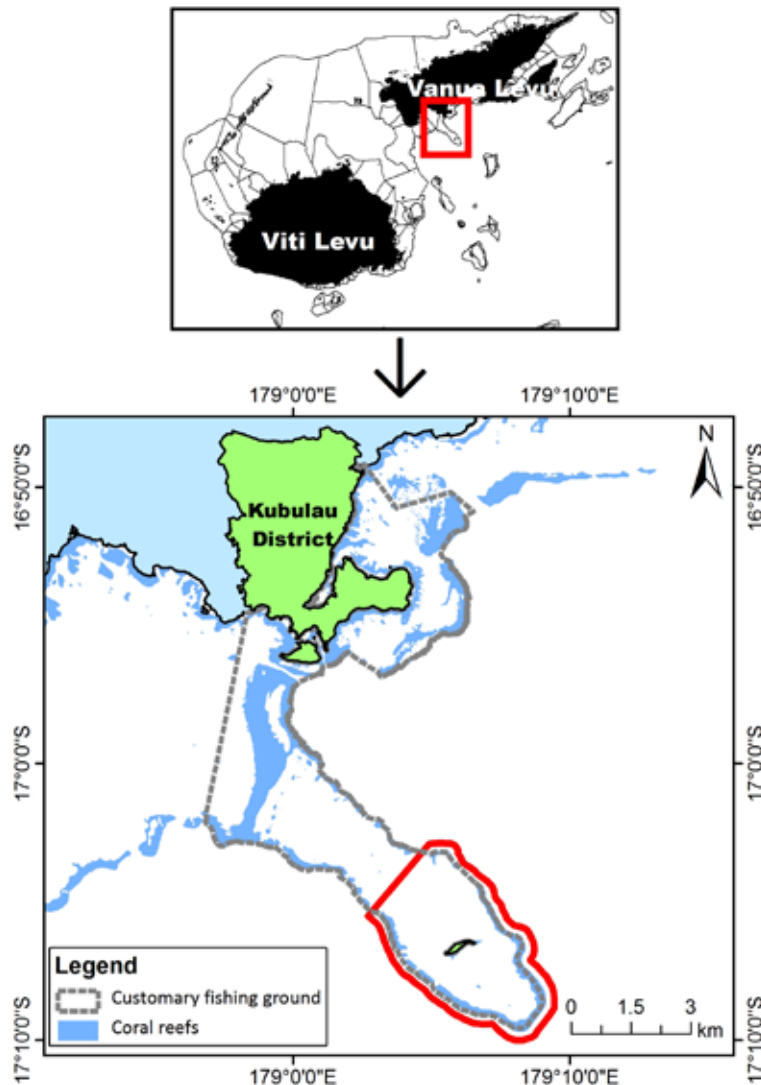


Figure 2. Map of the Namena Marine Reserve in Kubulau District, Bua Province.

Vatu-i-Ra Conservation Park

Based on the model established by the Namena Marine Reserve, the Vatu-i-Ra Conservation Park was set up as a *tabu* area in 2012 by the 28 villages of Nakorotubu District in Ra Province. The Vatu-i-Ra Conservation Park was extended in 2015 and covers 110.5 km² of barrier reefs, slopes, passages, deep ocean, as well as Vatu-i-Ra Island (0.023 km² land cover) (Fig. 3), which supports large breeding colonies of seabirds. The island is listed as a “Site of National Significance” in Fiji’s National Biodiversity Strategy Action Plan, and is one of the 28 internationally “Important Bird and Biodiversity Areas” (IBA) recognised by BirdLife International. The island belongs to the Nagilogilo clan (*yavusa*), who reside in the two villages of Nasau and Navuniivi in the Navitilevu District within Nakorotubu District.

The WCS has been instrumental in facilitating the discussions between local communities and tourism operators and has largely born the initial transaction costs through external grants. A management plan has been developed with inputs from local communities, tourism operators, the Ra Provincial Office and NGOs (e.g. WCS, BirdLife International, Mareqeti Viti/Nature Fiji, Fiji Environmental Law

Association, FELA, Tourism Suncoast, Volivoli, Wananavu, Nai'a Cruises, Resort Support). The objectives of the Vatu-i-Ra Conservation Park are to: (i) protect the unique biodiversity of the island and the surrounding reefs; (ii) protect the unique cultural history of the area; (iii) protect critical breeding grounds for fish so that the 'spillover' from this Conservation Park supports community fisheries in the adjacent *qoliqoli* Cokovata Nakorotubu area; (iv) to establish a voluntary mechanism through sustainable tourism, that will ensure the sustainable financing of the Conservation Park while supporting the sustainable development of resource owners; and (v) to establish the Vatu-i-Ra Conservation Park as the leading Conservation Park for Fiji and the wider South Pacific (WCS 2018). The management plan sits under the Integrated Coastal Management Plan for Ra Province (USP 2016).

All visitors to the Vatu-i-Ra Conservation Park will be offered the opportunity to make a voluntary contribution (currently FJ\$15/person/year) to a trust being set up to support the day-to-day management of the park, and a tertiary level education fund, similar to the Namena Marine Reserve. A trust deed is being established by FELA, to oversee the funds with a board member representative from the community, the tourism industry and WCS. A management committee of 5–7 key representatives will provide advice and oversee the management of the Park and the education fund. The funds generated will be allocated as follows: (i) 40% will be allocated to provide educational support for students from a single clan, Naqiloqilo with rights to the Vatu-i-Ra Island; (ii) 30% to educational support for the remaining communities; and (iii) 30% for the day-to-day management of the Park (WCS 2018). Similarly, the governance and membership will have greater representation from the one clan. While these decisions have been made within the Nakorotubu District and with the support of the *Bose Vanua*, it is not clear if this bias towards one clan will continue to be acceptable, and will work long-term. Currently, supporters of the MCA and its arrangements include a dive liveaboard operator (i.e. NAI'A Cruises Fiji), and two land-based dive operators (i.e. Wananavu Beach Resort, Volivoli Beach Resort) on the Ra coast.

The reefs are 15 km offshore and as such have some natural protection from most local community subsistence fishing, but similar to the Namena Marine Reserve, are vulnerable to large fishing boats from the mainland. Small-scale commercial fishers sometimes make camp on Vatu-i-Ra Island while fishing in the area. Since BirdLife International and local NGO NatureFiji/MareqetiViti funded and carried out a rat-eradication programme on Vatu-i-Ra Island to protect nesting seabirds, boats have been banned from landing and a biosecurity protocol has been developed. With the formation of the *tabu* area, fishing licences for the area are no longer being issued. However, small boats have still been observed pulled up on the beach, with spearfishers in the water. At this time, two enforcement options are being considered – community policing would be the preferred option, but requires a boat and fuel, and would be costly. Devolving the responsibility to the tourism operators is attractive, but would be limited to the times they visit the area.

Baseline ecological and socioeconomic monitoring commenced more formally in 2016, post-Cyclone Winston led by WCS through the RESCCUE Project.⁵ Although there was extensive damage to the south western side of the Park, the northern side frequented by tourism was largely untouched and therefore can continue to draw divers to the area (Nand et al. 2017). It is not known if the money generated through voluntary contributions will be sufficient to cover the costs of monitoring in the future. Early estimates of the voluntary contributions range from FJ\$15,000-35,000/year.

5 RESCCUE stands for the "Restoration of Ecosystem Services and Adaptation to Climate Change" project funded by the French Development Agency and French Global Environment Facility through the Pacific Community (SPC).

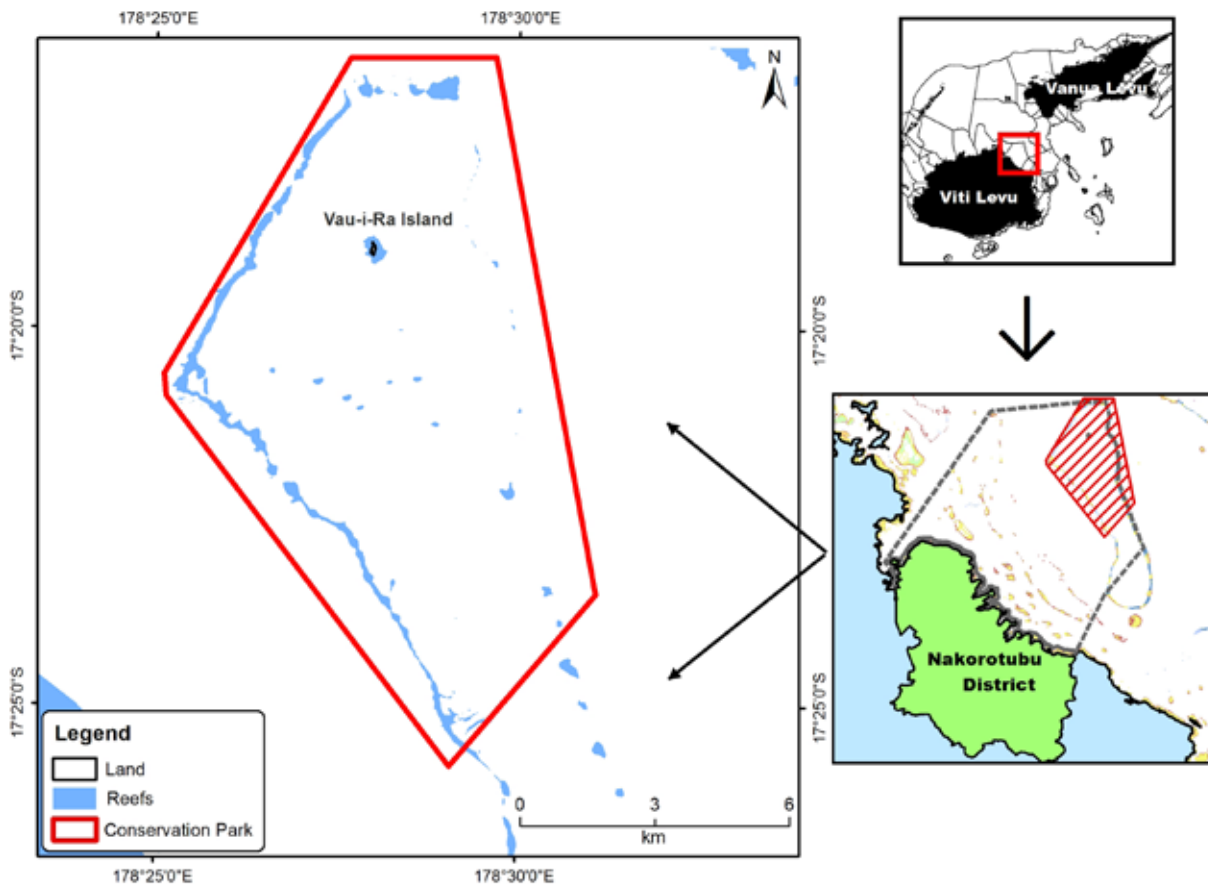
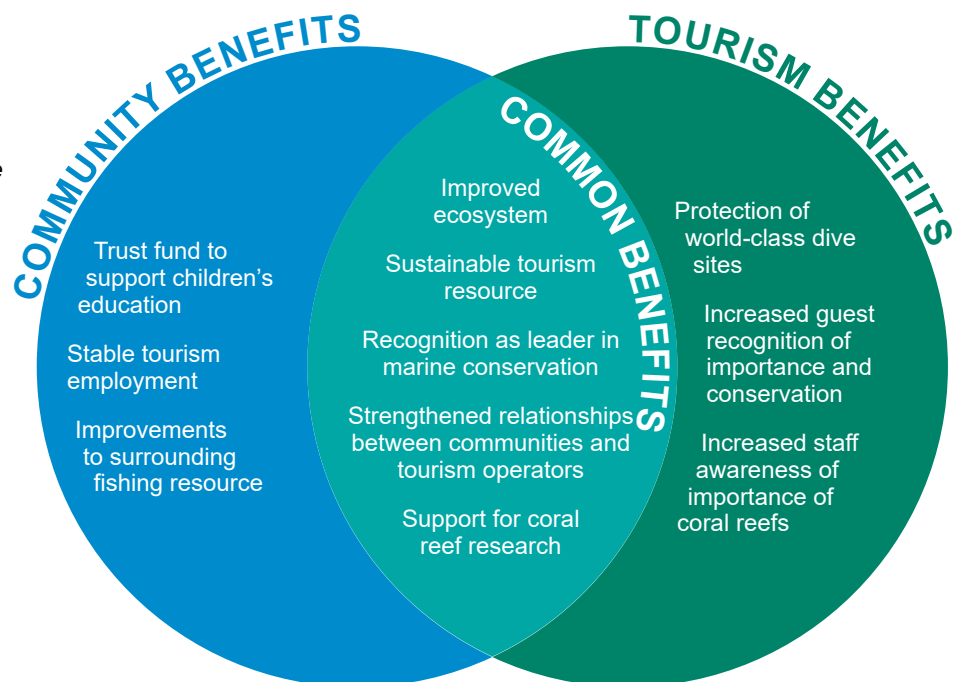


Figure 3. Map of the Vatu-i-Ra Conservation Park in Nakorotubu District, Ra Province.

Figure 4. Benefits to providers (community resource owners) and beneficiaries (tourism operators, divers) for the Namena Marine Reserve and the Vatu-i-Ra Conservation Park.



CASE STUDY 2

Community owned ecotourism business: Waitabu Marine Park

Waitabu Marine Park on the island of Taveuni was established in April 1998, initially funded by the New Zealand Overseas Development Agency, facilitated by New Zealand-based Tourism Recreation Conservation Consultants (TRC) as part of the Bouma Environmental Tourism Project. The project included four communities all with different conservation-based ecotourism businesses, and aimed to: (i) protect the Vanua Bouma forest and ecosystems, including the marine areas of Bouma; (ii) create sustainable livelihoods for the four villages; (iii) preserve natural and cultural traditions where possible; and (iv) implement projects managed by and for the local communities.⁶ Each project was set up as a cooperative venture, along the lines of existing community-based farming and fishing cooperative businesses, with a committee and a project manager paid from the income generated from tourism. Waitabu was the only project of the four with a marine component, the others being forest-based.

The marine park is a shallow fringing reef area 900 m long by 300 m wide, from beach to 100 m off the reef slope, including a deepwater channel and a seagrass bed (Figs. 5–6). It was set up as a traditional no-take *tabu* area, with consent from the heads of all clans, and registered with the district council in what was then referred to as a “*Tikina* lease”, recognised by traditional authority, but not in Fijian law. The period of protection was left open-ended with no fixed-term, and is now considered permanent. A second area, a temporary “*Tabu Tara*” was closed in 2012 for a period of 5 years, to create a future sustainable fishing area, subject to research and a management plan.

In 2001, Waitabu became a founder member of the FLMMA network, and in the same year, after business training from TRC, and snorkel guide training for community youths from a local consultant, Resort Support, the community started their own income-generating half-day snorkel trip business for tourists from the resorts on the island. Support for tourism management was provided by the National Trust of Fiji for many years, but has now ceased.

Since then the Marine Park has attracted small study-abroad groups from international universities, and nature and cultural heritage based adventure cruise ships. Financial benefits have not been large, averaging 15–20 visitors per month, at FJ\$50 per head, generating in the order of FJ\$10,000 per year. This has been sufficient to reinforce the community’s commitment to marine protection. All income goes directly to the community cooperative, which pays the project manager, snorkel guides, boat captains, refreshment providers and boat fuel costs. Remaining funds go into the project account to cover business expenses such as stationary, phone costs and snorkel equipment replacement. Any extra donations from tourists are used for sponsorship of local children’s school expenses. There is some debate within the village as to whether funds should be used for larger community “*Vanua*” commitments. The flow of benefits between providers and beneficiaries is shown in Figure 7.

Initially, observance of the traditional *tabu* was very high, but after fish numbers were seen to increase, poaching by nearby communities began. Night spearfishing of groupers and collection of commercial harvests such as trochus shell (*Sici*, *Tectus niloticus*) and of sea cucumbers became a recurring problem. In 2009, six community members received training and were certified as Fish Wardens by the Ministry of Fisheries, which gave them the powers to arrest illegal fishers, and to confiscate fishing gear. After some commercial sea cucumber fishers were found in the park and reported to the Ministry of Fisheries, their fishing licences were suspended. Unfortunately, this could not be applied to subsistence fishers, and when local fishers were apprehended, the community proved reluctant to press charges with Police and Fisheries officers, preferring instead to exert traditional pressures on the offenders, with varying levels of success.

6 Reference Toothpicks for tourism (British Airways Tourism for Tomorrow Awards 2002)

Biological monitoring has been carried out annually since the start of the project, initially funded by the TRC. Financial support for monitoring ceased in 2000, since when the cost of biological monitoring and management of the site has been largely through the support of a local consultant (Resort Support) who partnered directly with the community and bears the cost of the support (approximately FJ\$10,000 per year). These surveys are carried out largely by community members who are tasked to monitor the progress of the park, a process which reinforces understanding of, and commitment to, the project (Sykes and Reddy 2009). The community carries out active reef restoration and protection projects such as the removal of COTS, and coral transplanting onto constructed “Micro-Reefs” to enhance fish habitat.

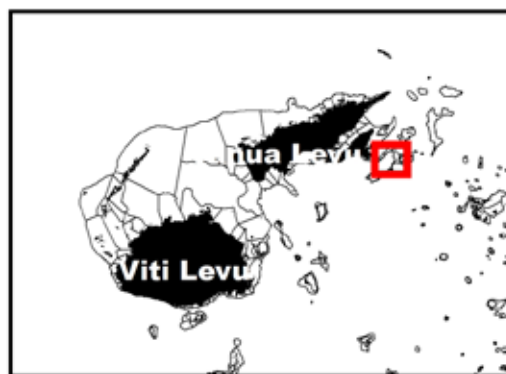


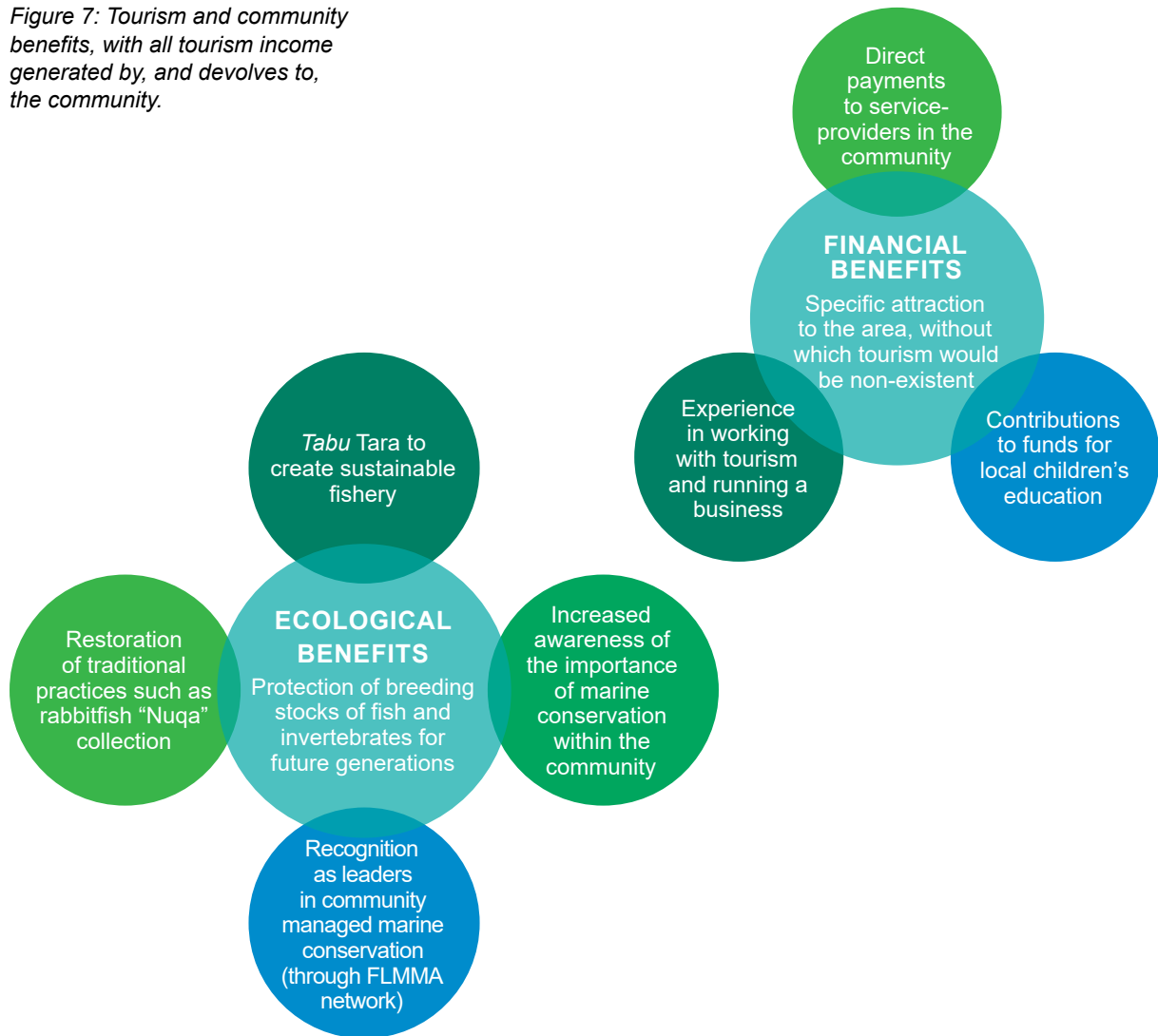
Figure 5. Map of the Waitabu Marine Park on Taveuni Island.





Figure 6. Map of Waitabu's tabu area and rules for use. © Helen Sykes

Figure 7: Tourism and community benefits, with all tourism income generated by, and devolves to, the community.



Community reef monitoring in Waitabu Marine Park
© Helen Sykes



CASE STUDY 3

Community initiative to create employment stability: Vuda and Waya Qoliqoli

The communities of Vuda and Waya are the traditional resource owners of a large section of the Mamanuca and lower Yasawa islands, north of Lautoka town, predominant tourism development areas of Fiji. In the 1990s, community leaders, working in partnership with early local tourism pioneers such as Mr Dan Costello (Beachcomber Island), decided that in order to support sustainable development and employment in the area, they would declare no-fishing areas around resorts.

Initially, in 1996, three islands were declared no-fishing areas by the traditional leader, the Tui Vuda, Ratu Sir Tavaiqia, who wrote an open letter saying "I confirm that the waters around the islands of Tai, Eluvuka and Kadavu Lailai in Nadi Bay are now either Fisheries Reserves or are to be designated Fisheries Reserves and therefore no fish, shell fish or octopus (*sasala ni waitui*) are to be taken from those waters in that area of sea being 400 m from the shoreline of those islands." These islands are now known as Beachcomber (Tai), Treasure (Eluvuka) and Bounty (Kadavu Lailai) Island Resorts.

Aerial photograph of the protected reef within the MPA at Treasure Island Resort. © Treasure Island Resort



These first reserves were later joined by no-fishing areas fronting newer resorts at South Sea Island Resort (Vunivadra Island), Tivua Island Resort, and Vomo Island Resort. To the north, on Wayalailai and Kuata Islands, similar protected areas were formed at Wayalailai Ecohaven, Naqalia Lodge and Kuata Barefoot Island Resort (Fig. 8). Most of these reserves only cover shallow fringing reefs from beach to the deepwater drop off, but a new, larger area including an expanse of open sea and dolphin habitat was declared in February 2017. Lying between Wayalailai and Kuata Islands, it was named the "Gateway" Marine Park in recognition of the area serving as the gateway to the Yasawa Islands.

These reserves are traditionally formed no-take *tabu* areas, recognised by traditional authority, but not in law. In most areas traditional leaders, with the agreement of the resort, may allow limited fishing for specific traditional events. Enforcement and management are carried out primarily by resort employees, some of whom have formal training and are recognised as Fish Wardens by the Ministry of Fisheries. If transgressors are found to be from the local community they are reported to the village

authority, the *Turaga ni Koro* for discipline. The Vuda community resource owners formed the Vuda Resource Committee to manage environmental issues, consult with resorts, and negotiate new agreements in their area.

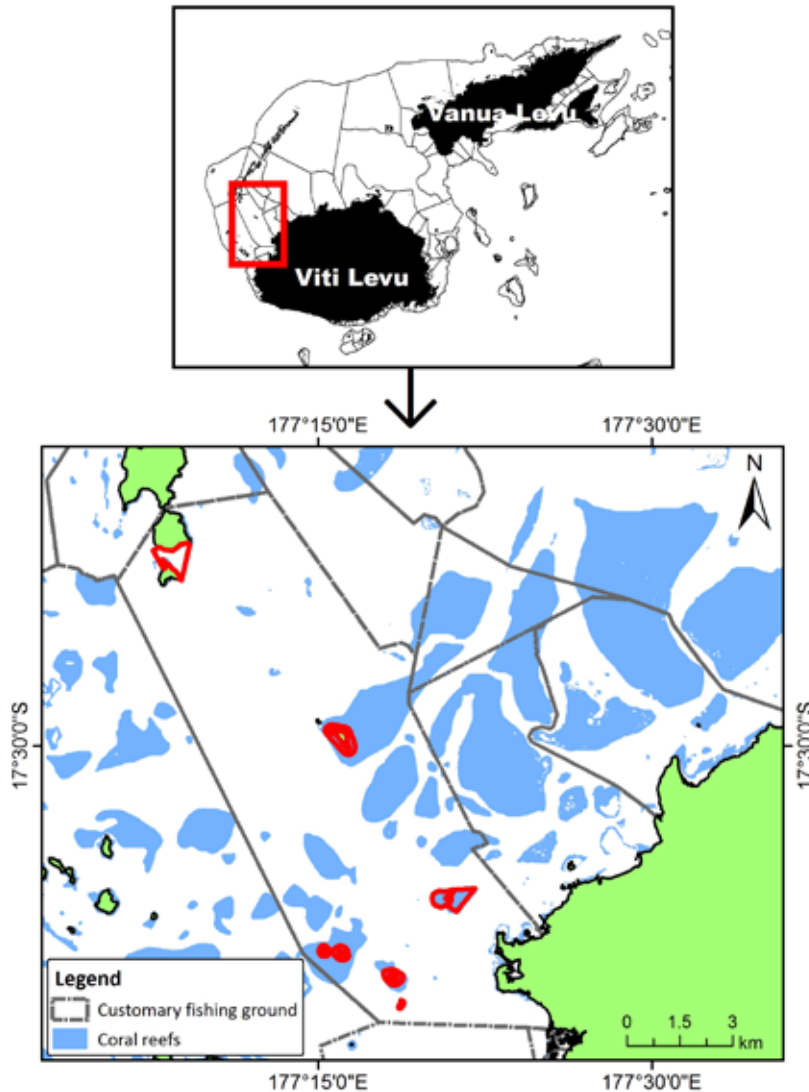


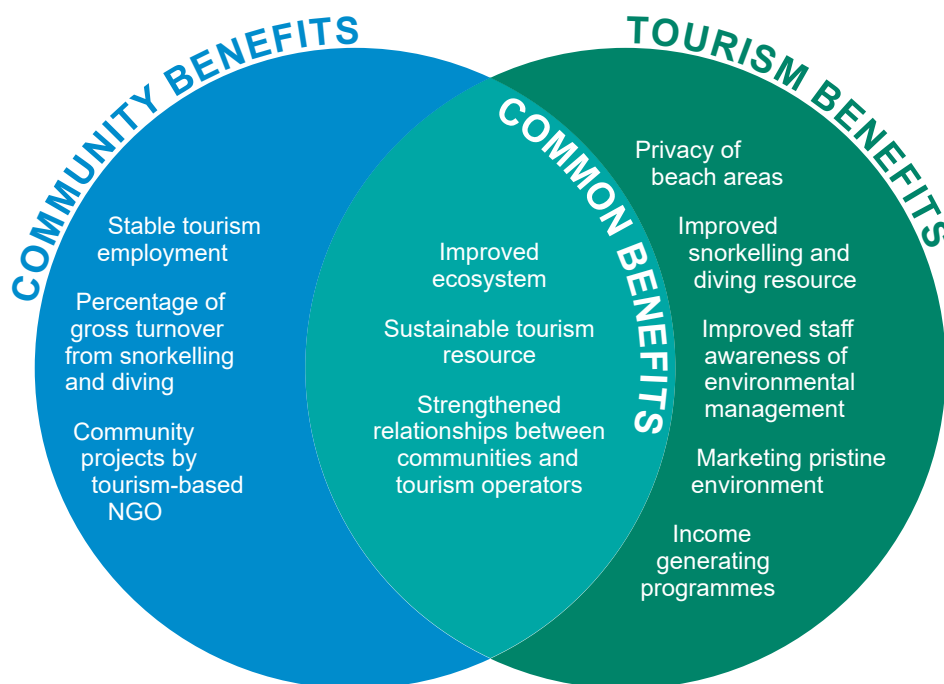
Figure 8. Map of the tourism-related MPAs within the Vuda and Waya Qoliqoli, Viti Levu.

Poaching in the areas is generally low, but varies from resort to resort, depending largely on the strength of their relationships with the local communities. Where the closest villages are on the mainland, with employment opportunities and a reduced need to fish on the small patch reefs, and where there has been a long-standing agreement between resort owners and the community, a simple word to the traditional authorities has been enough to discourage fishing.

On outer islands, where communities are more dependent on fishing for subsistence and agreements may have been made more recently, enforcement has been more complex, particularly for properties managed by community members who find it difficult to refuse fishing requests from their own community. In general, enforcement by outside management has been taken more seriously. In the islands closest to Lautoka town, there is a continuing problem with poaching by small-scale commercial fishers, who may not recognise traditional authority, and there is a desire for increased legal recognition to assist in preventing this.

Most (but not all) of the resorts carry out some form of reef rehabilitation and protection programmes, usually for guest attraction and involvement. The most common are removal of COTS, restocking giant clams and coral transplanting. Others carry out specific wildlife interaction activities including fish feeding (shark feeding as an income-generating attraction in one area), and turtle protection programmes. The flow of benefits between providers and beneficiaries is shown in Figure 9.

Figure 9. Benefits to providers (community) and beneficiaries (tourism operators) for the properties in Vuda and Waya customary fishing grounds.



Vomo Island fringing reef. © Vomo Island Fiji

CASE STUDY 4

Locally-owned private resorts: Lawaki Beach House and Botaira Resort

Background

Both of these projects have traditional *tabus* fronting small resorts privately leased and run by members of the local resource-owning community, who returned to the area after working overseas or in mainstream tourism in another district. Although the local communities are not directly involved in decision making at the resort, they supply most of the employees, and have strong family and traditional bonds.

Traditional *tabus* have been formed after NGOs working with the local communities created awareness of the prospective benefits. However, neighbouring *tabu* areas without active resort involvement have failed due to the difficulty people find in enforcing regulations on their own community members. The *tabu* areas in front of the resorts have survived because the community sees direct benefits from their existence, and because the resort owners and staff actively police and enforce the area.

Lawaki Beach House

Lawaki Beach House is a small eco-resort on the south western coast of Beqa Island, operating since early 2003. The resort was built and is privately owned and operated by a member of the local resource-owning community, and currently employs 11 staff from the two villages of Naceva and Naiseuseu. Their stated aims are to operate with sustainability and environmentally friendly management, and have a low impact on local culture and tradition.

In 2004 the shallow fringing reef and slope in front of the resort was protected under a traditional verbal *tabu* agreement and, after a FLMMA workshop in 2010, the area was extended to stretch between Lawaki Beach House and Naiseuseu Village (the Kauvala *Tabu*), agreed to by the Naceva and Naiseuseu communities (Fig. 10). The area is used for snorkelling by Lawaki house guests and day trippers. Ten community members were trained in reef monitoring, and to be snorkel guides by a local consultant (Resort Support), and a number as Fish Wardens by the Ministry of Fisheries, supported and facilitated by Beqa Adventure Divers.

Lawaki Beach House guests and day-trippers are asked to contribute FJ\$10 each to a local community fund in support of the MPA. The maximum house guest capacity is 18, but frequent occupation levels are 2 to 6 at a time, and up to 20 day-trippers visit about 3 times per month. The roughly estimated annual income to the village from this is probably between FJ\$5,000 and FJ\$10,000 per year. The flow of benefits between providers and beneficiaries is shown in Figure 12.

Lawaki Beach House MPA Beqa Island
© Helen Sykes



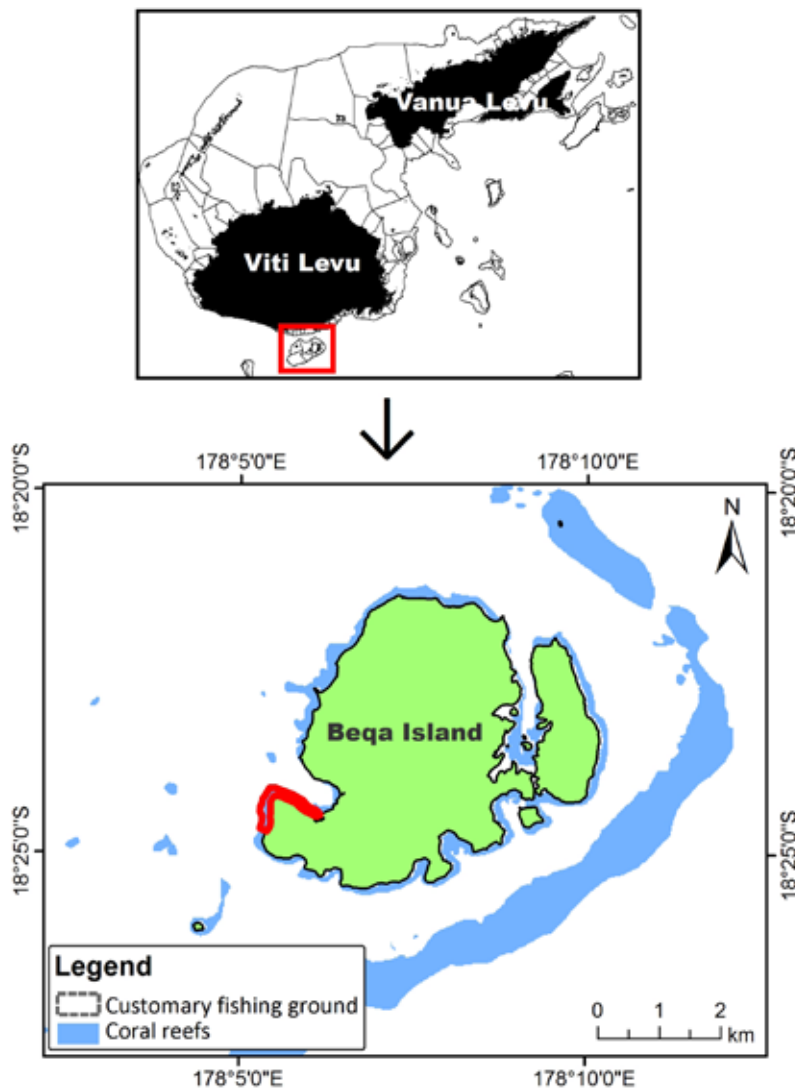


Figure 10. Map of the Kauvala tabu area at Lawaki Beach House on Beqa Island

Botaira Resort

Botaira Resort is on the west coast of Naviti Island in the Yasawa chain of islands north of Nadi, operating since 2008. The resort was built by members of the local resource owning community, and is privately owned and operated by a member of that community. It preferentially employs directly from the local village, but also takes staff from neighbouring island villages as needed.

As part of "Year of the Coral Reef" Initiatives in 2008, and supported by the United Nations Development Programme (UNDP), WWF and Global Environment Facility (GEF) small grants fund, members of the communities of Naviti Island formed the *Tikina* Naviti Conservation Initiative (TNCI), with the aim of creating MPAs around resorts and villages in their *tikina*, with the twin objectives of attracting tourism and also providing breeding grounds for marine life. In 2012, the Ministry of Fisheries mapped the areas and provided Fish Warden training to 26 community members from seven villages.

One of these *tabu* areas was Botaira Bay, stretching from both points of the bay to cover the shallow fringing reef and the deeper open water of the bay (Fig. 11). The area is used for snorkelling by Botaira house guests and day trippers. Staff were trained in reef monitoring, and to be snorkel guides by a local consultant (Resort Support), and occasional reef monitoring is carried out by visiting students from the University of Georgia in the USA. Botaira does not make any direct payment to the community for the marine protection, and does not charge guests for snorkelling.

Student carrying out reef surveys, and reef path to protected corals at low tide in Botaria MPA. © Helen Sykes

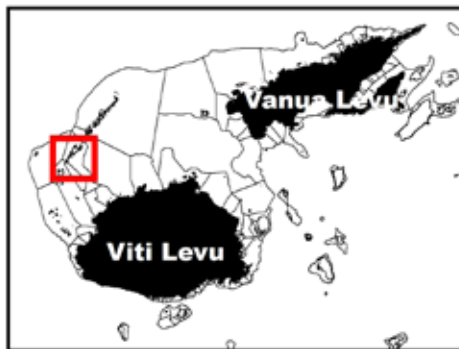
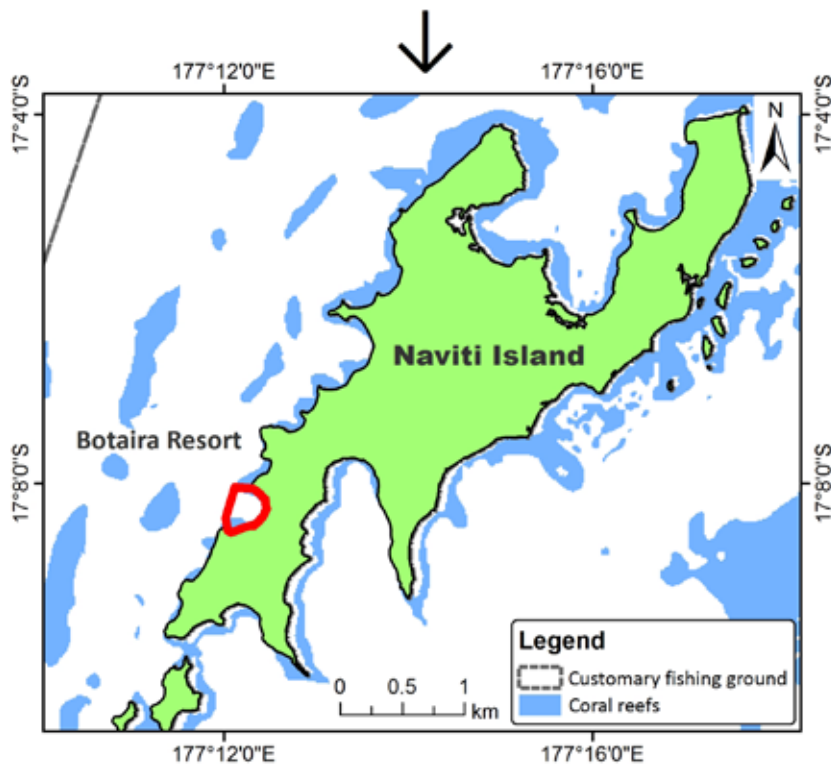
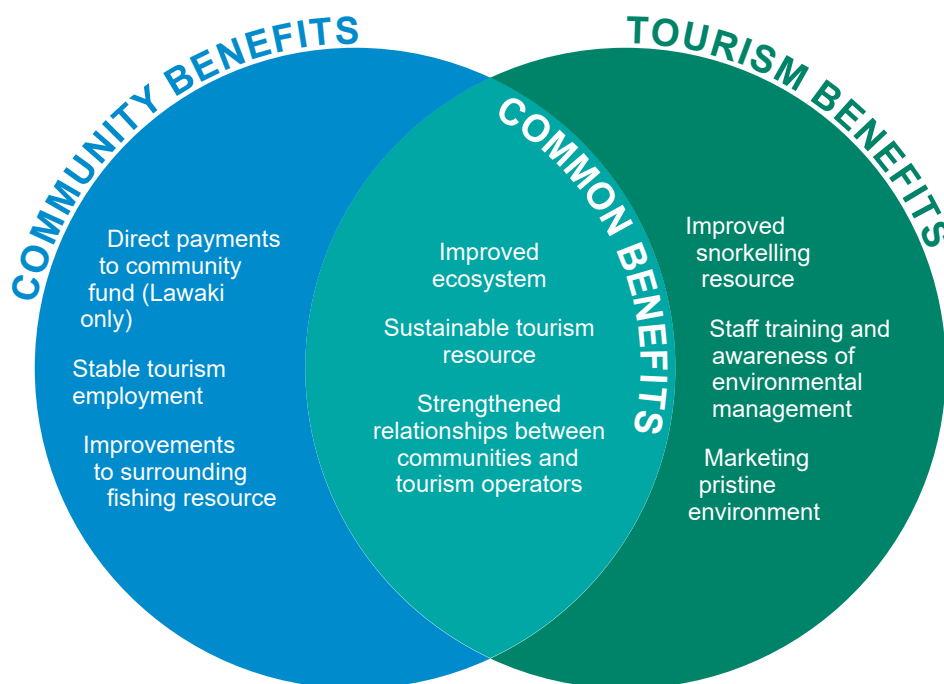


Figure 11. Map of the Botaira MPA on Naviti Island in the Yasawa group



Poaching on both islands was low at the start of the *tabu* period, but has increased since, primarily in the form of night spear fishing, probably from the local community, but also possibly from outside small scale commercial fishers. Both areas rely on the resorts to monitor and enforce the protected areas, which means that enforcement is more effective immediately in front of the resort, less so in more distant sections. Fishers are asked to leave, and may be reported to the traditional community leaders. Both projects have small areas of reef rehabilitation and protection projects, namely removal of COTS, restocking of giant clams and *Charonia tritonis* Triton’s trumpet snail “Davui” (Botaria only), and small areas of coral transplanting. The flow of benefits between providers and beneficiaries is shown in Figure 12.

Figure 12. Benefits to providers (community) and beneficiaries (tourism operators) for the properties at Lawaki Beach House and Botaira Beach Resort.



Marine life in Botaira MPA. © Helen Sykes



CASE STUDY 5

Partnership between a large resort, an NGO, and the community: Cuvu Marine Protected Area, Shangri-La's Fijian Resort and Spa

Shangri-La's Fijian Resort & Spa is located on the small island of Yanuca, Cuvu, immediately off the west coast of Viti Levu, north of Sigatoka (the "Coral Coast"). It is part of a corporate chain of hotels based in Hong Kong, and one of the oldest resort properties in Fiji, first opening for business in 1967. It still has the highest guest capacity in Fiji, with 442 rooms, potentially housing over 1,400 guests.

In 2000, the resort management became concerned about the state of the marine environment surrounding the island, and in 2001 began a joint project with local NGO the Foundation for the Peoples of the South Pacific (FSP) and the local community of the Cuvu *tikina*, to address various environmental issues, including the formation of MPAs. The resort provided funding to match grants secured by the FSP, the project facilitator, to conduct environmental awareness and management workshops in seven villages, and to design and implement a long-term management plan, including marine protection and watershed management, with a particular focus on women (the predominant fishers) in decision making. They commissioned a private sector consultant (Resort Support) to design and create guest environmental awareness materials and programmes, and to train resort staff in sustainable tourism practices.

In 2001, three marine and one mangrove protected areas, including the reef off-shore of the resort, were declared as traditional no-fishing *tabu* areas by the Paramount Chief of the district of Cuvu, *Na KaLevu*, Ratu Sakaisa Makutu, originally for least three years, to be renewed by future agreement (Fig. 13–14). Destructive fishing methods and disposal of rubbish into the sea was banned in the district. The Cuvu District Environment Committee was formed, consisting of representatives of villages, clans, families, the resort, FSP, and various governmental sectors. The Ministry of Fisheries provided 500 giant clams for restocking, and trained 16 local community members as Fish Wardens, empowered to oversee and enforce the no-fishing agreement.

John Rice, the general manager of the resort at the time of formation, estimated that the resort spent in excess of FJ\$150,000 (US\$70,000) in cash and in kind on activities to benefit the marine environment. The project was designated a United Nations Environment Programme (UNEP) International Coral Reef Action Network "model site for coral reef conservation", the first for Melanesia (MPA News 2002). Since that early start, the resort has continued to develop the resort-based project, including employment of a permanent marine biologist and a full time community environment representative in the watersports department, building and furnishing a marine centre for guest and local school education, and establishing mangrove planting around the foreshore.

The *tabu* area is recognised by traditional authority, but not by law. Initially poaching was low and the local Fish Wardens' authority was effective. However, in later years, community commitment to the project has waned, and the area fronting the resort has been opened multiple times, reducing its effectiveness. Due to the position of the *tabu*, one of the seven villages involved was much more impacted by the loss of fishing rights than the others, and currently actively

Minister for Tourism with the Heritage in Young Hands mangrove planting programme. © Shangri-La's Fijian Resort



fish the sections less used by tourists without hindrance. The flow of benefits between providers and beneficiaries is shown in Figure 15.

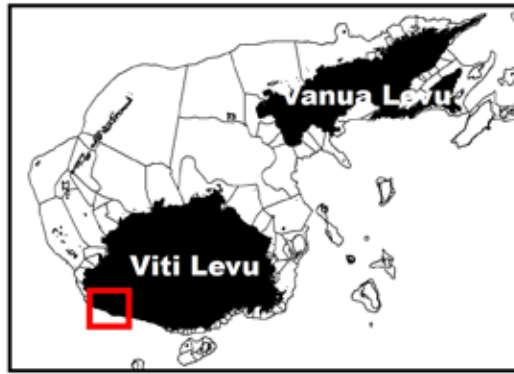


Figure 13. Map of the Cuvu MPA at the Shangri-La's Fijian Resort on the Coral Coast of Viti Levu.

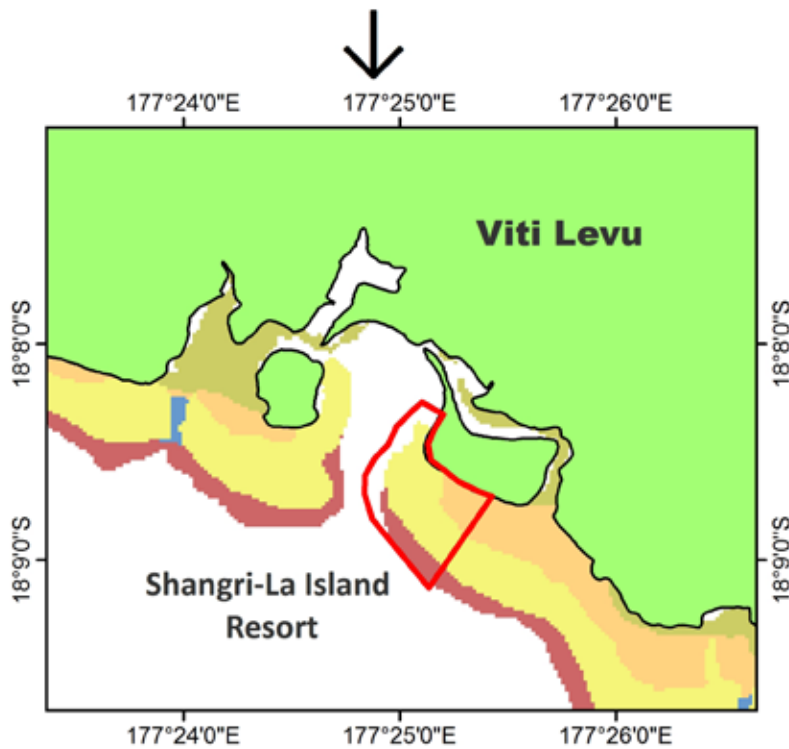
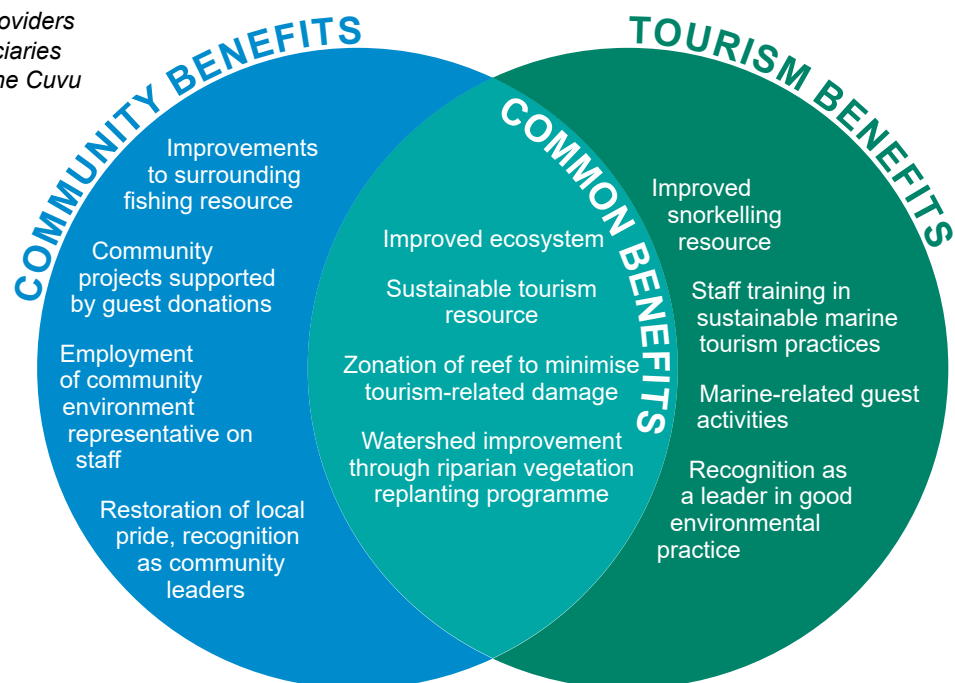


Figure 14. Map of tourism use zonation within the Cuvu MPA. ©Helen Sykes

The resort is engaged in several environmental rehabilitation and enhancement projects, including:

- Removal of COTS;
- Restocking giant clams, *Tectus* or *Trochus niloticus* trochus shell, *Lambis lambis* spider conch (*Yaga*);
- Coral transplanting onto constructed “fish houses” to enhance fish habitat;
- Tree planting in villages to absorb polluted groundwater leaking onto reefs;
- Upgrading of the resort’s sewage treatment plant, and installation of a pioneering artificial wetlands tertiary treatment facility to reduce nutrients entering the sea from treated wastewater; and
- Replanting *Rhizophora* spp. (*tiri*) coastal mangrove trees.

Figure 15. Benefits to providers (community) and beneficiaries (tourism operators) for the Cuvu Marine Protected Area



Further details of benefits

Tourism activities related to project:

- Redesign of “Little Chiefs” kids’ club programme to relate activities to environmental and cultural themes;
- Fish identification materials at watersports centre and on glass bottom boats to replace fish feeding;
- Donation-based “Fish House” building and mangrove planting programmes for guests; and
- The Shangri-La’s Marine Education Centre and staff, established in 2009 to provide educational and awareness raising activities for guests, and community groups, and to provide assistance and expertise to other resorts in the area.

Community benefits related to project:

- School "Heritage in Young Hands" programme, where primary school students from 5 primary schools learn ecosystem stewardship and leadership. Carried out in partnership with the National Trust for Fiji Islands Sigatoka Sand Dunes National Park.
- Guest income generating programmes and donations fund community projects selected by resort, including school projects and the Nageledamu women's centre.
- Recognition as leaders in environmental management: chiefs from two nearby districts with resorts requested assistance from the FSP for marine restoration projects and resort partnerships.

Yanuca Island from the water. © Shangri-La Fijian Resort



CASE STUDY 6

Management plan by resource owners supported by tourism operator: Jean-Michel Cousteau Resort Fiji

The Jean-Michel Cousteau Resort Fiji is located at the south eastern tip of Savusavu Bay on the island of Vanua Levu. With 25 five-star bures, and awards for Eco-tourism, it prominently features marine and environmental education and activities. There has been an informal no-fishing agreement in front of the resort since about 2000, allowing coral transplanting and giant clam restocking to take place. The resort carries out regular biological surveys of reef health. In 2005 this was extended to a 4.5 km² traditional no-take *tabu* area (Lisiaceva MPA) to cover the entirety of the reef flats and slopes, plus a 50 m buffer zone, stretching from the resort to the lighthouse at the end of the reef corner (Fig. 16). The area includes SCUBA dive and snorkel sites, as well as three small islets. It is a juvenile black tip reef shark *Carcharhinus melanopterus* habitat.

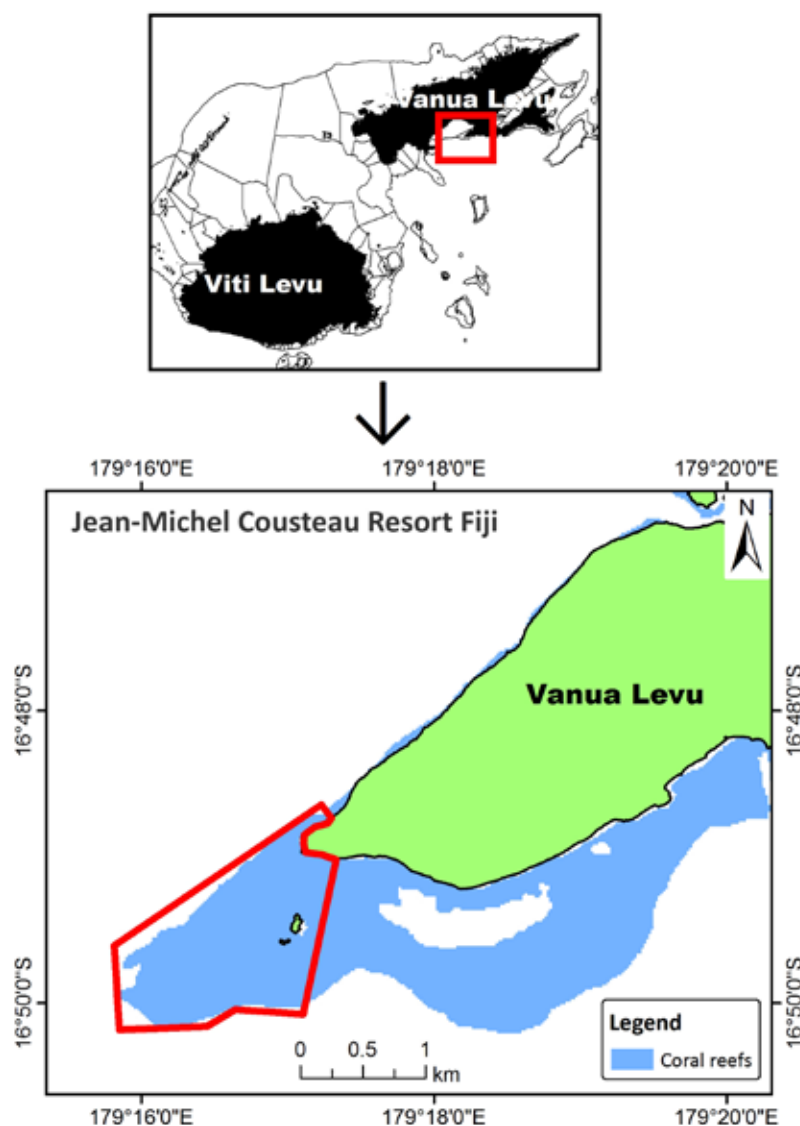


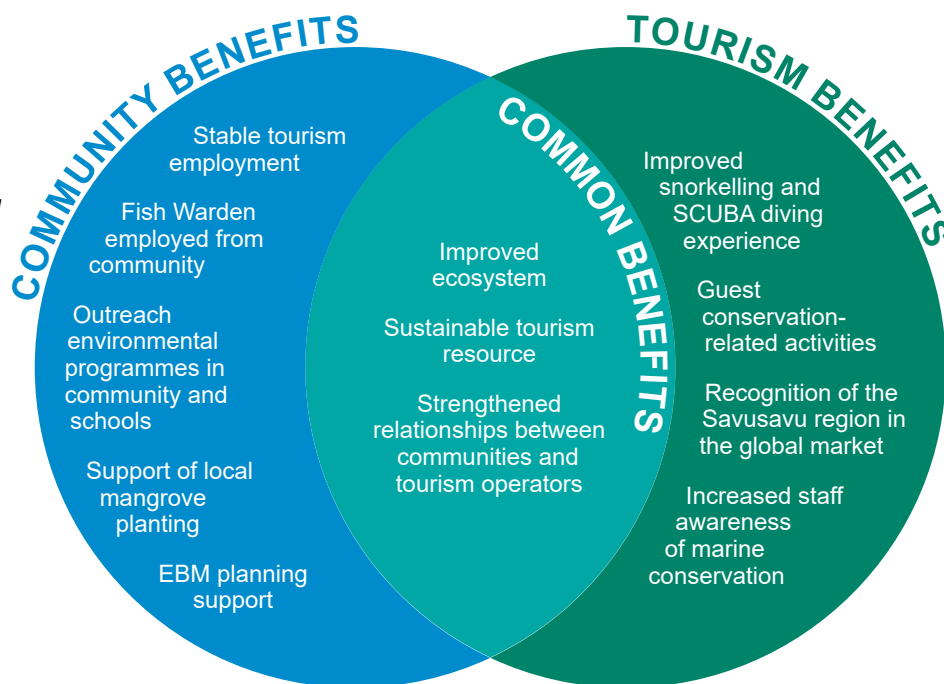
Figure 16. Map of the MPA at Jean-Michel Cousteau Resort Fiji, Savusavu on Vanua Levu.

Documentation from the traditional leader of the resource-owning community, *Tui* Nasavusavu, was incorporated as part of a management plan, to ensure that the area was excluded from commercial fishing activities. When fishing licences are sought, they are only granted conditionally, on the exclusion of the *tabu* area, using a letter given to the fishermen with a map and description of the *tabu* boundaries. The flow of benefits between providers and beneficiaries is shown in Figure 17.

Guests are monitored by resort activities staff. Fishers from the community are challenged by resort staff during the day. At night a Fish Warden from the village is employed to patrol. Commercial fishing is excluded by means of the standard letter from the Chief of Nasavusavu. If caught in the area, the Fish Warden has the authority to arrest commercial fishers, confiscate gear, and deliver to the Fisheries Officer or local Police.

Reef rehabilitation programmes were wiped out in Cyclone Winston in 2016. However, prior to the cyclone the resort had long term projects including the removal of COTS, restocking giant clams, and small areas of coral transplanting.

Figure 17. Benefits to providers (community) and beneficiaries (tourism operators) from the marine conservation at Jean-Michel Cousteau Resort Fiji.



Aerial photograph of reefs within the MPA at Jean Michel Cousteau Fiji Resort. © Reef and Rainforest



CASE STUDY 7

Reserves declared for protection of Megafauna: Shark Reef, Drawaqa/Naviti Manta Channel, Moon Reef

Three areas of Fiji have protected areas specifically based around charismatic megafauna naturally found on, or attracted to, the region. Although the species and mechanisms of protection are different in each one, they are considered together as they similarly rely on a specific attraction to support the protected area.

Shark Reef Marine Reserve and Shark Corridor, Pacific Harbour, Viti Levu

Shark Reef Marine Reserve (SRMR) is Fiji's first statutory ("gazetted") sanctuary for sharks in Fiji. It includes most of a 1.5 km long patch reef 6 km from Pacific Harbour on the south coast of Viti Levu. An area of approximately 1.8 km² is no-fishing, with an additional buffer zone of about 15.5 km² around it where no targeted shark fishing may take place (Fig. 18). In addition there are no-shark fishing traditional agreements around nearby reefs known informally as the "Shark Corridor". Two tourism operators use these reefs for SCUBA diving: Beqa Adventure Divers within the statutory reserve, and Aquatrek on the nearby Lake Reef within the buffer zone. Bull sharks *Carcharhinus leucas* and tiger sharks *Galeocerdo cuvier* are the main attraction, although up to eight species of shark are seen in the area. Shark provisioning (feeding) is carried out on these dives, usually up to 3 to 4 times a week at each site.

Initially, in 1999, a traditional *tabu* was agreed with the local resource-owning communities, in return for payments to community funds. The SRMR was gazetted in parliament as a permanent legally recognised national reserve in 2014, under the Fisheries Act (see Case Study 9, Statutory (Gazetted) Marine Reserves) and is to be managed by a committee consisting of the fisheries resource owners, the dive operator, an academic, and a civil society representative.

Aquatrek pays a FJ\$20 per diver contribution to Wainiyabea village, split into four payments to the clan and chiefs bank accounts. There are monthly payments of FJ\$200 to two community leaders for protection of other dive sites outside the reserve.

Beqa Adventure Divers at SRMR pays a FJ\$25 per diver contribution to three community bank accounts (Wainiyabea, Rukua and Galoa villages), and a FJ\$200 per month fee to one other community for protection of other dive sites. They also offer professional diver training and preferential employment opportunities to youths from those villages, and support long term research on bull shark movements (Cardenosa et al. 2016). Some giant clam restocking has been done at the Shark Reef dive site. The flow of benefits between providers and beneficiaries is shown in Figure 18.

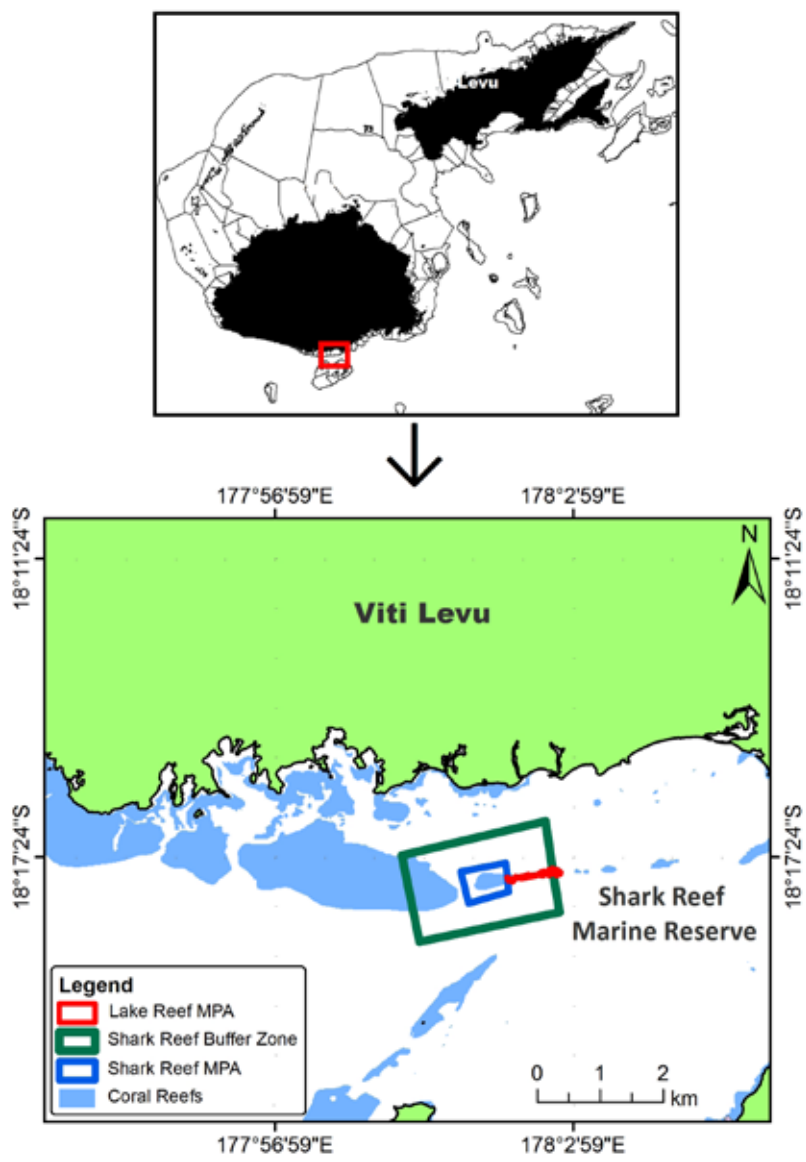


Figure 18. Map of the Shark Reef Marine Reserve, Serua, Viti Levu.

Poaching in the gazetted area is low, but enforcement of the shark corridor has proved more difficult, with some communities observing, and some disobeying the strictures against shark fishing, particularly for the lucrative shark fin trade. Beqa Adventure Divers have several trained Fish Wardens on staff, empowered to arrest fishers and confiscate fishing gear from the gazetted area, who take care of most of the day-time policing of the reserve, and Aquatrek staff chase away fishers seen on Lake Reef, but there is little enforcement possible at night.

Manta Channel, Drawaqa/ Naviti, Yasawa Islands

The Manta Channel is a naturally occurring *Mobula alfredi* manta ray aggregation site in a narrow passage between Drauwaqa and Naviti islands in the Yasawa Islands chain north of Nadi town. Manta rays are regularly found feeding and being cleaned in this passage, particularly on rising tides. While manta rays are most commonly seen on Fiji’s reefs in the warmer months (November to February), manta rays are seen here May to October, the months when they are least frequently seen elsewhere in Fiji, and at those times are a reliable attraction.

Local resorts established income-generating snorkel trips for tourists to see the manta rays in the mid-2000s. In 2013 the channel and surrounding area was officially recognised as *tabu* by the community resource owners, the *Tikina* Naviti Conservation Initiative (TNCI), and the Ministry of Fisheries (Fig. 19). Currently there are moves to declare and possibly gazette a larger area as an official reserve under Section 9 of the Fisheries Act of 1942, but this is still under discussion.

The number of tourists visiting the Manta Channel exceeded 5,000 paying guests in 2015 (Fiji Manta Ray Project 2015). Based on the average price of FJ\$40 per person per trip, manta tourism at this one site generated an estimated FJ\$220,080 total revenue over 6 months, split between several snorkel trip operators, including some belonging to the resource-owning community. As part of standard land-lease agreements, a percentage (usually under 5% depending on individual agreements) of gross turnover, including that gained from manta snorkel trips, is paid to the land-owning communities, administered by the *i-Taukei* Land Trust Board.

The Manta Trust (Manta Trust 2017) carries out research on the ray population and migration patterns. Multiple resorts use this area as an attraction, and there is a need to agree on best practice guidelines to prevent harassment and possible driving away of the mantas. The manta ray has traditional importance to the local communities as a traditional totem "*i-Cavuti*" species, and there are some conflicts regarding potential payments to resource owners over the use of the channel. No provisioning or other inducement to attract marine life to the area is used.

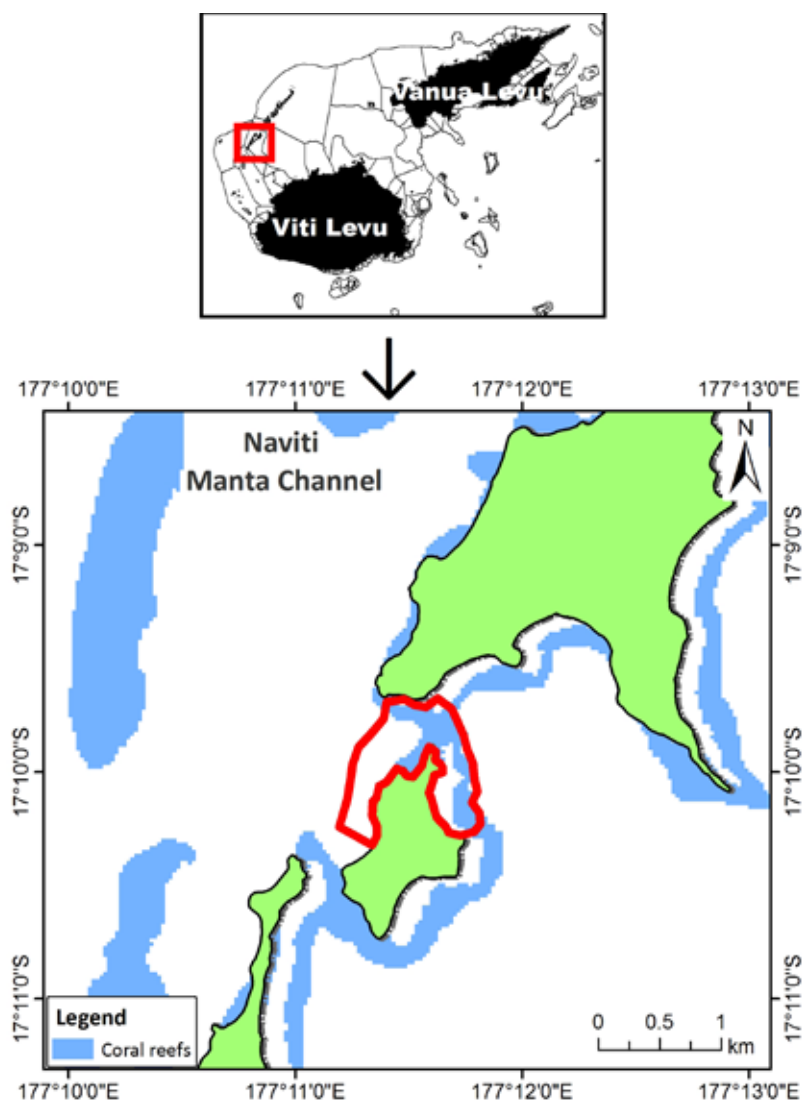


Figure 19. Map of the Manta Channel MPA at Naviti Island in the Yasawa Islands

Tourism operators report any local fishers to the community leaders, keeping such poaching to low levels, although spear fishers do occasionally venture into the channel, targeting fin-fish (not mantas). There are frequent night-time visits from small-scale commercial fishing boats from the mainland. When possible the tourism operator located directly on the channel (Barefoot Manta) chases these fishers away, but as the *tabu* is recognised by traditional leaders but not in law, they have no legal powers to exclude them.

Barefoot Manta Island Resort has on-staff marine biologists, and carries out regular reef enhancement programmes, in which guests can be involved. These include removal of COTS, restocking of giant clams (a nursery site currently contains 56 *Tridacna gigas* and *T. derasa* clams), and extensive coral planting on the reef slopes bordering the Manta Channel (2,500 m² of reef has been replanted over the past 4 years, D. Bowling, pers comm). The flow of benefits between providers and beneficiaries is shown in Figure 21.

Pair of Manta rays in Manta Channel. © Dan Bowling



Moon Reef Dolphin Watch, Tailevu Province

Moon Reef is an offshore coral pinnacle in Tailevu Province, 6 km offshore of the eastern coast of Viti Levu. A small enclosed bay inside the reef provides a resting and breeding area for *Stenella longirostris* spinner dolphins, which reside in this area year-round (Cribb et al. 2012). In 2005, a local community member partnered with an overseas investor, started to develop a tourism day trip to visit the dolphins, and built a small backpacker style lodge called Takalana, to provide accommodation centred on the dolphin attraction. A partnership with the Whale and Dolphin Conservation Society based at the USP, led to development of best practice guidelines for the dolphin-viewing trips, which involve limiting the number of boats entering the sheltering bay at a time, dolphin observation from the boats only, and snorkelling only on the outer edges of the reef. Research on the dolphins using the bay has shown that the area is an important day time resting place for the species (Cribb et al. 2012).

The area has been protected from fishing since 2010 under a traditional *tabu* agreement with Dawasamu village, supported by the FLMMA network (Fig. 20). The reef is of traditional importance to the local communities, and its protection is well supported. No provisioning or other inducement to attract marine life to the area is used.

A percentage of the income generated by the Dolphin Watch programme is used to support community projects chosen and administered by Takalana Bay Retreat. School projects are funded with ten percent of income, and community projects by five percent. In addition Dawasamu village has been able to establish its own income-generating backpacker lodge.

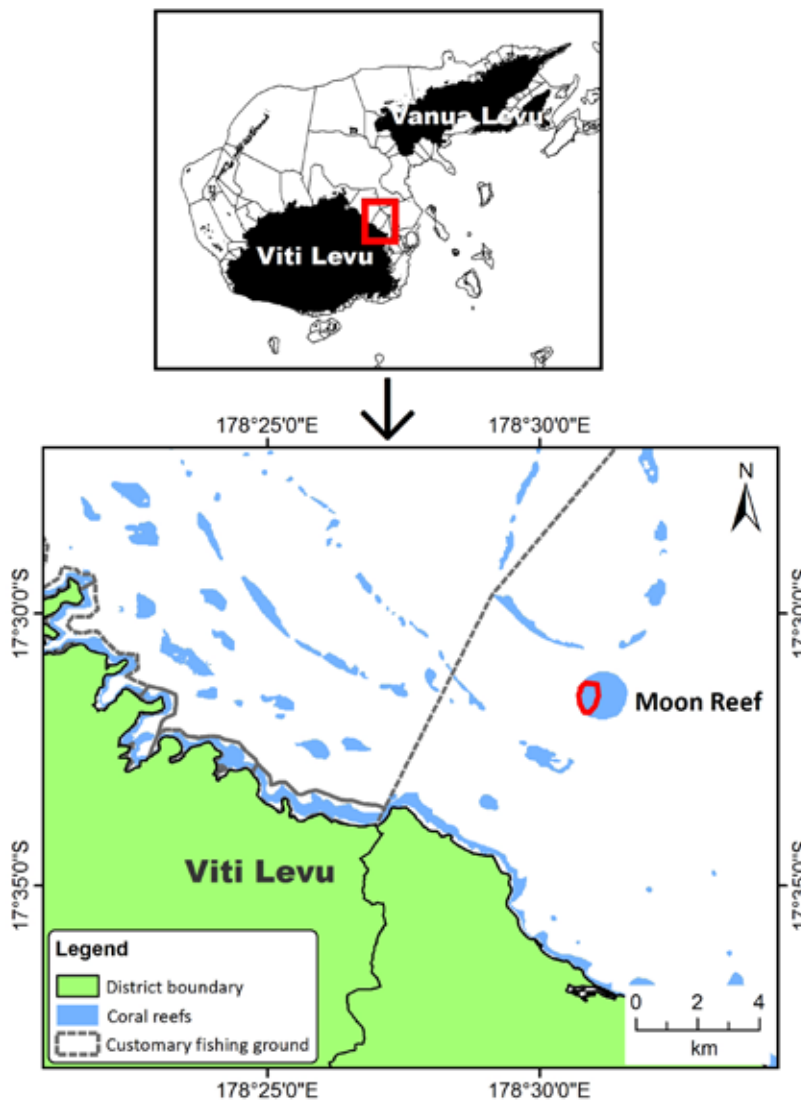


Figure 20. Map of the Moon Reef MPA in Tailevu Province, Viti Levu

The distance of the reef from shore and its traditional importance naturally reduces the likelihood of poaching by the local community, and although it is potentially vulnerable to fishing boats from outside the community, little fishing seems to occur. All of Fiji's Exclusive Economic Zone (EEZ) is a whale and dolphin sanctuary, and so there is no targeted dolphin fishing in the country. If poaching were observed during a dolphin-watching trip, the staff from the local community would challenge the fishers, report local fishers to the community leaders, and take outside fishers to Police or Fisheries officers. The flow of benefits between providers and beneficiaries is shown in Figure 21.

Moon Reef Dolphin Watch. © Takalana Bay Resort

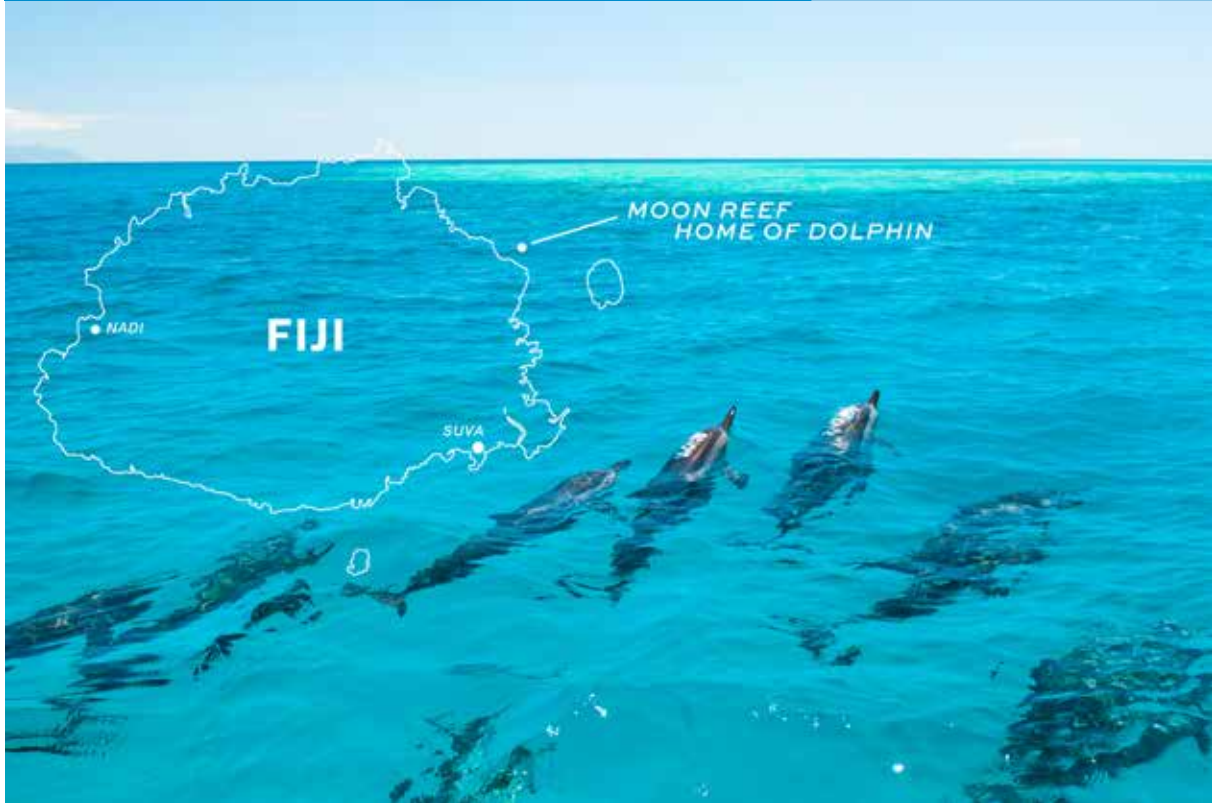
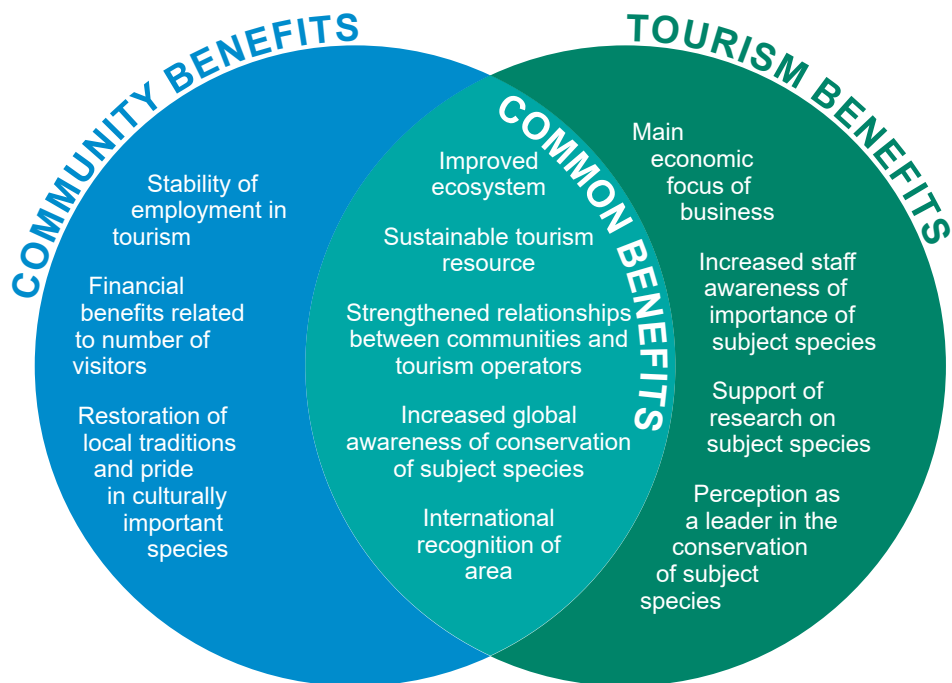


Figure 21. Benefits to providers (community) and beneficiaries (tourism operators) from the marine conservation at megafauna viewing operations.



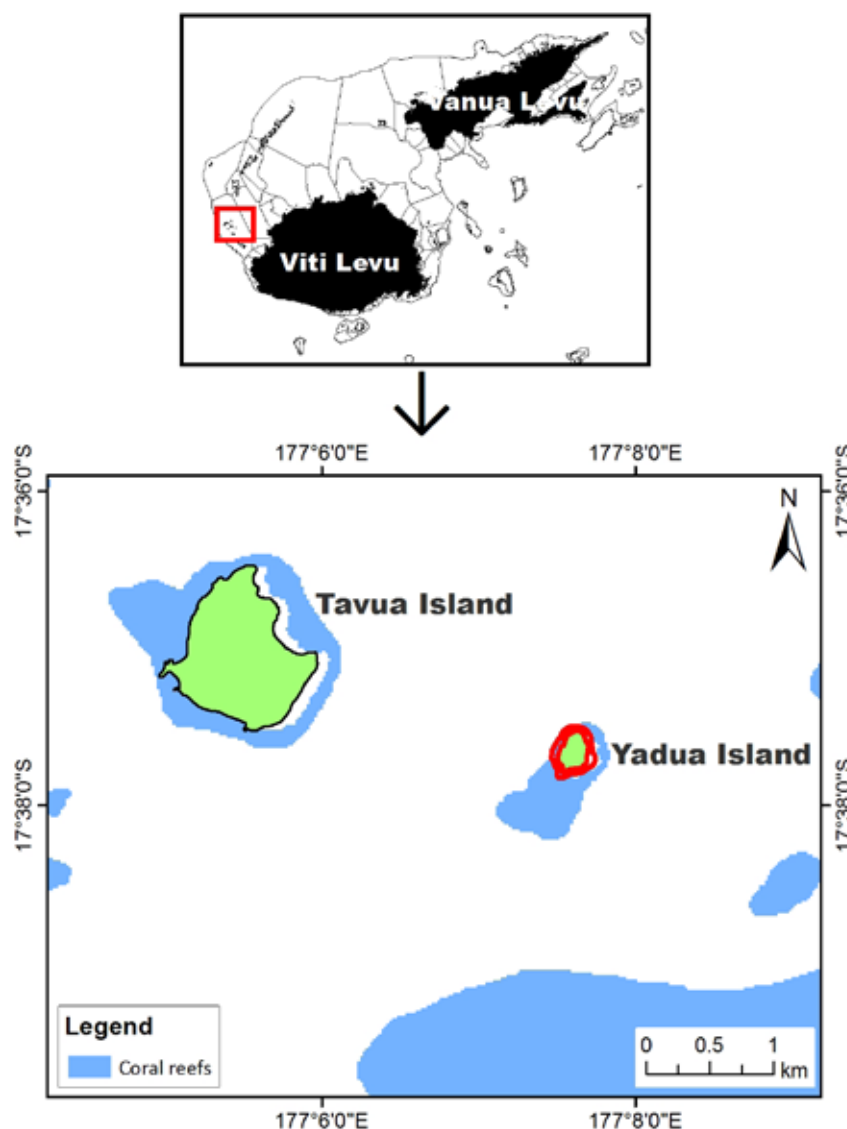
CASE STUDY 8

Foreshore Licence or Lease: Waivunia Marine Park, Namotu Island Resort and Yadua Island

Foreshore leases and licences may be granted for a limited term by the Ministry of Lands and Mineral Resources under parts IV and V of the State Lands Act. They only apply to shallow foreshore areas, defined as Crown Land, not to deeper offshore waters, and lease payments devolve to the government, not to the local fishing resource owners. This mechanism was designed primarily to cover areas for development (lease) or commercial use (licence), but has been examined to see whether it can legally be applied to the formation of marine protected areas. At time of writing, one lease and two licences have been granted to tourism-related projects, but the process is currently suspended pending more thorough legal analysis of their suitability for this purpose (FELA and EDO 2017).

Foreshore Lease – Yadua Island, Mamanuca Islands, north of Nadi

On 1 July 2009, a 98 year Foreshore Lease was granted to Yadua Island (Fiji) Ltd for the purpose of creating an MPA (Fig. 22). The leased area is defined as the seabed area 50 m from the high water mark around the Yadua Island.



The island is currently undeveloped and uninhabited, but used by tourism operators for day trips, and is actively listed for sale for development as a private residence or boutique resort. The stated objective of the lease is to ensure that the area will be used solely as a MPA "for the purpose of maintaining the peace and tranquillity of the surrounding area, ensuring the preservation of the reef ecosystems and all marine life therein."

Figure 22. Map of the foreshore lease area at Yadua Island in the Mamanuca Islands

An annual rent of FJ\$100 is payable to Government, and will be reassessed every 10 years (Department of Lands and Survey, Approval notice of lease, LD ref 60/1052). Poaching is at very low levels due to the long term high levels of tourism and community education in the area. Fishers are confronted by tourism staff if seen. The flow of benefits between providers and beneficiaries is shown in Figure 25.

Foreshore Licence – Namotu Island Resort, Malolo, Mamanuca Islands

In 2015, a 5 year Foreshore Licence was issued to Namotu Island Resort, primarily a surfing destination, for the purpose of creating a MPA (Fig. 23, FELA and EDO 2017). The area of protection is primarily the shallow fringing reef from the high tide mark out to 100 m from shore. The main focus of the licence is to retain privacy of use of the foreshore, prevent anchoring on the reef, and provide a healthy reef environment as a snorkelling resource. The resort is also a member of the Mamanuca Environment Society and as such reef health and water quality are regularly monitored.

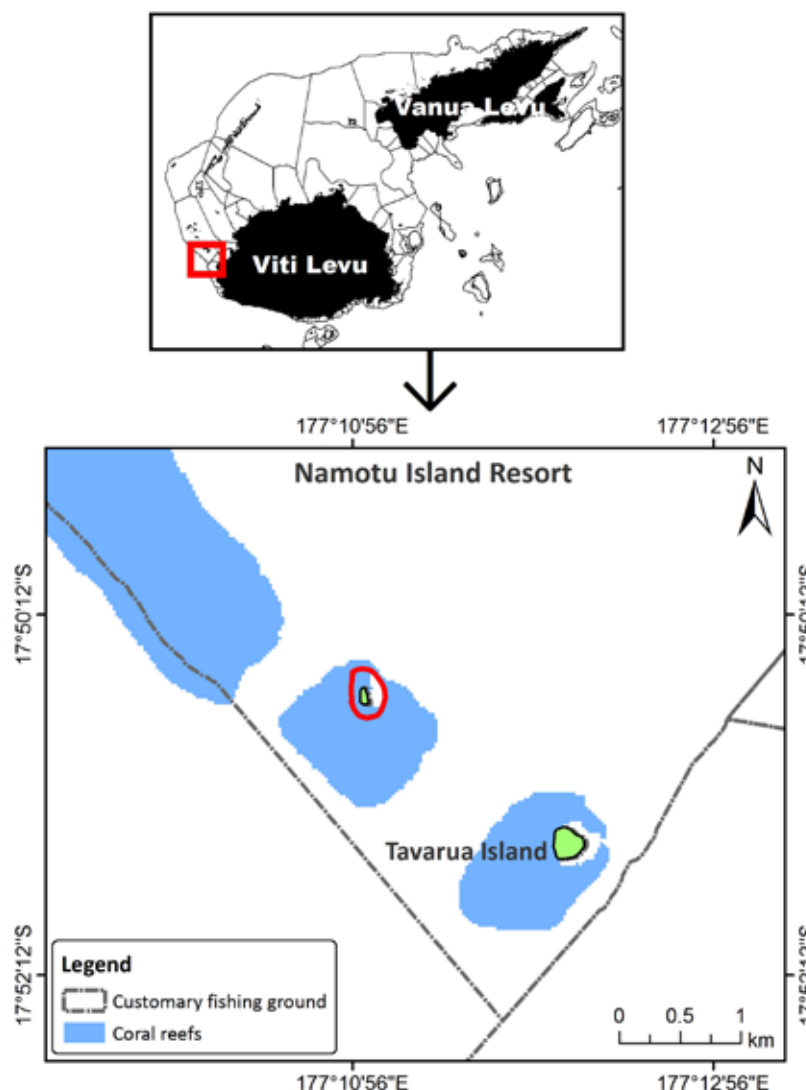


Figure 23. Map of the foreshore licence area at Namotu Island in the Mamanuca Islands.

There are no direct financial benefits being paid other than the small annual licence fee to the Ministry of Lands and Mineral Resources, Department of Lands and Surveys. Poaching is at very low levels due to the long term high levels of tourism and community education in the area. Fishers would be confronted by tourism staff if seen. The flow of benefits between providers and beneficiaries is shown in Figure 25.

Foreshore Licence – Waivunia Marine Park, Savusavu, Vanua Levu

In 2015, a 5 year Special Licence to occupy State Land was issued to the Naivuatolu Cooperative Ltd, a legal entity representing the fishing right owners, to establish the Waivunia Marine Park (Fig. 24). An annual rent of F\$100 is payable to Government (Department of Lands and Survey, Approval notice, LD60/2841). This is a unique case, in that the traditional fishing resource owners have licenced their own fishing grounds from government in order to legally reinforce their right to manage it for the purposes of creating a tourism resource.

The area covers a 4 km stretch of foreshore, channel, mangrove and deeper reef slope, with a buffer zone extending out into deep water. It includes several sites already in use by SCUBA diving tourism operations. A traditional *tabu* was in place in part of the area for the previous 15 years before the licence was granted. The resource-owning community has not stopped all fishing in the marine park, but instead has “Green Weeks” when no fishing is done, to reduce pressures on the marine populations.

The stated aims of the Marine Park are to establish sustainable tourism income for the community through conservation and rehabilitation of marine species. The cooperative has designated a local dive operation, Namena Divers, to patrol the area and assist in preventing illegal activities, and the Ministry of Fisheries has given planning assistance. CORAL has been approached for help with community organisation. Coral transplanting and giant clam restocking supported by the nearby Koro Sun Resort was wiped out during Cyclone Winston in February 2016, and has not yet restarted.

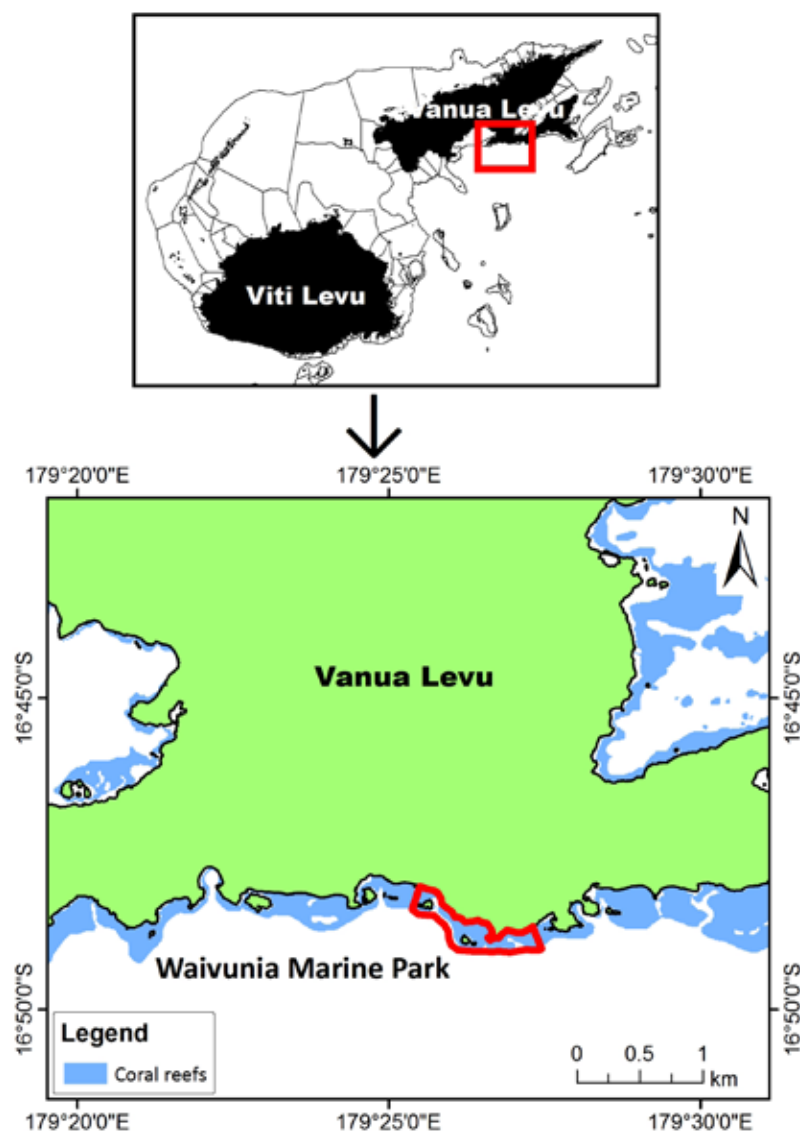
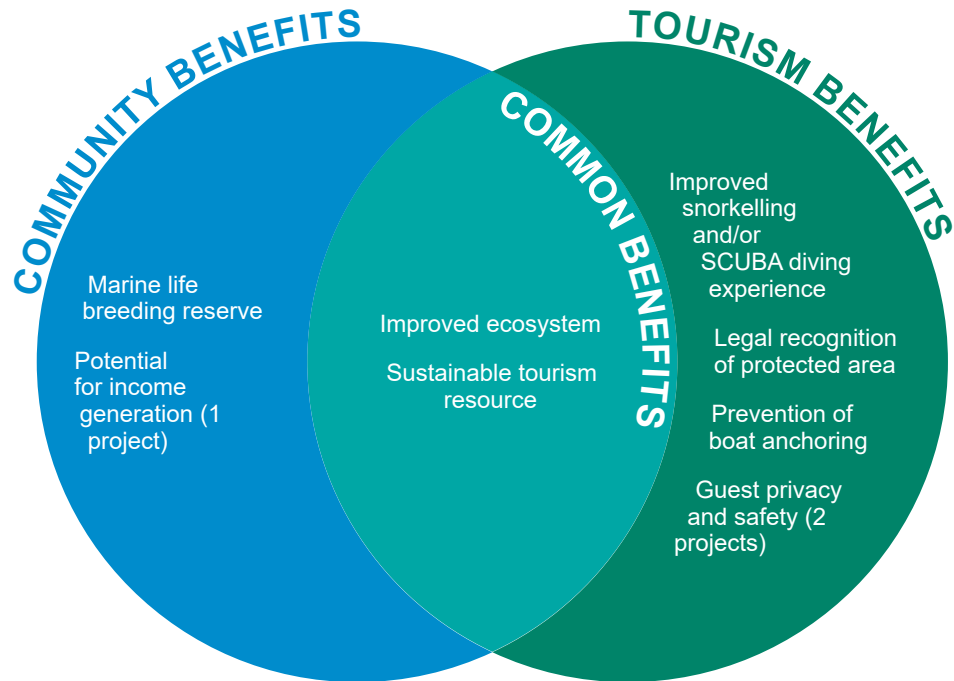


Figure 24. Map of the foreshore licence area at Waivunia, Vanua Levu.

Tourism operators in the area have provided training for local youths who are now engaged as snorkel guides when guests wish to snorkel in the park. Other hoped-for income-generating projects within the park have not yet eventuated. The flow of benefits between providers and beneficiaries is shown in Figure 25.

Figure 25. Benefits to providers (community) and beneficiaries (tourism operators) from the marine conservation in Foreshore Lease and Licenced areas.



Google Earth Image of Waivunia Marine Park. © 2018 DigitalGlobe



CASE STUDY 9

Statutory (gazetted) Marine Reserves: Wakaya and Shark Reef Reserves

Under Section 9 of the Fisheries Act of 1942 (Cap 158), the Minister of Fisheries may introduce regulations for the conservation, protection and maintenance of a stock of fish by “prescribing areas and seasons within which the taking of fish is prohibited”. The Act also contains regulations under which marine reserves may be created, and the associated fishing regulations become enforceable under law once they are read by parliament and published in the Government’s Gazette. The process is long and complex, and once gazetted, inflexible. Once created, the traditional resource owners submit control over the customary fishing, governance and management rights to the area (FELA and EDO 2017).

Both of the statutory reserves have detailed rules and regulations, and buffer zones around the reserves with more limited restrictions. In both reserves, tourism operators have supported Fish Warden training and certification by the Ministry of Fisheries for staff and community members who then have the power of arrest and confiscation of gear, to be delivered to the relevant Fisheries Officer or to the Police. Under the regulations, any fishing or collection activity which breaches the regulations of that reserve are prohibited, and persons who contravene the regulations are liable to prosecution under law, “liable upon conviction to a fine of not less than FJ\$500 and not exceeding FJ\$10,000, or imprisonment to a term not exceeding 6 months, or both.”

There is also a clause (3.2) which states that vessels within the reserve shall only use the mooring provided within the Marine Reserve. At Shark Reef such moorings are provided, but at Wakaya no mooring had been set at time of writing, and there is some discussion about how this affects the rights of visiting ships to anchor in the area. Due to the legislation in the Surfing Decree (Regulation of Surfing Areas Decree 2010), watersports users who are not fishing, engaged in destructive practices, or discharging waste or litter, cannot be refused access to the reserve area for the purposes of providing watersports, and cannot be compelled to pay monies or compensation for such use.

Shark Reef Marine Reserve

In 2014 Shark Reef Marine Reserve (SRMR) became the first statutory nationally gazetted sanctuary for sharks in Fiji (Fig. 26). The stated purpose of the reserve is for “conserving, protecting and maintaining shark species and marine organisms including coral within the area” (Fisheries (Shark Reef Marine Reserve) (Serua) Regulations 2014). The reserve is primarily used as a shark-feeding SCUBA diving attraction, managed by a committee consisting of the fisheries resource owners, a dive operator, an academic, and a civil society representative.

The legal agreement only covers the rules and regulations of the park use, and does not include any financial compensation or benefit agreements. In this case, FJ\$20 to FJ\$25 goes from two SCUBA diving businesses operating in the area to the resource owning communities through voluntary contractual agreements that pre-date the legal gazetted. Details of payment structure are included in Case Study 7.

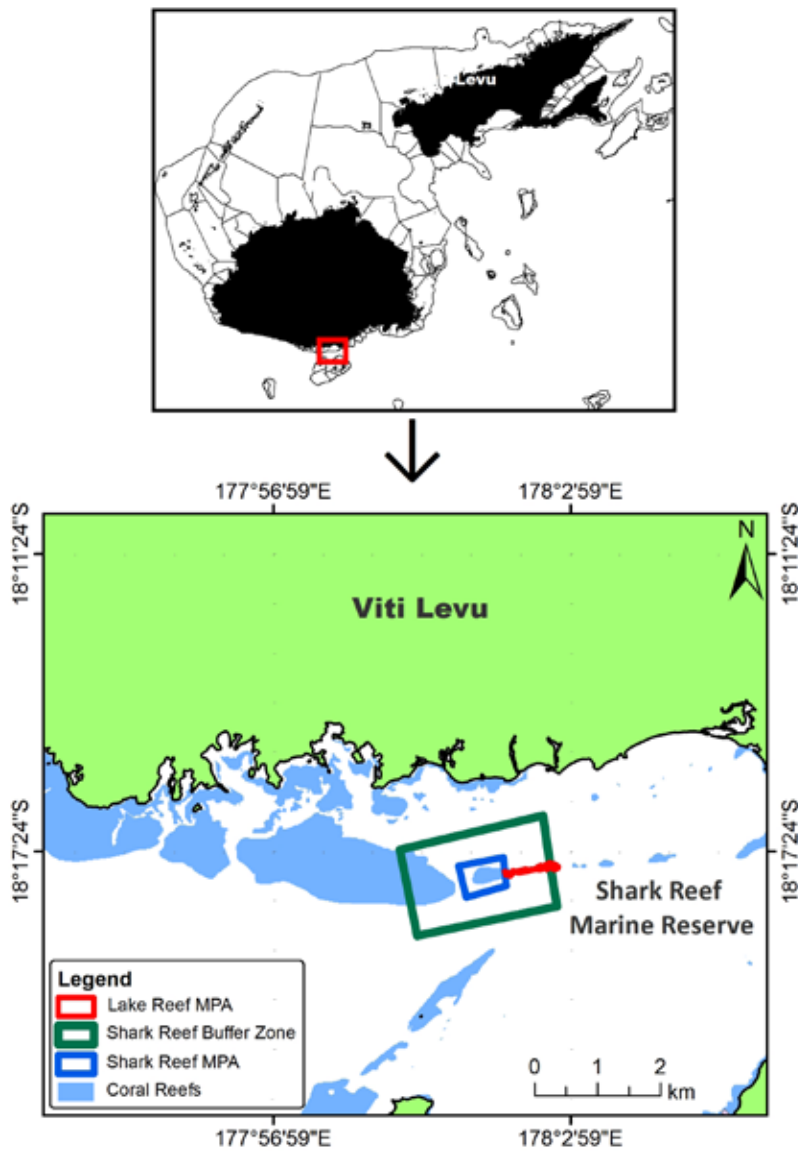


Figure 26. Map of the statutory reserve at Shark Reef Marine Reserve, Serua Province, Viti Levu. The outer red line represents the outer boundary of the buffer zone.

Bull sharks in the Shark Reef Marine Reserve. © Keith Ellenbogen



Wakaya Marine Reserve

In 2015, Wakaya Marine Reserve (WMR) on Wakaya Island in the Lomaiviti Province, became the second tourism-related statutory nationally gazetted marine reserve (Fig. 27). The stated purpose of the reserve is for “conserving, protecting and maintaining species of fish, sharks, rays, cetaceans, sea turtles and all and marine organisms including coral within the area” (Fisheries (Wakaya Marine Reserve) Regulations 2015).

The reserve area fronts an island with a very exclusive resort and private homes. For many years before the formation of the reserve, three dive liveboard ships regularly moored and dived in the area. The main objectives of the reserve formation were preservation of a pristine ecosystem, and prevention of commercial fishing.

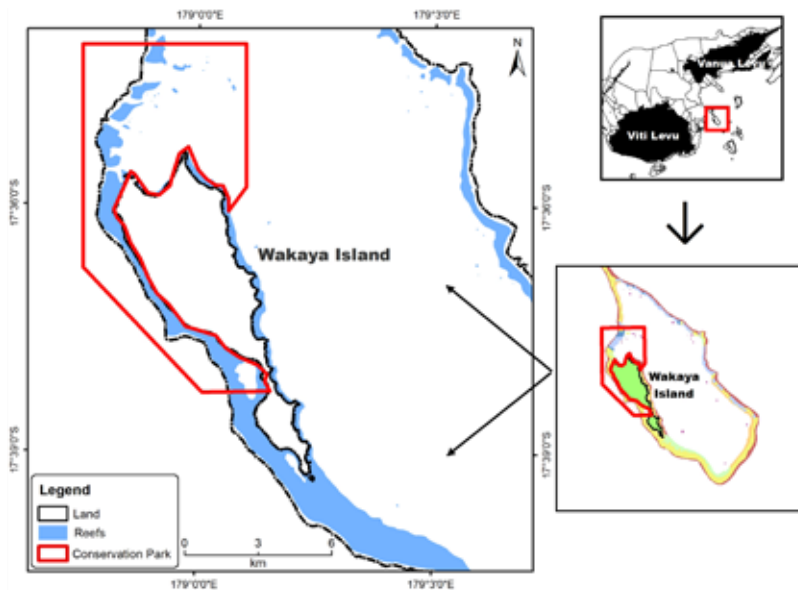


Figure 27. Map of the statutory reserve at Wakaya Island, Lomaiviti

Blackfin Barracuda in Wakaya Marine Reserve. © Helen Sykes



CASE STUDY 10

Non-tourism-related MCAs: Seacology

Starting with one project in 1991, Seacology became a global non-profit organisation (NPO) firmly established in 1999, supported by donations from the public and foundations. Their basic approach is that of "quid pro quo": direct exchange of a specific benefit for fixed term conservation commitment, negotiating directly with communities, not with governments or partner organisations. Trips are hosted to allow donors to experience the project sites, increasing their interest in and commitment to support. Local field representatives are employed to find new project opportunities and monitor existing ones.

In Fiji there have been 15 marine protection projects with a total stated area of 428.5 km² since 2000, mostly 10 year no-fishing agreements in return for construction of community halls (Table 23, Fig. 28, Seacology Pacific Projects 2017). They do not offer money directly to the community, instead funding and organising the building or supply of the agreed benefit. Enforcement relies entirely on community observance. There is no monitoring of the progress of MPA, or reinforcement of ecological benefits to community. At the end of the contractual period, (or if the benefit fails) most communities feel they can fish the MPA, or require another benefit to extend the protection. Although the Seacology contractual agreements reportedly cover a large amount of Fiji's marine area, most have not been heard of by other practitioners in the area, and are not formalised in existing networks. As there is no monitoring or reportage of socioeconomic, biological or fisheries progress to any outside agency, their efficacy is unmeasured, and in many cases, in doubt.

Table 23. Protected areas established by local communities in partnership with Seacology. MPA = Marine Protected Areas

Start date	Village and location	Area protected (km ²)	Duration	Community benefit
Jun 2014	Nanuca, Vanua Levu	4.59 marine 0.84 mangrove	15 years	Community hall
May 2009	Tokou, Ovalau Island	1.48	15 years	Community hall
Jan 2008	Nakaugasele, Kadavu Island	33.67	10 years	Flush toilets and community centre renovation
Jul 2002 Oct 2008	Yalewakalou and Yawini Ciri, Yasawa-i-Rawa Island	Not given	Not given	2002 Community centre 2008 Purchase of a solar power water supply system for the Seacology-funded community centre
Jan 2007	Nukubalavu, Vanua Levu	103.6	20 years	Construction of a preschool and kindergarten building
Jan 2006	Sila, Viti Levu	100.0	10 years	Construction of a community centre
Jan 2006	Viani, Vanua Levu	30.0	10 years	Construction of a community centre
Jan 2004	Navolau, Ra Province, Viti Levu	0.27	10 years	Community centre
Jul 2004	Nacamaki, Koro Island	4.05	10 years	Community centre maintenance and repair
Nov 2003	Dakuniba, Vanua Levu	Not given	10 years	Construction of a community centre
July 2003	Laselase, Viti Levu	70.0	10 years	Construction of a community centre
Jul 2003	Nukuvou, Kadavu Island	60.0	10 years	Construction of a community centre
Nov 2003	Veivatuloa, Lobau and Wailoaloa, Viti Levu	20.0	Not given	Electrical infrastructure
Nov 2002	Naikorokoro, Ovalau Island	Not given	10 years	Construction of a kindergarten and upgrade of a community hall
Jul 2000	Waisomo, Ono Island	Not given	5 years	Community centre and to purchase a boat to patrol the marine conservation area

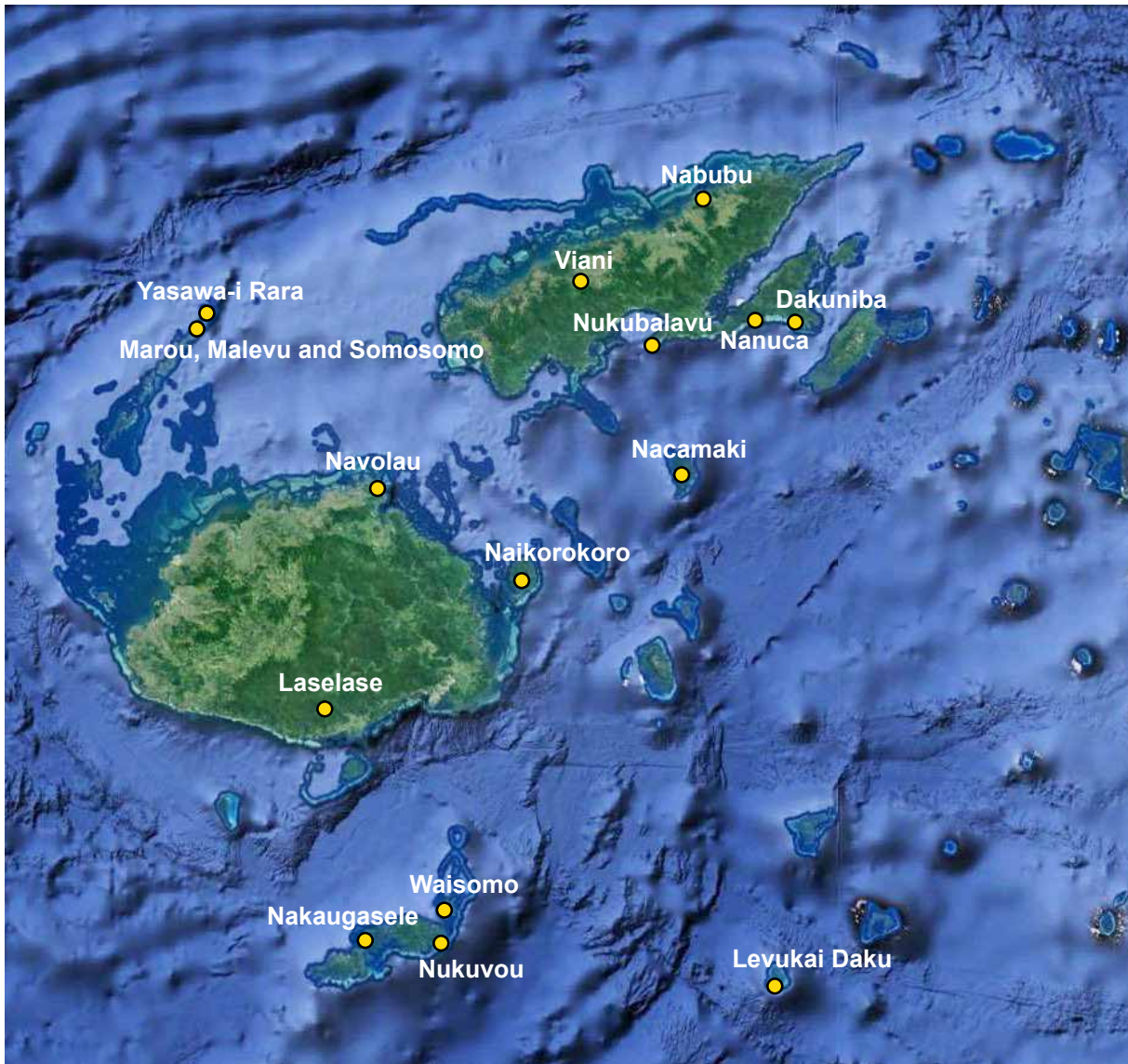


Figure 28. Google Earth image of Fiji showing sites of Seacology marine conservation agreements. © 2018 DigitalGlobe and Seacology⁷

7 Location of Seacology marine sites drawn from Seacology Website <https://www.seacology.org/projects/>. Locations appear to be sites where agreements were made, rather than of actual reserves.

5. CONCLUSIONS

Fiji is known as a leader in community-based marine conservation, but the contribution of MCAs has not been documented and therefore has largely gone unrecognised to date. Fiji's social and resource ownership systems provide the enabling conditions for establishing conservation partnerships at the grass roots level. Environmental awareness combined with forward-thinking traditional leadership has cultivated unique partnerships between communities and tourism operators. In turn, most tourism operators in Fiji acknowledge that a pristine marine environment is one of the most important resources they have, making them willing to expend resources in protecting it.

At least 56 tourism operators and one non-profit organisation (i.e. Seacology) have worked on MCAs with local communities in Fiji for many years, focused around the establishment and implementation of MPAs. A total of 71 (56 tourism-related and 15 Seacology-led) MPAs covering 654.75 km² (226.25 km² tourism-related and 428.5 km² Seacology-led) were documented by this study, and contribute to Fiji's national marine conservation goals and international commitments (e.g. Aichi Target 11 under CBD, Convention on Migratory Species), by protecting coral reef ecosystems as well as specific areas important to vulnerable megafauna. It is likely that there are at least another 10–20 MCAs that were not covered by this study, and more under consideration.

MCAs require a number of enabling conditions to be effective including clear agreement mechanisms, conservation goals, right-holders, specific providers and beneficiaries, a voluntary transaction, incentives and conditionality (Wunder 2005). MCAs may be structured in a variety of ways in terms of the type of agreement (formal and informal), the parties to the agreement and the different types of conservation measures agreed to and resulting economic incentives.

In Fiji, the majority of MCAs are not formally documented, instead relying on verbal understandings and relationships between resource owners and users. However, while the number of MCAs with formal contractual agreements or management plans with documented financial agreements between providers and beneficiaries were few (i.e. Namena Marine Reserve, Waitabu Marine Park, Vatu-i-Ra Conservation Park, Shark Reef Marine Reserve), these projects covered the largest area (over 80%) of the marine environment under tourism-related MCAs.

MCAs which do not involve direct financial benefits to community resource owners still provide the mutual benefits of improved ecosystems and stability of employment. Many are providing long term protection and mutual benefits. However, the efficacy of some of these areas is reduced by lack of management and enforcement, and in some cases lack of trust between the two parties. Clear legislation about MPA formation is missing, and there are insufficient incentives to ensure that protection remains in force for the long-term.

Enforcement of *tabu* areas largely relies on the authority of traditional leaders and social pressures, and good relationships between tourism operators and communities, with the practical side of monitoring and enforcing falling largely on resort owners and staff. This can be a stable and long-term arrangement, and has the advantage of maintaining the traditional ownership rights of the village communities. However, when conflicts arise, or key personnel depart, protection tends to collapse. The legal situation is unclear and difficult to navigate, and it is difficult for charges to be pressed in law when poachers are caught, a source of frustration for those involved in enforcing MPAs.

In most cases there is little active management other than prevention of fishing, and although more are embarking on reef enhancement, only a few engage in consistent monitoring, or publishing of reports to a wider audience, to show whether or not such projects are actually beneficial. Some resorts are now working in cooperation to share lessons and techniques, demonstrating the value of sharing

information across the industry as a whole, so that operators new to the concept are not starting from scratch. More could be done to promote information exchange and peer-to-peer learning between resorts and communities.

At time of writing there were no government incentives to the tourism industry to engage in marine protection projects. In fact, by reducing available income and increasing the price of visiting Fiji, the fairly new Environment and Climate Adaptation Levy (ECAL) (started at 6% of gross turnover in 2016 and increased to 10% in 2017) has served as a disincentive for some tourism operators to invest resources in such projects. While some operators have been employing voluntary environmental contribution schemes to support conservation, many feel that they cannot ask guests who know they are already paying an environmental levy to contribute further.

As the stated objectives of ECAL include promotion of conservation of ecosystems and biodiversity, and provision of funds to assist programmes, projects and activities associated with climate change, many operators have assumed that the fund they have paid into the levy will be used to improve environmental management, including marine protection, across the country.

Finally, there is not a great deal of recognition or publicity related to the marine conservation efforts of the tourism industry. It often seems that the industry is considered as a consumer, not a conserver, of natural resources. The study found 69% of all operators who responded to the survey were involved in marine protection to some level, and yet only 4% of them used that directly in their marketing.

Fiji's tourism market revolves around the sustainability and quality of its marine environment, and garnering more international and national recognition of the contribution made to national conservation goals can only be good for the community, the environment, and the tourism industry.

6. RECOMMENDATIONS

The tourism sector in partnership with local communities is already playing a vital role in marine conservation. Promoting the engagement of tourism operators in MCAs can deliver benefits for the tourism industry as a whole, specific operators, local communities and conservation. Key recommendations for policy makers, tourism operators and communities, and partners are provided below.

Policy makers

The government plays a key role in providing the enabling environment to establish and promote MCAs. Key recommendations for policy makers are:

- Recognise the role and contribution of MCAs nationally to biodiversity protection, fisheries and sustainable financing.
- Provide support to tourism operators and local communities wishing to formalise their agreements, and enforce their MPAs.
- Ensure all commercial fishing licences issued by the Ministry of Fisheries prohibit fishing within MPAs established through MCAs.
- Develop a recognition programme to encourage operators to improve and expand their MCAs. This may include a rating system that acknowledges those with best practice enhancement projects and tangible community benefits.
- Formulate a national tourism marketing plan to raise international awareness of Fiji's role in leading community and tourism-based marine conservation, highlighting operators with MCAs.
- Explore opportunities for utilising the Environment and Climate Adaptation Levy (ECAL) revenues to support MCAs involving the tourism sector through partnerships with Ministries of Fisheries, Environment, and of Industry & Trade and Tourism, NGOs and tourism operators. This could include making finance available to, for example, establish and monitor MPAs, offer workshops on environmental conservation for village communities and resort staff, or train and support patrols by Fish Wardens.
- Ensure all MPAs established under MCAs are including in reporting on national (e.g. National Biodiversity Strategy Action Plan and Implementation Framework) and international (e.g. Aichi targets under the Convention on Biological Diversity) commitments and targets.

Tourism operators and communities

Where tourism operators and communities are actively engaged in conservation through MCAs, highlighting these efforts could add value to existing marketing strategies. Key recommendations for tourism operators and communities are:

- Ensure the “rules” of the MCAs are acceptable to both the tourism sector and local communities, with clear consequences if those rules are breached;
- Engage the local village community in management and monitoring training and recognition programmes;
- Incorporate MCA-related activities into guest programmes, to highlight the role of the tourism sector in conservation; and/or
- Highlight MCAs on websites and in marketing, and engage in regional marketing to showcase conservation efforts in Fiji as a whole. Explore opportunities to apply for international conservation-related awards and certificates.

Partners

There is a need for more standardised information about the establishment, governance and monitoring processes for MCAs to ensure that projects are sustainable into the long term and offer actual benefits. Key recommendations for partners are:

- A "Best Practice" guideline to inform both tourism operators and communities on the available mechanisms for MPA formation, and give examples of MCAs that could be used as models.
- Assist with the formation of a network similar to the FLMMA network structure, where tourism operators can share lessons and advice, offer each other support and information, and get or give access to scientific advisors.
- Promote methods for evaluating progress and benefits of MCAs, including both biological and socioeconomic factors.

South from Naviti Island to Drawaqa and Nanuya Balavu Islands and Waya Island in the distance. © Stuart Chape



7. REFERENCES

- Bell JD, Kronen M, Vunisea A, Nash WJ, Keeble G, Demmke A, Pontifex S, Andréfouët S (2009) Planning the use of fish for food security in the Pacific. *Marine Policy*. 33: 64–76
- Brunnschweiler JM (2010) The Shark Reef Marine Reserve: a marine tourism project in Fiji involving local communities. *Journal of Sustainable Tourism* Vol. 18 , Iss. 1,2010 <https://doi.org/10.1080/09669580903071987>
- Brunnschweiler JM, Baensch H (2011) Seasonal and Long-Term Changes in Relative Abundance of Bull Sharks from a Tourist Shark Feeding Site in Fiji. *PLoS ONE*6(1): e16597. <https://doi.org/10.1371/journal.pone.0016597>
- Cardenosa D, Glaus K, Brunnschweiler J (2016) Occurrence of juvenile bull sharks (*Carcharhinus leucas*) in the Navua River in Fiji, *Marine and Freshwater Research*. <http://dx.doi.org/10.1071/MF16005>
- Cohen PJ, Foale SJ (2013) Sustaining small-scale fisheries with periodically harvested marine reserves. *Marine Policy* 37: 278–87
- Cribb N, Miller C, Seuront L (2012) Site fidelity and behaviour of spinner dolphins (*Stenella longirostris*) in Moon Reef, Fiji Islands: implications for conservation. *Journal of the Marine Biological Association of the United Kingdom* 92.08: 1793-1798
- Earle J, Whitton R, Pyle R, (2012) Shark Reef Marine Reserve (SRMR) Shark Reef Fish List 2012 Fish Count, Beqa Adventure Divers <http://fijisharkdive.com/conservation/shark-reef-fish-list/>
- FELA, EDO NSW (2017) Towards an effective legal framework for marine protected areas in Fiji: Policy and law discussion paper. The University of the South Pacific Press, Suva
- Fiji Manta Ray Project (2015) Annual report www.mantatrust.org
- Fisheries (Shark Reef Marine Reserve) (Serua) Regulations 2014 Legal notice #41, Government of Fiji Gazette supplement number 20
- Fisheries (Wakaya Marine Reserve) Regulations 2015 Legal notice #40, Government of Fiji Gazette supplement number 6
- Gaymer CF, Stadel AV, Ban NC, Cárcamo PF, Ierna J, Lieberknecht LM (2014) Merging top-down and bottom-up approaches in marine protected areas planning: experiences from around the globe. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 24 (2): 128–144
- Goetze JS, Langlois TJ, Egli DP, Harvey ES (2011) Evidence of artisanal fishing impacts and depth refuge in assemblages of Fijian reef fish. *Coral Reefs*. 30(2): 507–517
- Goetze JS, Fullwood LAF (2012) Fiji's largest marine reserve benefits reef sharks. *Coral Reefs*. 32(1): 121–125
- Govan, H., Aalbersberg, W., Tawake, A., and Parks, J. (2008). *Locally-Managed Marine Areas: A guide for practitioners*. The Locally-Managed Marine Area Network.
- Government of Fiji (2015) Environmental Levy Act 2015. Act No. 20 of 2015
- Government of Fiji (2017) Environmental Levy (Budget Amendment) Act 2017. Act No. 36 of 2017
- Government of Fiji (2016) Fiji Post-Disaster Needs Assessment. Tropical Cyclone Winston, February 20, 2016. Government of Fiji, Suva. 148pp.
- Greenhalgh S, Mangubhai S (2016) Fiji RESCCUE Vatu-i-Ra voluntary contribution to conservation scheme feasibility assessment. LC2539. Landcare Research, Lincoln. 46pp.
- Gurney GG, Darling ES (2017) A global social-ecological systems monitoring framework for coastal fisheries management: a practical monitoring handbook. Wildlife Conservation Society, New York. 63pp.

- Hunt C (1999) Fiji's fisheries: their contribution to development and their future. *Marine Policy*. 23: 571–585
- Jones PJS (2012) Marine protected areas in the UK: Challenges in combining top-down and bottom-up approaches to governance. *Environmental Conservation* 39(3): 248–258
- Jupiter SD, Egli DP (2011) Ecosystem-based management in Fiji: successes and challenges after five years of implementation. *Journal of Marine Biology Article ID 940765*
- Jupiter SD, Cohen PJ, Weeks R, Tawake A, Govan H (2014) Locally-managed marine areas: Multiple objectives and diverse strategies. *Pacific Conservation Biology* 20: 165–179
- Kim MK, Mangubhai S, Fox M, Gernez E, Jupiter S (2017) Socioeconomic Factors that Affect the Sustainable Use of Natural Resources in Rural Communities in Fiji. *Wildlife Conservation Society, Report No. 04/17, Suva, Fiji*. 49 pp.
- Lalavanua W, Mangubhai S, Vandervord C, Dulunaqio S, Fox M, Naisilisili W, Jupiter S, Tuinasavusavu I, Vodivodo T (2017) Sea cucumber diversity and densities within locally managed marine areas. In S. Mangubhai, W. Lalavanua and S. Purcell (eds.). *Fiji's Sea Cucumber Fishery: Advances in Science for Improved Management*. *Wildlife Conservation Society, Report No. 01/17. Suva, Fiji*. pp. 4–15
- Lee S, Lewis A, Gillett R, Fox M, Tuqiri N, Sadovy Y, Batibasaga A, Lalavanua W (2018) Fiji Fishery Resource Profiles. S. Mangubhai (ed.) *Gillett Preston and Associates and the Wildlife Conservation Society, Suva*. 240pp.
- Lowe J, (2016) Postgraduate study "Bright Spots' preliminary findings. Southern Cross University. <http://discover.scu.edu.au/2016-08-august/postgrad-corner-judi-low/>
- MacNeil MA, Graham NAJ, Cinner JE, Wilson SK, William ID, Maina J, Newman S, Friedlander AM, Jupiter S, Polunin NVC, McClanahan TR (2015) Recovery potential of the world's coral reef fishes. *Nature* 520: 341-344
- Mangubhai S (2016) Impact of tropical Cyclone Winston on coral reefs in the Vatu-i-Ra Seascape. Report No. 01/16. *Wildlife Conservation Society, Suva*. 27pp.
- Mangubhai S, Sykes E, Lovell E, Brodie G, Jupiter S, Lal R, Lee S, Loganimoce EM, Morris C, Nand Y, Qauqau I, Rashni B (in press) Fiji: Coastal and marine ecosystems. In C. Sheppard (ed.) *World Seas: An Environmental Evaluation Volume II: The Indian Ocean to the Pacific*. Elsevier, Oxford.
- Manta Trust (2017) <http://www.mantatrust.org/in-the-field/fiji/>
- Millennium Ecosystem Assessment (2005) *Ecosystem and Human Well-Being: Synthesis*. Island Press, Washington, D.C.
- Ministry of Industry & Trade and Tourism (2006) *Fiji Tourism Development Plan 2007–2016*. Ministry of Industry & Trade and Tourism and Environment, Suva
- MPA News 2002: Involvement of the Private Sector in a Community-Based MPA: Case Example from Fiji Vol. 4, No. 3
- Nand Y, Loganimoce EM, Mangubhai S, Fox M, Uluiburotu L, Naisilisili W, Dulunaqio S, Lalavanua W, Gurney G, Teneva L (2017) Baseline ecological and socioeconomic surveys of the Vatu-i-Ra Conservation Park. *Wildlife Conservation Society, Report No. 02/17. Suva*. 52pp.
- Regulation of Surfing Areas decree (2010) Decree No.35
- Seacology Pacific Projects (2017) <https://www.seacology.org/projects/pacific/>
- Sloan J, Chand K (2016) An analysis of property rights in the Fijian qoliqoli. *Marine Policy*. 72: 76–81
- Stern MJ (2008) Coercion, voluntary compliance and protest: the role of trust and legitimacy in combating local opposition to protected areas. *Environmental Conservation*. 35(3): 200–210
- Sykes H, Reddy C (2009) Sacred Water: 10 years of community managed marine protection supported by ecotourism-based income generation at Waitabu Marine Park, Fiji Islands. The 11th Pacific Science Inter-Congress, "Pacific Countries and their Ocean: facing Local and Global Changes", March 2–6 2009, Tahiti, French Polynesia.

- Sykes H (2014) Marine Ecological Benthos Assessment of Shark Reef Marine Reserve, Pacific Harbour, Viti Levu, Fiji
- Teneva L, Mangubhai S (2016a) Principles for conservation agreements in terrestrial and marine settings in Fiji. Wildlife Conservation Society. Report No. 5/16. Suva. 26 pp.
- Teneva L, Mangubhai S (2016b) Monitoring and Evaluation Framework for Marine Conservation Agreements in Fiji. Wildlife Conservation Society. Report No. 06/16. Suva. 15 pp.
- TNC (2010) Marine Conservation Agreement Factsheet (MCA Factsheet).
- Udelhoven J, Carter E, Gilmer B (2010) Coral Triangle MCA feasibility analysis – final interim findings. The Nature Conservancy, Bali. 108pp.
- Udelhoven J, Quintero A, Gilmer B, Revenga C, Sanchez F (2011) Eastern Tropical Pacific Seascape MCA feasibility analysis – project findings. The Nature Conservancy, Seattle. 71pp.
- USP (2016) Integrated Coastal Management Plan for Ra Province. USP, Suva.
- Veitayaki J, Breckwoldt A, Sigarua T, Bulai N, Rokomate A (2014) Living from the Sea: Culture and Marine Conservation in Fiji, iTaukei Trust Fund Board.
- Wiley DN, Moller JC, Pace RM, Carlson C (2008) Effectiveness of voluntary conservation agreements: Case study of endangered whales and commercial whale watching. *Conservation Biology* 22(2): 450–457
- WCS (2009) Ecosystem-Based Management Plan: Kubulau District, Vanua Levu, Fiji, Wildlife Conservation Society, Suva.
- WCS (2012) Ecosystem-Based Management Plan: Kubulau District, Vanua Levu, Fiji. Wildlife Conservation Society, Suva.
- WCS (2018) Vatu-i-Ra Conservation Park Management Plan. Wildlife Conservation Society and Ministry of Fisheries, Suva, Fiji. 30 pp.
- Wunder S (2005) Payments for environmental services: Some nuts and bolts. Center for International Forestry Research (CIFOR) Occasional Paper No. 42.

8. APPENDICES

APPENDIX 1. List of tourism operators approached for this survey

The authors would like to thank all the operators who responded for their time and assistance in providing the information used in this report.

Area	Names Of Premises
LEVUKA/ ISLANDS OFF LEVUKA	Koro Beach Resort, Koro Island, Lomaiviti
	Wakaya Club, Nukuciri, Wakaya Is; Lomaiviti
TAVEUNI/ ISLANDS OFF TAVEUNI	Aroha Taveuni, Naiyalayala, Taveuni
	Coconut Grove Beachfront Cottages, Matei
	Garden Island Resort, Waiyevo
	Laucala Island Resort, Laucala Island
	Makaira Resort, Ucuilagi, Matei
	Maqai Eco Surf Beach Resort, Qamea Is; Taveuni
	Matagi Island Resort, Matagi Island
	Nabogiono farms
	Nakia Resort & Dive Ltd, Nakia, Vatulaqa
	Paradise Taveuni, Navaca Settlement, Vuna
	Qamea Beach Club Resort, Qamea Is;
	Taveuni Dive Resort, Soqulu, Taveuni
	Taveuni Island Resort & Spa, Matei
	Taveuni Palms Resort, Matei
	Tremonto Restaurant
Waitabu Marine Park	
SAVUSAVU/ ISLANDS OFF SAVUSAVU	Daku Resort, Lesiaceva Road
	Dolphin Bay Divers Retreat, Vanaira Bay
	Jean-Michel Cousteau Resort Fiji, Lesiaceva Point Road
	Koro Sun Divers
	Koro Sun Resort & Rainforest Spa, Hibiscus Highway
	Namale The Fiji Islands Resort & Spa
	Namena Divers
	Namena Marine Park
Waivunia Marine Park	
LABASA/ ISLANDS OFF LABASA	Nukubati Island Resort, Nukubati Is; Macuata

Area	Names Of Premises
SIGATOKA/ NADROGA	Fiji Hideaway Resort & Spa, Queens Rd; Sigatoka Intercontinental Fiji Golf Resort & Spa, Natadola Beach Mango Bay Resort, Tadrawai, Nadroga Natadola Beach Resort, Maro Rd; Malomalo Outrigger Fiji Beach Resort, Queens Rd; Korotogo Sigatoka Robinson Crusoe Island Resort, Likuri Island Shangri-La's Fijian Resort & Spa, Yanuca Island, Cuvu Tambua Sands Beach Resort, Namada, Sgtka The Beachouse, Korolevu, Nadroga The Naviti Resort, Korolevu, Baravi, Nadroga Warwick Fiji Resort & Spa, Korolevu, Baravi Yatule Beach Resort, Natadola
NADI/ ISLANDS OFF NADI	Club Fiji Limited, Wailoaloa Beach, Nadi Bay Double Tree Resort, Sonaisali Island Momi Bay Seashell Cove Sheraton Fiji Resort, Denarau Island
MAMANUCA IS/LAUTOKA / YASAWA/ISLANDS OFF LAUTOKA	Anchorage Beach Resort, Vuda Pt; Lautoka Barefoot Island Lodge, Naviti, Yasawa Manta Channel multiple resorts in region Beachcomber Island Resort, Tai Is; Vuda Blue Lagoon Beach Resort, Ltd, Nacula Island, Yasawa Botaira Beach Resort, Vuata Bay, Naviti Is; Yasawa Bounty Island Resort, Kadavulailai Is; Vuda, Lautoka Castaway Island Fiji, Qalito Island Coconut Beach Resort PTE Ltd, Tavewa Is; Yasawa Coralview Island Resort, Tavewa Is; Yasawa First Landing Resort, Nalamu, Vuda, Lautoka Funky Fish Beach Resort, Malolo Island; Mamanuca Goldcoast Inn, Nanuyalailai Is; Yasawa Korovou Eco Tour Resort, Kese, Naviti Is; Yasawa Kuata, Waya lailai and Naqalia Lodge Kuata Island Resort, Wayalailai Is; Yasawa (Barefoot Kuata) Ditto above Likuliku Lagoon Resort, Malolo Is, Mamanuca Lomani Island Resort, Malolo Lailai Island; Mamanuca

Area	Names Of Premises
	Long Beach Backpackers, Vuaki, Matakawalevu Is; Yasawa
	Malamala Beach Club
	Malolo Island Resort, Malololailai Is, Mamanuca
	Malolo Lailai Lagoon Resort Club, Mamanuca
	Mana Bay Lagoon Backpackers, Yarolevu, Mana Island
	Mana Island Resort (Fiji) Ltd, Mana Is; Mamanuca
	Manta Ray Island Resort, Waya Is; Yasawa
	Matamanoa Island Resort, Mamanuca
	Musket Cove Island Resort, Malololailai Is;
	Namotu Island Resort, Namotu Is; Nadroga
	Nanuya Island Resort, Nanuya Lailai Island, Yasawa
	Naqalia Lodge, Waya Island, Yasawa
	Navini Island Resort, Navini Island, Mamanuca
	Oarsman's Bay Lodge, Nalova Bay, Nacula Is; Yasawa
	Octopus Resort, Likuliku Bay, Yasawa
	Paradise Cove Resort, Naukacuvu Island, Naviti, Yasawa
	Plantation Island Resort, Malololailai Is; Mamanuca
	Ratu Kini's Hostel, Mana Is; Malolo
	Safe Landing Resort, Naisisili, Nacula Island, Yasawa
	Sheraton Tokoriki Resort & Spa, Tokoriki Island, Mamanuca
	South Sea Island Resort, Vunivadra Is;
	Tavarua Island Resort, Tavarua Island
	Tivua Island Resort, Off Vuda Pt; Lautoka
	Tokoriki Island Resort, Mamanuca
	Treasure Island Resort, Treasure Island off Vuda
	Tropica Island Resort, Malolo Island
	Turtle Island Resort, Nanuya-Levu, Yasawa
	Vision Tadrai Island Resort, Mana Island, Mamanuca
	Viwa Island Resort, Lot 6, Namawala, Viwa Island, Yasawa
	Vomo Island Fiji
	Wadigi Island Villa, Wadigi Is; Malolo
	Wayalailai Resort, Wayasewa Island, Yasawa
	White Sandy Beach Dive Resort, Naviti Is; Yasawa
	Yadua Island
	Yasawa Island Resort, Yasawa

Area	Names Of Premises
BA/TAVUA/ RAKIRAKI/ ISLANDS OFF RAKIRAKI	Betham's Beach Cottages, Nananu-I-Ra
	Safari Lodge, Lomanisue Beach, Nananu-I-Ra
	Vatu-i-Ra Conservation Park
	Volivoli Beach Resort, Rakiraki
	Wananavu Beach Resort, Volivoli Rd;
DEUBA / PACIFIC HARBOUR / BEQA / LAU / SUVA / NAUSORI / TAILEVU	Aquatrek Beqa Dive Centre
	Beqa Adventue Divers
	Beqa Lagoon Resort, Rukua, Beqa Island
	Lalati Resort & Spa, Beqa Island
	Lawaki Beach House, Beqa Island
	Leleuvia Island Resort, Moturiki, Bau
	Naigani Island Resort, Off Verata, Tailevu
	Nanuku Resort & Spa, 11 Nanuku Drive, Queens Highway, Taunovo, Deuba
	Royal Davui Island Resort, Ugaga Island off Beqa Is;
	Takalana Bay Resort, Dawasamu, Tailevu
	The Pearl South Pacific, Queens Rd; P/Harbour, Deuba
	The Uprising Beach Resort, P/Harbour, Deuba
	Toberua Island Resort, opposite Kaba Point , Tailevu ,Toberua Island
Waidroka Bay Resort, Waidroka Bay, Serua	
KADAVU ISLANDS	Kokomo
	Koro Makawa Resort, Ono Island
	Mai Dive Ltd, Nukubalavu, Ono Island
	Matana Beach Resort, Navuatu, Sanima
	Matava - "The Astrolabe Hideaway", Naceva District
	Oneta Resort, Ono Island
	Papageno Eco Resort, Malawai Bay

APPENDIX 2: Matrix used to interview tourism operators

Resort information (Name, area): _____

Key informants name, position, contact: _____

Matagali/ Village name: _____

Resort ownership:

Owner		1	2	3	4	
A	Matagali Lease	Local community member	Local community member /Outside Investor partnership	Outside Private Investor	Outside Corporate Investor	Local ownership / Outside management company
B	ILTB Lease	Local community member	Local community member /Outside Investor partnership	Outside Private Investor	Outside Corporate Investor	Local ownership / Outside management company
C	Crown Lease	Local community member	Local community member /Outside Investor partnership	Outside Private Investor	Outside Corporate Investor	Local ownership / Outside management company
D	Freehold	Local community member	Local community member /Outside Investor partnership	Outside Private Investor	Outside Corporate Investor	Local ownership / Outside management company

Resort Size:

Resort type		1	2	3	4
A	Budget	< 10 rooms/ 20 guests	11 – 20 rooms/ 21 - 40 guests	21 – 100 rooms/ 41 - 200 guests	>100 rooms/ > 200 guests
B	Midrange	< 10 rooms/ 20 guests	11 – 20 rooms/ 21 - 40 guests	21 – 100 rooms/ 41 - 200 guests	>100 rooms/ > 200 guests
C	Highend	< 10 rooms/ 20 guests	11 – 20 rooms/ 21 - 40 guests	21 – 100 rooms/ 41 - 200 guests	>100 rooms/ > 200 guests
D	Luxury / Boutique	< 10 rooms/ 20 guests	11 – 20 rooms/ 21 - 40 guests	21 – 100 rooms/ 41 - 200 guests	>100 rooms/ > 200 guests

Average percent annual occupancy: _____

Conservation Partners / Advisors (may be more than one):

	Partner type	Name
A	Government Department	
B	NGO	
C	Private sector	
D	Educational establishment (local)	
E	Educational establishment (overseas)	
F	Volunteer tourism agency	
G	Community/ local expert	
H	None (acted alone, no advisor)	
I	Other	

MPA Agreements:

Agreements	1	2	3	4
A Traditional verbal Tabu	No compensation AND NO employment or business opportunities	Employment or business opportunities BUT NO compensation payments	Compensation payments, BUT NO employment or business opportunities	Compensations payments AND employment or business opportunities
B Documented Tabu (Letter or FLMMA/ Fisheries mapping)	No compensation AND NO employment or business opportunities	Employment or business opportunities BUT NO compensation payments	Compensation payments, BUT NO employment or business opportunities	Compensations payments AND employment or business opportunities
C Foreshore Licence	No compensation AND NO employment or business opportunities	Employment or business opportunities BUT NO compensation payments	Compensation payments, BUT NO employment or business opportunities	Compensations payments AND employment or business opportunities
D Foreshore Lease	No compensation AND NO employment or business opportunities	Employment or business opportunities BUT NO compensation payments	Compensation payments, BUT NO employment or business opportunities	Compensations payments AND employment or business opportunities
E Within Land Lease	No compensation AND NO employment or business opportunities	Employment or business opportunities BUT NO compensation payments	Compensation payments, BUT NO employment or business opportunities	Compensations payments AND employment or business opportunities
F Legally Gazetted Statutory Reserve	No compensation AND NO employment or business opportunities	Employment or business opportunities BUT NO compensation payments	Compensation payments, BUT NO employment or business opportunities	Compensations payments AND employment or business opportunities

MPA Duration:

Agreements	1	2	3	4
A Indefinite	In place less than 2 years	In place 2 – 5 Years	In place 5 – 10 Years	In place longer than 10 years
B Fixed term	Duration less than 2 years	Duration 2 – 5 years	Duration 5 – 10 years	Duration longer than 10 years
C Permanent	Until decided otherwise	Except for traditional openings	Legally permanent	Other

MPA Features:

Features	1	2	3	4
A Physical area	Immediate fringing reef	Fringing reef with 100m boundary	Remote reef (e.g. dive site)	Mixed, shallow reefs and deeper areas
B Area	Smaller than 0.5 km ²	0.5 km ² to 2 km ²	2.1 km ² to 5 km ²	Larger than 5 km ²
C Habitat	Coral reef	Mangrove	Open water	Mixed
D Main feature	Reef system	Megafauna (name)	Ecosystem restoration	More than one
E Main tourism focus	SCUBA diving	Snorkelling	Fishing	Other

Ecosystem improvements:

Features	1	2	3	4
A Planting or farming	Coral	Giant Clams (Vasua)	Triton shell (Davui)	Other
B Maintenance	Weeding algae	Cleaning cages	Removing harmful organisms (COTS etc)	Other
C Details / type				

Compensation Agreements

No direct financial payments:

Payment type	Details
A One-off (on formation)	
B Annual	
C Monthly	
D Per person	
E Percentage of gross turnover	

Payment mechanism (if applicable):

Payment type	Notes
A	To local guides on day of visit
B	To community representative or project manager
C	To traditional leadership
D	To government (local or TLTB etc)
E	To trust fund
F	Other

Other benefits:

		1	2	3	4
A	Physical improvements	Ecosystem	Fishing	Specific species	Commercial species management
B	Tourism	Market stability	Marketing opportunities	Focus on region	Focus on Fiji
C	Traditional	Totem species	Cultural importance	Strengthen traditional leadership	Responsibility to future generations (Bequest Value)
D	Recognition as leaders	Within local community	Within Fiji communities	Within Fiji government	Internationally
E	Awareness raising	Visitors	Resort operators, staff	Community	Schoolchildren
F	Social: Relationship building	Tourism and community	Community and leadership	Community and government	
F	Other	Tourist safety	Government commitment	Research opportunities	

Measures of success:

- A Ecological surveys
- B Socio-economic surveys
- C Tourist perceptions (Visitor surveys / returning guest stats / Trip Advisor reviews)
- D Community perceptions
- E Tourism marketing (used on website etc)

MPA Rules and Regulations

Activity	1	2	3	4
A Community fishing	Allowed	Openings for traditional functions only	Certain species only	Not allowed
B Tourist fishing	Allowed	Limited type or areas	Catch and release only	Not allowed
C Souvenir collection	Allowed	Dead / empty shells only	Only with permission (staff gifts)	Not allowed
D Snorkelling and SCUBA diving	Allowed	Allowed only after a briefing	Only on a guided tour	Not allowed
E Reef walking	Allowed	Only on a limited areas of path	Only on a guided tour	Not allowed
F Fish / shark / turtle feeding	Main focus of MPA	Done on regular basis	Done occasionally	Not allowed
G Motorised watersports (e.g., jet skis, parasailing)	Allowed	Only in limited area	Only on guided tour	Not allowed
H Non-motorised boating (e.g., kayaks, sailing)	Allowed	Only in limited area or on certain tides	Only on guided tour	Not allowed
I Other				

Enforcement (Describe instances):

Rules broken by	1	2	3	4
A Tourists	Any/ all resort employees	Specific department (e.g. dive shop)	Designated officer	Community
B Local community	Resort	Fish Wardens	Government (police or Fisheries dept)	Community
C Outside fishers	Resort	Fish Wardens	Government (police or Fisheries dept)	Community

Poaching (Describe instances):

	1	2	3	4
A Origin	Outside (other regions)	Local (Vanua members)	Internal (local community)	Other
B Type	Beche de Mer	Spearfishing	Other 1	Other 2
C Purpose	Commercial	Subsistence	Recreation	Other

Interested in more government involvement?

	1	2	3	4
A No, happy with existing agreement				
B Yes - which preferred?	Documented Tabu	Registration with Fisheries/ exclusion from fishing licences	Foreshore lease or licence	Gazetting by parliament (legal)
C Other				

