



Strengthening Conservation and Management Across the Mt. Navotuvotu-Mt. Kasi Forest Corridor: Final Stakeholders Report

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Executive Summary

In May 2012, the Wildlife Conservation Society (WCS) received a 13 month grant from the Critical Ecosystem Partnership Fund (CEPF) for “*Strengthening Conservation and Management Across the Mt. Navotuvotu-Mt. Kasi Forest Corridor, Fiji.*” The long-term goal of project is to work with communities to achieve, by 2020, 20% protection of forests and streams within key biodiversity areas across the Mt. Navotuvotu-Mt. Kasi forest corridor and 10% protection outside. The Mt. Navotuvotu-Mt. Kasi forest corridor covers the heavily forested districts of Dama, Vuya, Solevu, Nadi, Wainunu, Kubulau (Bua Province), and Wailevu and adjacent catchments in Koroala (Cakaudrove Province), on Fiji’s second largest island of Vanua Levu.

We undertook two spatial prioritizations to identify land tenure parcels most suitable to achieve biodiversity targets, while minimizing threats from other land uses and capitalizing on already identified community willingness to manage their natural resources. We developed a project steering committee composed of representatives from the iTaukei Affairs Board, iTaukei Land Trust Board, iTaukei Lands and Fisheries Commission, Department of Forestry, and local NGO NatureFiji-MarqetiViti to advise on how to proceed with community consultations and how to overcome hurdles associated with conflicts in land use.

We targeted 23 clans for engagement to discuss the establishment of protected areas and sustainable land management leading towards permanent forest estates, as recommended under the Fiji Forest Policy (DoF 2007). As a direct result of CEPF investment, eleven landowning clans across the Mt. Navotuvotu-Mt.Kasi forest corridor committed to establish 6,585 ha new community forest parks (CFPs) and river buffer zones (RBZs). These new protected areas increased the total area protected within the planning region from 5.6% to 10.8%, with 6.9% of key biodiversity areas protected and 13.1% of the broader forest corridor protected. Management rules for the protected areas have been included in adapted ecosystem-based management plans (EBM) for Kubulau, Wainunu and Wailevu/Koroalau districts, which will be endorsed by the respective councils of chiefs. New EBM plans for Nadi and Solevu districts have additionally been developed and are awaiting endorsement by their council of chiefs in October 2013.

Establishment of community-managed protected areas across the Mt. Navotuvotu-Mt. Kasi forest corridor was constrained by current legal and practical obstacles. Fifty-nine percent of the Mt. Navotuvotu KBA is currently allocated as logging concessions, while 80% of the Mt. Kasi KBA is under mining tenement. With respect to the logging concessions, many landowners were unaware that their land had been leased or who was the signatory on their behalf. With our project steering committee, we outlined a process for concerned landowners to find out more information about leasing arrangements on their land. Once these details are made available, it may become easier for interested communities to negotiate buy backs from logging companies should opportunities arise for conservation investment. In the meantime, we are encouraging landowners to sustainably manage their land holdings with a view toward establishing permanent forest estates, and we recommend that new protected area legislation provides greater opportunity for registration and incentives for community conserved areas. We will continue to work with landowners to demonstrate the direct (e.g. through natural products) and indirect links (e.g. through ecosystem service provisioning) between healthy natural resources and livelihoods.

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Introduction

Since 2005, the Wildlife Conservation Society (WCS) has worked with communities on Vanua Levu, Fiji, to develop management schemes in a ridge-to-reef framework. By 2009, the chiefs of Kubulau District, Bua Province, endorsed Fiji's first comprehensive ridge-to-reef ecosystem based management (EBM) plan (WCS 2009; Clarke and Jupiter 2010). The model has been subsequently replicated across the adjacent districts of Wainunu, Nadi and Solevu (Bua Province) and Wailevu District (Cakaudrove Province), and is being taken forward to Vuya and Dama (Bua Province). Yet, while the EBM plans provide national regulations and policy, community rules and best practice guidance for management of terrestrial and freshwater systems, those habitats received disproportionately less attention than management of adjacent coastal and marine systems. WCS therefore sought funding from the Critical Ecosystem Partnership Fund (CEPF), which was successfully awarded in May 2012, for "*Strengthening Conservation and Management Across the Mt. Navotuvotu-Mt. Kasi Forest Corridor, Fiji*", to boost protection of the catchment areas of Dama, Vuya, Solevu, Nadi, Wainunu, Kubulau, and Wailevu and portions of Koroalau districts, inclusive of the Mt. Navotuvotu and Mt. Kasi key biodiversity areas.

Project implementation was advised by a steering committee composed of representatives from the iTaukei Affairs Board, iTaukei Land Trust Board, iTaukei Lands and Fisheries Commission, Department of Forestry, and NatureFiji-MarqetiViti. WCS received additional guidance and data input from staff from the Bua and Cakaudrove Provincial Council offices, the National Trust of Fiji, the Fiji Herbarium at the University of the South Pacific, as well as several logging companies active on Vanua Levu.

Activities under this grant align with objectives under the Fiji National Biodiversity Strategy and Action Plan to: (1) promote research and awareness on forests and terrestrial resources; (2) improve and update information on status of wetlands and wetland biodiversity; and (3) expand protected area network in priority sites at the national level and provincial level to achieve national targets (DoE 2007). This project also supports Fiji's National Climate Change Policy objective to support the ecosystem based management approach throughout Fiji, recognizing that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience (GoF 2012).

Project rationale

Globally, anthropogenic activities are causing species extinctions at unprecedented rates in Earth's history (Pimm et al. 1995). To counter accelerated rates of biodiversity loss (Butchart et al. 2010), a framework was developed to prioritize key biodiversity areas (KBAs) for urgent conservation. The framework is based on standardized, globally applicable criteria, driven by the vulnerability and irreplaceability of sites for protecting species that are internationally recognized as threatened with extinction on the IUCN red-list (Eken et al. 2004).

On Fiji's second largest island of Vanua Levu, the forests within and surrounding the KBAs of Mt. Navotuvotu and Mt. Kasi in Fiji are recognized as critical for conservation, both because they contain globally threatened species and because they are sites of national significance for biodiversity conservation. The forests within the Mt. Kasi KBA have the highest known single-site species richness on Vanua Levu (Olson et al. 2010). They include the IUCN red-listed

critically endangered trees *Astronidium kasiense* and *Gardenia anapetes*, and the vulnerable tree *Metrosideros ochrantha*, all of which are endemic plants to Fiji. *A. kasiense* and *G. anapetes* are additionally found in the Mt. Navotuvotu KBA. While the biodiversity of freshwater fauna from the KBAs is currently unknown, streams within the relatively pristine forests of two districts (Kubulau, Wainunu) in the corridor between Mt. Navotuvotu and Mt. Kasi contain at least 5 species of endemic freshwater fish (*Redigobius leveri*, *Glossogobius sp.*, *Stenogobius sp.*, and two species of *Stiphodon*). The streams also support sensitive species, such as *Eleotris melanosoma*, *Butis amboinensis*, *Kuhlia munda*, *Giurus hoedti* and *Redigobius bikolanus*, that are conspicuously absent from other Fiji catchment streams where forests have been cleared and non-native tilapia introduced (Jenkins et al. 2010).

The forested catchments in and around Mt. Navotuvotu and Mt. Kasi provide critical ecosystem services to the people of Bua and Cakaudrove provinces, who are heavily dependent on natural resources for their livelihoods (WCS, unpublished data; Figure 1). Villagers from Kubulau District, located between the two KBAs, rely on forest products for building materials and traditional medicines (Singh 2012); streams within the forest corridor support large gudgeons (*Ophiocara porocephalus* and *Bunaka gyrinoides*) that are important to diets of inland communities and have been declining in abundance across Fiji (Jenkins et al. 2010); and largely intact forests provision and filter water. All of these habitats provide essential services for the health of local human populations and downstream freshwater and marine ecosystems.

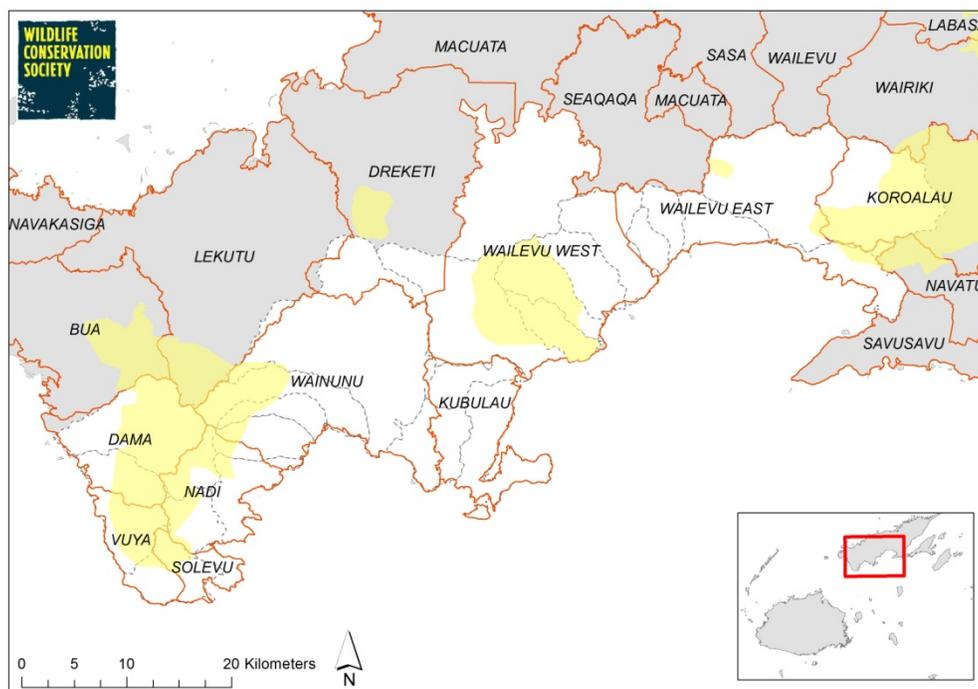


Figure 1. Project implementation area (white) across the Mt. Navotuvotu-Mt. Kasi forest corridor. Key biodiversity areas are indicated in yellow.

The forests and freshwater areas of the Mt. Navotuvotu-Mt. Kasi forest corridor are under imminent threat from logging, mining and invasive species. Fifty-nine percent of the Mt. Navotuvotu KBA is currently allocated as logging concessions, while 80% of the Mt. Kasi KBA is under mining tenement (WCS, unpublished data). Without management, there is a high risk

that: (1) IUCN red-listed plant species will be lost through direct clearing; (2) endemic and vulnerable freshwater fish species will be lost through direct and indirect effects of sedimentation; and (3) there will be irreconcilable damage to downstream coastal and marine ecosystems. Already there have been strong anecdotal reports of massive fish and coral kills coincident with the appearance of sediment-laden runoff from the Yanawai River draining the Mt. Kasi region during the last period of mining activity at Mt. Kasi between 1996 and 1998 (Jupiter et al. 2010).

Community members and provincial administrators have expressed concern over these threats. In general, the will of the communities is to protect their forests in order to derive benefits from the ecosystem services they provide, such as freshwater provisioning, flood mitigation, and food security. At a 2010 Protected Area Committee (PAC) planning workshop with provincial administrators, representatives from the Cakaudrove Provincial Office and NGOs identified the Mt. Kasi region as a candidate site for a forest reserve. Representatives from the Bua Provincial Office proposed conservation sites around Wainunu and Kilaka rivers as well as forest management around the Mt. Navotuvotu and Kilaka forests (Jupiter et al. 2011). The terrestrial working group of the PAC has listed the Mt. Navotuvotu and Mt. Kasi KBAs, as well as the forests of Kubulau and Wainunu, among their priority locations to increase the current level of terrestrial area under protection in Fiji from 2.9% closer to the 20% target by 2020 set under Fiji's Programme of Work on Protected Areas.

This report describes steps taken by WCS, through a project funded by CEPF, to increase protection of terrestrial and freshwater areas across the Mt. Navotuvotu-Mt. Kasi forest corridor. We describe a series of steps taken to increase short and long-term protection in this area by: (1) identify landowning clans to target for consultation based on the characteristics of their land parcels and their willingness to implement management; (2) consulting with clans to secure agreements to establish community forest parks (CFPs) and river buffer zones (RBZs), managed within the context of ridge-to-reef ecosystem-based management plans; and (3) undertaking legal and policy review to identify opportunities for strengthening recognition of community conserved areas in Fiji in order to facilitate greater uptake of protected areas. We additionally describe work undertaken through this project to strengthen rural networks to improve livelihoods.

Project approach

The long-term goal of our initiative across the Mt. Navotuvotu-Mt. Kasi forest corridor is to:

Work with communities (approximately 8250 people across 5 districts) to achieve 20% protection of forests and streams inside the key biodiversity areas and at least 10% protection of forests and streams in the broader forest corridor by 2020.

In the short-term during this project, we aspired towards progress against our long-term goal through achievement of three short-term impacts:

1. *Native forest sustainably managed through clan-level action plans for 10 community forest parks (estimated total size = 1825 ha) nested within 5 district-level ecosystem-based management plans.*

2. *River buffer zones established to protect 50 km (1000 ha) of priority streams along the Mt.Navotuvotu-Mt. Kasi corridor with the highest biodiversity, clear migratory pathways and least fragmentation, and managed under 5 district-level ecosystem based management plans.*
3. *Management plan implementation supported by resource management committees, coordinated through a knowledge sharing network, and at least partially financed by small-scale livelihood activities.*

To achieve these impacts, we developed a suite of complementary activities for terrestrial and freshwater management across the Mt. Navotuvotu-Mt. Kasi forest corridor with a 4-phased approach to: (1) prioritize landowning clans for engagement; (2) consult with clans to develop agreements for protected areas and strengthen existing EBM implementation; (3) identify opportunities to develop greater national recognition of community-managed protected areas; and (4) strengthen networks for improvement of livelihoods. We provide an overview of the methods, outcomes and lessons learned of each phase below.

Spatial Prioritization

We used the conservation planning software Marxan with Zones (Watts et al. 2009) to conduct two parallel spatial prioritization exercises to enable identification of: (1) land tenure parcels with high biodiversity value for community forest parks (CFPs) and minimum threats; and (2) priority river buffer zones (RBZs) based on degree of ecological intactness.

Prioritizing land tenure parcels

Based on our prior work with communities in this region, we estimated that land owning clans would be willing to protect around 20% of their land parcel, and that 50% of consultations with clans would lead to establishment of CFPs. Thus, we projected that 10% of land originally prioritized would lead to CFPs. Thus, we set a target to prioritize 18,250 ha of intact native forest (12,167 ha inside KBAs and 6,083 ha outside KBAs), with the expectation that communities would only protect 1,825 ha, our short-term goal for CFPs.

We used clan land tenure parcels as our planning unit based on spatial data from the Department of Lands. We created a spatial layer of predicted intact forest by removing the following areas from dense forest cover mapped from Landsat Thematic Mapper data (as described in (Klein et al. 2012): (1) areas of hardwood and softwood plantations identified by Fiji Department of Forestry and logging companies; and (2) regions within 1 km of major and minor roads, as the minimum recommended distance to buffer impacts of invasive species (Olson et al. 2006). The amount of likely intact forest was then calculated for each land tenure parcel to enable calculation of contribution towards our biodiversity target. We derived cost layers from spatial information compiled for: (1) logging concessions obtained from the National Trust of Fiji and edited based on information from Department of Forestry and logging companies; (2) mining exploration areas obtained from Aurum Exploration (Fiji) Ltd (under condition that the spatial areas were not publically released); (3) areas suitable for arable farming obtained from the Ministry of Agriculture Land Use Section; (4) areas within 1 km of roads; and (5) community willingness to participate in management, as derived from consultations by NatureFiji-

MareqetiViti and Department of Forestry with 94 landowning clans. We treated the community willingness to participate in management as an inverse binary measure, while all other costs were calculated as proportion of each land parcel occupied by that particular threat. Existing proposed CFPs belonging to two clans in Kubulau were “locked in”, such that Marxan was required to always select these land parcels, while freehold land parcels were “locked out”, whereby Marxan could never select these areas.

We used the resulting output selection frequency map (Figure 2), showing the relative number of times that Marxan selected land parcels over 100 runs, to identify the top 20 clans we should target for initial consultations with landowners to establish CFPs.

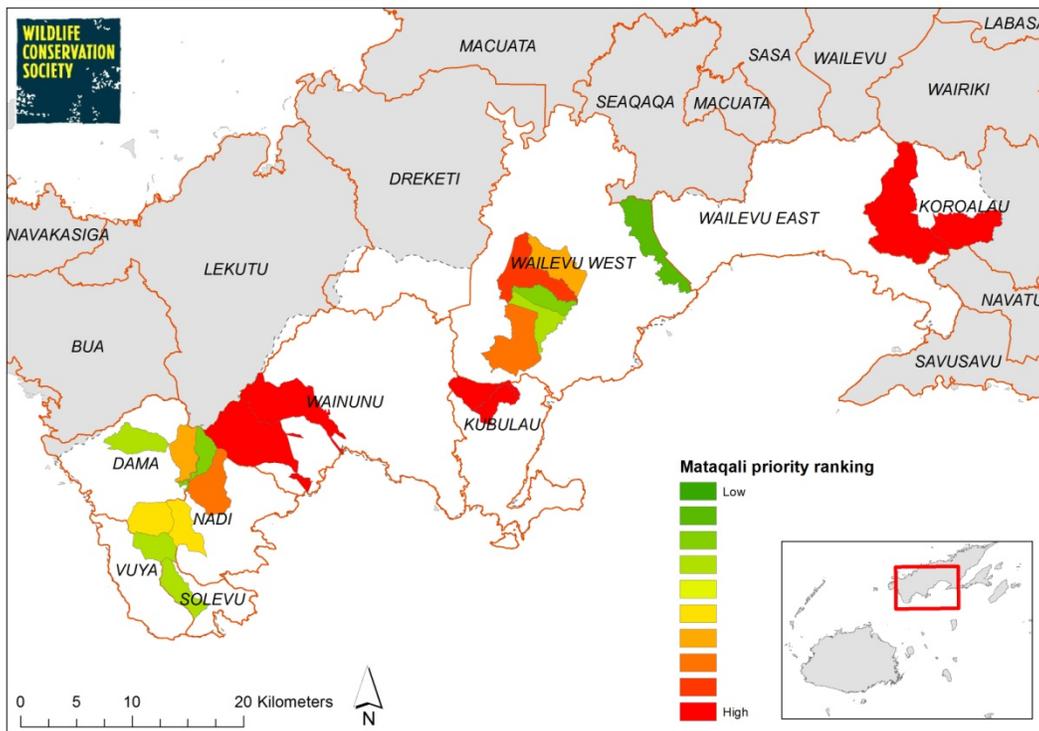


Figure 2. Selection frequency map output from 100 runs with Marxan showing the relative frequencies (red = high, green = low) that the top 20 land parcels were selected to be part of a protected area network to meet biodiversity targets and minimize costs.

The two clans tenure parcels coloured red in Korolau and Wainunu district were selected in 100% of the Marxan runs. In the case of Koroalau, this result reflects the large areas of likely intact native forest on their lands and a relatively low number of threats. In Wainunu, although the land parcels are covered by large logging concessions, they were consistently protected because of the substantial proportion of likely intact native forest, indicating that these areas would potentially be good candidate sites for logging lease buy-back through a renegotiated conservation lease, should funding become available.

Prioritizing river buffer zones

Candidate RBZs were created by cleaning spatial data from the Department of Lands for rivers and major creeks, clipping the rivers to the planning region across the Mt. Navotuvotu-Mt. Kasi

forest corridor, and adding 100 m buffers to either side of the waterways (Askew et al. 2013). Planning units were created by dividing segments of rivers and streams by divisions into tributaries. Planning units upstream from verified overhanging culverts, demonstrated to be an obstacle to upstream fish migration (Jupiter et al. 2012), were “locked out” of the analysis, as well as rivers and creeks which were found to be dry during surveys in June 2012.

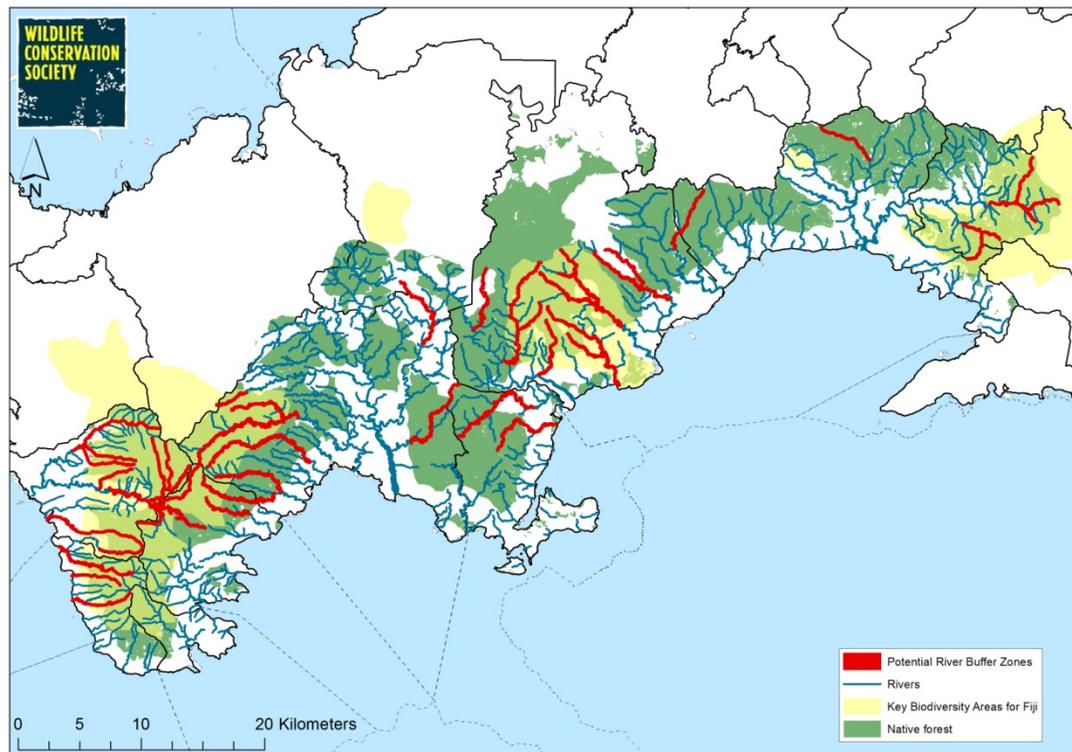


Figure 3. Location of priority RBZs with the most likely intact forests and minimum costs for establishment.

As with the first spatial prioritization to identify priority land tenure parcels, we assumed that communities would be willing to protect 20% of a buffered riparian planning unit, and that 50% of clans consulted would establish RBZs. We set biodiversity targets for establishment of 5,333 ha of likely intact native forest within RBZs inside KBAs and 2,667 ha outside KBAs. We derived costs from some of the same spatial layers as for the above prioritization, but treated them in different ways. Mining was only considered if an exploration area fell upstream of a RBZ planning unit. Transaction costs of dealing with multiple landowning clans were created on the basis of whether an RBZ straddled district boundaries, meaning that at least 2 clans would be involved in discussions, and based on the total number of land tenure parcels crossed by each RBZ planning unit. We additionally calculated a fragmentation index for each RBZ planning unit as the ratio of the area of likely native forest within each RBZ unit to the RBZ unit perimeter. An inverse of community willingness to participate in management was included as a binary cost, as for the prioritization of land tenure parcels.

The areas selected in each of the 100 Marxan runs were the same (Figure 3). This may have been because the options for selecting networks of RBZ that met our criteria were extremely

constrained. This suggests that in the future we might be able to select priority RBZs through spatial overlays in GIS only without using the more time consuming and technically-demanding Marxan software.

Community Consultations and Management Strengthening

Outputs from the spatial prioritization analyses were used to inform selection of landowning clans for consultation to establish community forest parks (CFPs) and river buffer zones (RBZs). Of the 20 land tenure parcels that received the highest selection frequencies from the spatial prioritization, five of the parcels were excluded on advice from the project steering committee because they are already being managed under the “Drawa block” project on sustainable forestry, being led by the Fiji Department of Forestry, Live and Learn, and the Secretariat of the Pacific Community (SPC) and Gesellschaft für Internationale Zusammenarbeit (GIZ). To replace these five parcels, an additional 8 clans were added to the list for consultation from Wainunu and Koroalau districts because they had already proposed CFPs through development of their ecosystem-based management (EBM) plans.

Community engagement summary

The project steering committee counseled us to develop a consultation team consisting of representatives from WCS, the iTaukei Land Trust Board, Department of Forestry and Provincial Council Offices to begin the landowner engagement process. Through these partnerships, we were able to ensure that communities were receiving consistent messages from different agencies and were able to access further support and information locally.

Initial consultations were undertaken from November 5-12, 2012 with 23 selected landowning clans across the districts of Vuya, Dama, Nadi, Solevu, Wainunu, Kubulau (Bua Province) and Wailevu and Koroalau districts (Cakaudrove Province). Consultations were scheduled through the Provincial Council offices in advance and sought to engage the heads of clans and as many clan members as possible. Facilitator notes were drafted for each clan, which included any potential conflicts with establishing protected areas (e.g., due to overlap of logging or mining concessions, proximity to roads, or presence of downstream overhanging culverts) and well as important biodiversity features, such as the known locations of endemic species. The full set of facilitator notes can be found as an appendix in Askew et al. (2013). Facilitators reviewed the project objectives, ecosystem service benefits from forests, the importance of river buffer zones, and the contents and rules contained with the Fiji Forest Decree and Forest Harvesting Code of Practice, including the principles behind establishing Permanent Forest Estates.

Consultations took the form of *talanoa* sessions (literally translated as storytelling). This traditional social gathering around the kava bowl helps build relationships and trust with the communities and allows them to explore and clarify issues in an informal setting. Clan members reviewed biodiversity features and threats on large-format maps. As this was the first time that most clans had visualized or considered their land in this way, many questions were raised. Several clans were unaware of the concessions on their land and most had no knowledge of when they were due to expire or be harvested. Some clans felt further discussion was required with their tribes (consisting of several clans) at village meetings before any commitments could be made. Some clans had not been properly informed by their Provincial Office and were unaware of the planned visit. Appointments with several clans were also postponed because of local

funerals. The consultation team established phone contact details for all the clans in order to directly confirm arrangements for follow up consultations, which took place from February 22-28, 2013.

The second round consultations were facilitated in a more structured workshop format. The aims were to map and name CFPs and RPZs, outline management rules that would be applied to these (and any exceptions) and to begin planning the necessary practical actions. At the suggestion of our project steering committee, Memoranda of Understanding (MoU), based on a template developed by BirdLife International with approval from iTaukei Lands and Fisheries Commission, were introduced as a means of formalizing the commitment of clans and other key stakeholders to conservation of CFPs and RBZs.

Protected area commitments

In total, eleven clans committed to establish 6,585 ha new CPFs and RBZs at the end of second round consultations, with several working together across their tenure boundaries (Table 1, Figure 4). This resulted in a total increase from 5.6% to 10.8% of the total area protected within the planning region, with 6.9% of key biodiversity areas protected and 13.1% of the broader forest corridor protected.

Existing EBM plans for Kubulau, Wainunu and Wailevu districts have been adapted to include the boundaries and management rules for these CFPs and RBZs. These will be endorsed by their respective district council of chiefs at their next meeting in October 2013. The updated management plans are in the process of being implemented and monitored by the respective district Resource Management Committees (RMCs).

The majority of landowners requested more information on logging concessions, their expiry dates, when they are likely to be harvested and whether the declaration of CFPs (with accompanying MoU) could prevent harvesting. In these cases, the consultation team recorded their concerns and reviewed them with the project steering committee, which assisted us to outline a process for the landowners to access the relevant information. WCS staff provided an overview of this process to concerned landowners, along with a template to use for submitting written requests to the iTaukei Land Trust Board for queries regarding the nature of signed leases. Unfortunately, the logging companies with whom we consulted were largely unable to provide harvesting timeframes or guarantee not to log within CFPs or RBZs. This was a problem for clans with widespread logging concessions that covered all or part of the area they had identified to protect. Having explored scenarios and discussed options, several clans were left questioning the value of establishing such areas.

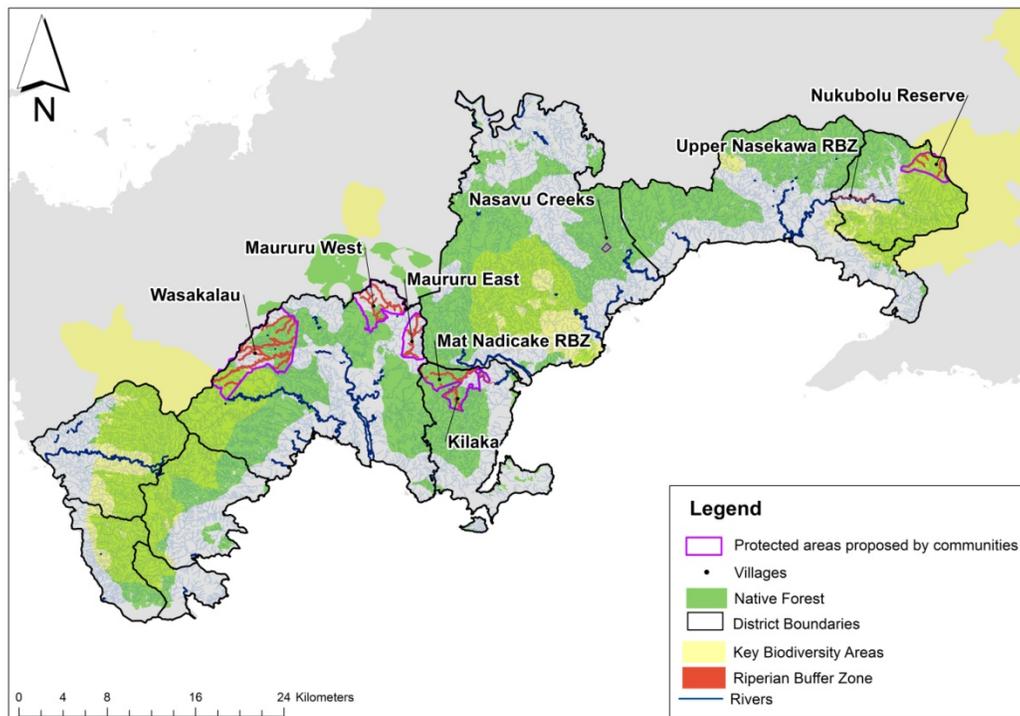


Figure 4. Location of community forest parks (CFPs; purple outline) and river buffer zones (RBZs; red) across the Mt. Navotuvotu-Mt. Kasi forest corridor.

Table 1. Size (ha) of established community forest parks (CFPs) and river buffer zones (RBZs), including amount and proportion of areas inside key biodiversity areas (KBAs). Note that some RBZs are located within CFPs of the same name.

Protected area	Type	Area (ha)	Inside KBA
Wasakalau CFP	CFP	2,738.31	2,738.31
Wasakalau RBZ	RBZ	168.09	168.09
Maururu West CFP	CFP	1,191.62	-
Maururu West RBZ	RBZ	95.79	-
Maururu East CFP	CFP	653.26	-
Maururu East RBZ	RBZ	40.63	-
Nukubolu Reserve	CFP	570.57	570.57
Nukubolu RBZ	RBZ	44.95	44.95
Kilaka Forest	CFP	1,207.23	-
Kilaka RBZ	RBZ	105.09	-
Upper Nasakawa RBZ	RBZ	153.00	-
Mat. Nadicake RBZ	RBZ	40.00	-
Nasavu Creeks	RBZ	31.00	-

% planning area now protected (inc. existing protected areas) 10.8%
 % KBA area now protected in the planning region 6.9%

Responding to a request from clan members during follow-up consultations, the project team has developed checklist to help clans in monitoring and enforcement of their protected areas. This will direct clan-level monitoring and enforcement activities and be made widely available to communities in the project area. Monitoring and enforcement actions will be endorsed at village meetings and clan-level management committees will begin implementation of monitoring and enforcement action plans.

Key lessons learned

We found clan level consultations about land and forest protection to be more difficult than originally anticipated. An initial lack of knowledge among landowners required us to spend considerable time to build their understanding of: the value of biodiversity in their forest; ecosystem services they receive from the forest; threats and impacts of unsustainable logging on biodiversity and ecosystem services; and the national laws and guidelines in the Fiji Forest Decree and the Forest Logging Code of Practice. While building this foundation of awareness took time, our outreach efforts are likely to encourage conservation of forests beyond the timeframe of this project.

Secondly, in many cases, the clan members empowered to make decisions resided elsewhere in Fiji or overseas, and not in the districts we targeted. In some cases we were able to contact clan members based elsewhere in Fiji, however this slowed the entire consultation process. In other cases, we were unable to reach important decision-makers, which limited the number of commitments that could be made to establish community forest parks and river buffer zones.

Even when we were able to reach decision-makers, we found some reluctance by communities to establish CFPs and RBZs due to the lack of formal supportive legislation or viable financing mechanisms available to support management implementation (*see section below*). Even though there is some momentum in Fiji to develop new protected area legislation, several clans expressed a lack of faith in the Fiji Government to carry this forward and, consequently, did not see the possibility of deriving financial benefits from community managed forest or freshwater areas in the future.

Opportunities for Strengthening Recognition of Community Conserved Areas

Under this project, establishment of community-managed protected areas was constrained by current legal, political and institutional frameworks in Fiji. In order to determine options available to communities for long-term protection of CFPs and RBZs across the Mt. Navotuvotu-Mt. Kasi corridor, we participated in two reviews of the legal, institutional and policy conditions that support and hinder establishment of indigenous community conservation areas in Fiji (Govan et al. 2012; Vukikomoala et al. 2012). The relevant issues described in these two reports related to land tenure in Fiji, opportunities for protected area establishment and challenges are summarized below.

Land tenure in Fiji

Customary indigenous (*iTaukei*) tenure is recognized in Fiji under the iTaukei Lands Act [Cap 133] and the iTaukei Lands Trust Act [Cap 134]. Under British colonial rule, communal land tenure was formally recognized at the clan level, although during pre-colonial periods land

ownership was more flexible across different units of Fijian society (Walter 1978; Ward and Kingdon 1995). The iTaukei Lands Trust Act established the iTaukei Land Trust Board, which was formed in 1940 to assist iTaukei landowners to manage their land ownership rights and to facilitate commercial transactions for use of their land parcels. iTaukei lands cannot be sold except to the State and any dealings with the land require the approval of the majority of registered clan members over age 21. This provides opportunities for clans to allocate portions of their land to conservation with the agreement of the majority of landowners.

Legislation and policy that encourages indigenous conservation

There are several provisions in various pieces of legislation that empower customary laws for the purpose of local governance of community conserved areas. Section 3 of the iTaukei Lands Act states that “native lands shall be held by native Fijians according to native custom and tradition, as evidenced by usage and tradition.” This provision allows clan landowners options for a broad spectrum of use, including conservation, defined by native custom and tradition. Meanwhile, section 21 of the Forest Decree enables indigenous Fijians to exercise rights established by native custom, which could include hunting, fishing, collecting fruits or vegetables, as well as conservation. Similarly, section 13 of the Fisheries Act states that it is an offence to fish or collect shellfish (from marine or freshwater areas) without a permit for the purpose of trade or sale in an area where a clan’s fishing rights are registered by the iTaukei Lands and Fisheries Commission (Minter 2008). This allows for the involvement of local fishing rights owners in the governance of freshwater areas in some instances.

Existing terrestrial and freshwater community conserved areas

There are several existing mechanism by which local landowners can enter into legally binding leases to protect their lands. The Forest Decree enables provisions for declaration of an area as a Nature Reserve. The Minister for Water may declare any area of land or water to be a water supply catchment area under the Water Supply Act. Thirdly, the iTaukei Land Trust Board may broker a conservation lease with willing landowners (Clarke and Gillespie 2008; Clarke and Jupiter 2010). Sovi Basin, Fiji’s largest protected area, was created through a conservation lease when thirteen clan agreed to cancel the logging concession covering the basin in exchange for the establishment of a compensatory trust fund that provides a premium and annual rent payments to the landowners.

Alternatively, some communities have agreed to establish informal conservation areas without any legal status. For instance, the Bouma National Heritage Park on Taveuni covers areas where landowners, the iTaukei Land Trust Board and the government have agreed to protect nationally important natural and cultural heritage areas through a non-binding agreement (Clarke and Gillespie 2008). Similarly, communities on the Natewa Tunuloa Peninsula in Vanua Levu have declared a 6,000 ha protected area through informal agreement with among eleven clans and an international NGO to sustainably manage the area for the next 10 years (Govan et al. 2012).

Challenges to protected area establishment

While there are legal mechanisms in place to establish terrestrial and freshwater protected areas, there are some practical challenges that prevented the use of these instruments for legal gazettal of protected areas across the Mt. Navotuvotu-Mt. Kasi corridor:

- *Declaration as Nature Reserve under Forest Decree:* Designation of a Nature Reserve formally transfers all management rights to the Conservator of Forests, thus many landowners may not be willing to give up access to exercise customary rights to hunt, fish and collect non-timber products (Clarke and Gillespie 2008). Furthermore, in practice, the Department of Forestry has no resources to establish any new nature reserves and limited resources to maintain existing reserves (Vukikomoala et al. 2012).
- *Declaration as Water Catchment Area under Water Supply Act:* This instrument requires a professional survey of the water catchment area, which is prohibitively expensive for communities, costing potentially hundreds of thousands of dollars. This process is generally only undertaken by commercial agencies, such as Fiji Water Authority. (Vukikomoala et al. 2012).
- *Declaration as a Conservation Area through a Conservation Lease:* While this is the preferred mechanism for legal gazettal of a terrestrial protected area by the iTaukei Land Trust Board, it requires considerable financial resources to pay a premium to the landowners for a 99 year lease based on the value of the forest stock, plus an annual rent payments. The necessary financial resources were not available under this project for conservation leases to be a realistic option.

Furthermore, even if areas are legally gazetted as protected areas, section 7 of the iTaukei Land Trust Board Act subjects iTaukei land to the provisions of the Crown/State Acquisition of Lands Act [Cap 135], the Forest Decree, the Petroleum (Exploration and Exploitation) Act [Cap 148] and the Mining Act [Cap 146] that vest control of various resources with the State under specific circumstances, regardless of the nature of protection. For example, the Mining Act gives the Director of Mineral Resources powers to issue prospecting licenses over indigenous lands, regardless of protection status and without owner consent. Mining leases may also be granted over indigenous land without landowner consent.

We are optimistic that new protected area legislation will be developed to rectify the gaps in recognition of community conserved areas and create more practical possibilities for their establishment. The Protected Area Committee, established as a technical advisory committee to the National Environment Council (NEC) through section 8(2) of the Environment Management Act, is tasked with the responsibility of overseeing the development of protected areas policy (Vukikomoala et al. 2012).

Strengthening Networks for Livelihoods

To improve opportunities for local livelihoods based on sustainable harvests of natural resources, we worked throughout the project to build and strengthen two separate networks of practitioners: (1) Yaubula Support Management Teams in Bua and Cakaudrove provinces to strengthen management implementation and improve livelihoods indirectly from the improved availability of natural resources; and (2) women's weaving cooperatives focused on the production and sale of mats to directly derive income from the sustainable management the kuta reef source material.

Yaubula Management Support Teams

Yaubula Management Support Teams (YMSTs) are site support groups made up of community representatives who function as liaisons between community interests and the Fiji Locally Managed Marine Area network (FLMMA) and provide information, tools and motivation to sites

to implement local resource management. FLMMA is a national network of government and non-government organizations that assist communities to implement local resource management to support local objectives (Weeks and Jupiter accepted). To date, the primary focus of YMSTs has been to support marine management. Yet, because many communities are moving to a more holistic ridge-to-reef management framework, we sought to involve YMST to additionally strengthen the implementation of terrestrial management. During the course of this project, we worked with other FLMMA partners to develop a Bua YMST and support the existing Cakaudrove YMST.

Between November 26-28, 2012, we brought together representatives from the nine districts of Bua Province to formally establish a YMST. The participants provided information regarding natural resource use, management measures in place, and issues of concern that will form the basis of ongoing management planning in the province. A follow-up capacity building workshop was held from February 19-20, 2013, led by WCS, the Bua Provincial Office, and other FLMMA partners working in Bua. The objectives of the workshop were to: coordinate activities in Bua Province among stakeholders to improve complementarity and efficiency; train Bua YMST members and Provincial Office staff in management planning and project management skills; and develop the scope of an application to the GEF-UNDP small grants program to be submitted on behalf of the Bua Provincial Office to finance activities by the Bua YMST. Terms for an operational structure and role for the Bua YMST are currently being developed. As well as synchronizing natural resource management implementation at village, district and provisional levels, it is expected that the BYMST will raise awareness, build capacity through targeted training activities, direct information and resources to local communities, facilitate planning, empower action and undertake monitoring.

We also provided capacity building support to the complementary Cakaudrove YMST during a training workshop on March 21, 2013, coordinated by the Cakaudrove Provincial Office. We trained YMST and other district representatives how to carry out conceptual modeling to define threats and management strategies to build ecosystem-based management (EBM) plans, based on the models developed for Kubulau, Wainunu and Wailevu. We distributed copies of the Wailevu EBM plan to participants to use as a guide for management planning in their respective districts.

Kuta mat weaving cooperatives

Kuta, the fine-stemmed reed commonly known as bamboo spike sedge, grows in freshwater lakes and wetlands and is used for the fine weaving of mats that are highly sought after and valued in Fiji (US\$25-75 per mat, depending on size and quality). Given the high value of each mat and scarcity in the market, we consulted with women in the project area in August 2012 to gauge the feasibility of developing kuta mat weaving cooperatives. The women approached were very enthusiastic about the idea. The consultations highlighted the existence of large kuta plantations in the region, indicating that the reeds could be easily sourced for production, and a strong tradition of weaving round mats in Navakasiga District. This gave us confidence that we would be able to use the local knowledge of women in Navakasiga to help train other women weavers, using this platform as a basis for increasing entrepreneurial skills and providing new sources of income.

Following the initial scoping phase, we facilitated three training workshops between November 19 – 24, 2012 to build local capacity to develop small-scale kuta-mat weaving enterprises by sharing skills and knowledge of weaving and small business development. Sixty women from communities in the districts of Lekutu, Nadi, Solevu, Wainunu, Kubulau (Bua Province), and Wailevu (Cakaudrove Province) participated in the workshops. Most of the women were novices or had lost confidence in their kuta-weaving skills, and had low levels of financial literacy and limited experience in managing money. The aims of the workshops were to: build their confidence and capacity as trainers; discuss the sustainable management of kuta plantations; build understanding of markets and supply chains, identify key challenges and opportunities in developing a kuta business; identify preferred structure and terms of reference for weaving cooperatives; and establish working groups and plan next steps.

As an outcome of the workshop, three localized ‘kuta teams’ were established, made up of workshop participants and each with a nominated leader, a quality control process, and a communications protocol to notify buyers when products are ready. All 60 trainees were able to produce the highly-sought-after decorative round mats and completed several that were ready for sale. Workshop participants requested assistance in finding steady buyers for their products. We identified interested parties, including local and overseas-based Fijians, a hotel in Cakaudrove near Savusavu, and a Suva-based business and potential exporter to Tonga. All initial mats produced were sold within weeks, demonstrating proof of concept that the initiative can generate income.

To increase local capacity to develop business plans, we facilitated a business planning and empowerment training workshop from June 6 - 7, 2013 that brought together 30 women from six districts across Bua Province. Following the introduction of some basic business concepts, participants were able to consider their business aspirations, define goals, and identify challenges and opportunities. The women reported having gained confidence, particularly in their ability to communicate about their businesses, with clearer ideas about their business and how they can make a profit. As next steps under complementary funding from the Flora Family Foundation and the David and Lucile Packard Foundation, we will: help the women build skills in market research, pricing, and financial planning; support development of individual business plans; cement support networks between the women; and assist the women to integrate management of kuta wetlands within district ecosystem-based management planning processes.

Conclusions

As a direct result of CEPF investment, eleven landowning clans across the Mt. Navotuvotu-Mt.Kasi forest corridor committed to establish 6,585 ha new community forest parks (CFPs) and river buffer zones (RBZs). These new protected areas increased the total area protected within the planning region from 5.6% to 10.8%, with 6.9% of key biodiversity areas protected and 13.1% of the broader forest corridor protected. Management rules for the protected areas have been included in adapted ecosystem-based management plans (EBM) for Kubulau, Wainunu and Wailevu/Koroalau districts, which will be endorsed by the respective councils of chiefs in October 2013. New EBM plans for Nadi and Solevu districts have additionally been developed and are awaiting endorsement by their council of chiefs. Once these plans are endorsed, a further 816 ha of protected CFPs and RBZs will be added to the network. Monitoring and enforcement templates have been developed and are being distributed throughout the planning region. We will

additionally train the Bua and Cakaudrove YMSTs on protocols for monitoring and enforcement so that they can encourage ongoing management implementation.

While this project uncovered some legal and practical constraints to expansion of terrestrial protected areas across the Mt. Navotuvotu-Mt. Kasi forest corridor, and more generally across Fiji, we are working to take steps towards easing these constraints. With our project steering committee, we outlined a process for concerned landowners to find out more information about leasing arrangements on their land. Once these details are made available, it may become easier for interested communities to negotiate buy backs from logging companies, as occurred in Sovi Basin (Vukikomoala et al. 2012), should opportunities arise for conservation investment. In the meantime, we are encouraging landowners to sustainably manage their land holdings, moving toward the system of permanent forest estates recommended in the Fiji Forest Policy (DoF 2007), and we recommend that new protected area legislation provides greater opportunity for registration and incentives for community conserved areas. We will continue to work with landowners to demonstrate the direct (e.g. through natural products) and indirect links (e.g. through ecosystem service provisioning) between healthy natural resources and livelihoods.

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