



WILDLIFE CONSERVATION SOCIETY  
FIJI COUNTRY PROGRAM  
ANNUAL REPORT 2019

Annual Report 2019  
Wildlife Conservation Society  
Fiji Country Program

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Cover page photo:

Close up of *donu* (*Plectropomus leopardus*), a species of coral trout found on Fijian reefs that was included in seasonal ban of groupers. © Fareea Ma/WCS

## FROM THE DIRECTOR



**2019** has been a year of critical thinking and synthesis as we reflect on the health of our planet and where it is headed. The Wildlife Conservation Society Fiji Country Program (WCS-Fiji) continued to support communities by working with government, NGOs, provincial offices and partners to develop and implement solutions for a sustainable Fiji.

The level of support and commitment shown by communities in protecting their resources and working with WCS has been inspiring as we celebrated the launch of the first ever island-scale ecosystem-based management (EBM) plan on Koro Island and two district EBM plans for Dama and Bua districts on the island of Vanua Levu. WCS is also facilitating our first community-private sector partnership to establish a community-managed sustainable pearl farm in Cakaudrove Province.

2019 also saw WCS embarking on a four-year multi-stakeholder project, Watershed Interventions for Systems Health in Fiji (WISH Fiji) which focuses on improving watershed health to reduce the spread of waterborne diseases in five sub-catchments in Fiji. A new three-year grant, Blue Action Fund, is supporting WCS in our work collaborating with governments and other NGOs on expanding networks of marine protected areas and locally managed marine areas to ensure land-seascapes are sustainably utilized and conserved. Coupled with improvement of coastal livelihoods in fisheries-dependent communities, this will lead to a doubling of effectively managed marine areas in Fiji.

We were proud to launch *Kusima Mada*, our sustainable seafood cookbook which was the winner for Fiji in the South Pacific Category, Gourmand World Cookbook Award 2020. This cookbook promotes fisheries sustainability, while recognizing the critical role that women play in fisheries in Fiji.

2020 will be a big year for those of us working on environmental issues. As the world sets new targets and strategies, we look forward to forming closer partnerships with communities, government, private sector, NGOs, and other stakeholders in Fiji, both regionally and nationally, to set a course for a more sustainable future for our planet.

A handwritten signature in black ink that reads "Sangeeta Mangubhai". The signature is written in a cursive, flowing style.

Sangeeta Mangubhai  
WCS-Fiji Director

## THE WCS-FIJI TEAM

### Dr. Sangeeta Mangubhai – Director, Fiji Program



Sangeeta joined WCS in 2014. She has worked on marine science and conservation in Australia, East Africa, Indonesia and the South Pacific. She completed her Ph.D. in 2007 through Southern Cross University in Lismore, Australia, looking at reproduction and recruitment of corals in Kenya. She has been working on coastal fisheries, gender and fisheries, protected areas, marine spatial planning, payment for ecosystem services, environmental policy, and climate change. She sits on numerous national government committees, and is an editor for the journal *Pacific Conservation Biology* and the *Pacific Community's Women in Fisheries Information Bulletin*, and an adjunct Associate Professor with Southern Cross University in Australia. Sangeeta received a Pew Marine Fellowship in 2018.

### Artika Singh – Finance Director



Artika joined WCS in August 2019. She holds a Bachelor in Accounting from the Fiji National University and is currently pursuing her Master in Professional Accounting. She specializes in the public and private sector finance with over 14 years of experience. Prior to joining WCS, she worked as the Regional Finance Manager – Pacific for Live and Learn Environmental Education.

### Upashna Prakash – Finance and Administration Coordinator



Upashna first joined WCS in 2016 as a Finance and Admin Officer to support projects and operations of the organisation. She holds a Post Graduate Diploma in Commerce from the University of the South Pacific. She also completed studies in Professional Development (International) from the University of Southern Queensland, a Bachelor of Arts majoring in Accounting and Information Systems from USP.

### Fareea Ma – Technical Support Manager



Armed with a Bachelor of Science in International Relations, Fareea started her career in the corporate sector managing multiple projects and leading organisational development before setting up and managing a social enterprise for more than 12 years. Joining WCS in 2019, Fareea brings her expertise in managing projects and people, communicating with multiple level stakeholders and funders along with personal development skills to provide technical support to the organisation.

### Samuela Lagataki – Terrestrial Ecosystems Manager



Samuela joined WCS in 2019 as the Terrestrial Ecosystems Manager. He has a Bachelor of Science in Forestry from the Australian National University and worked for the Fiji Forestry Department for over 23 years. He is the former Head of the Fiji Forestry Department and former Permanent Secretary for the Ministry of Fisheries and Forests. Samuela is overseeing the Watershed Interventions for Systems Health in Fiji project and WCS's terrestrial program.

#### Akanisi Caginitoba – Community Engagement Coordinator



Akanisi (Cagi) has been part of the WCS team since 2002. Previously working for the Asia Pacific Ltd., Cagi is now a specialist in community-based management and leadership. She assists communities identify, design and raise funds for community projects. She has assisted over ten districts develop ridge-to-reef management plans, and is currently developing pathways for integrating disaster risk reduction into community planning processes.

#### Vinesh Prasad – Agriculture Coordinator



Joining the WCS team in 2019, Vinesh provides technical guidance and advice on the best practices for agricultural activities in the context of integrated land-sea management and climate adaptation. Vinesh has a Post Graduate Diploma in Climate Change, a Diploma in Tropical Agriculture and a Bachelor of Arts from the University of the South Pacific. He worked as an Information Officer with Fiji Ministry of Agriculture before joining The Pacific Community (SPC) as an Agroforestry Specialist and later joined the Australian Centre for International Agriculture Research overseeing work in seven countries in the Pacific.

#### Margaret Fox – Fisheries Coordinator



Margaret and is a specialist in conducting socio-economic surveys, marine biological surveys, fisheries and natural resource management. She holds a Master of Conservation Biology from Victoria University of Wellington in New Zealand. After joining WCS in 2010, Margaret contributed in assessing Fiji's sea cucumber and mud crab fisheries, and documenting and supporting the women in Fiji's fisheries sector.

#### Yashika Nand – Science Coordinator



Yashika joined WCS in 2010. She holds a Post-Graduate Diploma in Marine Science from the University of the South Pacific. Previously she worked for Fiji's Department of Fisheries as the lead coral researcher. Her expertise includes coral identification, coral health assessments, the aquarium trade fishery and more recently value chain analyses of coastal fisheries. She is currently completing a Master's in Coral Reef Ecology, focusing on coral disease at the University of the South Pacific.

#### Arishma Devi – Communications Officer



Arishma joined WCS in 2019 as Communications Officer. She has a Bachelor of Mass Media from the University of Mumbai, India and has worked for Fiji Sun as a Journalist for six years. Before joining WCS-Fiji, Arishma was the Communications Officer at the Land Transport Authority, leading their Department of Communications. She is currently pursuing a Post Graduate Diploma in Diplomacy and International Affairs at the University of the South Pacific.

#### Sirilo Dulunaqio – Community Engagement Officer



Sirilo (Didi) joined WCS in 2005. Originally from Kubulau and trained as a dive instructor, Didi provides a critical link between WCS activities and management implementation with the communities of Kubulau and adjacent districts through the provision of technical and logistical support on biological surveys. Didi is working with communities and dive operators in Ra Province to establish a marine protected area and a voluntary contribution to conservation scheme.

#### Waisea Naisilisili – Fish Specialist & Operations Support Officer



Waisea joined WCS in 2003 as a field collector and now works as a project officer and is part of the biological survey team. Waisea has previously worked at the Fiji Mineral Resources as a research assistant collecting mineral samples. Waisea specializes in coral reef fish surveys and community catch monitoring. He is also a specialist in community engagement and is currently leading WCS's planning process and community engagement in the Lomaiviti Province.

#### Ingrid Qauqau – GIS and Remote Sensing Officer



Ingrid has been working with WCS as a GIS officer since 2003. She graduated with a Bachelor of Environmental Science in 2002 from the University of the South Pacific. She specializes in general mapping, image analysis, remote sensing, spatial analysis, and habitat mapping. Ingrid is also a member of the GIS user forum of Fiji.

#### Thompson Daurewa – Assistant Laboratory Technician



Thompson holds a Bachelor in Forensic Sciences with Honours from the Management and Science University in Malaysia. He did his internship at the Australian Laboratory Services, Technichem based in the Environmental Department before joining WCS in 2019. Thompson assists with the testing of specimens collected during field visits for the implementation of Watersheds Intervention for Systems Health Fiji (WISH Fiji) under the Vibrant Reefs initiative.

#### Mereia Ravoka – Community Engagement Assistant



Mereia (Mia) joined WCS in 2019. She has a Bachelor in Environmental Science from the University of the South Pacific. During her final term of studies, she began volunteering at the Institute of Applied Science where she was exposed to community fieldwork. Later, she joined Fiji Locally Managed Marine Area (FLMMA) Network as an intern and then a Graduate Assistant for 2 years. She has been engaged in empowering fisherwomen in communities.

#### Bulou Vitukawalu – Fisheries Assistant



Bulou holds a Master of Science degree from Mie University, Japan, specializing in Shallow Sea Aquaculture. Prior to joining WCS in 2019, she was an intern at the Pacific Community (SPC), Fisheries, Aquaculture and Marine Ecosystem Division. She engaged as a volunteer with the World Wide Fund for Nature in Fiji from 2012 to 2014. In 2015, she was a research assistant with the University of the South Pacific and the International Union for Conservation of Nature. Bulou also has experience working in Japan's eco-tourism sector, engaging with coastal fishing communities, traditional Japanese female divers and the Mikimoto pearl industry.

#### Ana Ciriya – Fisheries Assistant



Ana joined WCS in 2019. She holds a Bachelor in Marine Science from the University of the South Pacific. Ana had devoted her time volunteering with WWF and Global Vision International in Fiji since 2015 and in 2016, she developed an interest in climate change and assisting communities by providing them support with alternative livelihood measures and volunteered with Community Centred Conservation Fiji. Ana has worked as a Research Assistant at the School of Marine Studies at the USP in 2016. She brings to WCS her experience and skills in biological and socioeconomic surveys in local communities.

#### Eferemo Kubunavanua – Community Engagement Officer



Eferemo joined WCS in 2019. He has a Bachelor of Arts in Marine Affairs and Geography from the University of the South Pacific. He worked as a tutor at the University of the South Pacific, a Research Assistant at the Pacific Islands Forum Secretariat. Prior to joining WCS, Eferemo worked as a Research Officer for the iTaukei Land Trust Board. His interests lie in the area of species conservation and the preservation and documentation of traditional knowledge, particularly relating to marine ecosystems. With his role, Eferemo supports communities with natural resource management.

#### Mohini Raj – Human Resources and Admin Assistant



Mohini holds a Certificate in Business (Banking) and a Diploma in Business (Management), both from the Fiji Institute of Technology, and graduated with a bachelor's degree in management majoring in Human Resource Management and Industrial Relations. Prior to joining WCS in 2018, Mohini worked as Secretary to the Managing Director and Group CEO for Foods Pacific Ltd and has over 15 years of administrative experience.

#### Sulia Vorata – Office Support and Cleaner



Sulia joined WCS in 2016. She takes care of the office and supports the staff in the preparation of field logistics and meetings.

## Collaborating Students

### Nicola Fraser



Nicola is in the second year of her PhD at the National Marine Science Centre, Southern Cross University, Australia. Nicola is examining sea anemones in the marine aquarium trade, to address knowledge gaps to enable effective fisheries management, and establish aquaculture techniques for sea anemones to provide sustainable livelihoods for local communities and promote environmental stewardship. Her supervisors are Drs. Anna Scott, Sangeeta Mangubhai, and Karina Hall.

### Brae Price



Brae is a Master of Science at Curtin University, Australia. His research assessed the ecological and socioeconomic impacts of Cyclone Winston on coral reefs ecosystems and the communities that are dependent on them. His supervisors are Drs. Jordan Goetze, Sangeeta Mangubhai and Benjamin Saunders, and Professor Euan Harvey.

### Ana Samperiz



Ana Samperiz is a PhD candidate at Cardiff University investigating signals of water quality and environmental change detected from long-lived coral records collected from the Coral Coast and Ra in Fiji. She will be trying to link long-term records with land use patterns and climate change impacts in adjacent catchments. Her supervisors are Drs. Sindia Sosdian, Ken Johnson, Erica Hendy, Eleanor John and Stacy Jupiter.

## Volunteers

### Neelam Bhan



Neelam has a Bachelor of Science from the University of the South Pacific. She assisted with socioeconomic surveys in Labasa, Savusavu, Rakiraki, Tavua and Ba areas to understand the role and contribution of Indo-Fijian fishers to the coastal fisheries sector in Fiji. She assists with data entry using MERMAID and Kobo Toolbox software.

### Rashmi Audh



Rashmi has a Bachelor of Science from the University of the South Pacific. She assisted with socioeconomic surveys in Labasa, Savusavu, Rakiraki, Tavua and Ba areas to understand the role and contribution of Indo-Fijian fishers to the coastal fisheries sector in Fiji. She assists with data entry using MERMAID and Kobo Toolbox software, as well as desktop reviews on relevant topics.

### Aisea Ratuva



Aisea has a Bachelor of Science from University of the South Pacific. He has been supporting the community engagement team in workshops and the socialisation of 'Ecosystem Based Management' (EBM) in Bua and Lomaiviti provinces. He has been translating EBM plans into the iTaukei language.

### Rosi Batibasaga



Rosi is a volunteer with a passion for both marine and environmental conservation. Her expertise includes turtle surveys, biological monitoring, socioeconomic surveys, community engagement and workshop facilitation. Rosi assists with socioeconomic data collection, data entry and the preparation of community workshops.

### Prashant Kumar



Prashant supports the Finance Department and hopes to build his career in accounting. He has completed his final year at USP with a Bachelor's of Commerce, majoring in Accounting & Marketing, and will graduate in April 2020.

### Natalie Mason



Natalie has a Bachelor of Environmental Management (Honours) from the University of Queensland, Australia. She assisted with a manuscript on the value chain analysis of the mud crab fishery in Fiji as well as with data entry, and fisheries workshops in Labasa.

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## EXECUTIVE SUMMARY

The Vatu-i-Ra Seascape is an area of unique ecological value located between Fiji's two main islands incorporating the four provinces of Bua, Ra, Lomaiviti, and Tailevu, and their associated traditional fishing grounds and offshore channels. The Wildlife Conservation Society Fiji Country Program (WCS-Fiji) is working with a diversity of partners to preserve the functional integrity of Fiji's Vatu-i-Ra Seascape to sustain biodiversity, fisheries, and intact linkages between adjacent systems from land to sea, thereby enhancing social-ecological resilience to disturbance, and improving quality and abundance of marine resources for Fiji's people and economy. This report highlights WCS achievements from January to December 2019, under our three main themes of Science, Management and Communication. We also highlight our engagement with national and regional policy and planning, and the links to Fiji's national priority strategies.

In 2019, WCS' scientific studies included:

- Size at maturity and spawning potential ratios for coral reef fish;
- Assessments of the critical role of women and Indo-Fijian fishers in the fisheries sector;
- Mainstreaming gender and human rights-based approaches into coastal fisheries;
- Looking at the social, ecological, and political conditions in which the use of Marine Protected Areas (MPAs) and Other Effective Management Measures (OECMs) are associated with positive outcomes for both people and nature, as well as the synergies and tradeoffs that exist between multiple outcomes;
- Strengthening knowledge co-production in Locally Managed Marine Areas; and
- Baseline surveys of watershed and coral reef health in 5 sub-catchments – Dama, Bureta, Dawasamu, Waibula and Upper Namosi.

In our efforts to help strengthen community-based natural resource management in the Vatu-i-Ra Seascape WCS:

- Supported the 14 villages of Koro Island launch the first ever island-scale ecosystem-based management plan;
- Assisted Dama and Bua in Bua Province traditionally launch their district ecosystem-based management plan;
- Continued to support local communities and tourism operators to set up a voluntary conservation contribution scheme around dive tourism in Ra Province;
- Worked with communities and a private pearl company in Vatulele Village in Wailevu to set up a pearl farm project; and
- Released Fiji's sustainable cookbook, Kusima Mada which provides the seafood consumers information on fish size limits by Ministry of Fisheries and promotes sustainable seafood choices.

In 2019, WCS produced 13 new scientific publications and 13 reports and informative articles, on a range of topics including groupers, coral bleaching, women in fisheries, marine conservation agreements, forest inventories, and land-sea island management, gender equity and watershed management. We participated on a number of national committees and steering groups focusing on national objectives in biodiversity protection, conservation planning, coastal management, sustainable fisheries and climate change preparedness.

## SCIENCE

The following sections present a synthesis of completed and on-going science projects by WCS and partners for 2019. All reports are available online at <https://fiji.wcs.org/Resources.aspx>

### *Size of maturity and spawning potential ratios in coral reef fish*

**STATUS:** Completed

**FUNDING:** David and Lucile Packard Foundation (Grant #2015-41007, #2017-66580)

**PARTNER ORGANISATIONS:** Biospherics, Ministry of Fisheries, World Wide Fund for Nature (WWF), University of the South Pacific (USP)

#### **OUTPUTS:**

- Prince J, Lalavanua W, Tamanitoakula J, Loganimoce E, Vodivodi T, Marama K, Waqainabete P, Jeremiah F, Nalasi D, Tamata L, Naleba M, Naisilisili W, Kaloudrau U, Lagi L, Logatabua K, Dautei R, Tikaram R and Mangubhai S (2019) Spawning potential surveys reveal an urgent need for effective management SPC Fisheries Newsletter. 158: 28-36
- Prince J, Lalavanua W, Tamanitoakula J, Loganimoce E, Vodivodi T, Marama K, Waqainabete P, Jeremiah F, Nalasi D, Tamata L, Naleba M, Naisilisili W, Kaloudrau U, Lagi L, Logatabua K, Dautei R, Tikaram R, Mangubhai S (in review) Reforming Pacific Island reef fish management: the Fijian initiative. Conservation Science and Practice

#### **RESEARCH HIGHLIGHTS:**



Ministry of Fisheries and WCS staff collecting data on maturity of reef fish in Fiji. ©WCS

WCS, Ministry of Fisheries and WWF completed a 3-year collection of data on the size of maturity of 13,901 fish (129 species) that are commonly consumed or sold in markets around Fiji. Good estimates of the size of maturity for the main species in a catch are critical for determining minimum size limits.

The study adopted a robust methodology to assess length-based Spawning Potential Ratios (SPR) and gathers data on: (i) the length of the fish and its maturity phase; (ii) the

sex of the species; and (iii) the SPR of the targeted species for specific fishing grounds. The need for this kind of data is imperative in the Pacific, especially Fiji, given the high levels of non-compliance by fishermen and middlemen to the current fish and invertebrate size limits, and the increasingly high demand of fish as a source of protein.

Partners trained representatives of communities from Bua, Macuata, Ba, Serua, Tavua and Kadavu on how to examine their own catch and used their own staff members to sample fish in the main fish markets of Suva (Viti Levu) and Labasa (Vanua Levu).

Key results from this study are summarised as follows:

- Our results suggest that without management >57% of the potential reef fish yield and 38 of the 74 species in the modelled assemblage will be lost in Fiji, but that a system of six Minimum Size Limits set at 25, 35, 45, 55, 70 and 90 cm can protect ~93% of the yield and prevent extinctions;
- Our model estimated that with optimal management the 30 most important species comprise >70% of the catch, with the 10 most important being: blue spine unicorn fish (*Naso unicornis*), thumbprint emperor (*Lethrinus harak*), paddle tail snapper (*Lutjanus gibbus*), pink ear emperor (*Lethrinus lentjan*), vermiculate rabbitfish (*Siganus vermiculatus*), spangled emperor (*Lethrinus nebulosus*), long nose emperor (*Lethrinus olivaceus*), bumphead parrotfish (*Bolbometopon muricatum*), yellowlip emperor (*Lethrinus xanthochilus*), and two-spot red snapper (*Lutjanus bohar*);
- More than half the species (17) are assessed as having <20% SPR, the international Limit Reference Point, above which fish stocks should be managed to minimise the risk of stock decline;
- Fourteen of these species are estimated to having <10% SPR the international reference point for SPR below which fish populations are expected to collapse;
- Closer examination of species with low SPR suggested that speargun fishing and gillnetting currently pose the biggest threat to reef-fish sustainability in Fiji.

Our results suggest an urgent need to reform the management of Fijian reef fish stocks so that fish are not caught before reproducing sufficiently to replace themselves and to keep fish populations stable. To this end the existing regulation of minimum size limits and mesh sizes need revision, and the implementation of additional restrictions on fishing methods should be considered.

#### **NEXT STEPS:**

- Supporting the Ministry of Fisheries and cChange implement a “Set Size” campaign to build awareness and compliance with size limits for fish and invertebrate species.
- Incorporate “Set Size” into Communities Fisheries Curriculum, so that information is available to local communities.

#### **LINKS TO NATIONAL PRIORITIES:**

**NBSAP Implementation Plan TA 3 (Inshore Fisheries), Action 3.2b:** Monitor core set of existing MPAs for biodiversity and fisheries resources compared with unmanaged sites; **Action 8.2a:** Perform stock assessment of inshore marine resources. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship.

## *Socioeconomic surveys of Fijian women in the inshore fisheries sector*

**STATUS:** Completed

**FUNDING:** Flora Family Foundation (Grant #2017-3026), David and Lucile Packard Foundation (Grant #2017-66580), Pacific Community (SPC)

**PARTNER ORGANISATIONS:** Ministry of Fisheries, Conservation International, Fiji Locally-Managed Marine Areas (FLMMA), World Wide Fund for Nature (WWF), University of the South Pacific (USP), Women in Fisheries Network-Fiji (WiFN-Fiji), Vatuvara Foundation, Pacific Community (SPC)

### **OUTPUTS:**

- Thomas AS, Mangubhai S, Fox M, Meo I, Miller K, Veitayaki J (2018) Quantifying and valuing the critical role women play in Fiji's inshore fisheries sector. SPC Women in Fisheries Information Bulletin. 28: 15-16
- Thomas AS, Mangubhai S, Fox M, Lalavanua W, Meo I, Naisilisili W, Ralifo A, Veitayaki J, Waqairatu S (in press) The critical contribution of women fishers to food security and livelihoods in Fiji. Report No. 01/20. Wildlife Conservation Society, Suva, Fiji. 132 pp.
- Thomas AS, Mangubhai S, Fox M, Lalavanua W, Meo I, Naisilisili W, Ralifo A, Veitayaki J, Waqairatu S (in press) The critical contribution of women fishers to food security and livelihoods in Fiji. SPC Women in Fisheries Information Bulletin. 31

### **RESEARCH HIGHLIGHTS:**

Women fishers significantly contribute to household protein requirements and/or income; but these contributions are often 'invisible' – overlooked, underestimated, and/or undervalued. A national socioeconomic survey was conducted from October 2017 to April 2018, to document the diversity of fisheries targeted by fisherwomen. A total of 1,239 women were interviewed across 11 of the 14 provinces in Fiji, including 47 districts and 110 villages. The survey covered fisheries across the full range of habitats – rivers, mangroves, seagrass, coral reefs and deeper pelagic waters. From these, 1,237 women fished while the remaining two women were only involved with post-processing and sale of catches made by male members of their household.

***Of women interviewed 99.8 percent stated that they fished for food for the family, 64 fished for cultural events, 48 percent fished for social events and 44 percent of women fished for income.***



Woman selling mud crabs © Shiri Ram

Findings also show that women fish in all habitats in their areas, ranging from freshwater streams to the intertidal area and the open ocean. The study also found that although

women fishers in Fiji have limited fishing gear, they use a wide variety of techniques. For example, in shallow water, hand lines may be cast at various spots. In semi-deep water, women use snorkel masks to look for fish. Once fish are sighted, they let down their hand lines at that particular spot. In deeper water, women sit in boats and drop hand lines over the side of the boat. Highly skilled women fishers use the *siwa basikeli* technique, which involves treading water at much greater depths while using snorkel masks to sight fish. When fish are sighted, the women quickly align themselves to float on the surface while looking into the water and dropping their hand lines down into the group of fish.



Woman selling groupers at Labasa market ©Sangeeta Mangubhai/WCS



Woman cleaning fish for her family ©WCS

Women also faced numerous challenges to both fishing and selling seafood, some of which were considered unique to women. Strong currents and cold weather affect women's fishing. Market access issues mean many women have to sell their seafood inside the village instead of at a market. The information gathered from the surveys will assist stakeholders to better recognise the valuable contribution women fishers provide to food security and to the national economy. Fisherwomen are a critical backbone for their families, and to our society. However, it is not enough just to recognise the substantial role these women play.

Ultimately, fisherwomen need to be provided the same opportunities as fishermen. This includes participation in fisheries planning and management, receiving training and support, and accessing projects and funding to improve their fisheries.

#### **LINKS TO NATIONAL PRIORITIES:**

**NBSAP Implementation Plan TA 3 (Inshore Fisheries), Action 8.2a:** Perform stock assessment of inshore marine resources. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship. **TA 4 (Inclusive Social Development):** increase women's capacity to participate in decision-making and leadership at all levels to development (from village to national government) by 2018. **Fiji National Gender Policy:** 5.7 Gender Statistics and Research, 5.19 Leadership, Training and Development.

## *Socioeconomic surveys of women market sellers in municipal markets*

**STATUS:** Ongoing

**FUNDING:** David and Lucile Packard Foundation (Grant #2017–66580)

**PARTNER ORGANISATIONS:** United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), Labasa City Council, Savusavu City Council, Suva City Council

### **OUTPUTS:**

- Gavid K, Thomas A, Mangubhai S, Naleba M, Arnett E, Ieli P (2019) Barriers and constraints to gender equality and social inclusion of women sellers in municipal markets in Fiji. SPC Women in Fisheries Information Bulletin. 29: 52–53
- Mangubhai S, Vitukawalu B, Nand Y, Berdejo V, Naleba M (2019) Barriers and constraints to the economic empowerment of women seafood vendors in the Suva municipal market. Wildlife Conservation Society. Report No. 03/19. Suva, Fiji. 20 pp.
- Mangubhai S, Berdejo V, Naleba M, Arnett E (2019) Barriers and constraints to the economic empowerment of women seafood vendors in the Savusavu municipal market. Wildlife Conservation Society. Report No. 02/19. Suva, Fiji. 15 pp.
- Mangubhai S, Berdejo V, Naleba M, Arnett E, Nand Y (2019) Barriers and constraints to the economic empowerment of women seafood vendors in the Labasa municipal market. Wildlife Conservation Society. Report No. 01/19. Suva, Fiji. 27 pp.
- Bulou Vitukawalu, Sangeeta Mangubhai, Violeta Berdejo, Mosese Naleba, Yashika Nand (in press) Addressing barriers and constraints to gender equality and social inclusion of women seafood sellers in municipal markets in Fiji. SPC Women in Fisheries Information Bulletin. 31.

### **RESEARCH HIGHLIGHTS:**

The “Markets for Change” program run by United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) addresses barriers and constraints to women’s economic empowerment. The program “aims to ensure that marketplaces in rural and urban



Women selling seafood at the market. ©WCS

areas of Fiji, Solomon Islands and Vanuatu are safe, inclusive and non-discriminatory, promoting gender equality and women’s economic empowerment”.

In early 2018, the Wildlife Conservation Society (WCS) partnered with UN Women, the Ministry for Local Government and three town and city councils (Suva, Labasa, and Savusavu) to conduct a survey of women in markets. The survey aimed to document: (i) level of dependency on selling seafood at markets, (ii) decision-making power as vendors, (iii) barriers and constraints faced, and (iv) needs and recommendations.

### Key findings:

- Women seafood vendors made earnings from FJ\$50 to >\$5,000 per week;
- Income earned is used for food, household expenses, children's education, church events and village functions etc. Very little is spent on themselves;
- Majority of these women stated they are either very
- satisfied or satisfied with the earnings made from selling seafood;
- Decision-making: a large proportion of women made their own decisions on "what to fish for", "when to sell" and "how to spend income";
- Barriers include limited market space, poor or inadequate market conditions, lack of knowledge on food preservation, and access to information.



Women seafood vendors at Suva market ©Sangeeta Mangubhai/WCS

### Recommendations to improve the market places to meet vendor needs

- Provision of sufficient space and its equal distribution amongst vendors;
- Improvement in the overall hygiene and market infrastructure;
- Implementing training programs on seafood preservation methods for vendors;
- Councils and Ministry of Fisheries should partner up on the key information and messages to be delivered to seafood vendors, and create mechanisms for active dialogue.

### Next steps:

Partner and support the municipal councils and UN Women to help expand the Markets for Change program to include women seafood vendors.

### LINKS TO NATIONAL PRIORITIES:

**NBSAP Implementation Plan TA 3 (Inshore Fisheries), Action 8.2a:** Perform stock assessment of inshore marine resources. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship. **TA 4 (Inclusive Social Development):** increase women's capacity to participate in decision-making and leadership at all levels to development (from village to national government) by 2018. **Fiji National Gender Policy:** 5.7 Gender Statistics and Research, 5.19 Leadership, Training and Development.

## *Mainstreaming gender and human rights-based approaches into coastal fisheries*

**STATUS:** Ongoing

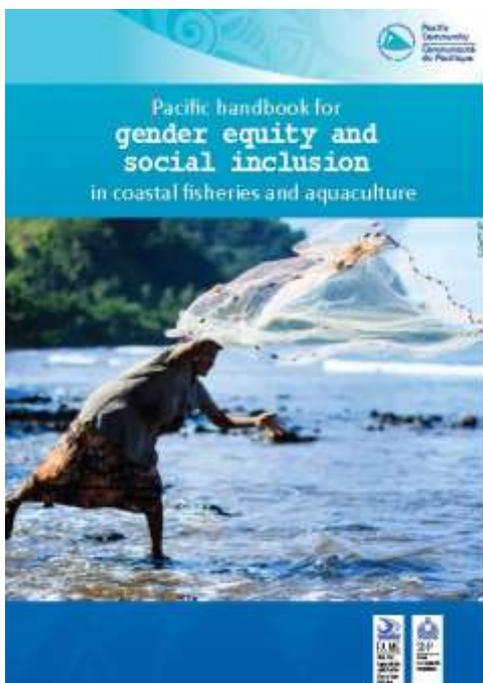
**FUNDING:** Pew Charitable Trusts

**PARTNER ORGANISATIONS:** Pacific Community (SPC), James Cook University

### **OUTPUTS:**

- Barclay K, Leduc B, Mangubhai S, Donato-Hunt C (2019) Pacific handbook for gender equity and social inclusion in coastal fisheries and aquaculture. First edition. Noumea, New Caledonia: Pacific Community. 80 pp. <https://coastfish.spc.int/en/component/content/article/494>
- Barclay K, Leduc B, Mangubhai S, Vunisea A, Namakin B, Teimarane M, Leweniqila L (2019) Module 1: Introduction. In Barclay K, Leduc B, Mangubhai S, Donato-Hunt C (eds.) Handbook for Pacific gender and social inclusion in small-scale fisheries and aquaculture. Pacific Community (SPC), Noumea, New Caledonia. 20 pp.
- Mangubhai S, Donato-Hunt C, Kleiber D (2019) Module 3: Monitoring Evaluation and Learning. In Barclay K, Leduc B, Mangubhai S, Donato-Hunt C. (eds.) Handbook for Pacific gender and social inclusion in small-scale fisheries and aquaculture. Pacific Community (SPC), Noumea, New Caledonia. 11 pp.
- Mangubhai S (2019) Mainstreaming gender and human rights-based approaches into coastal fisheries. SPC Women in Fisheries Information Bulletin. 29: 48–49

### **RESEARCH HIGHLIGHTS:**



FAO released *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication* (SFF Guidelines), to provide principles and guidance to countries on addressing small-scale fisheries. Commitments to address gender inequality feature prominently in the design and delivery of most coastal fisheries governance initiatives across the Pacific Islands. These commitments have been accompanied by large-scale financial investments to support them. However, questions still remain about how these commitments and investments are intended, being applied, and ultimately how and whether they will actually translate to impact.

To understand how efforts to achieve gender equality are integrated into coastal fisheries commitments and activities in the Pacific Islands region, a socioeconomic survey was conducted in partnership with Sarah Lawless, a PhD candidate at James Cook University with work experience in the Solomon Islands. The study was designed to document the approaches being used by different organisations, their access to gender resources, capacity, and barriers to increased gender inclusion. The study focused on interviewing key informants from government ministries, local and

international NGOs from the fisheries and environmental sectors, academic institutions, development organisations, regional and global organisations, and a select number of experts working on gender issues. Interviews were completed in Suva, Fiji in August 2018 and in Honiara, Solomon Islands in September 2018. All data collected to-date have been entered into a database.

Working closely with SPC's Fisheries, Aquaculture & Marine Ecosystems Division, Social Development Programme, and Regional Rights Resource Team, a legal consultant was commissioned to undertake a situational analysis of the gender and human rights laws and policies in six Pacific Island countries (Fiji, Kiribati, Samoa, Solomon Islands, Tonga, and Vanuatu) and identify opportunities for and barriers to their application in coastal fisheries and aquaculture management and development.

Dr Sangeeta Mangubhai participated in a regional technical working group to develop a "Handbook for Pacific Gender and Social Inclusion in Small-Scale Fisheries and Aquaculture." The handbook is designed to give practical guidance for staff working on fisheries and aquaculture in Pacific Island governments on how to improve gender and social inclusion in their work. The handbook focuses on the responsibilities of Pacific Island governments to help promote sustainable development outcomes for all people relying on coastal fisheries and aquaculture for their livelihoods. The contents of the handbook are therefore structured around the tasks involved in government work on coastal fisheries and aquaculture—around the planning and implementation of projects and programmes—including social analysis, monitoring and evaluation, policy development, community engagement, fisheries management, and livelihoods projects.

#### **NEXT STEPS:**

- A manuscript to be submitted to World Development on "Approaches to integrate gender into small-scale fisheries in Melanesia".
- Modules on community engagement, livelihood projects, and small-scale fisheries management will be developed in early 2020, to be included in a second edition of the handbook
- An analytical framework will be developed to guide the desktop review, and help identify which approaches are being applied by the fisheries sector in the Pacific.

#### **LINKS TO NATIONAL PRIORITIES:**

**Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship. **TA 4 (Inclusive Social Development):** increase women's capacity to participate in decision making and leadership at all levels to development (from village to national government) by 2018. **Fiji National Gender Policy:** 5.7 Gender Statistics and Research, 5.19 Leadership, Training and Development.

## *When does coastal conservation produce positive outcomes for people and nature?*

**STATUS:** Ongoing

**FUNDING:** Science for Nature and People Partnership (SNAPP)

**PARTNER ORGANISATIONS:** James Cook University, University of Michigan, World Wildlife Fund, University of Waterloo, University of Victoria, Brock University, RARE Indonesia, French National Centre for Scientific Research, Macquarie University, NCEAS and University of California, Duke University, University of Queensland

### **RESEARCH HIGHLIGHTS:**

The Convention on Biological Diversity and the Sustainable Development Goals underline the urgent need for transformations towards global sustainability. For our planet's oceans, a key target mandates that 10% of coastal and marine areas are to be managed through marine protected areas (MPAs) and other effective area-based conservation measures (OECMs). Many nations have made substantial progress towards meeting this target through establishing large MPAs. There has been slower progress in recognising the role of OECMs, which can include locally managed marine areas with community-based and co-management governance. OECMs are an important approach to marine and fisheries management in many contexts, particularly in developing countries, where recognizing local tenure and traditional practices is critical to ensuring equitable management. A key barrier to the recognition of OECMs by the global community is a lack of understanding of whether and how OECMs can deliver positive outcomes for people and nature.

Drs. Sangeeta Mangubhai and Stacy Jupiter participated in a SNAPP working group led by Drs. Emily Darling and Georgina Gurney, that is looking at the social, ecological, and political conditions in which the use of MPAs and OECMs are associated with positive outcomes for both people and nature, as well as the synergies and tradeoffs that exist between multiple outcomes. The group represents a trans-disciplinary partnership of policy-makers, practitioners and academics with expertise in social and ecological science.

### **NEXT STEPS:**

- Provide the first global synthesis examining the social and ecological outcomes of different types of coastal conservation measures.
- Build a decision support tool that will help stakeholders invest in and implement effective coastal conservation and management actions.
- Inform UN Sustainable Development Goal reporting and negotiations leading up to the Convention on Biological Diversity's Post-2020 Biodiversity Framework.

### **LINKS TO NATIONAL PRIORITIES:**

**Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship.

## *What key features support fisheries' resilience to climate change impacts, and how can these features be recognized and enhanced in marine fishery management systems?*

**STATUS:** Ongoing

**FUNDING:** Science for Nature and People Partnership (SNAPP)

**PARTNER ORGANISATIONS:** Environmental Defense Fund, Gulf of Maine Research Institute, WorldFish, International Council for the Exploration of the Sea (ICES), National Oceanic and Atmospheric Administration (NOAA), Alaska Fisheries Science Center Cornell University, University of the Sunshine Coast, University of California, Harvard University, Iwate University, James Cook University, University of Tasmania, The Nature Conservancy (TNC), Food and Agriculture Organization of the United Nations (FAO), University of Waterloo, University of British Columbia, University of California, CSIRO, Stockholm University, University of Hamburg, Environmental Law Institute, University of Kiel, University of Cape Town

### **RESEARCH HIGHLIGHTS:**

Marine fisheries provide income, jobs, and nutrition for millions of people, but impacts of climate change are altering the productivity and distribution of fish stocks and the flows of benefits from fisheries. In this context of increasing change and uncertainty, effective fishery management systems need to be designed to support resilience. This working group will synthesize interdisciplinary information to identify key features of resilience and develop guidance on approaches, processes, and tools that can help operationalize resilience in fisheries around the world.

Using experiences and data from around the world, this team will identify features of fisheries that support resilience in the context of climate change. We will analyze case studies to evaluate the benefits of these attributes in fisheries that have already experienced climate impacts. Ultimately, the working group will develop a tool to help managers assess and enhance resilience in a wide variety of fisheries. The SNAPP working group will:

- Provide consensus view of the key features of climate-resilient fisheries and examples of application of these features in fishery management systems.
- Develop a decision support tool to help managers identify resilience capacity and needs, and to provide guidance on approaches to enhance resilience.
- Work with leaders of fishery management organizations to tailor results and products for global, national, and regional application in a variety of fisheries.

### **LINKS TO NATIONAL PRIORITIES:**

Green Growth Framework TA 3 (Sustainable Island and Ocean Resources): (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship.

## Protecting Reefs of Hope

**STATUS:** Completed

**FUNDING:** Flora Family Foundation (Grant# 2018 - 3152)

**PARTNER ORGANISATIONS:** Manta Trust, Marine Ecology Consulting, Barefoot Manta Island Resort, Reef Safari Diving Fiji, Reef Explorer Fiji Limited

### OUTPUT:

- Factsheet: Snapshot of the 2019 coral bleaching in Fiji

### RESEARCH HIGHLIGHTS:



Healthy reefs with high coral diversity © Emily Darling

Coral reefs support critical ecosystem services of fisheries livelihoods, food security, coastal protection and cultural practices for millions of people around the world. Threatened by climate change and human stressors, coral reef conservation is at a crossroads. To increase reef resilience, global conservation initiatives are mobilising around the concept of ‘climate refuges’— reefs that occur in climatically stable areas, or that have properties of resilience to climate disturbances. The aim was to

proactively identify and manage these global refuges, or ‘Reefs of Hope’ to ensure their resilience and maintain intact coral reef processes where possible.

Key outcomes were:

- Coral bleaching was documented in Fiji in 2019 and a factsheet was produced with partners and provided to government colleagues;
- Compiled a national dataset of coral bleaching observations covering 64 sites in Fiji;
- Improve global coral monitoring by supporting the public launch of the MERMAID<sup>1</sup> beta software on an open-access platform where international scientists can use this tool and review our data; and
- Trained Fijian and Indonesian coral reef scientists on using MERMAID and improve their underwater monitoring skills ahead of fieldwork.

### LINKS TO NATIONAL PRIORITIES:

**NBSAP Implementation Plan TA 3 (Inshore Fisheries), Action 3.2b:** Monitor core set of existing MPAs for biodiversity and fisheries resources compared with unmanaged sites. **National Climate Change Policy, Objective 5 (Adaptation) Strategy 2:** Include vulnerability assessment and climate change impact projections into resource management planning, such as integrated coastal and watershed management plans.

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<sup>1</sup> <https://datamermaid.org/>

## Assessment of coral reefs around Ovalau, post-Cyclone Winston

**STATUS:** In progress

**FUNDING:** John D. and Catherine T. MacArthur Foundation (Grant #16-1608-151132-CSD)

### RESEARCH HIGHLIGHTS:



Coral conditions in Ovalau waters ©WCS

On 20 February 2016, one of the largest cyclones on record in the Southern Hemisphere passed through Fiji. Category 5 Cyclone Winston left a trail of destruction, with some of the most impacted landscape and communities located in the Vatu-i-Ra Seascape. Surveys were conducted to: (a) assess the current health of coral reef systems around Ovalau Island; (b) evaluate the trends in coral cover and diversity and fish population over the last five years; (c) assess the impact of threats such as cyclone, shipwreck and fish factory and recovery

potential of coral reefs from selected fishing grounds; (d) evaluate changes in community perception overtime; and (e) provide recommendations to communities on the management of their traditional fishing grounds to support ridge-to-reef planning for Ovalau Island. Data were collected on the benthic cover, habitat structure, coral genera, and fish size and abundance. Surveys were conducted both inside and outside *tabu* areas within community fishing grounds. Household and key informant interviews were conducted with communities living in Locally Managed Marine Areas (LMMAs) to understand their perception on coral reef management overtime. Catch per unit effort (CPUE) surveys were conducted with communities in the proposed or existing LMMAs to understand the current state of local fisheries and effort prior to strengthening management effectiveness. Results will contribute toward the development of an island-scale ecosystem-based management (EBM) plan for Ovalau Island, led by local communities and the Lomaiviti Provincial Office.

### NEXT STEPS:

- Data are being analysed and a full report of the survey will be available in 2020.
- Share results to Lomaiviti Provincial Office and to local communities.
- Incorporate results into the design of EBM plan for Ovalau Island.

### LINKS TO NATIONAL PRIORITIES:

**NBSAP Implementation Plan Thematic Area 3 (Inshore Fisheries), Action 3.2b:** Monitor core set of existing MPAs for biodiversity and fisheries resources compared with unmanaged sites; **Action 8.2a:** Perform stock assessment of inshore marine resources. **Fiji Climate Change Policy Objective 5 (Adaptation), Strategy 5:** Support the ecosystem-based approach throughout Fiji, recognising that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience; and **Green Growth Framework Thematic Area 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship, (ii) government to continue to work with community and civil society on initiatives such as the establishment of marine protected areas and community based fish wardens.

## *Strengthening knowledge co-production in Locally Managed Marine Areas: a Fijian case study*

**STATUS:** Ongoing

**FUNDING:** British Academy, John D. and Catherine T. MacArthur Foundation (Grant #16-1608-151132-CSD), Margaret S Cargill Philanthropy

**PARTNER ORGANISATIONS:** Fiji Locally Managed Marine Areas (FLMMA), Locally Managed Marine Areas (LMMA), Middlesex University, College of London

### **RESEARCH HIGHLIGHTS:**



Community planning workshops ©WCS

Community-based co-management is hailed as the solution to natural resource decline experienced by rural communities worldwide. It involves decentralised resource management which responds to social and conservation goals. The LMMA network in Fiji is one of the most extensive networks of community-based co-management sites in the world. The LMMA process involves the collaborative generation and dissemination of knowledge and decision tools on marine resource management between scientists, NGOs, fishing

communities and government officials. After 14 years of existence, the FLMMA network is seeking to identify lessons learned, to provide guidance to stakeholders about inputs and organisational processes that generate knowledge and decisions that deliver sustainable resource use and management.

Although co-management takes many forms, a core concept is that knowledge and decisions about local resource management are generated by integrating traditional ecological knowledge with scientific knowledge. Such ‘co-produced knowledge’ is hypothesised to generate decisions that are locally-relevant, context specific and culturally acceptable. A project was launched in 2018 to evaluate the impact of knowledge co-production on the success or failure of LMMAs in delivering social and ecological benefits, and to identify contextual factors that are conducive to success. Ultimately, the main aim of knowledge co-production in marine co-management regimes is to increase the capacity of local communities to sustainably manage their marine resources. It is thus critical to identify whether knowledge co-production helps to achieve this aim, and which factors are conducive to success.

### **LINKS TO NATIONAL PRIORITIES:**

**NBSAP Implementation Plan Thematic Area 3 (Inshore Fisheries), Action 3.2b:** Monitor core set of existing MPAs for biodiversity and fisheries resources compared with unmanaged sites; **Green Growth Framework Thematic Area 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasizing supporting resource owners on the importance of proper environmental stewardship, (ii) government to continue to work with community and civil society on initiatives such as the establishment of marine protected areas and community based fish wardens.

## *Monitoring the impact of the MacArthur Foundation's 10 year coastal and marine strategy*

**STATUS:** In progress

**FUNDING:** John D. and Catherine T. MacArthur Foundation (Grant #13-104090-000-INP)

**PARTNER ORGANISATIONS:** WCS offices in Melanesia, Indonesia, Western Indian Ocean and the Caribbean, James Cook University

### **RESEARCH HIGHLIGHTS:**



Ovalau Island above and below water ©Sangeeta Mangubhai/WCS

Monitoring the effectiveness of conservation interventions is critical for adaptive management and provides the opportunity to evaluate components of successful fisheries management around the world. WCS and our partners in key geographies have refined a global framework to monitor the impact of investments in coral reef fisheries management by standardising methodologies and developing a coordinated database of monitoring indicators. By bringing together global partners towards collaborative fisheries

monitoring, we can provide information to assess the impact of investments made by the MacArthur Foundation's 10 Year Coastal and Marine Grant Making Strategy and identify successful fisheries management in a global context.

Baseline ecological and socioeconomic data were collected across eight sites across four districts in three provinces in Fiji. Biological monitoring was conducted in 2014, 2016 (2–3 months after Cyclone Winston) and in 2019, using standard underwater visual census techniques. Socioeconomic household and key informant surveys were also conducted across the 8 villages previously surveyed in 2014, 2015 and 2016. All data were entered into Kobo Toolbox for data analysis. In 2020, WCS hopes to work closely with social scientists to undertake data analysis, and share the results with local communities and partners.

### **LINKS TO NATIONAL PRIORITIES:**

**NBSAP Implementation Plan Thematic Area 3 (Inshore Fisheries), Action 3.2b:** Monitor core set of existing MPAs for biodiversity and fisheries resources compared with unmanaged sites; **Action 8.2a:** Perform stock assessment of inshore marine resources. **Green Growth Framework Thematic Area 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasizing supporting resource owners on the importance of proper environmental stewardship, (ii) government to continue to work with community and civil society on initiatives such as the establishment of marine protected areas and community based fish wardens.

## *The role and contribution of non-indigenous groups to the coastal fisheries sector in Fiji*

**STATUS:** In progress

**FUNDING:** John D. and Catherine T. MacArthur Foundation (Grant #16-1608-151132-CSD)

### **RESEARCH HIGHLIGHTS:**

Non-indigenous groups make up just under half of Fiji's population, with many relying on coastal fisheries resources for their subsistence and livelihoods. The fisheries sector is the third largest natural resource sector in the country after sugar and other crops. There is very little published information on how other ethnic groups, the largest being Indo-Fijians, contribute to the coastal fisheries sector, and the challenges they face given they do not have access rights to traditional fishing grounds. Therefore, their contribution to Fiji's coastal fisheries and the local and national economy are largely unknown and has not been quantified or valued.



Indo-Fijian fishers waiting to go fishing  
©Yashika Nand/WCS

This study is aimed to document the role and contribution of non-indigenous (non-*iTaukei*) groups to Fiji's coastal fisheries sector to: (a) better understand the diversity of coastal fisheries non-indigenous groups participate in, and their contribution to the local and national economy; (b) document the degree of dependence non-indigenous groups have on the coastal fisheries for food and/or livelihoods; and (c) understand the main challenges and barriers non-indigenous groups face in Fiji's coastal fisheries sector.

### **NEXT STEPS:**

- Data are being analysed and a full report will be available in 2020.
- Presentation of the results to Ministry of Fisheries and other local stakeholders.
- Presentation of the results of the 2020 International Coral Reef Symposium in Germany.
- National level awareness and consultation workshops to present the results and further discuss the challenge of this groups and to find ways to better engage this group into coastal fisheries management.

### **LINKS TO NATIONAL PRIORITIES:**

**NBSAP Implementation Plan Thematic Area 3 (Inshore Fisheries), Action 8.2a:** Perform stock assessment of inshore marine resources. Green Growth Framework Thematic Area 3 (Sustainable Island and Ocean Resources): (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasizing supporting resource owners on the importance of proper environmental stewardship.

## MANAGEMENT

The following sections present a synthesis of completed and ongoing activities that have strengthened and supported community-based natural resource management in Fiji in 2019.

### *Spreading district-scale ecosystem-based management in Bua Province*

**STATUS:** Ongoing

**FUNDING:** John D. and Catherine T. MacArthur Foundation (Grant #16-1608-151132-CSD)

**PARTNER ORGANISATIONS:** Bua Provincial Council Office, *iTaukei* Affairs Board (iTAB), *iTaukei* Lands and Fisheries Commission (TLFC), cChange Pacific, Bua Yaubula Management Support Team (BYMST), Fiji Locally Managed Marine Area (FLMMA)

#### **OUTPUTS:**

- Management Plan: WCS (2019) Ecosystem-Based Management Plan Bua District, Bua Province, Fiji. Wildlife Conservation Society, Suva, Fiji.
- Management Plan (2019) Ecosystem-Based Management Plan Dama District, Bua Province, Fiji. Wildlife Conservation Society, Suva, Fiji.
- Giffin A, Caginitoba A, Kubunavanua E, Dulunaqio S, Mangubhai S (2019) Ecosystem-based management in Fiji to support healthy fisheries. SPC Fisheries Newsletter. 159: 28–33

#### **HIGHLIGHTS:**

Dama and Bua districts successfully launched their bottom-up, community-driven EBM plans



Launch of Dama District Ecosystem-based management plan.  
©Eferemo Kubunavanua /WCS

in December 2019. As a result, all nine districts in Bua Province have endorsed their individual EBM plans, which sit under the broader Integrated Coastal Management Plan for Bua Province. The launching of EBM plans strengthened existing *tabus*, resulted in creation of new *tabus* across terrestrial, freshwater, and marine habitats, and formalised

suites of community rules regulating use of natural resources on their land and customary fishing grounds. These measures combined should lead to improved natural resource management and more sustainable practices, and improved ecosystem health and fisheries productivity. In early 2020, the Yaubula Management Support Team (YMST) for each district will be developing detailed implementation plans.

WCS has supported the Bua BYMST, and resource management committees (RMCs) in Kubulau, Navakasiga and Lekutu with grants from the United Nations Development Programme's Small Grants Programme. These grants are providing RMCs with resources to implement components of their EBM plans.



People of Bua District came together to launch the ecosystem-based management plan © Eferemo Kubunavanua/WCS



#### LINKS TO NATIONAL PRIORITIES:

**Recommendation 2:** Develop ICM plans at the provincial levels which when considered together will suggest the make-up of the National ICM Plan. **Implementation Plan TA 6 (Protected Areas), Strategy 2:** Expand protected area network in priority sites at the national level and provincial level to achieve national targets, **Objective 2.2:** By 2014, develop management structures and implement paths to gazettal at highest priority sites, **Actions 2.2b-c;** and **NBSAP Implementation Plan TA 3 (Inshore Fisheries), Strategy 4:** Design new ecologically relevant inshore MPAs, **Objective 4.6:** By mid-2014, 25% of the communities will have established new management structures for new MPAs, **Action 4.6a:** Consult with communities at priority regions outside of existing MMAs to establish new MPA management structures. **Climate Change Policy Adaptation Strategy 5:** Support the ecosystem based management approach throughout Fiji, recognising that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship, (ii) government to continue to work with community and civil society on initiatives such as the establishment of marine protected areas and community based fish wardens.

## *Island-scale EBM planning for Lomaiviti Province*

**STATUS:** Ongoing

**FUNDING:** John D. and Catherine T. MacArthur Foundation (Grant #16-1608-151132-CSD), Blue Action Fund (Grant #02-05-2018-21)

**PARTNER ORGANISATIONS:** Lomaiviti Provincial Council Office, Lomaiviti Yaubula Management Support Team ('LYMST), Koro Yaubula Management Support Team (KYMST), Ovalau Yaubula Management Support Team (OYMST)

**OUTPUT:**

- Giffin A, Caginitoba A, Kubunavanua E, Dulunaqio S and Mangubhai S (2019) Ecosystem-based management in Fiji to support healthy fisheries SPC Fisheries Newsletter 159: 28-33

**HIGHLIGHTS:**

On 4 November 2019, with support from WCS, the Lomaiviti Provincial Office and key Government Ministries, the 14 traditional chiefs (Turaga-ni-Koro) of the 14 villages of Koro Island launched the first ever island-scale ecosystem-based management plan (EBM) in Fiji. The plan was designed by the YMST on the island through various community and stakeholder consultations undertaken between 2015 and 2018. The plan reflects the outcomes of the Koro Island EBM planning workshops conducted on the island with local communities and relevant government representatives.



Chiefs of the Koro Island villages at the launch of the Koro Island Ecosystem-based management plan  
©Arishma Devi/WCS

The management plan promotes an integrated approach to enhancing the ecological value and resilience of terrestrial freshwater, coastal and marine ecosystems on Koro Island. EBM aims to maintain ecosystems in a healthy, productive and resilient condition so that human needs can be met in future. Local communities are key to sustaining the ecosystems and this plan seeks to address the growing challenges of Fiji's land and marine resources including the impacts of climate change.

A workshop was held in June 2018 on Koro Island with representatives from each of the 14 villages. Workshop participants reviewed management rules for terrestrial and marine protected areas. The RMCs were re-established with new members at the village and island levels. There were greater efforts made to encourage and support improved inclusion of women on RMCs. The new fisheries training modules were also piloted on Koro Island. The most up to date fisheries information were provided to the representatives to better equip them with the knowledge needed to develop a single fisheries management plan for the island that will sit under the larger Koro Island EBM plan.

WCS staff have started supporting the EBM process on Ovalau Island in partnership with the provincial office and Ovalau YMST. Three management workshops were conducted on Ovalau Island in 2019. The workshops were attended by Government representatives from the Ministries of Fisheries, Forestry, Environment and Agriculture, Trade and Tourism, high chiefs for Koro, Ovalau and Moturiki Islands, the Lomaiviti Conservation Officer, Lomaiviti Youth Coordinator, and village spokesmen. Communities from Ovalau Island created visions for the most important ecosystems on their islands. The communities on Ovalau have reviewed their existing *tabu* area within their LMMAs, and identified sites for inclusion in the EBM plan for their island.

#### NEXT STEPS:

- Develop implementation plan for Koro Island, and monitor its effectiveness.
- Consult communities in Ovalau for island-scale EBM and prepare for launch in 2020.



WCS Staff celebrate the launch with people of Koro Island © WCS

#### LINKS TO NATIONAL PRIORITIES:

**Recommendation 2:** Develop ICM plans at the provincial levels which when considered together will suggest the make-up of the National ICM Plan. **NBSAP Implementation Plan TA 6 (Protected Areas), Strategy 2:** Expand protected area network in priority sites at the national level and provincial level to achieve national targets, **Objective 2.2:** By 2014, develop management structures and implement paths to gazettal at highest priority sites, **Actions 2.2b-c;** and **NBSAP Implementation Plan TA 3 (Inshore Fisheries), Strategy 4:** Design new ecologically relevant inshore MPAs, **Objective 4.6:** By mid-2014, 25% of the communities will have established new management structures for new MPAs, **Action 4.6a:** Consult with communities at priority regions outside of existing MMAs to establish new MPA management structures. **Climate Change Policy Adaptation Strategy 5:** Support the ecosystem based management approach throughout Fiji, recognising that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship, (ii) government to continue to work with community and civil society on initiatives such as the establishment of marine protected areas and community based fish wardens.

## Watershed Interventions for Systems Health in Fiji (WISH Fiji)

**STATUS:** Ongoing

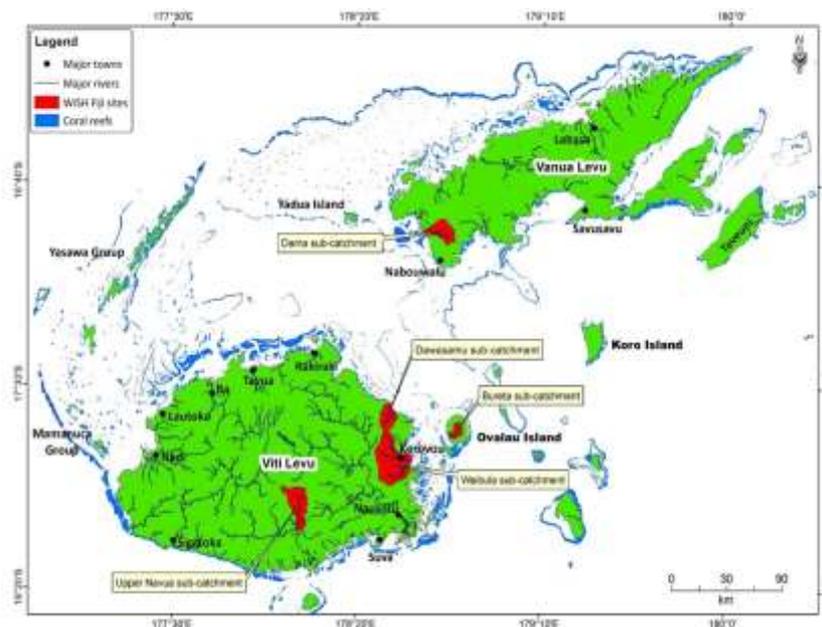
**FUNDING:** Bloomberg Philanthropies, Australian Department of Foreign Affairs and Trade

**PARTNER ORGANISATIONS:** Fiji National University, University of Sydney, Edith Cowan University, Ministry of Health and Medical Services, Ministry of Environment and Waterways, World Health Organization (WHO), Pacific Committee (SPC), George Institute for Global Health

### OUTPUTS:

- McFarlane R, Horwitz P, Arabena K, Capon A, Jenkins A, Jupiter S, Negin J, Parkes MW, Saketa S (2019) Ecosystems services for human health in Oceania. Ecosystems Services. doi.org/10.1016/j.ecoser.2019.100976
- Jenkins A, Jupiter S, Jenney A, Rosa V, Naucukidi A, Prasad N, Vosaki G, Mulholland K, Strugnell R, Kama M, Crump J, Horwitz P (2019) Environmental foundations of typhoid fever in the Fijian residential setting. International Journal of Environmental Research and Public Health. DOI:10.3390/ijerph16132407
- Quarterly newsletter: WISH Fiji Newsletter 1 <https://mailchi.mp/817c13d93a78/watershed-interventions-for-systems-health-in-fiji?e=08e541f1c0>

### HIGHLIGHTS:



Map of five project sub-catchment sites in Fiji

A large body of research identifies the mechanisms by which land-based runoff of point and non-point source pollution containing freshwater, sediments, nutrients, pathogens, and chemicals can damage and kill coral reef organisms. Land-based impacts are particularly problematic in areas where logging is prevalent and unmanaged, and where village and urban waste management systems are

rudimentary. These impacts are pronounced in high island ecosystems where there is tight connectivity between land and sea. Poor land-use practices can have large impacts on coastal habitats and the communities that depend on them.

WCS collaborated with researchers and practitioners from Australian and Fijian Universities, the World Health Organization (WHO), SPC and the Fiji Ministries of Health and Medical Services and Environment and Waterways on a three-year national project to reduce water-related diseases through integrated upstream solutions and protect the health of coral reefs. The project is called the Watershed Interventions for Systems Health in Fiji (WISH Fiji).



Project objectives:

1. To reduce incidence and occurrence of water-related diseases such as typhoid, dengue and leptospirosis;
2. Reduce downstream runoff of sediments and nutrients to coral reefs through good catchment management practices;
3. Assess the impact of catchment interventions through regular monitoring;
4. Strengthen the implementation of policies to reduce land-based pollution.

### Working across five sub-catchments



WISH Fiji team collecting samples for testing ©WISH Fiji

A national-level workshop was held on 19 March 2019, bringing together government stakeholders and staff from the Vibrant Oceans and WISH Fiji projects to review geographic, environmental, and health data to select project sub-catchments.

Sub-catchments were prioritized based on the following criteria: (1) areas of concern with respect to at least two of three diseases of typhoid, leptospirosis and dengue; (2) at least six identifiable communities and/or

large settlements within the sub-catchment boundaries; and (3) sub-catchment is coastal with discharge to reefs, for at least two of the three overlapping project sub-catchments. The WISH Fiji is now working on five sub-catchments, namely Dama, Bureta, Dawasamu, Waibula and Upper Navua.

After consultations with and consent from the selected villages of the target sub-catchments, the team executed a pilot baseline survey in July. In August, the project began initial baseline surveys through household surveys and collecting water and soil samples for laboratory testing. Four categories of tests done on the collected samples are: physio-chemical, chemical, microbiological and molecular. Target samples are sent to Australia's Westmead Institute of Medical Research (WIMR) in Sydney to process the DNA of target samples.

Coral reef surveys were completed in October to collect baseline data on coral cover, coral disease, and reef fish communities using WCS's standard monitoring practices,<sup>2</sup> to help document and better understand how land use practices are impacting downstream coral reef habitats. All data have been entered and stored in WCS's online MERMAID platform<sup>3</sup>. Preliminary results showed coral cover on inshore reefs ranging from 16.9 – 23.1% and silt (sediments from terrestrial sources) was high, ranging from 2.7 – 51.8%. Coral bleaching (pale and fully bleached colonies), an indicator of stress, was also documented. This stress is likely a combination of freshwater (from heavy rain at the time of surveys) and sediments from the watershed. Catch per unit effort (CPUE) surveys of marine and freshwater fish and invertebrate landings with local fishers in each sub-catchment were conducted in August 2019; another three surveys will be done over the next 9 months (December 2019, April and August 2020) to establish a baseline.



Team WISH Fiji on Ovalau © Tom Vierus

#### **NEXT STEPS:**

- Analyse the baseline data collected, and present back to communities, government, and other stakeholders.
- Work with local communities to identify and implement interventions to improve catchment management and human health.
- Complete a policy gap analysis and produce policy briefs for discussion with key government ministries.
- Develop community engagement tools for WISH Fiji.

#### **LINKS TO NATIONAL PRIORITIES:**

**Fiji Climate Change Policy Objective 5 (Adaptation), Strategy 9:** Build the capacity of the health and agriculture sectors to respond effectively to climate sensitive diseases, including the strengthening of disease surveillance and control systems, and early warning mechanisms for climate sensitive human and livestock diseases. **Fiji Ministry of Health Strategic Plan (2011 - 2015): Objective 2.3:** Reduce confirmed cases of typhoid by 75% by 2015; **Objective 2.7:** Reduce incidence rates of leptospirosis by 50% by 2015; and **Objective 7.1:** Increase the proportion of people with access to safe water.

**Recommendation 2:** Develop ICM plans at the provincial levels which when considered together will suggest the make-up of the National ICM Plan.

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<sup>2</sup> WCS (2010) WCS-Fiji marine biological monitoring handbook. Version 3.1. Wildlife Conservation Society Fiji, Suva, 50 pp.

<sup>3</sup> <https://collect.datamermaid.org/>

## *Improving effectiveness of inshore fisheries management systems in Fiji to achieve sustainable ecological, social and economic outcomes*

**STATUS:** Ongoing

**FUNDING:** David and Lucile Packard Foundation (Grant #2017-66580), John D. and Catherine T. MacArthur Foundation (Grant #16-1608-151132-CSD), Blue Action Fund (Grant # 02-05-2018-21)

**PARTNER ORGANISATIONS:** Ministry of Fisheries, Fiji Environmental Law Association (FELA), Biospherics, World Wide Fund for Nature (WWF), Fiji Locally Managed Marine Area (FLMMA)

### **OUTPUT:**

- Giffin A, Naleba M, Fox M and Mangubhai S (2019) Women fishers in Fiji launch a mud crab management plan for their fishery. SPC Women in Fisheries Information Bulletin 30: 21-23

### **HIGHLIGHTS:**



*Size measurements of fish at Labasa markets. ©Sangeeta Mangubhai/WCS*

Our fisheries work focuses around three key objectives: (1) improving fisheries management systems; (2) developing effective legislation, policy, and management frameworks; and (3) strengthening governance of inshore fisheries.

**Sea cucumber fishery:** Despite the ban on the sale of sea cucumbers, Natuvu (Wailevu District) village held consultations and finalised the content of their community sea cucumber plans. The plan includes the implementation of minimum wet and dry size limits; prohibition on the collection of a list of

non-permitted species developed by Ministry of Fisheries and WCS; gear limitations (i.e. gleaning and breath-hold diving only); seasonal closures around spawning periods, where known; and spatial protection (i.e. *tabu* areas). The plan has been reviewed and endorsed by the Ministry of Fisheries Northern Division. This management plan will ensure management strategies are in place, if and when the ban is lifted, and applies to harvesting of sea cucumbers for food. The plan will be launched in early 2020.

**Fisheries Curriculum:** Developed by WCS in 2018 with inputs from partners, the curriculum was tested in Bua District in Bua Province from June 26–28, 2019. Key leaders and local fishers, including fisherwomen, were trained on a range of fisheries management tools to enable them to develop a fisheries management plan for the district, which includes an ecologically representative network of fisheries closures (*tabus*), as well as other management measures. Participants also identified some of the tools they wished to use in their customary fishing grounds. Once developed and finalized, the fisheries management plan will sit within the ecosystem-based management plan for Bua District. It is important to note that currently there is no legal framework that allows for the Ministry of Fisheries to

recognise the community fisheries management plan. However, *tabu* areas can be detailed in commercial licenses.

**Northern Fisheries Forum:** The Fourth Northern Division Fisheries Forum took place in Labasa, Fiji from August 14–15, 2019, hosted by Ministry of Fisheries with the support of WCS. The Ministry took a lead role in the forum in terms of developing the agenda and identifying the participants with little input from WCS. The 2019 forum focused on a wide diversity of topics such as the Set Size Campaign, women in fisheries, draft national management plans for mud crabs and giant clams, fishers' associations, national compliance strategy, and species protected under Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Endangered and Protected Species Act (2002). The forum had greater participation of women fishers than previously, which provided a greater diversity of voices to the discussions. The Forum was preceded by a Commercial Fishers Forum and an Aquaculture Forum (funded by WWF), held in parallel sessions on August 13, 2019.



Participants of the 2019 Northern Fisheries Forum © WCS

**National Fish Warden Strategy:** Two Fish Warden Forums were held in the Northern Division in 2015 and 2018. The Ministry of Fisheries and WCS co-hosted Fish Warden Forums in Central and Western divisions in March 2019, to obtain inputs into a national fish warden strategy. The issues faced by community fish wardens in the Northern, Central and Western divisions are similar, and include: (i) unclear roles and responsibilities; (ii) lack of compensation for time and effort; (iii) inadequate training; (iv) unclear processes for dealing with offenders; and (v) poor communication and coordination between fish wardens and enforcement agencies. Based on the inputs from fish wardens and from other enforcement agencies, the Inshore Fisheries Management Division is drafting a national fish warden strategy that will be available for broader stakeholder consultation in early 2020.

#### **LINKS TO NATIONAL PRIORITIES:**

**NBSAP Implementation Plan Thematic Area 3 (Inshore Fisheries), Action 8.2a:** Perform stock assessments of inshore fisheries. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship.

## Supporting women in fisheries as a strategy to strengthen and expand marine conservation in Fiji

**STATUS:** Ongoing

**FUNDING:** Flora Family Foundation (Grant #2018 - 3153), David and Lucile Packard Foundation (Grant #2017-66580)

**PARTNER ORGANISATIONS:** Ministry of Fisheries

### OUTPUTS:

- Giffin A, Naleba, Fox M and Mangubhai S, Women fishers in Fiji launch a mud crab management plan for their fishery (2019) SPC Women in Fisheries Information Bulletin 30: 20-23

### HIGHLIGHTS:



Vero, mud crab fisher from Cavaga Village in Bua, Vanua Levu. © VCreative

Waitabu and Tacilevu villages, collectively referred to as Navunievu community, launched a 3-year Community Mud Crab Management Plan (2018-2020) with the support of the Ministry of Fisheries and WCS, the Bose Vanua – Bua District and Bua Provincial Office, to address the social, economic, and ecological issues associated with the harvesting and handling of mud crabs (*qari*) and to ensure the sustainability of their fishery for future generations.

Ministry of Fisheries and WCS co-hosted a national consultation workshop on the draft management plans for mud crab and giant clam fisheries in Fiji from February 26 to 27, 2019. The workshop objectives were to: (a) present the status of giant clam and mud crab populations and fisheries in Fiji; (b) obtain stakeholder inputs into the draft giant clam and mud crab fisheries management strategies; and (c) design a national consultation process to ensure inputs from

all relevant stakeholders. Consultations were also done with fishers at the Northern Division Fisheries Forum. Concerns on the low engagement of women fishers in the consultations remain and WCS will work with the Ministry of Fisheries and Fiji Environmental Law Association to plan additional consultations with women fishers in early 2020.

### LINKS TO NATIONAL PRIORITIES:

**NBSAP Implementation Plan TA 3 (Inshore Fisheries), Action 3.2b:** Monitor core set of existing MPAs for biodiversity and fisheries resources compared with unmanaged sites; **Action 8.2a:** Perform stock assessment of inshore marine resources. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship. **TA 4 (Inclusive Social Development):** increase women's capacity to participate in decision making and leadership at all levels to development (from village to national government) by 2018. **Fiji National Gender Policy:** 5.7 Gender Statistics and Research, 5.19 Leadership, Training and Development.

## Supporting community pearl oyster farm

**STATUS:** Ongoing

**FUNDING:** Blue Action Fund

**PARTNER ORGANISATIONS:** J. Hunter Pearls, Pacific Community (SPC)

### HIGHLIGHTS:



The Fijian Pearl Oyster, *Pinctada margaritifera*  
©Fareea Ma/WCS

WCS is partnering J. Hunter Pearls Fiji and SPC to pilot a community-managed pearl oyster farm in Cakaudrove Province on the island of Vanua Levu. The project is supporting non-extractive and environmentally friendly livelihoods for local communities in Fiji. It will engage women fishers and village youth in the industry, while enhancing the effectiveness of their LMMAs as it promotes the sustainable use of marine resources within their customary fishing grounds. The local community will be guided to ensure land uses do not impact water quality in their customary fishing grounds and to maintain the waters needed for producing high quality pearls. WCS and the partners will work closely with the community to develop business plans to ensure equitable distribution of benefits that will cover costs of wages, new pearl oyster stock, training and maintenance of the pearl farm.



The committee members of the pearl farm project in Vatulele Village © Fareea Ma/WCS

Three Pearl Oyster Farm Project Workshops were hosted by Vatulele village, in 2019. Youth, women and men representatives were part of each workshop. The workshops incorporated skill-mapping, livelihood risk assessments, grievance mechanisms, Free Prior and Informed Consent (FPIC). The overall operations and costs of setting up and operating a marine pearl

farm were shared with the community and preliminary surveys were carried out for potential sites within their existing *Tabu*.

The community was supportive and engaging, presenting their working committee and requesting for the setup of the right legal entities, financial literacy and skill training suitable for the project.



Preliminary assessment of potential pearl farm sites within the protected areas of Vatulele Village © Fareea Ma/WCS

This project is the first of a community-private sector partnership on pearl oyster farming for pearls and pearl meat. If found to be a viable livelihood project, the process will be fine-tuned to be replicated in other villages as it (i) helps economic livelihoods for families and villagers, (ii) provides opportunities for employment and development, and (iii) supports sustainable fisheries and protection of the environment.



WCS and SPC teams discussing details of the pearl farm project at the Community Hall of Vatulele Village ©Fareea Ma/WCS

#### Next Steps:

- Develop a business plan involving the community, consultant and partners.
- Establish legal entities to manage the pearl farm and village trust.
- Provide financial literacy and other skill sets training.

#### LINKS TO NATIONAL PRIORITIES:

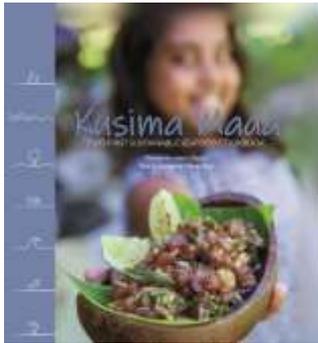
**NBSAP Implementation Plan TA 3 (Inshore Fisheries), Action 8.2a:** Perform stock assessment of inshore marine resources. **Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated, and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship. **TA 4 (Inclusive Social Development):** increase women’s capacity to participate in decision making and leadership at all levels to development (from village to national government) by 2018. **Fiji National Gender Policy:** 5.7 Gender Statistics and Research, 5.19 Leadership, Training and Development.

## *Kusima Mada – Fiji’s first sustainable seafood cookbook, celebrating the role women play in coastal fisheries*

**STATUS:** Completed

**FUNDING:** Flora Family Foundation (Grant #2018 - 3153)

### **HIGHLIGHTS:**



On Tuesday, 25 June 2019, WCS launched a first-of-its-kind cookbook in Fiji, *Kusima Mada*, designed to promote sustainable seafood. The launch was officiated by the Honourable Minister for Fisheries, Mr Semi Koroilavesau at Governor’s Restaurant in Suva.

*Kusima Mada* was named winner for Fiji in the prestigious Gourmand World Cookbook Awards 2020 for the C23 South Pacific Category and is now vying for the 2020 Best in the World of the same category.

The cookbook features original recipes from Chef Jason Allport, who designed original mouth-watering recipes using a range of locally sourced seafood and produce. Only species currently thought to be sustainable are included in the cookbook. The cookbook features over 80 recipes organised in terms of the habitats each species is found, from rivers and mangroves to coral reefs and the open ocean. The cookbook encourages consumers to make smart seafood choices, while contributing to keeping Fiji’s fisheries healthy. *Kusima Mada* was also designed to inspire new menus, promote sustainable seafood choices and to protect local fisheries through the compliance of fish and invertebrates size limits in Fiji.

The recipe book celebrates women in coastal fisheries sector who contribute to the food security and the livelihoods of their families, and to Fiji’s national economy. With their stories and traditional knowledge, these women help educate the readers about the long-term health and sustainability of our freshwater and marine habitats.

*Kusima Mada* is currently available at Dominion Bookshop (Opposite MHCC Suva), Pacific Bookshop (Renwick Road Suva), Fiji Museum (Thurston Garden, Suva), Flavours of Fiji (Port Denarau), Tappoos Nadi and Tappoos at the Nadi International Airport.

### **LINKS TO NATIONAL PRIORITIES:**

**Green Growth Framework TA 3 (Sustainable Island and Ocean Resources):** (i) develop a natural resource management system which is inclusive and integrated,

and continue capacity building and awareness programmes with all communities, emphasising supporting resource owners on the importance of proper environmental stewardship. **TA 4 (Inclusive Social Development):** increase women’s capacity to participate in decision making and leadership at all levels to development (from village to national government) by 2018.



Minister for Fisheries Mr. Semi Koroilavesau and WCS Country Program Director Dr. Sangeeta Mangubhai unveil the cookbook ©WCS

## *Sustainable financing for local community protected areas*

**STATUS:** Ongoing

**FUNDING:** John D. and Catherine T. MacArthur Foundation (Grant #16-1608-151132-CSD),

**PARTNER ORGANISATIONS:** Ra Provincial Council, Volivoli Resort, Wananavu Resort, Nai'a Cruises, SPC, FELA, BirdLife International, YachtHelp

### **HIGHLIGHTS:**



WCS Community liaison officer Sirio Dulunaqio hands over the grant to a student ©WCS

### **Management Plan**

The Vatu-i-Ra Conservation Park Management Plan establishes the vision, strategies and framework for sustainably managing Vatu Island, known also as Vatu-i-Ra Island, the surrounding customary fishing grounds *iqoliqoli* Cokovata Nakorotubu, and adjacent deeper waters.

The management plan seeks to promote a holistic ecosystem-based management approach to managing terrestrial and marine ecosystems, and reflects both communities and private sector needs and aspirations for the area. A website has been created to keep the public informed about the Vatu-i-Ra Conservation Park access: <https://www.vatu-i-ra.org/>

### **Education grants**

The Nakorotubu Education Fund was established through a partnership with locally-based tourism operators, liveaboard dive operators, the communities from *qoliqoli* Cokovata Nakorotubu, with technical support from the Ra Provincial Office, WCS, BirdLife International and FELA. A bank account has been set up for the Trust Fund, where all funds collected hereon will be transferred to the account directly by the tourism operators on a quarterly or biannual basis. The frequency of deposits will be determined by the operators themselves. The Management Committee for the Vatu-i-Ra Conservation Park awarded grants totalling FJ\$9,624 in 2019 to 22 students.

### **LINKS TO NATIONAL PRIORITIES:**

By providing means to alternate revenue streams, this activity in principle supports **NBSAP Implementation Plan TA 3 (Inshore Fisheries), Strategy 9:** Reduce demand for marine natural resources and biodiversity products. However, monitoring will be required to evaluate whether revenue is additive or alternative. **TA 3 (Protected Areas), Strategy 3:** Develop sustainable finance mechanisms for new and existing protected areas. **Action 3.1d:** Ensure meaningful participation and provide equitable incentives and remuneration to resource owners for Protected Area establishment and management.

## *Kilaka Forest Conservation Area*

**STATUS:** Ongoing

**FUNDING:** Harvey and Heidi Bookman, John D. and Catherine T. MacArthur Foundation (13-104090-000-INP)

**PARTNER ORGANISATIONS:** Nadicake *mataqali*, iTaukei Land Trust Board (TLTB), Ministry of Forests, Ministry of Environment, Kubulau Resource Management Committee (RMC)

### **HIGHLIGHTS:**

The Kilaka Forest Conservation Area (KFCA) is a 402-hectare block of one of the last native rainforests on Fiji's second largest island of Vanua Levu, within the heart of the Vatu-i-Ra Seascape, where WCS focuses its conservation investments. To increase the visibility and awareness on the presence of the KFCA and especially on the location of its border, the community worked with WCS to install two additional signages at strategic locations within the conservation area. The KFCA now has a total of 3 signages located at strategic points to provide awareness to the general public.

In October 2019, a meeting for the KFCA management committee was held in Kilaka village to discuss (i) overall management of the KFCA; (ii) KFCA management plan which started in November 2016 for a five year period ending in November 2021; (iii) KFCA lease agreement; (iv) the completion of the 2019 activities; and (v) a mid-term review of the the KFCA management plan. A meeting was was also held with the iTaukei Land Trust Board (iTLTB) in Labasa to determine a suitable time to visit the Kilaka community to address emerging issues surrounding the lease agreement and build community financial literacy to manage their lease revenue. The committee will plan for the meeting in March 2020, during their mid-term review and discussions of the KFCA management plan. Key stakeholders especially iTLTB, and financial advisers for the community will be invited to the meeting.

### **Completion of the KFCA boundary demarcation**

The KFCA lease agreement was issued to WCS by the iTaukei Lands Trust Board on June 22, 2017 for a total land area of 402 hectares (subject to final survey), and for a period of 99 years effective from January 1, 2017. The field survey works of the KFCA has finally concluded after a very long process, and the survey plans are currently being processed under a registered number at the Fiji Ministry of Lands for approval and the initiation of the final process for the issuance of the KFCA Lease Title.

### **LINKS TO NATIONAL PRIORITIES:**

**NBSAP Implementation Plan TA 6 (Protected Areas), Strategy 1:** Identify gaps in biodiversity protection against national targets. **Strategy 2:** Expand protected area network in priority sites at the national level and provincial level to achieve national targets. **Green Growth Framework TA 6 (Freshwater Resources and Sanitation Management):** Adoption of watershed management plans using integrated water resources management principles for major rivers, waterways and drainage systems.

## ENGAGING WITH NATIONAL AND REGIONAL POLICY AND PLANNING

The following sections present a synthesis of ways that WCS Fiji has participated in development of national and regional conservation and resource management policies and planning in 2019.

### *Protected Area Committee*

WCS participated in the national Protected Areas Committee (PAC) under the Ministry of Waterways and Environment, established under the Environmental Management Act (2005). WCS-Fiji Director, Dr. Sangeeta Mangubhai continued to chair the Marine Working Group for PAC, and Samuela Lagataki is active on the Terrestrial Working Group.

### *Integrated Coastal Management Committee*

WCS participated in the national Integrated Coastal Management (ICM) Committee under the Department of Environment, established under the Environmental Management Act (2005). The committee provides technical advice to ICM efforts in Fiji.

### *Marine Protected Areas Advisory Committee*

WCS participated in the national Marine Protected Area Technical Advisory Committee chaired by the Ministry of Fisheries, established under the Offshore Fisheries Management Decree (2012). The focus of the meeting was the commitment by Fiji to protect 30 percent of its seas by 2020.

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