



Women in Fisheries

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Gender risk
assessment to
improve fisheries
livelihood projects



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Delvene Boso



Inspiring profiles:
Janet Saeni-Oeta

The sea urchin
harvesters of
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Editor's note

This 39th edition of the Pacific Community's *Women in Fisheries Information Bulletin* has 14 original articles from the Pacific Islands region. Our stories tend to be from a smaller subset of countries, and I would like to ask if our readers can help connect me to people from some of our more under-represented Pacific Island countries such as Cook Islands, French Polynesia, Guam, Nauru, New Caledonia, Niue, and Wallis and Futuna. I offer mentoring and support to new writers who want help to tell their stories.

In this edition, the Fiji Ministry of Fisheries reached out for mentoring and have produced two articles on women-dominated fisheries that have not been well documented: shrimp and sea urchin. The Kiribati government has just started a detailed gender analysis of the fisheries and aquaculture sector, focusing initially on four atolls. Salote Waqairatu-Waqainabete highlights a new upcoming agribusiness project that is evaluating alternative approaches to sector development in the Pacific. We encourage you to check out an article led by Elisabeta Waqa and collaborators, showcasing the Ministry of Fisheries' efforts to conduct a gender risk assessment to improve community livelihood projects in Fiji. There is also a new publication by WorldFish and the Wildlife Conservation Society – "Fisheries Co-Management Guidebook" – which is designed to assist practitioners in understanding the latest research on what constitutes successful fisheries co-management, and how to reach this objective. The guide includes ethical considerations that should form the basis of any programme, including human rights, equity and justice, gender equality, and sustainable Indigenous management.

We welcome several new lead authors to the bulletin who have found their muse – Delvene Boso, Pretika Kumar, Zafiar Naaz, Unaisi Nalasi, Janet Saeni-Oeta, Esther Umu, Elisabeta Waqa and Patrick Smallhorn-West.

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Improving the livelihoods of *moci* fishers by training them in seafood safety and best handling practices

Pretika Kumar¹ and Diana Divalotu¹

Fiji's Ministry of Fisheries and Forestry is working to support and empower women fishers involved in the *moci* (mangrove shrimp) fishery by enhancing their skills and knowledge on food safety and safe handling practices. This in turn, will lead to the improved quality of *moci* sold in local markets.

Background

The mangrove shrimp (*Palaemon concinnus*) – known as *moci* – is a brackish water species that is an important source of protein and a local delicacy for people living in Fiji's Rewa Province. When *moci* is wrapped inside *dalo* (taro) leaves it is referred to as *rourou vakautona*, a traditional food served to the chiefly household in Rewa Province.

Fiji's Ministry of Fisheries and Forestry conducted a market survey in the country's Central Division (Suva and Nausori markets) in October 2020 to get baseline data on women fishers who sell *moci*, and to better understand the challenges they face as sellers in local markets. The study found that *moci* is harvested predominantly by women fishers. During low tide, women use handnets and other small nets to collect *moci* from tidal pools or channels in mangrove and estuarine areas. Potato sacks and the Indian *saree*² are also used by some women to catch *moci*. *Moci* sells for FJD 5.00–10.00 a heap, and women typically sell 10–20 heaps at municipal markets on Saturdays (Ministry of Fisheries and Forestry, unpublished data). Two women traders from Rewa Province buy *moci* from harvesters and then sell the shrimp to restaurants (e.g. Tiko Seafood) and visitors from New Zealand and Australia.

One of the main issues raised by fishers was that hot weather causes *moci* to change, from grey to red, which reduces its market value. The women had no access to refrigeration to help preserve the freshness of their product, and most women simply placed the *moci* on large *drau ni via* leaves, which are laid down on the hot concrete.

The Ministry of Fisheries and Forestry conducted a workshop in March 2022 in Vunuku Village to address some of the issues raised by *moci* fishers during baseline surveys. The workshop brought together women *moci* fishers from four districts: Vutia, Dreketi, Rewa and Burebasaga. In total, 10 villages from these four districts participated in a two-day workshop.

The topics covered were fisheries management and licensing, post-harvesting methods, maintaining the cold chain, and food safety. Fishers shared information on storage, transportation and marketing strategies, as well as their weekly expenses and income from selling *moci*.

Mapping the fishery

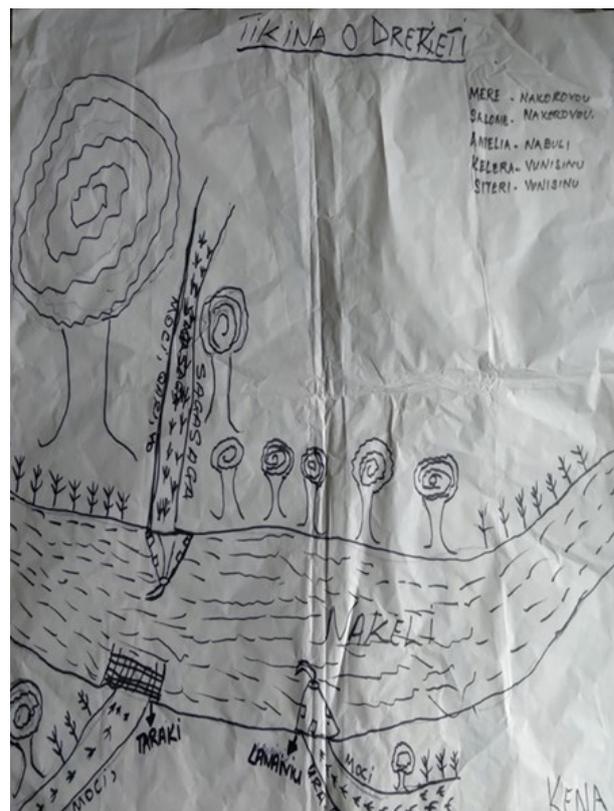


Figure 1. *Moci* harvesting sites in Dreketi District.

A habitat mapping exercise was carried out with the fishers to get an overview of their main harvesting areas, their preferred fishing gear and methods (Fig. 1), and how *moci* is stored on site to ensure its freshness and to maintain food safety standards. Fishers generally prefer to fish in small creeks and waterways in mangrove areas, especially those closest to the village. They also prefer not to harvest from the same location every month. Instead, they rotate their harvesting sites to allow *moci* to grow and reproduce. According to one of the harvesters, *moci* spawn every month and prefer a clean environment (Amelia Liku, *moci* fisher, pers. comm.).

Fishers usually visit mangrove areas, especially during low tide, to set their nets for *moci*. This activity, however, is not restricted by the tides. The fishers continue to set their nets

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² A *saree* is a piece of (often) brightly coloured cloth, about five to seven yards long, that Indian women wear.

as long as they are getting a good catch or once they have met the target for the market, which is about 5 kg of fresh *moci* per day. On average, a *moci* fisher spends about three hours (except on weekends) at their harvesting site. Once caught, the *moci* are rinsed twice with sea water to ensure all mud and debris are removed. The *moci* are then packed in fine-mesh shopping bags that help to drain any excess water to ensure that freshness is maintained. Fishers use various methods to harvest *moci*; some women use an Indian *saree* to construct a pushnet, while others use a potato sack (Fig. 2). In both cases, the fabric is tied around a metal frame and flour is added as food to attract *moci*. Potato sacks and *sarees* are used rather than nets, because the fine weave of these materials prevents the *moci* from escaping. If these fabrics are cleaned and cared for regularly they can be used for several months.

Overview of fisheries management and licensing

There is currently no legislation protecting *moci*. However, Regulation 8 of the Fisheries Regulations (Cap.158 as amended) provides that: “No person shall take, stupefy or kill any fish in any lake, pool, pond, river, stream or in the sea by use of any of the following substances or plants:

- a) any chemical or chemical compound;
- b) any substance containing derris;
- c) any substance containing the active principal of derris, namely, rotenone;
- d) any plant or extract or derivative from any plant, belonging to the genera *Barringtonia*, *Derris*, *Euphorbia*, *Pittosporum* or *Tephrosia*, or place any of such substances or plants in any water for the purpose of taking, stupefying or killing any fish.”



The fishing licensing process was explained to *moci* fishers: they must first fill out and present a Fishing Permit Application that has been verified and endorsed by the Commissioner’s Office prior to them being issued a fishing licence by the Ministry of Fisheries and Forestry. If an applicant has a boat with an engine, she needs to submit the Survey Certificate and the Boat Master License to the Maritime Safety Authority of Fiji. In Fiji, fishing licences are non-transferable and valid for only one year. As part of their licencing conditions, fishers are required to provide records of their catch to the ministry.

Post-harvest methods and best handling practices

Poor handling and processing of seafood, especially within the artisanal and subsistence fisheries (including *moci*), is one of the major challenges of fishers in Fiji. A lack of knowledge about good handling practices results in poor quality seafood, reduced value, and limited opportunity to connect to big markets. Most *moci* fishers lack adequate storage capability during and after harvest. The commodity is merely wrapped in *drau ni via* leaves during harvesting to keep the *moci* cool and prevent it from changing colour from grey to red or reddish brown too quickly. The *moci* are then transported home where fishers freeze the *moci* for later sales, or transported directly to the market from the harvesting site for live sales. Wet or damp cloths are used to maintain the freshness while at the market.



Figure 2. *Moci* fisher, Amelia Liku, deploying her net (left) and with her catch (right). ©Diana Divalotu

The fishers were briefed on the main causes of seafood spoilage, which is through bacteria, enzymes and chemical reactions. They were then taught four simple ways of minimising seafood spoilage:

- 1 Care – handle seafood with care after harvest;
- 2 Cool – wet or cover seafood with wet clothes or leaves;
- 3 Clean – keep handling and storage container clean by using clean water and keep the handling area clean; and
- 4 Quick – gut, clean and store the seafood as quickly as possible.

A demonstration was given on how to properly handle and process *moci* during and after harvesting. A flow chart of each step in the post-harvest process was made and shared with participants (Fig. 3). *Moci* fishers were lectured on the importance of maintaining the cold chain, which is crucial for preserving the quality and safety of *moci*. Fishers were also taught how to use clean water to make ice, and the proper procedure for placing the *moci* in an ice box (Fig. 4). This is done by placing a layer of ice on the bottom of the ice box, and then a layer of *moci* packed in a ziplock bag, ensuring that a ratio of 1 kg of ice to 1 kg of *moci* is maintained. During the training, the Ministry of Fisheries and Forestry provided each village with one ice box, buckets for storing *moci* while fishers are harvesting them, and pushnets (Fig. 5).



Figure 3. The different steps of the post-harvest process.



Figure 4. Officers demonstrating best handling and proper icing practices to participants. ©Pretika Kumar



Figure 5. Minister of Fisheries presenting the certificate and ice box to the participants. ©Pitila Waqainabete

Challenges for *moci* fishers

One of the major issues for *moci* fishers is the distance they must cover to reach their harvesting sites; many women do not have access to a boat so must walk 1.0 to 1.5 hours to reach their fishing sites. None of the women fishers have a boat master's licence, and so rely on men to captain the boat, although the men have their own fishing schedules. If the *moci* fishers make special requests for boat use, it is costly for them because they have to hire it.

Maintaining the cold chain and reducing post-harvest loss are other challenges because fishers do not have electricity at home and use a relative's or neighbour's fridge who does have electricity to store their catch until market day. Most fishers try to take their harvest to the market daily to solve storage issues, but due to their remote location and scheduled bus services, some fishers are not able to go to the market daily. Sales days are normally Thursday, Friday and Saturday. Leftover *moci* from the market is discarded because there is no fridge to keep the produce fresh in the market. The weekly post-harvest loss is estimated to be around 1 kg per fisher (Ministry of Fisheries and Forestry, unpublished data). The major consumers of *moci* are Indo-Fijians, but sales are down during Hindu festival months (e.g. April, February, October/November) when people only eat a vegetarian diet. A high post-harvest loss is recorded during these festive months because sales are low and the product is taken home for personal consumption or given to relatives as gifts. Anything left over is discarded.

In terms of marketing, there is limited space for fishers at the markets, and because *moci* fishers are not licensed, they pay FJD 3.00/day for a market stall. Consequently, most fishers sell outside the market on paved footpaths. Adhering to food safety standards may not be possible for the *moci* fishers who

place their catch on taro leaves on the paved footpaths. The price for *moci* goes down by the afternoon because it changes colour to reddish brown due to the heat from the footpaths. The price sometimes goes as low as FJD 2.00 or FJD 3.00 per heap – down from FJD 5.00 when fresh. When looking at revenue compared with expenses, women fishers make very little profit, hence they do not have extra money to focus on packaging or improving on hygiene and food safety.

Next steps

The Ministry of Fisheries and Forestry hopes to help *moci* fishers form cluster groups so that they can be issued with fishing licences that would allow them to access a proper table at the market to sell their harvest. Further training is needed on fisheries best practices and management, value adding and financial management.

Acknowledgements

The Ministry of Fisheries and Forestry acknowledges the funding support of Fiji GEF R2R Project facilitated by the Department of Environment and the United Nations Development Programme. Our special gratitude goes to the *moci* fishers from the four districts of Dreketi, Noco, Rewa and Burebasaga for their support and sharing valuable information, knowledge and fishing experiences about the *moci* fishery. A special thank you goes to Sangeeta Mangubhai, Editor of the SPC *Women in Fisheries Bulletin* for her tremendous support and coaching in writing and publishing this article.

The sea urchin harvesters of Navakavu, Fiji

Unaisi Nalasi,¹ Kalisi Logatabua,¹ Pitila Waqainabete¹ and Aporosa Ledua¹

Women dominate and play diverse roles in the sea urchin fishery – from collecting, processing and marketing. Women’s participation in the sea urchin fishery is largely undocumented in Fiji. This article presents new information on the fishery that is of value for researchers and decision-makers.

Introduction

In Fiji, the sea urchin *Tripneustes gratilla* is locally known as *cawaki*. Data for small-scale coastal fisheries, such as sea urchins and other invertebrate species, are sparse. Sea urchins have long been dismissed as being unimportant, despite the fact they are harvested as a source of income and food (Lee et al. 2018). Women dominate and play diverse roles in the sea urchin fishery, from collecting, processing and marketing. Women’s participation in coastal fisheries, or in any other sector, is frequently undervalued and underestimated (Thomas et al. 2021). The increasing awareness and recognition of women’s involvement in formal and informal sectors highlights the importance of collecting sex- or gender-disaggregated data.

Tripneustes gratilla is primarily harvested for subsistence and is a supplementary protein source in other fishing grounds (*i qoliqoli*). Sea urchins dominated the overall invertebrate catch for both artisanal and subsistence by 79.5%, according to O’Garra (2007), who estimated the total economic value of Navakavu *i qoliqoli* over a 20-year period to range between FJD 28,793,197 and FJD 29,164,050.

Sea urchins are harvested around the world, with the majority destined for the Japanese market (Sonu 2017). In 2016, Japan imported approximately 11,000 tons of live sea urchins and sea urchin roe valued at approximately USD 183 million, a more than six-fold increase in volume, and a nine-fold increase in value since 1975.² Much of this increase was due to an increased demand, decreased domestic harvest, and a subsequent price increase for sea urchin roe (Sonu 2017). Because it is a resilient and valuable species, the sea urchin has the potential to be cultured. Investigating alternative routes for sea urchin harvesters to achieve greater economic independence through sea urchin farming, could reduce the reliance on wild harvesting.

While government and non-governmental organisations have collected some basic information, there has been very

little effort to collate, synthesise and share recent *T. gratilla* information from various sources. The main objective of this study was to collect data for assessing and managing *T. gratilla* stocks in Fiji, and to identify knowledge gaps and explore potential opportunities to improve the value of the product.

Field sampling

Yavusa Navakavu is a half-hour drive from Suva, Fiji’s capital. A part of the *qoliqoli* there was designated as a locally managed marine area in 2002. Muaivuso, Nabaka, Waiqanake, Namakala and Wainigasau are the three villages and two settlements, respectively, that make up the *Yavusa* (traditional linked unit or clan) known as *Navakavu*, in Suvavou District (Rewa Province).

Data on *Tripneustes gratilla* was gathered from 23 fisherwomen from *Waiqanake* and *Namakala* villages by the Ministry of Fisheries and Forestry. The information was gathered through key informant interviews. The survey was conducted on Wednesdays, Thursdays and Fridays over three consecutive weeks. Interviews were undertaken on the beach front while the women were deshelling the sea urchins they had harvested. Interview topics included the target fishery, reason for fishing, fishing methods, travel time to key fishing grounds, time spent fishing, and habitat types targeted.

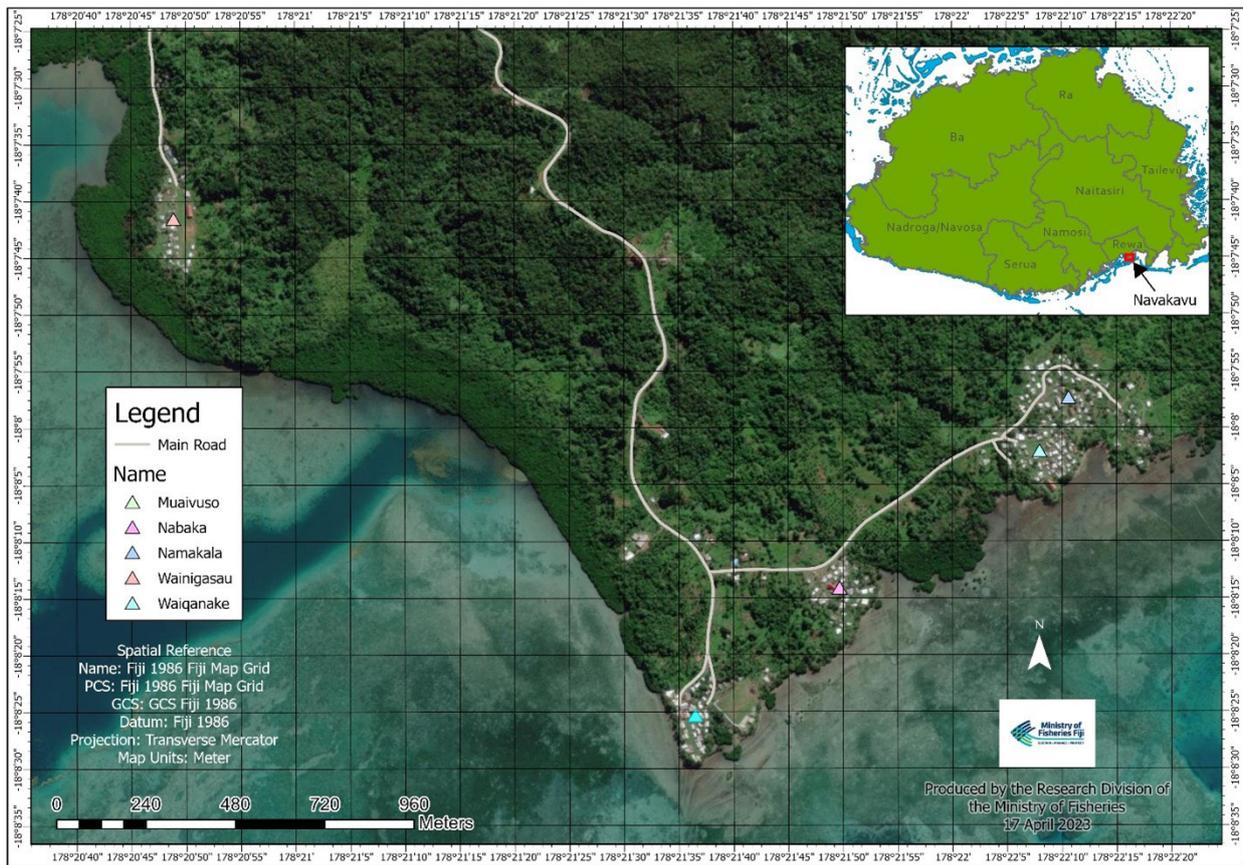
To determine the size of the urchins harvested by the fishers, the maximum width of the underside of each urchin in the sack was measured using a calliper to the nearest millimetre. Individual weights were measured using a waterproof scale. To determine the volume and price of sea urchins sold at the market, 20 women vendors were interviewed at the Suva market. Interviews were conducted on Fridays and Saturdays over three consecutive weeks. Information was gathered from individual vendors on the price of each container of sea urchins, the fishing ground they harvested from, the number of containers of sea urchins to be sold, and targeted customers and their preferences. To determine the actual volume of sea urchins to be sold, both the weight of the deshelled sea urchins in the container and the empty container were weighed.

The landing and market data collected were entered into the *Ikasavea* application.³ This is a smartphone and tablet

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² <https://www.aquaculturenorthamerica.com/new-england-eager-to-cash-in-on-japans-hunger-for-sea-urchins>

³ <https://www.spc.int/CoastalFisheries/FieldSurveys/MktSurvey>



The villages within Qoliqoli Navakavu. © Ministry of Fisheries and Forests



Weighing deshelled urchins (*Tripneustes gratilla*) stored in plastic containers. ©Kalisi Logatabua

application developed by the Pacific Community (SPC) that allows data to be entered offline, and then synchronised to the web portal once connected to the internet. Analysis and reporting of the data are done through this online portal, making information readily available for decision-makers.

Traditional knowledge

Fijian traditional calendars are linked to planting and fishing activities (Veitayaki 2002). The women of Waiqanake Village always correlate harvesting to their surroundings. As explained by the women fishers, *T. gratilla* roe is fully ripe during the breadfruit season and full moon. During super tides and high wave activities associated with strong currents, *T. gratilla* mostly hide underneath rocks and are hard to find. This is the time when most women do not go out to harvest.

Harvesting sea urchins

The majority of harvesters are women who typically harvest *T. gratilla* on Tuesdays, Wednesdays and Thursdays. Monday is usually the day to conduct village work whereby they engage in village meetings, cleaning and other activities assigned by the village headmen. Fridays and Saturdays are market days for the fishers. Fishers work in groups of two to three people (using boats owned by men), venturing out to shallow coral reef areas that emerge during low tides during the day. Women also engage in night gleaning. Fishers

mentioned that it is much easier to locate sea urchins at night than during the day. No specialised equipment is used, just knives and sacks. Urchins are collected by hand and kept in sacks in cool, dry places overnight or left on the boat. This is to kill off parasites associated with *T. gratilla* that, when they come into contact with the skin, cause itchiness.

Processing sea urchins

The very next morning, the sea urchins are deshelled. Deshelling happens during high tide or beside a pool of seawater during low tide. A tablespoon is used to crack open the urchin's shell and to scoop out the gonads.



A fisherwoman from Waiqanake deshelling a sea urchin (*Tripneustes gratilla*) next to a tide pool during low tide. ©Kalisi Logatabua

Once the gonads are removed from the shell, they are properly cleaned in seawater and kept in plastic ice cream containers. Afterwards, the urchins are transferred to the deep freezer to await their sale. A 50-kg bag of sea urchins can fill up one 4.5 litre ice cream container. During peak season, this 50-kg bag can fill one 4.5-L bag plus one 2-L ice cream container depending on the size of the gonads.

Selling sea urchins

Women from *Yavusa Navakavu* dominate the sea urchin market in Suva, particularly on Fridays and Saturdays. The women must travel either by bus or taxi to Suva to sell their catch, which is either sold whole with the shells on in a coconut basket (*i-su*), or only the gonads kept in plastic containers. Whole urchins are sold in 4.5-L containers that cost FJD 100, or in 2-L containers that cost FJD 50. Gonads packed in small containers are sold for FJD 5 for small or medium gonads, and FJD 20 for large ones. Major buyers of urchins are Pacific Islanders, especially Tongans and Samoans, as well as Asians. For export, agents and middlemen buy directly from the village.

Income generated

The majority of the women fishers are satisfied with the income they earn from marketing sea urchins. As most of them mentioned, sea urchin collecting is an easy way to earn income because they are able to combine their household chores in a day with harvesting sea urchins for income.



A sea urchin (*Tripneustes gratilla*) is deshelled and the roe scooped into a 2-L ice cream container. ©Kalisi Logatabua

and food. Harvesting takes up to three to four hours per week. Money earned from the sale of sea urchins is spent on household and personal needs. According to one of the women who was interviewed, she was able to complete the construction of their house from the income she earned from sea urchin sales. One of the women interviewed also resigned from her job because she earned more from selling urchins.

Challenges faced by sea urchin fishers

The major challenges faced by sea urchin fishers include the lack of a processing facility. The women must deshell sea urchins outdoors, in direct sunlight, thus degrading the quality of the gonads, and not meeting Hazard Analysis and Critical Control Point (HACCP) standards for export. Having access to an ice box and ice for preserving packed sea urchins for marketing would enable women to help improve the storage life of urchins, and improve the health and safety of the product being sold. Proper protective clothing during harvesting and processing is needed to prevent sickness associated such as flu, pneumonia and hyperthermia. Fishers also felt they had limited knowledge about food hygiene and protection to produce safer seafood products.

Conclusion

Sea urchins are not subject to any regulation. Women fishers from Waiqanake Village have been identified as the main harvesters and marketers. The women use simple methods for collecting and packaging sea urchins. There is, however, a need to introduce control measures and a management system to prevent overfishing of this important commodity.

Acknowledgements

First, we would like to thank Sangeeta Mangubhai of Talanoa Consulting for her assistance and guidance in compiling this article. We also thank the villages of Waiqanake, Namakala and nearby settlements for allowing the Fisheries Research Conservation Project (FRCP) Team to conduct this survey in their fishing grounds (Navakavu fishing grounds or *i qoliqoli*) and for the time and knowledge imparted for the survey to be successfully completed. We thank the executive management of the Ministry of Fisheries and Forests for giving approval to the team for undertaking this survey.

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Fisheries officers interviewing women vendors at the Suva municipal market. ©Unaisi Nalasi

Gender risk assessment to improve fisheries livelihood projects

Elisabeta Waqa,¹ Mere J.B. Vere,² Sangeeta Mangubhai,³ Anne-Maree Schwarz,⁴

Zafiar Naaz² and Moape Yabakiva⁵

Potential gender risks may easily be overlooked in the design of community development projects. This can result in poor outcomes and create conflicts or disharmony within communities. To ensure that traditions, interests, concerns and values of every community member are fairly considered in the design of community-based projects, a risk assessment should be done in partnership with the communities where a project will be implemented. This article will discuss the use of a gender risk assessment tool that was designed and then applied to three community-based mangrove oyster projects in Fiji.

Introduction

Natural resources are often central to the livelihoods of women, men, youth and other members of communities living in the Pacific Islands region. Sustainable coastal resource-based livelihoods were described by Stacey and Govan (2021) as those that not only continue, but also address social-cultural or economic barriers that different groups in the community may experience in obtaining a livelihood.

Fiji, like most Pacific Island countries, is patriarchal in its power structure, which has implications for different sectors of society (Vuki and Vunisea 2015). In most Fijian villages, there are culturally defined roles and expectations for women and men in their households as well as the community. In a traditional Fijian household, there are gendered divisions of labour and, as in most Pacific Island societies, women work longer hours than men (UN Women 2022; MWCPA 2022). For instance, women are expected to be the first one up in the mornings to prepare breakfast; get the children ready for school; take care of household chores such as laundry, house cleaning, compound cleaning; have meals ready during the day; and be the last to go to bed after ensuring the kitchen is clean and everything is ready for the next day (FAO 2019). The men in the same setting often tend to the farm or garden at sunrise and are expected to bring in income for the family. In coastal villages, men also fish for family meals whereas men in interior villages or highlands hunt wild pigs and animals. Fishing and gleaning from freshwater streams are often done by women. There are also cultural, religious and community obligations that can differ between women and men, but are equally important to village life.

When changes are introduced to villages through projects designed to help community livelihoods or village developments, the functions and roles of men and women are often affected to varying degrees. In this regard, community livelihood projects – often introduced or supported by external agencies, and that do not properly understand social and cultural norms, and the roles and responsibilities of women and men in all their diversity – have a high probability of failing (Lawless et al. 2019). One of the assessments that

help inform development projects or project designs to best serve the community is a gender risk assessment (GRA).

This article discusses GRA as a tool in the design of community-based projects, drawing from experiences in its use in three coastal communities in Fiji.

Gender risk assessment

A GRA is used to understand and map the different ways in which women and men will be affected by a project, and to identify the interventions needed to reduce or eliminate any risks. A GRA recognises that women and men have different responsibilities and play different roles in their households and communities; they also have different needs, priorities and degrees of control in different situations. The different roles that men and women play in a household, community, church, and in society bring different responsibilities that could be impacted by the introduction of new projects. Different places have different risks and, depending on their geographical location, might experience different environmental issues that have implications for gender roles. Thus, a new project that brings about change can be expected to affect men and women differently and at varying scales. Knowing the ways in which women are affected differently than men will help inform the project's design to better achieve its objectives. A GRA can help determine if the project is the right fit for the intended beneficiaries by ensuring that all risks (and the management of those risks) are openly discussed prior to commencement.

For meaningful engagement with communities in selecting new sites for expansion and to ensure an inclusive set up, it is considered essential to conduct a GRA prior to the project beginning in order to inform project implementation (Delisle et al. 2021). The GRA helps improve the design of the project by carefully mapping out the risks to the project. This should help identify any barriers to be addressed and come up with possible solutions or recommendations. Depending on the methodology used, the process of carrying out the GRA can also create a space where women can find their voice. A GRA can determine if the project's objectives will be achieved and to ensure it is inclusive.

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GRA tool

In conducting a GRA, it is important to be familiar with and have a good understanding of the community and its power structure, its cultural and gender relations as well as external traditional relations. This may vary for different communities, even within the same area. There are three steps or components of a GRA.

STEP 1. For new projects, the GRA should include a presentation of the project being proposed. There should be sufficient details provided to the communities so that they can assess the risks, and whether this is the project for them.

STEP 2. Conduct a focus group discussion (FGD) with women and with men to provide the opportunity for each group to independently discuss ways to improve the design of the proposed project by assessing

potential unanticipated impacts and to make sure the project activities are widely beneficial and practical for community members. In accordance with gender best practice, women and men should be separated so they can speak openly without the other group hearing. FGDs with women should be led by female researchers, and FGDs with men with male researchers (Mangubhai et al. 2022). Questions can be administered in a *talanoa* style (Nabobo-Baba 2006) to enable community members to talk openly about their expectations for the project, the concerns they have, the potential risks from the project, and to identify potential ways to prevent or minimise these risks. Examples of some of questions used for the Fiji case study (described below) are provided in Table 1.

STEP 3: A basic description of the community should be compiled from existing information. However, researchers may want to talk to leaders and other knowledgeable people in the community.

Table 1. Examples of questions used in a gender risk assessment conducted for mangrove oyster farming projects in Fiji.

Topic	Questions	Guidance
Feedback on project	Do you think this is a good idea to start this project here? What are the good points about this project? What should be changed (what don't you like)?	Try and understand why the groups think it is good – is there a need for money, they have the necessary expertise, the right habitats are nearby, etc. Are there specific things they don't like and why? For example, is the project too time consuming, not a priority, not culturally appropriate?
Barriers	What are the barriers to women's and men's participation in the project? What can be done to minimise or remove those barriers?	Try and understand how participation might vary depending on gender and other social identities, and the way culture might define or restrict participation, time available, etc. Are there culturally acceptable ways of removing barriers? Your project should not reinforce or increase barriers to participation.
Time investment	What types of employment (part-time, full-time) or sectors are people from the community engaged in? Do people here have enough time for new projects?	Try and get a rough estimate of how much time is available outside of their current routines that may be used for the project. You may want to use a time use diary as a tool to understand how much free time different groups have?
Benefits	Who will benefit the most from the project and how?	Try to capture who specifically benefits – for example if they say men – ask if all men or only certain men? How do the people they mention benefit – is it financial gain, direct access to clean water, improved health, etc?
Impacts	Who will be impacted negatively by the project and why?	Try to capture who specifically will be impacted - for example if they say women - ask if all women or only certain women? How are the people they mention likely to be impacted by the project – is there likely to be financial loss, reduced access to resources, restriction on livelihood, etc?
Local knowledge	Are there specific people in the community, with traditional knowledge we need to include in the project to ensure its success?	This question can be used to ensure local knowledge is included to inform the project design. Are there different knowledge and skills men and women hold?
Community contribution	Is there anything the community can bring to the project?	This question can be used to understand if there is any capital (or assets) they can bring to a project. In livelihood projects, capital can include knowledge, capacity, fixed assets (e.g. specific gear), space in fishing grounds, finances, etc.

Fiji case study

A GRA was conducted between 29 November 2022 to 21 December 2022 with three communities on the island of Viti Levu. These communities were participating in trials to farm mangrove oysters in partnership with the Ministry of Fisheries and Forestry (MOFF) with technical support from the Pacific Community. The livelihood support has been largely targeted at rural women who harvest mangrove oysters from the wild for food and income to diversify their livelihood options (Kinch et al. 2019). Specifically, the trial aims to support food security and create a sustainable income source for women by farming mangrove oysters to premium market standards.

With funding from the Food and Agriculture Organization's Adaptive Fisheries Management project (Canadapt 003), two researchers conducted the assessment with assistance from two MOFF staff members. Prior to conducting the GRA at Muanaira Village (Rewa Province), Daku Village (Tailevu Province), and Waikona Settlement (Ba Province), the team were trained in how to use the tool. Visits to the community started with a presentation outlining each of the steps to set up and maintain a mangrove oyster farm, and importantly, the time and investments a community would need to ensure its success. Once the project details were understood, women and men were split into two groups for FGDs.

The findings from each site were analysed and summarised in a report for MOFF. The assessment highlighted that there were socio-cultural gender norms that were a barrier for women to engage in projects targeted at them, and the

need to address the disproportionate burden of care that falls on rural women. Communities highlighted a range of risks from women's time availability, community governance and decision-making, to unclear incentives and expectations, particularly related to markets. MOFF gained useful insights into the main risks associated with mangrove oyster farming projects from women and men, as well as potential solutions to reduce or eliminate those risks. While the GRA was used on an existing livelihood project (rather than the beginning of a new one), the findings from the risk assessment are being used to re-shape the ministry's investments in community-based oyster farming elsewhere in Fiji.

Conclusion

The use of the GRA tool has helped bring out communities' concerns before and during the introduction of projects. Without conducting a GRA at these pilot sites, these concerns may have otherwise been overlooked in the design of the project. This could result in a poorly designed project that has the potential to cause unintended outcomes that risk leaving communities in conflict, tension and disharmony. The findings will now be able to be considered along with other assessments as pilot projects are reviewed, to inform the approach to scaling up this livelihood opportunity.

Acknowledgement

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Focus group discussions at Muanaira Village. ©Mere Vere/FAO



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Focus group discussions at Muanaira Village. ©Mere Vere/FAO



Gender equality and social inclusion training for Tonga's Ministry of Fisheries

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Background

Tonga's Ministry of Fisheries (hereafter the Ministry) is spearheading community-based fisheries management through its Special Management Area (SMA) programme – a successful homegrown model to enhance community-driven management systems. The application of gender equity and social inclusion (GESI) lenses is an area the Ministry expressed interest in to enhance its capacity, with a strong focus on the SMA programme. In the past three years, the Ministry received diverse forms of assistance from the Pacific Community (SPC) through the Pacific-European Union Marine Partnership Programme (PEUMP) and with support from SPC's Human Rights and Social Development Division to enhance learning, research and awareness on GESI, and to some extent on human rights. These activities included awareness raising, learning sessions and research-related tasks:

- 1 A people-centred approach⁹ session planned and conducted during the Ministry of Fisheries Stakeholder Workshop (2020).
- 2 The inclusion of GESI and human-rights based approaches in the virtual training on how to conduct socioeconomic assessments using a step-by-step process (2021).
- 3 The inclusion of GESI and human rights aspects in research as part of the COVID-19 socioeconomic impact assessment on SMA households and small-scale fishers (2021).¹⁰

The above support was provided opportunistically or through an integrated approach to enhance GESI as part of the socioeconomic assessment work. To provide a more foundational basis for strategic learning and to strengthen capacity, a GESI training for fisheries officers was proposed

by SPC staff in consultation with the Ministry's acting CEO, who welcomed the training initiative as a way forward to progressing GESI mainstreaming across the Ministry's various divisions, with a focus on the inshore and operational teams.

Training details and structure, purpose and objectives

A two-and-a-half-day training was planned, designed and conducted by SPC in Nukualofa, Tonga from 22–24 August 2023. The facilitation team included Natalie Makhoul, PEUMPs' gender and human rights specialist; Margaret Fox, GESI adviser for fisheries; and Siueli Eleni Mone, in-country focal point for human rights. Siueli Eleni Mone was crucial in building relationships with the Ministry, identifying GESI training needs in consultation with the Ministry and contributing to sessions and input to the training in order to align with and explain national level GESI issues, objectives and priorities representing the Ministry of Internal Affairs' Women's Affairs Division. The key purpose was to provide a tailored training on GESI concepts and how these can be applied to support the progress of GESI mainstreaming in the fisheries sector. The training was intended to build the confidence and technical capacity of ministry staff. The application of GESI from a fisheries officer's lens was facilitated by providing practical tools on how to bring social and human dimensions into the focus of coastal fisheries, particularly with regards to small-scale fisheries management and community engagement in the context of the SMA programme.

Training structure

The first two days were open for both male and female staff to help build their technical GESI mainstreaming knowledge and skills. The third day was a half-day of training for female officers only, with a focus on women's empowerment in the professional world of fisheries. The purpose of this session was to identify barriers and challenges to women working in a male-dominated sector, and to provide tools and support for leadership through empowerment.

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⁹ A People Centred Approach or PCA is SPC's own tool in applying human rights-based principles, including GESI.

¹⁰ <https://purl.org/spc/digilib/doc/8gqjg>

Day 1: Concepts and definitions were discussed, GESI misconceptions and biases were identified, and linkages between state obligations and commitments with regards to GESI and fisheries-related contexts were also discussed. GESI's relevance to the fisheries sector was demonstrated, and discussions included the following: 1) key GESI issues in the fisheries sector at both the regional and national levels; 2) the reasons why progress is slow and pointing out gaps and needs for greater GESI investment; 3) understanding national GESI priorities from a “big picture” perspective and highlighting how these relate to, and matter, in the context of Tonga's fisheries sector.

Day 2: The focus was on delivering technical capacity for GESI analysis. In a first step, the term “GESI mainstreaming” was discussed. GESI analysis was then highlighted as a key enabler for technical staff to better understand GESI issues within their specific work areas. The sessions that followed focused on GESI analysis by presenting various analysis tools and examples using the SPC Pacific Handbook on Gender Equity and Social Inclusion in Coastal Fisheries and Aquaculture.¹¹ Group work activities allowed participants to apply GESI analysis tools using a scenario. In the final session, key findings and recommendations for GESI from the 2021 socioeconomic COVID-19 impact assessment for small-scale fishers in SMA communities were presented and discussed. None of the participants were aware of the report and its findings. A discussion followed about how research, data collection and analysis can be better used to support GESI-relevant evidence to inform policy and programming.

Learning objectives

The learning objectives for Days 1 and 2 were to ensure that participants are: a) more gender aware and sensitive towards inclusive approaches, and are better positioned to identify entry points for integrating GESI into coastal fisheries; and b) better equipped with knowledge, tools and processes to apply GESI concepts into coastal fisheries.

Day 3 (half day only): This half day was dedicated to women's empowerment, with the intent to better understand constraints and barriers of female fisheries officers in progressing their professional careers and in undertaking their roles and responsibilities within the Ministry's work environment. This day allowed female fisheries officers to express their struggles and aspirations with navigating through cultural and traditional gender norms, while also working in a male-dominated field and juggling responsibilities at home and in their communities. This targeted session created awareness of gender barriers by aiming at building the confidence of female fisheries officers to overcome these barriers through empowerment.

The learning objectives for Day 3 were to ensure that female fisheries officers: a) are more aware about gender barriers and how these may affect their work within the Ministry and externally when working at the community level; and b) feel more empowered to progress their careers and to make a case for a more equitable work environment and a stronger engagement of women in fisheries.

Participation and why female officers are mostly selected to attend GESI training

In total, 13 Ministry staff attended the workshop (11 women, 2 men) and included staff from the science, compliance, policy, administration and human resources divisions. Four of the women were extension officers from the outer islands (two from Vava'u and two from Ha'apai). The low number of male participants was noted, and could be a result of the misconception that GESI topics are for women only. It is also possible that competing training sessions scheduled for the same week made it difficult for men to attend. A female participant remarked that she found it disappointing her male colleagues did not attend, and instead were sent off to attend technical training. On the other hand, the low

¹¹ <https://coastfish.spc.int/en/component/content/article/494-gender-equity-and-social-inclusion-handbook>

Female participants giving presentations at the training workshop. ©Josaia Nanuqa



representation of men was a blessing in disguise. It allowed a very honest and open dialogue by creating a safe and trusting setting for female staff to speak their minds and share their emotional stories related to the challenges they face in the fisheries sector. The women also reflected on their journeys growing up experiences with strongly designated gender roles in their personal and professional lives. A positive outcome of participant composition was the high number of young fisheries officers, with eight of the staff being between 20 and 30 years old. This prompted discussions on the challenges of younger officers, and the difficulty of speaking out in team meetings about, for example, their career progression because this age hierarchy is mirrored in the Ministry's power structure, comprises a hierarchy of senior officials. Two senior female fisheries staff were also part of the discussions. Their leading role as supervisors and the knowledge and experience they held helped to encourage younger staff to share and speak up during the workshop, and was a sign of leadership and commitment towards GESI, showing the importance of role models and intergenerational mentoring within the work place.

Session outcomes with key issues raised

1. Gendered journeys from girls and boys to women and men in the Tongan context

The first day allowed time for self-reflection on one's personal gender identity, from growing up as a girl or boy, to becoming a woman or man in the Tongan societal context and how gender roles, expectations and norms shaped participants' individual journeys. Key messages that were shared were:

- Growing up, girls face more restrictions because parents have stricter rules for girls than boys and limitations are imposed on girls with regards to exploring the outdoors, including the sea.

- Girls face greater restrictions in going out to the ocean for a swim, which they see as a barrier considering careers related to the ocean, where swimming, diving and a keen interest in marine spaces and resources usually begins.
- Other obstacles that girls feel are the expectations of doing well in school while also having to support parents in meeting family needs from an early age. This is particularly so for girls from families that struggle financially and so girls are pressured to support and look after their siblings. The pressure on girls is even higher if they come from families that have many children (e.g. 7 or more) because girls are expected to help with their siblings' upbringing, particularly in families that have lost a parent.
- There are high expectations for girls when it comes to good behaviour, finding a husband, and having children. Participants, however, mentioned that this can vary, depending on one's parents and their level of conservatism and general attitudes.
- One positive aspect of being a girl in Tonga is if she is the eldest girl in the family, in which case she receives special status as a fahu, with certain privileges that her siblings do not receive. In households with only one girl, the parents are also more likely to pamper her, particularly the fathers.
- Some participants mentioned that growing-up experiences depend highly on social factors such as the family's socioeconomic background, social status, and family mindset.
- Some married women mentioned that they feel lucky because they have married supportive husbands who give them more freedom, both at work and at home than other women who do not have enabling spousal support.

Participants of the two-and-a-half-day workshop. ©Josaia Nanuqa





Some of the participants during a break with SPC's in-country Human Rights and Social Development focal point, Ms Eleni Mone (far right).

It was evident that hardship within a family is felt more by girls than boys. Girls felt more pressure to step in to take up additional responsibilities for their siblings and for household-related matters, with additional pressure to look for paid work. Intersecting social categories such as poverty levels created greater vulnerabilities for girls. Early restrictions on girls with regards to exploring the sea signalled the greater barriers women and girls face when choosing careers in oceans and marine science.

2. Identifying GESI issues in the Ministry of Fisheries across all divisions

Participants discussed GESI issues within the Ministry and identified these through group work exercises:

- The Ministry's Compliance Division used to be a male-dominated space. Recently, however, the division has seen more women employed in jobs. Attitudes and the nature of the work can be challenging for women who mentioned personal safety concerns, harmful behaviour during inspections, and dealing with dangerous situations. Mixed teams of women and men, and support from the police, were mentioned as ways to improve women's working conditions. Compliance work allows women and men to gain a wide skillset and progress their careers, hence women emphasised the importance of improving access to, and conditions within, the Compliance Division for women.
- A high concentration of women in supportive and administrative roles despite the fact that some of the women hold academic degrees and have a keen interest in technical working areas.
- Capacity building opportunities do not always trickle down fairly to women and young female and male officers, indicating that age hierarchies are a barrier to them accessing skills and development opportunities.
- Poor data collection, the lack of data analysis and sharing of data, and limited knowledge regarding the extent

to which datasets support GESI-related evidence were mentioned as an issue that hinders GESI mainstreaming.

- Emerging aquaculture activities are an exciting avenue to promote women and youth involvement in Tonga. Limited information, however, was available to better understand GESI constraints and mainstreaming opportunities in the aquaculture sector.
- The deployment of fish aggregative devices (FADs) has not been discussed from a GESI perspective and there is a need to better understand who benefits from FADs, the roles of women and men (e.g. who is fishing around FADs, who is processing the fish catches from FADs, the impacts of FADs on women's and men's livelihoods or food security) and the negative and positive impacts of FADs from a socioeconomic and GESI lens.
- Stereotypes within the Ministry still exist, such as women are not good at diving. Such stereotypes hinder women's access to jobs and training opportunities.
- The SMA programme supports women and youth as part of the committee structure. Their representation, however, in terms of numbers is still very small and concerns have been raised about their meaningful participation in a male-dominated community context, where women and youth may not always be taken seriously. There may also be harmful discriminatory behaviour such as ridiculing women's contribution. Active empowerment is needed to support self-esteem and confidence for marginalised groups to express their voices and change harmful social norms to create inclusive, safe and respectful structures for the SMA programme. Utilising female extension officers (where available) in empowerment initiatives and using their relationships within the community was discussed as a way forward to supporting more effective GESI integration within the SMA programme at the outcome level.
- Other social exclusion issues in the SMA programme were also mentioned in the context of landlocked communities that may be denied access to marine spaces

and resources even though this may be for basic survival needs. A risk assessment and an improved consultation process under the SMA programme was mentioned as way forward to addressing these exclusion risks.

3. Identifying GESI analysis needs for the Ministry

Participants discussed the need for GESI analysis to improve the Ministry's mainstreaming work for better outcomes across all divisions:

- The aquaculture sector offers a wide range of activities that can benefit women and men, youth and other groups that have fewer employment opportunities. Little has been done to better analyse GESI roles, barriers and opportunities. Few projects work with women supporting livelihoods such as the mabe pearl project funded by the World Bank. A better understanding of success factors and additional barriers and lessons will be required to determine how services and specific projects can integrate GESI. Less is known about projects that support youth or other marginalised groups. Participants identified the significant added value of a GESI analysis for the aquarium trade and seaweed farming. The lack of knowledge regarding GESI issues and needs in these sectors have led to GESI "blind" programmes despite the potential of women, youth and other marginalised groups in undertaking and further developing value-adding, trading and marketing. There is great potential for the Ministry in supporting economic empowerment of women, youth and other potentially marginalised groups through the integration of GESI, for example through targeted training.
- Future socioeconomic surveys should include GESI analysis.
- Women tend to express the need for training more than men, and include different types of training, from post-harvest-related needs to financial literacy, budgeting and business skills. The different training needs have not been mapped or analysed from a GESI perspective, hence a GESI analysis on training demand could help the Ministry to better understand needs and gaps for improved investment and services for training related activities that benefit a wider audience, in particular women.
- GESI analysis related to management is another area that can add value and improve fisheries management plans, especially for women-dominated fisheries activities, to better understand the status of species targeted by women as well as other ecosystem services and marine spaces differently used by women and men with different impacts on their food security and/or their livelihoods. GESI information from this analysis can also better inform community outreach, and information and awareness activities regarding SMA communities.
- Internal policies and recruitment processes are often GESI neutral and lack sex-disaggregated data relating to the work force, performance, career progression, or training access and other capacity building opportunities

and working conditions that impact women and men differently.

4. Day 3 allowed a safe avenue for women to reflect, discuss and express their feelings and thoughts on the five women's empowerment principles:

- Women's sense of self-worth.
- Right to have and determine choices.
- Right to have access to opportunities and resources.
- Right to have power to control our own lives, both within and outside the home.
- Ability to influence the direction of social change and create more just social and economic order.

This space was designed as a women only safe space, therefore, a summary of key issues will remain confidential because participants shared their personal journeys, stories, challenges, motivation and aspirations for the future. The more general outcome of this session highlighted the importance of role models, mentoring, leadership skills, the Tongan family unit, and having the support of fathers and husbands to follow a career pathway in marine science.

Evaluation and conclusion

The GESI training received excellent feedback through a post-evaluation survey, which indicated that 100% of participants agreed that they better understood how to include GESI in their work because of the training. None of the participants had participated in a similar training before and 90% found that the training was relevant to their jobs.

A training report was finalised – and shared with the Ministry – with special focus on highlighting potential areas for GESI mainstreaming and possible follow-up activities, such as identifying areas that can benefit from a GESI analysis, leadership training for women and young officers (e.g. Pacific Fisheries Leadership programme), and exploring targeted empowerment initiatives for marginalised voices in the SMA programme. As a direct result of the training, the Ministry appointed a gender focal point and has since established better relationships with the Ministry of Internal Affairs with the mandate of promoting and progressing gender equality.

A collective call for action: Voices of women in fisheries in Fiji

The global agreements and internationally recognised guidelines that Fiji has ratified have strong calls for gender equity in all fisheries matters. This includes equitable benefits from the blue economy and inclusive decision-making on marine resource use and management.

The Women in Fisheries Network in Fiji – along with joint support from partner organisations – organised the third Women in Fisheries Forum from 13 to 14 March 2023.

More than 37 women fishers and fish workers, and 46 individuals from partner organisations attended the forum, which was held in celebration of International Women's Day. Participants shared their perspectives and experiences under four themes:

Theme 1: Joining men at the blue economy table – Let's boost equity for a sustainable future.

Theme 2: Valuing fisherwomen's indigenous knowledge and resource management practices for community and national well-being.

Theme 3: Challenging governance structures – Let's hear it from the women fishers and fish workers.

Theme 4: Pandemics, disasters, and shocks – Women leading the way with resilience and innovation.

Key messages were distilled from the presentations and sharing of lessons under these themes:

- 1 Availability of gender-disaggregated data to inform policy and service delivery:** A lack of disaggregated data in formalised national statistics systems was highlighted. The Ministry of Women, Children, and Poverty Alleviation-led Gender Transformative Institutional Capacity Development Initiative (2022) provides the latest rapid gender analysis of the fisheries sector, confirming that women account for 51% of inshore fishers and 94% of freshwater fishers, while 43% of Fijian women who fish do so for a source of income and 99% to provide food. Communal contributions from their fishing activities are also high, with 64% of women providing food for cultural events. Yet these contributions remain invisible because they are not included in official statistics.
- 2 Navigating through shocks, pandemics, and disasters:** Fijian women play a critical role as resilient safety nets for their families, communities, and the nation by collecting and preparing aquatic resources to sell in strings, baskets, buckets, ice cream containers or sacks along roadsides or on weekends at municipal markets, often with sleeping infants and children in their arms. Nevertheless, their efforts are often not recognised. In the fisheries sector, if women's catches are not counted this means their

contributions are taken for granted and can be expected to be given little consideration in disaster recovery responses.

- 3 Women fishers and fish workers have long been part of the blue economy:** Their expanded roles in fisheries stretch across a wide spectrum of pre- to post-harvesting, selling and value-adding while bargaining, transporting, and marketing their produce. Women shared their experiences of being self-organisers. They find ways to connect to markets and transport their produce from rural to urban areas. They build networks to use their collective voices to shift bargaining power or overcome rigid and discriminatory governance structures.
- 4 Traditional knowledge:** Many examples of women's explicit traditional knowledge were shared in the Forum, including the use of ecosystem services including food, medicine, and handicrafts, and of the intimate connections between activities on land and the quality of the marine environment. Women's traditional environmental knowledge of marine and connecting terrestrial ecosystems, as well as their refined fishing skills, can be fostered as part of the nation's platform for generational knowledge exchange for a resilient future.
- 5 Access to opportunities:** It can be easier for people living in urban and semi-urban areas to access development interventions than those who live in more remote rural areas. This disconnect was noted as a particular issue by rural women fishers.
- 6 Lack of access to information:** This issue was raised by women fishers and fish workers as a major stumbling block, and is manifested in several ways:
 - Processes and stakeholder channels to access support services were not well understood;
 - Difficulties in partaking in community-based management activities and complying with marine resource management rules and regulations because of the lack of information and the lack of engagement in community-based fisheries management activities;
 - Traditional governance regimes continue to marginalise women's voices in decision-making processes and make access to information on marine resources often dependent on men with power in the community setting or existing cultural norms;
 - Unrealistic expectations were sometimes raised when different messages about what could be expected from a project filtered through to the women who could be engaged in the project;
 - Poor knowledge of how different pieces of legislation determine how coastal resources can be used (e.g. mangroves);

- f Women who do not have the opportunity to attend easily accessible training miss out on core skills to enable them to engage equitably in the blue economy such as marketing and financial management capacity.

The importance of sex-disaggregated data for inclusive and evidence-informed fisheries

We call upon policy and decision-makers and development partners to support the formalised collection of sex-disaggregated and socioeconomic data that captures small-scale fisheries activities, and their gender dimensions.

The role of fisherwomen in advocacy and leadership and economic empowerment of women fishers and market frontlines

We urge national agencies, the public, and the media to change the narrative of women fishers from vulnerable unseen, and unpaid helpers to market front liners, blue economy players, climate warriors, and above all, agents of change.

We request fisheries development initiatives to shift the focus towards women-led fisheries and market development that starts at the rural level. In doing so, livelihood interventions should support rural women's economic empowerment from the sea to the table, including value-adding support. This requires enabling women fisher's cooperatives, investing in postharvest facilities, and upskilling opportunities to adjust to modern market demands.

Enabling conditions to influence policy and improve accessibility of services

We call for enabling conditions that will influence policies that are gender-responsive; to make services more accessible to fisherwomen and all women involved across the fisheries

value chain, with particular emphasis on women in rural areas where service accessibility remains a challenge.

Valuing women's traditional environmental knowledge

We encourage research initiatives that highlight women's traditional environmental knowledge related to fishing, their role in intergenerational knowledge transfer and increased scientific knowledge on marine resources women dominantly use for food and income to inform fisheries management.

Strengthening collective action and positioning on key gender equality issues

We welcome increased efforts to engage men and boys at the household or *mataqali* level in fisheries development initiatives that support women. Fostering partnerships between women and women's groups and the men and male-dominated governing community structures, nurturing understanding for each other's roles and workloads, and enabling shared responsibilities and support for each other at the household and community level is a prerequisite to progress equality.

We call for information campaigns that target women fisherfolk in rural areas for increased understanding of fisheries matters, access to support services, redress, and grievance mechanisms or information on fisheries management and nature conservation matters.

We call for the support for our national network and the creation of a regional mechanism to provide opportunities to strengthen existing women fishers' networks in the country and across the region and to link practitioners to researchers, planners, and those in decision making encouraging sharing of experiences and information, comparing and mutually reinforce working methods in Fiji and the region.

This call for action was initiated by the Women in Fisheries Network – Fiji, and supported by the European Union, Sweden Sverige, Pacific-European Union Marine Partnership, the Pacific Community, the Food and Agriculture Organization of the United Nations, Women Entrepreneurs Business Council, and the Wildlife Conservation Society.

Permanent Secretary of Fiji's Ministry of Fisheries and Forests, Atelaite Rokosuka (second row, wearing a traditional garland around her neck), with participants of the 2023 National Women in Fisheries Forum. ©Women in Fisheries Network – Fiji



Food safety – an important addition to post-harvest fish processing training initiatives in Solomon Islands

Zafiar Naaz,¹ Saurara Lewa,¹ Sylvester Diake² and Wilson Kiyo³

Food safety is an important practice in post-harvest handling of seafood because food that is not prepared properly can cause food-borne illnesses and poisoning. Safe food is important for good health and better nutrition (World Health Organization 2023).

Some of the post-harvest preservation methods used around the world for fish include chilling, freezing, smoking and drying (Speranza et al. 2021). Additionally, because women play a critical role in the fisheries value chain, they are often seen using traditional preservation methods such as baking in earth ovens, smoking and salting; methods that preserve fish for both consumption and for selling in local markets (Bako 2005; Vunisea 2014). These ancient cooking methods help preserve food for up to three days (Makini 2011). Alternative preservation methods can help improve economic returns and ensure freshness for a longer duration.

In Solomon Islands, promoting food safety and nutrition is aligned with the Ministry of Fisheries and Marine Resources' (MFMR) corporate plan goal 2.1 "Develop initiatives that allow Solomon Islanders to secure food and nutritional security and derive economic and social benefits from the use of their inshore and inland fisheries resources" (MFMR 2020). The Food and Agriculture Organization of the United Nations' (FAO) Adaptive Fisheries Management project (Canadapt 003⁴) is supporting MFMR's efforts to develop the capacity of local women's groups in the areas of food safety within coastal fisheries value chains. The project has a focus on commodities in which women play a large role: for example, smoked fish, a fish preservation method where both men and women participate in multiple roles (Atu and Kiyo in review). Here we report on food safety training conducted as an important addition to post-harvest processing in Honiara and Auki in Solomon Islands.

Promoting food safety through the Island Food System in Transition Forum

An Island Food System in Transition Forum organised by WorldFish and Kastom Garden Association in Honiara provided an opportunity for the MFMR through the Canadapt 003 project to conduct food safety trainings for local women, men and youth. Representatives from rural communities were gathered at the Solomon Islands National University campus to display their agriculture and fisheries products for the forum. To contribute to hygienic food preparation and display, MFMR and FAO conducted a two-day training on food safety and post-harvest value addition for fish products from 31 May to 1 June 2023. In total, 16 participants attended the training (68% were women; two of whom were youth), including women involved in fish smoking from the Shortland Islands, WorldFish, MFMR fisheries officers, individual farmers, and school teachers.

A similar food safety and post-harvest value-adding training was also conducted in Auki, Malaita Province from 4 to 5 June 2023. This training session targeted representatives from the Auki market vendor association (existing collaborator for adaptive fisheries management project), and individual market vendors. The participants trained were 6 males, 15 females, and 2 female youth.

Pre- and post-evaluation surveys to assess the effectiveness of training

A pre- and post-evaluation survey was conducted for both training workshops. During the pre-evaluation survey, 62% of participants mentioned that this was the first time they were attending a workshop on food safety and post-harvest handling. With this in mind, the food safety facilitator for



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⁴ Funded by Global Affairs Canada and implemented by the Food and Agriculture Organization of the United Nations (FAO), the Strengthening Small Scale Fisheries in the Pacific (Canadapt 003) project (2021–2023) was designed to contribute to a long-term vision of improving the resilience of coastal communities in Fiji, Solomon Islands and Vanuatu. Through Canadapt 003, FAO has partnered with the national fisheries agencies in each country: the Fiji Ministry of Fisheries, the Solomon Islands Ministry of Fisheries and Marine Resources, and the Vanuatu Fisheries Department.



Figure 2. New value-added tuna products taught during the training: **A** one of the steps involved in preparing tuna samosa; **B** preparation of tuna sausages without using casings; and **C** shallow frying of tuna sausages.
©Saurara Lewa, Sylvester Diake and Zafiar Naaz

these training workshops (an FAO-food safety consultant) included demonstration sessions where participants received hands-on experience and practiced simple processing techniques such as marination and “cold smoking” (Fig. 1). Other new food processing techniques shared during the training include the preparation of tuna samosas (Fig. 2A) – which highlighted the reduction of wastage by using fish heads and bones – and production of tuna sausages without the use of machines and sausage casings (Fig. 2B and 2C).

All participants agreed that the training was relevant for their needs and that they can use the skills they learned to diversify their food products. For instance, in the post-survey comments, participants from both Honiara and Auki stated that the tuna burger was a new product that would add value to their income.

All recipes and preservation methods taught to participants were adapted from the post-harvest value-adding techniques of the FAO-FishFad project (FAO 2022) and were not developed specifically for this project. Participants, however, were encouraged to customise the recipes based on preference and the availability of local ingredients.

For future training needs, a training of trainers approach was used whereby the five MFMR national and provincial officers that attended the training sessions in Honiara and Auki were equipped with new food safety knowledge to complement the trainings they provide for rural fishers. We concur with the recommendation from Batalofo et al. (2023) regarding the need to evaluate such training sessions. A pre- and post-workshop evaluation survey for our training helped gauge expectations of participants and identify learning gaps for future MFMR planning.

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Fiji National Women in Fisheries Forum – 2023

Cherie Morris¹ and Adi Alani Tuivucilevu²

The Fiji National Women in Fisheries Forum – 2023 was held in March 2023 to foster and build on a previous dialogue that began at the first forum held in 2018 (Mangubhai et al. 2018). The forum, hosted by the Women in Fisheries Network in Fiji, provides a platform for women who are engaged in fisheries (including fishers and fish workers) to learn and share their knowledge and experiences, as well as raise their concerns and needs to policy-makers and development partners. The forum also provides an opportunity for fisheries practitioners and researchers to listen and learn from women fishers and fish workers themselves. The forum increases awareness and knowledge of gender issues in the fisheries so that gender equality in the sector can progress.

Women work across the whole spectrum of fisheries activities including harvesting, post-harvesting, marketing, and value-adding with little support, poor working conditions, and without a policy that focuses on their needs. They are also not a recognized player in the economy for all the work that they do, including unpaid care work. Despite these challenges, the 2018 forum brought to light the success stories of women fishers and their inspirational stories of how they resisted challenges, overcame poverty, and built their own businesses (e.g. pearl, fish, mud crab farming).

The 2023 forum was opened by the Permanent Secretary for the Ministry of Fisheries, Atelaithe Rokosuka. In her opening remarks she reiterated the highlights from the 2018 forum, and recognised the enormous contributions made by Fijian women fishers, post-harvesters, and market vendors to food, livelihoods, and wellbeing. These issues were raised by a variety of stakeholder groups. Despite these difficulties, the 2018 forum highlighted inspirational tales of women fishers who overcame hardships, emerged from poverty, or established successful businesses.

Permanent Secretary Rokosuka stated that “forums like this can provide a platform for exchange and learning, enabling the voices of women in the industry to be heard as advocates for change”.

She alluded to the forum as a crucial step towards recognising and empowering women in the fisheries sector, and an opportunity to work together towards promoting gender

equality. In addition, Mrs Rokosuka mentioned that the forum will serve as a platform to showcase successful initiatives and projects that have been implemented to support women in the fisheries sector and to identify areas where further support is needed. This, she said, would enable participants to learn from each other’s experiences and build partnerships for future collaborations. She went on to say that through these efforts, a more inclusive and equitable fisheries sector can be created that recognises and values the important role of women in sustainable fisheries management. She followed up by mentioning that ultimately, women and their communities would have improved livelihoods, as well as better conservation outcomes for our oceans and marine resources.

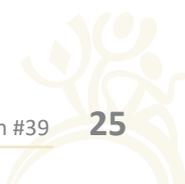
The Ministry of Women, Children and Poverty Alleviation-led Gender Transformative Institutional Capacity Development Initiative confirmed that women account for 51% of all inshore fishers and 94% of freshwater fishers, while 43% of Fijian women who fish do so for a source of income and 99% to provide food for their household (Ministry of Women, Children and Poverty Alleviation 2022). Communal contributions from their fishing activities are also high, with 64% of women providing food for cultural events. These contributions remain invisible because they are not included in official statistics³ (e.g. gross domestic product does not consider non-monetary outputs). Women have a higher domestic workload than men, and this is still seen as the key barrier for women from engaging further in the fisheries sector. Other challenges such as lack of accessing fishing gear, financial resources, technology and other assets, limited involvement in community-based resource management, and decision-making were confirmed as key persistent barriers for women fishers.

The objectives of the forum were to provide an environment for sharing lessons (positive and negative), research findings, impact stories, or other learning opportunities to shed light on gender issues in Fiji’s fisheries sector. In addition, through the forum, the concerns and needs of women fishers post-COVID-19 were identified, and networking spaces were provided for participants to establish new working relations or identify opportunities for joint action and partnerships.

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³ The Ministry of Women-led Gender Transformative Institutional Capacity Development Initiative, 2022



Forum topics

Speakers included fisherwomen and representatives of civil society and government who were invited to speak on one of four main themes:

- 1 **Joining men at the blue economy table – Let's boost equity for a sustainable future**
- 2 **Valuing fisherwomen's indigenous knowledge and resource management practices for community and national well-being**
- 3 **Challenging governance structures – Let's hear it from the women fishers and fish workers**
- 4 **Pandemics, disasters, and shocks – Women leading the way with resilience and innovation**

Key messages

Key messages were distilled from the presentations and sharing of lessons under these themes, and are summarised below.

- 1 **Availability of gender-disaggregated data to inform policy and service delivery:** A lack of disaggregated data in formalised national statistics systems was highlighted.
- 2 **Navigating through shocks, pandemics, and disasters:** Fijian women play a critical role as resilient safety nets for their families, communities and the nation.
- 3 **Women fishers and fish workers have long been part of the blue economy:** Their expanded roles in fisheries stretch across a wide spectrum of pre-to post-harvesting, selling and value-adding while bargaining, transporting, and marketing their produce.

- 4 **Traditional knowledge:** Many examples of women's explicit traditional knowledge were shared in the forum.
- 5 **Access to opportunities:** It can be easier for people living in urban and semi-urban areas to access to development interventions than those in more remote rural areas.
- 6 **A lack of access to information:** This was raised by women fishers and fish workers as a major stumbling block.

The key messages culminated in the drafting of the Women in Fisheries Call to Action (see article on page xx in this edition of the bulletin).

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Women in fisheries profiles

Delvene Boso

Delvene Boso and Teri Tuxson

coastal fisheries management. I felt strongly that the environment and fisheries space was what I was most passionate about and where I felt I could contribute most to my country.

Can you share with us your experience working at WorldFish?

I started work at WorldFish in 2007 as a Research Assistant. I was part of the research team doing post-tsunami marine surveys in Western Province and supporting socioeconomic research

Delvene Boso was born in Honiara, Solomon Islands, where she spent many of her early school years, and where pursued her professional career in marine science. She is a mother of two, a wife of 15 years, and she is currently a Senior Researcher with WorldFish. Delvene has contributed significantly to the coastal fisheries sector in Solomon Islands and the Pacific Islands region for almost two decades.

Delvene's parents are originally from Kia in Isabel Province. Her father worked at the then Solomon Islands Plantations Limited. So much of her and her two siblings' childhood were spent at the palm oil plantation neighbourhoods of Ngalimbiu and Foxwood in East Guadalcanal and on school holidays, they returned to their home village of Kia.

Where did you receive your education?

I attended school at Saint Nicholas Primary School (as it was known back then) and Chung Wah School, and did seven years of secondary school at the King George Sixth National Secondary School in Honiara. I undertook my undergraduate university studies in Australia studying Marine Science and Management at Southern Cross University in Lismore, and my third year at Coff's Harbour National Marine Science Centre.

What are some fond memories you have of growing up in the islands?

In my home village of Kia, houses are built on stilts over the sea. Many a school holiday during my childhood was spent in the village, going on picnics and camping out on the islands. Where I come from, tribal ownership of resources is strong, the sea is interconnected with the land, and so there is a heavy dependence on the marine environment for subsistence and livelihoods. This provided much of my motivation to work in

on the impact of the national beche-de-mer ban in Kia, Isabel Province. I later moved into a Senior Research position and in 2011, I was offered the Country Director role. As the Country Director, I managed the WorldFish Solomon Islands country programme. My role included managing budgets, staffing, infrastructure, partner relations and communicating with internal and external audiences. In 2022, I made the decision to return full time to research. As a Senior Researcher now, I contribute to the conceptualisation and planning of projects, lead implementation of said research projects, including conducting field research, analysing data, writing reports and liaising with provincial, national and international partners.

What do you see as a significant achievement working at WorldFish?

I spent a majority of my professional career with WorldFish working with local communities, and with provincial and national governments on coastal fisheries management, focusing on scaling community-based resource management (CBRM). In the past decade, we have learned together as a collective but there is still much to learn, and yet to improve how we can manage our fisheries resources to ensure we can continue to reap the benefits from it too.

What do you like the most about working at WorldFish?

One thing I like most about working at WorldFish is that the organisation endeavours to ensure its fisheries research programme is aligned with national government strategies and policies. In that way, the research is grounded with national priorities. Aside from that, I like that you get to meet lots of people and build an extended network of peers from local communities to provincial and national partners, to regional and international partners.

You were recently the vice-convenor at the 3rd CBFD (Community-Based Fisheries Dialogue) in Noumea, New Caledonia. Can you explain a bit about the CBFD and your role there?

The dialogue provides communities, civil society organisations (CSOs) and other non-state actors (NSAs) the opportunity to share experiences and lessons-learned on community-based fisheries initiatives to strengthen efforts in maintaining a productive and healthy ecosystem, and their associated fisheries resources. These are critical to the well-being of coastal communities. It is also an opportunity for CSOs and other NSAs to provide advice on key needs and issues associated with the sustainable access and use of coastal fisheries resources across the Pacific Islands region. During the recent 3rd CBFD, I took on the role as vice-convenor. As vice-convenor, I provided support to the convenor in all aspects of preparation for the 3rd CBFD, held within the 6th SPC Regional Technical Meeting on Coastal Fisheries and Aquaculture.

What advice would you give to women involved in fishing or fisheries management?

My advice to young women interested in fisheries management is to go for it. It is a broad area that you can specialise in, and once you find what you are most passionate about, I recommend putting yourself forward to take up opportunities

and build your confidence and repertoire. It may be a difficult space to find formal employment, particularly in the context of Solomon Islands, so volunteering yourself helps you to get yourself out there. And don't just stop at your diploma or undergraduate studies, the learning never stops!

It is true when you say that "the learning never stops"? Can you share with us your plans for the future?

WorldFish as an organisation is always supportive of its staff furthering their qualifications in the field. In 2024, I will be leaving WorldFish to undertake further studies. My area of interest is on balancing fisheries management and development needs. In the rural setting where communities are still highly dependent on coastal fisheries resources for food and nutrition security, it becomes crucial to ensure that development initiatives are environmentally sustainable to ensure that the resource base remains healthy and resilient to sustain future populations.

Thank you, Delvene, for your time and for sharing with us a little bit about working in community-based resource management in Solomon Islands. We hope your story can inspire other young women to pursue a career in coastal fisheries. We wish you all the best in your future studies and endeavours!

Delvene in Kavieng © Caroline Vieux





Women in fisheries profiles

Janet Saeni-Oeta

Country lead for WorldFish Solomon Islands

Janet Saeni-Oeta¹ and Anne-Maree Schwarz

My name is Janet Saeni-Oeta. I am from Lau Lagoon in North Malaita, Solomon Islands. I came from a family of five, of which I am the only female and the eldest child. A fun fact about my home village, called Hatodea, located on the island of Manaoba, is either you succeed in school and get formal employment, or you grow to be a fisher and fisher vendor your whole life. I completed a Bachelor of Arts degree (majoring in Sociology and Marine Affairs) at the University of the South Pacific in 2009 and in 2010 was successful in my application for a job as a research analyst at WorldFish, based in Honiara, Solomon Islands.

I have worked extensively with communities around Solomon Islands since that time, focusing on all aspects of community-based coastal resource management including food security, gender and social inclusion and climate change aspects.

I left WorldFish in 2015 to complete a Master's degree at Lincoln University in New Zealand, and then worked as a project coordinator in 2017 on an FAO project based in the Statistics Division of the Ministry of Finance and Treasury in Honiara. I returned to a new role as a Senior Research Analyst in WorldFish in March 2018, all this while building our family of four children with my husband.

What is your position now?

In May 2023, I was successful in my application for the position of WorldFish Country Lead for Solomon Islands. I am excited about what this represents as having progressed my career to a senior management position in an international organisation.

I am now responsible for programme management, programme administration, resource mobilisation, strategies and operational plans with our research partners in Solomon Islands and through participating in international networks. There are currently around 16 staff in the Solomon Islands programme; 14 based at three locations in Solomon Islands and 2 based at the University of Wollongong in Australia. I am based in the capital, Honiara, and travel regularly to WorldFish satellite offices in Malaita and Western provinces as well as internationally.

I have developed my leadership skills and style over the years and am excited to be able to use and build on them in this role. With a relatively small team I can maintain one-on-one communication and I can call people up to talk things through – I like that approach.

Your role has a much bigger component of meeting with and discussing strategies and research activities with senior government officials and senior international researchers now. How have you found that experience?

So far, the experiences have been positive. I haven't had to take a lead on that sort of responsibility in my previous jobs, but I have already gained my confidence in briefing provincial premiers and permanent secretaries, and have found that following all the proper procedures and protocols, and having my experience to draw on, means that they accept me and respect my position. This has boosted my self-esteem.

You are clearly enjoying this new challenge, what continues to inspire you to be working in fisheries?

I remember my first conversation in my first interview for a job at WorldFish in 2010. I said then "I want to work in this space because I came from a place (in the Lau Lagoon of North Malaita) where the livelihood of the people is mostly reliant on fishing". When I went to do my Master's degree at Lincoln University in New Zealand in 2015, they told me – there's no fisheries programme, you can only do environmental management, so I said OK, but my research topic will be focused on fisheries. And that's what I did. The interest is there because of where I came from.

In my research role, from 2020 to 2022, I visited around 60 communities in Malaita Province and 13 communities in Temotu Province, conducting resource management awareness and investigating community livelihoods. I draw inspiration from this experience now – we have opportunities that bring in significant funds for project activities, but I see that the level of engagement with communities is still not where it could be. So that is what keeps me going.

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What are some of the challenges that you see to be addressed?

The most common question that I hear from rural people in communities doing resource management, is what's next? In my FAO job when I was based in a government ministry, I experienced how there were restrictions in terms of availability of data to make good decisions for better lives for our people. So, I'm still seeing this as a challenge in terms of research. I see that new livelihoods-focused research projects can play a role, but this needs to be supported by better information from

and for communities. I see that I am now in a position to be able to directly talk to someone who's in charge. These experiences are helping me set my goals for this role, to see where I can have some sort of influence.

Personally, I have set myself the challenge of ensuring that the Solomon Islands context is adequately represented and championed in the international context of WorldFish strategies. I see the opportunity to leverage international expertise as an important area to explore, and where I, as a Solomon Islander with practical field experience, can bring a unique perspective to the discussions.

What would you say to young women who might look at your career path and ask if you have any advice?

Looking back, I would say that it is a matter of working to achieve what your supervisors expect of you, and being able to work effectively with minimal supervision. That requires you to be driven and to keep driving yourself. Also, as women, whenever we want to make a decision we tend to ask others. This comes from our home lives where, in the family, you have to ask your husband, or your brothers or your parents. That's OK to do that but you have to drive yourself. You have to work hard, believe in yourself and go above and beyond.

I am also a fairly straightforward person and this has helped when I have had to manage situations in the field while working in communities where the norm is for men to have the say in how things will be done and also when managing tensions with external researchers coming in to communities. I have had some good mentors who I have learned from. Formal leadership training has also given me additional skills and confidence to manage such situations to reduce the potential for conflict.

All of these experiences have been steps on the way to getting where I am now.



Solomon Islands field work. © Alick Konamalef



Young women share their experiences of working on gender and fisheries issues

Esther Umu¹ and Shania Chand

My name is Esther Umu. I am 23 years old and am from Tabuya, Nabukelevu, Kadavu in Fiji, and share maternal links with Tovu, Totoya and Lau. I graduated in March 2023 with a Bachelor of Arts degree in Environmental Management. I was privileged to be offered an internship with the Pacific Community (SPC) as a socioeconomic and gender equality and social inclusion (GESI) intern. I have gained training, practical knowledge and experience in socioeconomics and GESI in the Pacific Island region, and I thank SPC experts Carolina Garcia, Social Scientist; Julie-Anne Kerandel, Economist; Natalie Makhoul and Margaret Fox, both Gender and Human Rights Advisors and also Colette Wabnitz a lead scientist for the Stanford University Center for Ocean Solutions, who accompanied my learning journey as mentors.

Coming from an environmental background with an aspiration to further my studies focusing on social impacts of climate change, I understood both gender and fisheries but had no in-depth idea of the issues surrounding it. The first workshop I accompanied Natalie to, I realised from her presentation how I was sometimes gender biased myself. It was kind of a hard pill to swallow as I didn't believe I had that mindset, but it only then made me realise there was more to gender that I had yet to explore. As I began my research for the gender and fisheries factsheet, I explored a lot, deepened

my knowledge, and enjoyed every moment of the research. From all I discovered I was very fascinated by certain gender norms that some Pacific Island countries had; for instance, Solomon Islands men never do unpaid work, and if they do, they are usually made a mockery of and are thought in society to be wasting the money spent on bride price. This interested me a lot because I did not think that such norms existed in the Pacific. I also learned about ongoing and successful projects that supported gender mainstreaming in the fisheries sector; for example, the increasing community resilience through advancement of women to address climate change and natural hazards program that was implemented in 2013 to 2017 for both Solomon Islands and Samoa and other countries in the Pacific. With all the research carried out for the factsheets I realised the gap in disaggregated data by social categories such as gender or age, and more generally the scarcity of data on social and economic impacts relating to different people as they interact with marine resources, create markets and hold traditional environmental knowledge.

Apart from doing research for the factsheet, Shania – a junior consultant – and I also developed a questionnaire and had the opportunity to do one-to-one sessions with a few country representatives during a regional workshop. Through the development of this questionnaire, I learned a

lot about the structure, design and layout of questions. This was a great skill to learn and will help me in the future with developing a strong methodology for data collection. This exercise not only helped me with the contributions to the gender and fisheries factsheet, but it was a good opportunity to hear from community representatives and fisheries officers on how they have done work to break the gender bias and lack of inclusion in fisheries. I was also privileged to meet and work with other women who have made impacts in the gender and fisheries space for their countries or communities, and who have shared inspiring stories that are a beacon of hope for other women involved in the sector.

This journey has given me great exposure and has assured me that my focus on social impacts will be beneficial for the region. While I have mentioned the gaps in sex-disaggregated data and the lack of up-to-date data on socioeconomic impacts, I hope to fill in all these in my future research work, both academically and professionally.



Esther Umu during the third Community-Based Fisheries Dialogue.
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Evaluating alternative approaches to sector development in Pacific Island countries: a Fiji case study

Salote Waqairatu-Waqainabete^{1*} and Cooper Schouten¹

Background

An upcoming project will build on the Australian Centre for International Agricultural Research (ACIAR) Pacific Agribusiness Research in Development Initiative projects, that generated agribusiness tools, knowledge and training for various enterprises, including tilapia aquaculture.

Tilapia farming and beekeeping are important income-generating activities for smallholder farmers in Fiji and other Pacific Island countries that have unrealised potential to grow and develop into innovative high-value agribusiness industries that are inclusive and contribute significantly to local livelihoods. A key focus is evaluating gender roles in agribusiness activities supporting enterprises, value chains, farmer organisations, and collaborations. Enhancing representation and inclusivity in these roles can be vital for sustainable development.

This new ACIAR research project will support the transitioning of these sectors in Fiji through market-oriented development and sector strengthening by: 1) supporting farmer organisations to become effective agents of industry progress; 2) driving and facilitating sector development; and 3) attaining stronger financial and operational stability post-donor funding. A recent report on the gender analysis of women in Fiji's tilapia farming sector found that women significantly contribute to aquaculture across different tilapia farm types. Additionally, women involved in collective groups, managed by larger women's organisations or family units, gain empowerment and a collective voice, enhancing their influence within their sector.

Despite women's significant contributions to tilapia farming, they are often excluded from training programmes because they lack advocates in aquaculture gender issues (SPC 2018; Waqairatu-Waqainabete and Kaumaitotoya 2021). The project's goal is to strengthen farmer organisations by creating an inclusive and sustainable theory of change, and a monitoring, evaluation, and learning framework through collaboration with partners. It emphasises gender and social inclusion values and approaches in its development.

The project also seeks to grow and strengthen partnerships between key industry and government departments for continued industry growth through three development pathways.

Profitable beekeeping and tilapia businesses:

This pathway aims to achieve profitable and inclusive beekeeping and tilapia businesses serving diverse consumer markets through market-driven demonstration chains, product development, agribusiness mentoring, and group learning activities.

What are the most effective strategies for Fiji's beekeeping and tilapia industries to stimulate domestic demand and sales by aligning with the preferences of local consumers?

Development of farmer organisations:

The project focuses on establishing viable and sustainable farmer organisations that play a pivotal role in driving industry growth and development, both during and after the project's duration.

What are the most effective approaches for farmer organisations in Fiji to enhance outcomes for their members and improve their financial and operational capacity?

Optimising collaborative partnerships:

By optimising collaborations between industry stakeholders and government agencies, the project seeks to promote innovation, knowledge sharing, inclusivity and economic growth within Fiji's agricultural sector.

What are the most effective strategies for optimising collaborative partnerships within the industry to drive innovation, knowledge sharing, and economic growth in Fiji's agricultural sector?

It is clear that a holistic and inclusive approach to sustainable agribusiness and sector development requires comprehensive and meaningful gender research and development activities.

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Theory of change

The project team have developed a theory of change, a methodology for planning, participation, adaptive management, and evaluation used to promote social change with a shared vision. Our project's theory of change is the belief that empowering farmers, their enterprises, farmer organisations, and relevant stakeholders to work toward a common vision, will yield enduring agribusiness impacts. We recognise that strategic investments in research, development, capacity building, and relationships built on trust, can lead to positive outcomes in the agricultural sector, encompassing farmers, value chains, public-private partnerships, policy, and sector development.

To realise these goals, the theory of change places an emphasis on enhancing the collective capabilities of the private sector, farmer organisations, government agencies, and importantly, mechanisms for these groups to work in partnership towards a shared end goal and vision. This industry-driven, agribusiness research for development approach aims to achieve tangible changes that contribute to sustainable sector growth.

Key research outputs

The key research outputs encompass a range of areas vital for enterprise development and industry growth. These outputs include research that serves as a foundation for informed enterprise decision-making, aiding investments, product development, and sales strategies. Additionally, tools tailored for agribusiness, specifically designed to bolster productivity and profitability, aim to support beekeepers and tilapia farmers. Capacity-building initiatives form a significant part of the outputs, targeting enterprises to enhance their efficiency and profitability through standardised technical training programmes. Furthermore, efforts are directed towards

empowering farmer organisations by offering workshops on governance, grant-writing, income generation, and collaboration skills. Another pivotal focus lies in fortifying industry–government relationships within the apiculture and tilapia aquaculture sectors, achieved through the establishment of consultation committees and professional collaborations aimed at strengthening government extension officers' capabilities for industry development.

We hope to better understand and see impacts such as:

- 1 Strengthened beekeeping and tilapia enterprises.
- 2 Fit-for-purpose product development, commercial evaluation and demonstration chains.
- 3 Collaborative programmes with industry and emerging retail opportunities to understand economic viability and opportunities.
- 4 Unique selling points that are aligned with emerging market opportunities and the associated channels of engagement.
- 5 Industry baselines (farmers motivations, value chain and product profitability analysis, consumer preferences and association members evaluations).
- 6 Effective training, workshops, and peer-peer mentoring programmes to build farmer organisations' capacity.
- 7 Industry relationships and dynamics, knowledge sharing, partnerships and successful collaboration.
- 8 Coordinating and facilitating industry stakeholder capacity building activities.
- 9 Australia–Fiji industry stakeholder collaborations for industry development.

Some of the participants of the Project Development Workshop, Canberra (ACIAR), July 2023.



Key partners

Key partners include Fiji's Ministry of Agriculture and Ministry of Fisheries; Fiji Beekeepers Association; Fiji's Tilapia Farmers Association; Australia's Southern Cross University and University of Adelaide; Pacific Island Farmers Organisation Network; the Pacific Community; and the ACIAR (funding organisation), over a period of four years, starting in 2024.

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Project Development Workshop, Canberra (ACIAR), July 2023. Team photo (from left back) Dr Cooper Schouten (Southern Cross University, SCU), Theo Simos (University of Adelaide, UoA), Imraz Ali (Fiji Beekeepers Association, FBA), Mustaq Khan (FBA), Avinesh Dayal (Ministry of Agriculture, MoA), Dr Alok Kalla (Ministry of Fisheries, online), Asween Kumar (MoA), Laisias Cavakiqali (Tilapia Farmers Association, TFA), David Shearer (ACIAR), Craig Johns (UoA); (from left front) Katarina Senabu (TFA), Anneliese Austin (SCU), Dr Emily Grace (SCU), Salote Waqairatu (Pacific Island Farmers Organisation Network) and Jiosese Vodowaqvuka (TFA).



Kiribati undertakes a gender analysis of its fisheries and aquaculture sector

Sangeeta Mangubhai,¹ Margaret Fox,² Tarateiti Uriam Timiti,³ Kamaua Enari,³ Atanimango Korotu,³ Natalie Makhoul,² El-Jay Neneia,³ Rennie Raymond,³ Brandon Lokeijak Tabane,³ Karibanang Tamuera,³ Ren Teetimwa,³ Tooreka Temari³ and Bwakura Metutera Timeon³

The Kiribati Ministry of Fisheries and Marine Resource Development, in partnership with the Pacific Community, led the country's first gender analysis of the fisheries and aquaculture sector.

Background

Globally, the roles that women and men play in fisheries and aquaculture is strongly shaped by gender norms and relationships (FAO et al. 2023). In fact, gender, social and cultural norms, and power relations, influence individuals' access to resources and services, participation, decision-making, and opportunities in fisheries and/or aquaculture, as well as their overall well-being (Barclay et al. 2021). A gender analysis can help managers and practitioners consider these gender norms, relations and dynamics when designing their projects or programmes, to ensure they are gender responsive and socially inclusive.

A gender analysis should be conducted at the very beginning of a project or program during the planning phase (Leduc et al. 2021; Mangubhai and Cowley 2021). It should help inform the program design, implementation, monitoring, evaluation and learning *during* and *after* the project or program.

Between October and December 2023, the Kiribati Ministry of Fisheries and Marine Resource Development (MFMRD) – in partnership with the Pacific Community (SPC) and the University of Wollongong ANCORS Pathways Project – conducted a gender analysis to better understand the gender dimensions and dynamics in fisheries and aquaculture in local communities and within relevant government institutions. This work is part of MFMRD's commitment to ensuring gender equity and social inclusion are better integrated and mainstreamed into all aspects of its work.

Approach

An *institutional analysis* of MFMRD was done by adapting the SPC Stocktake of Gender Mainstreaming Capacity survey instrument. The survey instrument covered five

main areas: 1) political will and commitment to gender mainstreaming in government; 2) organisational culture that supports or does not support gender mainstreaming; 3) accountability and responsibility mechanisms to support gender mainstreaming; 4) technical capacity to do gender mainstreaming; and 5) availability of adequate resources to finance gender mainstreaming.

A focus group discussion (FGD) survey instrument was designed for the gender analysis. FGDs were held with six groups: young women (aged 18–29 years), young men (18–29 years), older women (>30 years), older men (>30 years), women elders (*unaine*) and men elders (*unimwane*).⁴ Where possible, FGDs were generally led by two same-sex staff from MFMRD – meaning, women interviewed women, and men interviewed men. All interviews were done in I-Kiribati (Gilbertese language). The survey instrument was reviewed by MFMRD staff who were trained in socioeconomic surveys that were piloted in Banraeaba Village on South Tarawa. Adjustments were made to the questionnaire as needed. FGDs were divided into seven thematic areas:

- 1 Amount of time women and men spent on productive work;
- 2 Gender roles, responsibilities and traditions;
- 3 Selling and marketing;
- 4 Decision-making and access to, and control over, resources;
- 5 Access to capital and financial institutions;
- 6 External impacts; and
- 7 Access to support and external opportunities and aspirations.

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⁴ Community elders are persons who are the oldest (in age) in the village – usually 60 and older, or if they have white hair. In certain communities, however, where there are not enough older people (e.g. over 60 years old), those who are slightly younger but of mature age (<60 years but not yet showing white hair) can assume the role of elders.

For example, the questions were designed to look at the roles of women and men of all diversities (e.g. age, abilities or disabilities) in coastal fisheries and aquaculture, the different ways they use marine resources and the impacts of their activities on the marine ecosystem and vice versa. Field research aimed at investigating how different people benefited from fishing or aquaculture (e.g. income, food, cultural, social), and asked if and how these benefits differed between the six social groups in order to reveal gender and age-related differences. Questions also examined access to, and control over, resources, and specifically how social interactions – including relations between women and men, social rules and hierarchies, and the power imbalances these social constructs create – affect people’s roles in coastal fisheries and aquaculture, and the opportunities and benefits they gain from the sector. The surveys were undertaken in 10 communities on the atolls of Tarawa, Maiana, Nonouti and Kiritimati.

Why is gender analysis useful?

We asked staff from MFMRD what they thought of the gender analysis, as a tool to help them with fisheries management. Below are some of the responses.



Tarateiti Uriam Timiti,
Community-based
Fisheries Management
Coordinator, MFMRD

This gender and fisheries analysis provided me with a deeper understanding about our cultural ways of living and how we, as I-Kiribati, associate ourselves with our ocean and our marine resources.

From our consultations with communities, we gathered interesting and important information that they (and we) often take for granted. However, it is important that this information is used to inform decision-making at the community level, island councils and at government level, so that our work is more impactful and meaningful to the people of Kiribati.

Further, we also noted that fisheries play a vital role to the food security and livelihoods of the i-Kiribati people and fishing is everyone’s role irrespective of whether they are men, women or children.



Kamaua Enari,
Research Officer, MFMRD

It is a fascinating opportunity for me to participate in this gender analysis of fisheries and aquaculture being undertaken in some pilot islands in Kiribati to learn more about our own culture and traditional knowledge on fisheries, as well as how our people invest in fisheries and aquaculture activities.

Before I joined this team, my understanding of a gender analysis was limited to evaluating men and women in communities according to their respective responsibilities. However, this survey went much deeper than I expected because it covers cultural ways of life, traditional knowledge on fishing with aquaculture activities, and marketing, which I believe will be very useful to communities in thinking about how they can improve their food security and add value to their fisheries products, and generate more income to support their family. After engaging with the communities by doing focus group discussions separated by gender and age, I discovered that there are significant differences between different social groups; our elders know more about traditional fishing techniques and beliefs than the young and middle-aged women and men. This discomforts me to know that our people, particularly the younger generations, have failed to acquire such unique fishing skills from our elders, which is part of our identity as an I-Kiribati; instead, they depend on imported food supplies and fishing tools for a living. But I am inspired to learn more about our traditional knowledge and to support communities in maintaining the traditional knowledge passed down from our elders to keep our identity.

Not to mention, I am grateful to SPC for carrying out this survey and studying the areas where we are deficient so that we can make the necessary improvements before it is too late.

El-Jay Neneia, Fisheries Assistant, MFMRD

This gender and fisheries analysis made me understand the different knowledge and skills that existed across different age groups in our I-Kiribati communities, which was very interesting. I also learnt about some fishing methods and practices that I’ve never heard of before. Further, it was a wonderful opportunity to interact with the communities across Kiribati, including all the way to Kiritimati, which I very much enjoyed!



Ren Teetimwa, Fisheries Officer, MFMRD

The traditional knowledge was very interesting, and this was the first time we learnt about some of these traditional fishing practices. I also learnt that in some areas

across Kiribati, women also are more engaged in fishing, and fish more frequently, compared to men. This was very surprising and unexpected and provides the basis of why a gender analysis of the fisheries sector is so important.

Rennie Raymond, Fisheries Technician, MFMRD

This gender analysis of the fisheries and aquaculture sector was a new and good learning experience for me. It took me out of my normal field of work (which is aquaculture), and provided me with the opportunity to learn about how local coastal communities use their fisheries resources and the roles that men and women play in their communities including the impacts of how it has changed over time.



Margaret Fox, Adviser (Gender and Social Inclusion: Fisheries), SPC

A gender analysis is important as it helps us to understand the knowledge, roles and responsibilities that women and men have within their families at the community level and also their engagement across the fisheries and aquaculture sector. This will help inform how fisheries and aquaculture development are tailored to the skills and needs of different groups in a community, so they can benefit equitably.

Acknowledgements

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Fish for healthy diets: A new report provides practical tips on boosting nutrition

Lydia O'Meara,¹ Fiasili Vae'au Lam² and Elesiva Na'ati³

Why is this report important?

People living in the Pacific Islands region are vulnerable to the negative impacts of “broken” food systems on their livelihoods and health. Pacific Island nations are on the frontlines of climate change and the triple-burden of malnutrition. To address these problems, the Pacific Islands region has called for a report to help achieve the goals laid out in the:

- UN Decade of Action on Nutrition (2016–2025)
- UN Decade of Ocean Science for Sustainable Development (2021–2030)
- UN Food Systems Summit (2021)
- International Year of Artisanal Fisheries and Aquaculture (2022).

The result is a report by the Food and Agriculture Organization of the United Nations, entitled “Pacific food systems: The role of fish and other aquatic foods for nutrition and health”.

Who is the report for?

It is for people and organisations working to build sustainable fisheries in Pacific food systems that deliver healthy diets for all Pacific Islanders – women, men, youth and children.

How was this report developed?

This report was developed based on the extensive collaboration and breadth of experience of over 19 experts from Pacific Island development organisations and partners, including the Pacific Community, Food and Agriculture Organization of the United Nations (Samoa), WorldFish (Solomon Islands), Ministry of Fisheries and Marine Resources Development (Kiribati), Tonga Health, Commonwealth Scientific and Industrial Research Organisation, Australian National Centre for Ocean Resources and Security (University of Wollongong), ARC Centre of Excellence for Coral Reef Studies (James Cook University), Australian Centre for Pacific Islands Research (University of the Sunshine Coast), Wildlife Conservation Society, and Island Elements. A literature review was also conducted.

What is in the report?

This report provides seven recommendations on how to leverage fisheries to build more sustainable, equitable, and nutritious Pacific food systems (Fig. 1). It also provides evidence for the following questions.

Why are fish and aquatic foods important for nutrition and health?

Women, children and babies have high nutrient needs compared to men and other age groups, especially when women are pregnant or breastfeeding and babies are very young. Fish and aquatic foods in the region are rich in omega-3 fatty acids, iron and iodine – nutrients that are important for women's health and for the growth of the baby's brain.

Why are fish and aquatic foods important for sustainable Pacific food systems?

For years, the ocean has been central to the cultures, livelihoods, and food of the Pacific Island peoples. Compared with land-based animals such as beef, fish and aquatic foods have a low environmental footprint.

Why are low trophic-level fish and aquatic foods important?

Small, low trophic-level aquatic foods like such as bivalves, pelagic fish (eaten whole, including the head and bones), crabs, prawns and seaweeds are important because they have a low environmental footprint, and 2) are more nutrient-dense than high trophic-level fish such as tuna.

Women fishers often glean these small, low trophic-level aquatic foods. This means that investing in low trophic aquatic foods would have a triple positive effect on providing more nutritious food for Pacific Islanders, while also boosting their livelihoods and incomes in a way that is environmentally sustainable.

Link to the report:
<https://www.fao.org/documents/card/en/c/cc5796en>

Link to the video:
https://www.youtube.com/watch?v=zb_-AEJNW4Yhandle/20.500.12348/5269

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Figure 1. Seven recommended actions to improve the contribution that fish and aquatic foods make toward more equitable, sustainable, and nutritious Pacific food systems.

Source: Reproduced with permission from O’Meara et al. 2023.

Introducing the Fisheries Co-Management Guidebook

Patrick Smallhorn-West^{1,2,3}

Fisheries co-management is widely understood to be the most effective way to manage small-scale fisheries. Yet co-management can also succeed or fail. A new guide aims to summarise the emerging research that is making it possible to achieve effective and equitable effects for people and nature.

Small-scale fisheries account for 40% of the global fish catch and employ more than 90% of the world's fishers (FAO 2022). Over 490 million people depend, at least partially, on small-scale fisheries for their livelihoods, food and nutrition security, including indigenous peoples, Afro-descendants, and religious and other minorities in coastal and riverine communities. As such, this sector defines the livelihoods, nutrition, and culture of a substantial and diverse segment of humankind, as well as being of global significance for ocean sustainability.

In 2014, the Food and Agriculture Organization of the United Nations released the “Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries”, the first internationally agreed on instrument dedicated to the small-scale fisheries sector (FAO 2014). Centred on a human rights-based approach, these guidelines were developed through a participatory and consultative process that aims to support the effective management of small-scale fisheries. Yet managing small-scale fisheries is inherently complex, and top-down approaches to small-scale fisheries management have faced many obstacles. In recent decades, more local forms of marine management, including fisheries co-management, have captured global attention as the most appropriate mechanisms to manage small-scale fisheries (Steenbergen et al. 2021).

Fisheries co-management is a relationship between resource-users such as fishers or a fishing community, and another organization or entity (often a government agency) for the purpose of managing a fishery (Pomeroy and Williams 1994). It is a collaborative arrangement where both groups have some responsibility and authority. This approach is now widely considered to be the most appropriate, fair and effective form of governance for small-scale fisheries. It is envisioned as a process by which to reverse the interconnected crises of hunger, poverty, and biodiversity loss, transforming small-scale fisheries into engines of prosperity, inclusion, and sustainability (Fig. 1).

Fisheries co-management will continue to grow. Yet co-management can succeed or fail, and implementation does not mean positive impacts for food security, nutrition, livelihoods, or biodiversity. Nor does it imply that programmes will respect human rights, gender equality, or principles of justice and equity. Fewer management programmes implemented well might achieve far more than many implemented poorly, and poorly implemented co-management can be worse than no management.

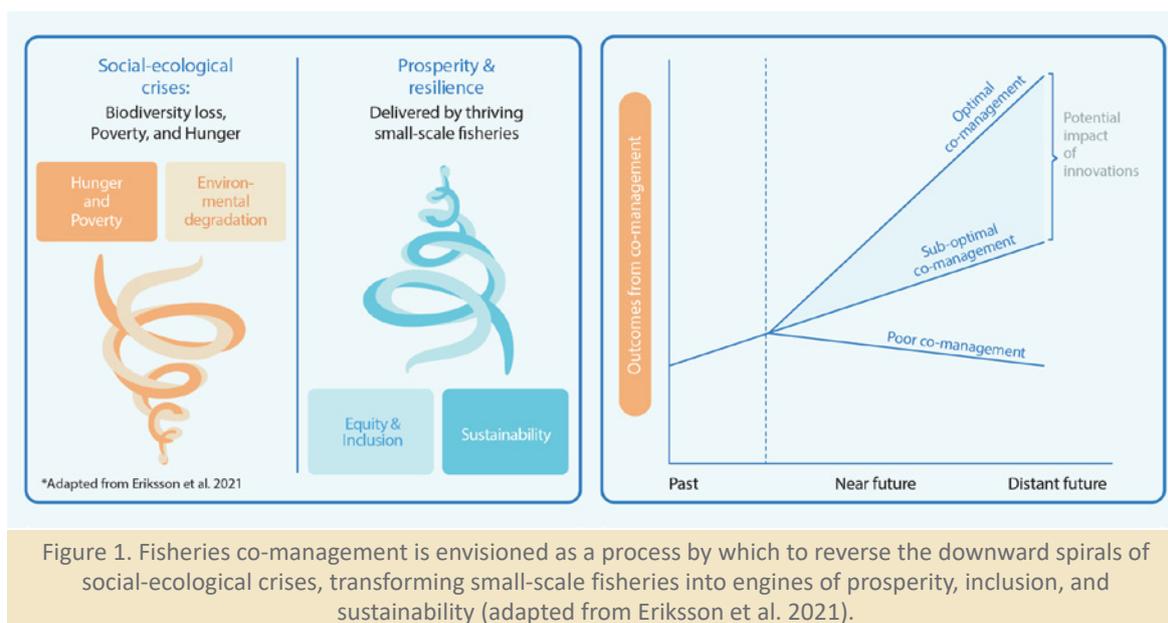


Figure 1. Fisheries co-management is envisioned as a process by which to reverse the downward spirals of social-ecological crises, transforming small-scale fisheries into engines of prosperity, inclusion, and sustainability (adapted from Eriksson et al. 2021).

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Figure 2. The Fisheries Co-Management Guidebook aims to provide practitioners with the information required to drive positive impacts for people and nature.

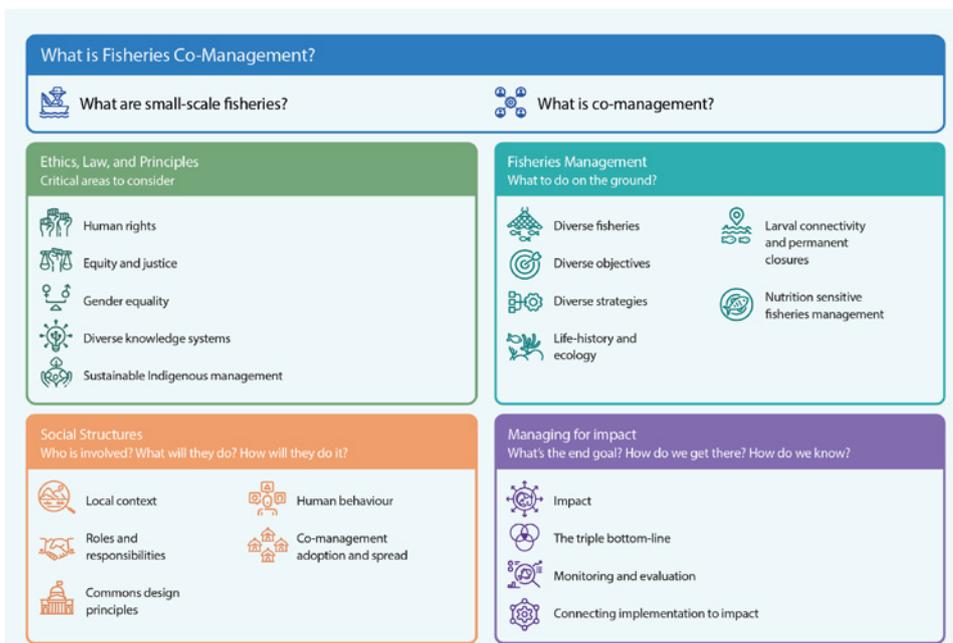


Figure 3. The Fisheries Co-Management Guidebook is divided into five sections: 1) What is fisheries co-management?; 2) Ethics, laws, and principles; 3) Fisheries management; 4) Social structures; and 5) Managing for impact.

The Fisheries Co-Management Guidebook is designed to assist practitioners in understanding the latest research on what constitutes successful fisheries co-management, and how to reach this objective (Fig. 2). The aim is to synthesise emerging research that, if adopted, would substantially improve impacts across both ecological and social dimensions. The guide is presented as an infographic series with each infographic summarising a substantial body of research from a particular field.

The guide is divided into five sections (Fig. 3). Section one – What is fisheries co-management? – defines small-scale fisheries and co-management. Section two – Ethics, law, and principles – outlines ethical considerations that should form the basis of any programme, including human rights, equity and justice, gender equality, and sustainable indigenous management. Section three – Fisheries management – outlines specific management strategies, ecological considerations, and how they can be applied to

The full report can be accessed at :
<https://doi.org/10.19121/2023.Report.49580>

achieve certain objectives. Section four – Social structures – discusses the social contexts and processes surrounding any co-management system. Section five – Managing for impact – outlines the processes required to understand whether management is making a difference. Each infographic also includes reflection questions that ask the reader to imagine how they would apply this information in a small-scale fisheries with which they are familiar, as well as suggested further reading.

Acknowledgements

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