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Cover picture
The deck crew © FFA

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Editor's note

This 36th edition of the Pacific Community's Women in Fisheries Information Bulletin has 15 original articles from the Pacific Islands region and beyond. As we all emerge from the global pandemic to a "brave new world", I feel uplifted by the inspirational stories and work that is happening in the gender and fisheries and aquaculture space, and how much we can all learn from each other.

The current bulletin features the significant investments being made in Fiji and Kiribati to support women in the maritime sector. The first female crew set course for the Pacific offshore fishing industry, while the Kiribati Women in Maritime Association launched its 2022-2027 Strategic Plan. Tonie Kattil-deBrum shares the key findings from her Master's research on the practices, experiences and observations of Marshallese women about their environment, society and economy, including their roles in natural resource management. Chelcia Gomese highlights the importance of Indigenous aquatic freshwater foods for rural women in Solomon Islands, while Ayodele Oloko explores gender and food taboos in fisheries of the Global South.

We welcome a number of new lead authors to the bulletin: Tonie K. Kattil-deBrum, Shaunalee Katafono, Margaret Von Rotz and Caroline Vieux.

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Marshallese women and environmental change: Their role and power in resource management

Tonie K. Kattil-deBrum[1]

Marshallese women play an important role in the development and well-being of their families and communities, especially through the wise use of resources. Climate change, however, is presenting new challenges to women's performance of this role. The effects of climate change on natural resources, within the context of longstanding environmental and societal challenges in the Marshall Islands, are making it harder for women to meet the needs of their households, especially in rural areas. A compounding factor is the low level of representation of women in the public sphere, especially in relation to decision-making for environmental management. This research draws on the women, culture, and development (WCD) paradigm to analyse semi-structured interviews with Marshallese women on their experiences, practices and observations about their environment, society and economy, including their roles in decision-making processes around resource management. The incorporation of the WCD paradigm into this study has allowed women's stories to be reflected through a culture lens that illustrates how society and tradition has provided the structure and values that shape ideas about how women should live in contemporary society.

Introduction

A significant body of socioeconomic literature has established the importance of equitable participation of women and men in development projects and environmental governance (e.g. Agarwal 2010; Arora-Jonsson 2013; MacGregor 2010; Alston 2014). Despite this, women continue to be under-represented at all levels of governance while also experiencing discrimination and unequal opportunity in almost all sectors of development. In the Marshall Islands, overpopulation, urbanisation, commercialisation, and poor waste management and pollution – impacts that are being exacerbated by climate change – have resulted in the deterioration of the natural environment. At the same time, climate change is leading to increasing temperatures, droughts, and rising sea levels (and, thus, saltwater inundation), threatening food security and water resources, all of which affect the health and livelihoods of Marshallese people (RMI Government 2016). Once refracted through the lens of the economic, social, and political contexts of the Marshall Islands, these issues reveal their gender-specific implications. According to the 2018 Gender Assessment report by the Marshall Islands Ministry of Culture and Internal Affairs, "women are more vulnerable than men to the effects of humanitarian crises, such as events related to climate change" (RMI Government 2018:11). This is due mostly to Marshallese women's reliance on natural resources for sustaining the livelihoods of their families and communities. While existing studies have opened the discussion on environmental change and its effects on women – as well as the gendered dimensions of climate vulnerability and adaptation, and the extent of women's involvement in decision-making on resource management in specific locations – there has been no scholarly analyses of these issues focused specifically on the Marshall Islands. My dissertation addresses this gap in the literature through a study of women's past and current roles in the Marshall Islands in terms of resource management.

Unlike earlier approaches established to address the exclusion of women in development,[2] the WCD paradigm argues that, in the twenty-first century, the failure of development in the Third World comes from the lack of awareness of culture being an experience of life (Bhavnani et al. 2016). Centering the links between women, culture and development can make visible women's important role and offer a powerful way to challenge the subordination and oppression of women that are being shaped by capitalism, patriarchy, race and ethnicity. The current policies and development theories being used are highly focused on the economy. Bhavnani and Bywater (2009) argue that the exclusion and marginalisation of women from development projects, with little attention to the place of culture and its impact on gender inequalities in society, have simultaneously contributed to widespread environmental degradation and resource depletion. Although modern policies and projects in development integrate women, they fail to do so in a way that sheds light on their roles and responsibilities in daily life. A WCD approach to development seeks to place women as an integral part of a sustainable and equitable society by maintaining a focus on moving towards justice and equality, while recognising the importance of economics (Bhavnani and Bywater 2009).

My research examines the implications of environmental degradation for women; specifically, whether women's vulnerability through a loss of access to resources not only reflects pre-existing gender inequalities but exacerbates them as well. Inequalities in the ownership of household assets and rising familial burdens due to declining food and water resources – as well as societal modernisation, and increased exposure to climate-induced disasters – can have negative implications for women's ability to economically support themselves, enhance human capital, and maintain the health and well-being of their families and themselves. Women and girls are disproportionately affected by environmental change and disaster impacts, making their participation and leadership critical for an all-of-society approach to building the resilience of families, communities and nations. This is especially true given Marshallese women's well-recognised resilience in times of disaster (RMI Government 2018).

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[2] The field of "women and development" is marked by the following theoretical approaches: Women in Development; Women and Development; Women, Environment and Development; and Gender and Development – all of which have contributed much to gender mainstreaming in development. They all lack, however, an understanding of culture and its influence on society.

A woman using a throw net to catch dinner. ©Tonie K. Kattie-deBrum

The problem

My five-year career with the Marshall Islands Marine Resources Authority (MIMRA) – first working as an intern and now as a permanent employee – has both exposed me to the "luxurious"[3] urban life in Majuro and the simple living in the rural outer islands. It is during this time that I noted and understood the inherent differences between the two types of communities. The obvious distinction is the significant influence of Western culture and social norms in the densely populated capital, where a concoction of traditional and modern ideals flourish. Meanwhile, communities in the less populated outer islands – who are somewhat influenced by Western ideals – prefer and cherish simplicity. Unfortunately for those in rural areas, with modernity comes the challenge of "keeping up" to a fast and ever-changing world. The abrupt alterations in both the environment and society have left fishermen, farmers and handicraft makers trailing behind, with some failing to adapt.

I am tasked to note and assess the threats against the natural resources that are necessary for the livelihoods of these communities. In order for this process – referred to as *reimaanlok*[4] – to properly take place, the full participation of the community is required because their knowledge of their surroundings and use of resources is the prime information used. Sadly, an issue I have often encountered is the reluctance of women to join discussions. Women seldom speak in community meetings. Even in cases where certain responsibilities are designated to them, the women feel disinclined to participate and often do not take part at all. In circumstances such as environmental degradation, where rural women are likely to be disproportionately affected, the question I am left with is why they do not feel obliged to share their opinions. What are the gender norms and stereotypes in Marshallese society that influence this behaviour, and is this lack of participation a reflection of currently accepted practices? What do women's lack of participation mean in the context of resource management and climate adaptation where the socioeconomic literature demonstrates the importance of women's participation in decision-making?

The 2018 Gender Equality Assessment of the Marshall Islands states that because of traditional beliefs, stemming from colonial times, as well as women's customary roles as mothers and nurturers – and their coexistence with contradictory gender stereotypes (universal stereotypes juxtaposed by local stereotypes stemming from traditional beliefs) – the initial roles of women as decision-makers have been shifted

[3] Majuro and other urban areas have certain amenities, opportunities, and easy access to resources in comparison to rural areas in the Marshall Islands.

[4] The term "*reimaanlok*", or looking to the future, was developed in 2007 to fill the need for a conservation area planning framework. The ***reimaanlok*** programme provides a step-by-step guide that Marshallese coastal communities can use to establish and manage community-based conservation areas.

Woman preparing dried pandanus for later use in handicrafts. ©Tonie K. Kattie-deBrum

to the men (RMI Government 2018). These stereotypes have since placed women in the private sphere, while men are expected to occupy the public space and be breadwinners. It is generally common in contemporary RMI society that leadership and decision-making positions are male roles (RMI Government 2018). This research sought to shed light on the gender inequities in Marshallese society in order to initiate discussions on the development of policies that will ensure women's equitable representation in decision-making on resource management.

Dependence on the natural environment

As Marshallese society further evolves, the surrounding physical environment is changing along with it. Social, economic, technological and cultural forces have been the main drivers of environmental change (Leenders et al. 2017), leading to an ever-increasing birth rate and continued migration from the outer islands into already crowded urban centres; not only altering the landscape, but putting further pressures on the economy and social environment. Staying in rural areas does not offer a better choice. Current environmental issues such as sea level rise, increasing temperature, and drier seasons have resulted in declining natural resources. And with the onset of climate change, these issues are being further exacerbated (RMI Government 2016) and are already threatening scarce resources (such as water) and is affecting food security, human health and the livlihoods of numerous communities.

I conducted my research over a seven-month period. The first three months were spent in the Marshall Islands where available and relevant data were collected from select organisations. This initial study phase was carried out in order to first understand the gender context in the Marshall Islands. This was done by examining gender roles in the home and in the community, and then exploring gender dependencies and preferences regarding resources. Government and non-governmental agencies involved in this study were able to provide information in the form of reports, which were used for factual information. These reports describe current changes in the environment (e.g. effects, post-disaster projects), as well as socioeconomic data, country demographics, environmental and social assessments, and gender-based research that highlights women's personal struggles with environmental change. The information collected provided an empirical base for this study, which is also supported by social science studies focused on natural resource management, gender studies, and feminist research. These papers were found through the University of Waikato library database.

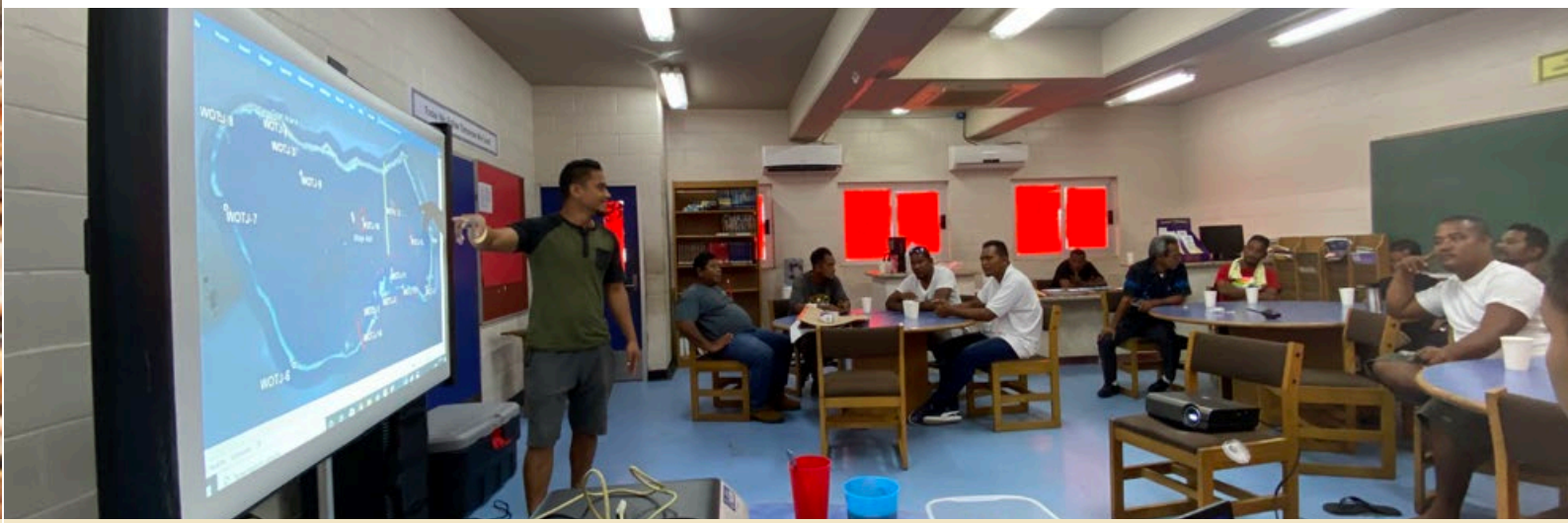
The second phase of the research involved a qualitative study of women's experiences in the outer islands of the Marshall Islands. This consisted of informal interviews with five women from Lae and Ujae atolls (two-thirds of the Kabinnmeto cluster located north of Kwajelein Atoll). Both Lae and Ujae, along with the rest of the northern Marshall Islands were severely impacted during the 2015–2016 El Niño event.[5] Both communities are rather small and consisted mainly of low-income families.

Key findings and discussion

Gender differences in roles and responsibilities

My research revealed the evolution of men's and women's roles. Before modernisation, men worked mostly outdoors, building, fishing and performing other strenuous, physical activities. Women, on the other hand, tended to household chores and were responsible for taking care of children, as well as collecting firewood, planting small crops, collecting seashells and harvesting plant materials for handicrafts, collecting water from wells or other sources, and ensuring food was prepared. Living in a matrilineal society meant that the women were held in high respect and known to uphold the roles of a caretaker, nurturer, benefactress and peacemaker. It was not until profit seekers arrived in the 1500s that the Marshallese understood the concept of wealth. When traders introduced a cash economy that would have an impact on previously balanced gender roles, men were quick to take offers to make a profit, such as in the production and selling of copra. The arrival of the missionaries in 1857 further cemented women's roles as domestic labourers, as those roles pertained to the Christian family ideals of the missionaries. As easily as the Marshallese absorbed the Christian religion, so did they also accept its patriarchal values, including those that insisted women should be obedient to their male

[5] Towards the end of 2015 and a couple months into 2016, the Marshall Islands experienced extremely low precipitation and one of the most intense El Niño Southern Oscillation (ENSO) events, which resulted in extreme drought. By May 2016, almost 21,000 Marshallese were affected, including 1257 households in the outer islands and 5195 households in urban areas (Leenders et al. 2017).



Another representation of an Land Resources Committee with mostly male attendees. ©Tonie K. Kattie-deBrum

counterparts and tend to the home, while the men worked outside the household.

The next century saw a transformation in the islands' economy and society. After the United States takeover of the archipelago at the end of World War II, the Marshallese further adopted Westernised views. What was left of the original culture evolved to adapt to post-nuclear livelihoods, globalisation, and eventually to the pressures of modernisation and being recognised as an independent nation in 1989. The new government brought new decision-making positions and, since then, the mixed parliamentary system of the Marshall Islands has been dominated by men. The lack of female representation in the public sphere influenced the development of policies to ameliorate discrimination and encourage gender mainstreaming. Since then, however, and with the onset of global efforts in women's empowerment, women have managed to get a foot in the door, expanding their educational horizons, and acquiring decision-making positions and other "proper" jobs. This is, at least, the outcome for women in urban areas.

Women and environmental change

Farther away from the bustling towns, supermarkets, and nine-to-five workdays, the lifestyles of rural Marshallese women still consist of much of what is considered "traditional" roles and customs. Rural women are still largely responsible for the health and well-being of their family, especially that of their children and older persons. Unfortunately, modernisation in the Marshall Islands has led to an array of issues such as overpopulation, urbanisation, commercialisation, poor waste management and pollution. Combined with the onset of climate change, these global and local issues have led to environmental degradation. Climate change has led to increasing temperatures, droughts and rising sea levels, which threaten food security, ruin water resources, and affect the health and livelihoods of Marshallese people. Women, especially those in rural areas, are most affected by these changes due to their limited resources. In the outer islands, women depend heavily on the sale of their handicrafts for money; money that is used to buy food, school supplies and other personal necessities. During periods of drought, not only do wells and food crops dry up, but so do the resources necessary for handicraft production. This situation leaves communities with few options to secure their well-being. Marshallese women are recognised for their resilience in times of disaster and finding solutions to problems. However, despite society subconsciously looking to women to fix problems, women's representation in decision-making positions – especially in outer island councils – is miniscule, due to traditional beliefs and gender stereotypes that have shifted women's earlier decision-making roles to men.

What my research has revealed is that the past concept of seeing society as having two different social spheres – public and private, with each complementing the other's roles – is no longer reflective of separate powers between the two. Rather, it has become a way to keep the other at bay. In the urban setting, men continue to ascend the social and political ladder, while discussions on "keeping the culture" is strictly in reference to women. Fortunately for Marshallese women living in urban areas, their awareness of the evolution of the global political environment and access to resources keeps them informed, even to the extent of attempting to challenge oppressive and unequal behaviour by adopting national policies for gender equality. Rural women, on the other hand, who live off the grid and are disconnected from global issues are unaware of the changes that are taking place in the world beyond their immediate environment. They are nevertheless aware of changes that they physically experience, which leaves them the most vulnerable to environmental change. Ione de Brum, Mayor of Ebon Atoll, emphasised that urban women have an easier time adapting because they are well accustomed to change in Marshallese society (pers. comm.). She also added that they are the most prepared for worst-case-scenarios of environmental change.

A double-edged sword

The roles culturally prescribed for men and women often shape the nature of their relationship, and the work they have to do with the material environment around them. At the same time, those roles may also be part of the problem because certain ideas about women's place being in the private and not public sphere are embedded within them. In

A typical Local Resources Committee created by the community to progress resource management discussions. ©Tonie K. Kattie-deBrum

historical times, before the Marshall Islands became part of a monetised, global and capitalistic economy, these roles and the relationships men and women had with the environment functioned within a socioeconomically subsistent context where it was possible to have a certain degree of equity. Fast-forward to a postcolonial modern era and the economy now functions within a global and capitalistic system, into which men are financially interwoven but women are excluded. In conclusion, most Marshallese men today have money and power, including political power in the country's political institutions, which they did not have in precolonisation days.

> "The idea that women work the home, makes it impossible for women to access cash. And when they do, their male family members or their partner would dictate what that money is used for... Financial abuse towards women is also prevalent." (Kathryn Relang, former Director of Women United Together Marshall Islands, pers. comm.)

A mother's burden

In the Marshall Islands, women are still expected to continue to fulfil their gender roles despite having lost out in terms of modernity. The reason why this situation is a concern today is because the differential gender roles and relationships in terms of using the environment have, in the modern era, translated into women being significantly disadvantaged or disempowered. The concern becomes obvious when observed through the lens of contemporary environmental change, especially climate change, because when the environment is destroyed and resources are unavailable or unusable, that situation puts greater stress on families and on communities, thereby leaving women to be responsible for the well-being of both, and to bear the brunt of that stress.

Recommendations for the future

The Marshall Islands does not exist within a vacuum. The country is very much a part of the global capitalistic economic system. In this system, both a cash economy and a subsistence economy exist. Yet women remain predominantly within the subsistence sphere, mainly as a result of historical gender roles and cultural values. Marshallese women lack a presence in the public sphere, while men dominate the public space. All of that translates into a situation where women remain disempowered.

Without appropriate representation in the public space, Marshallese women lose the opportunity to wield power or agency that comes with equitable access to all of these spaces – both private and public. At least with the addition of select women's groups, there is an entry point for progress. However, societal doubts about women's capabilities and a refusal to allow them to exercise agency denies women an opportunity to play an integral role in problem solving, and the weight of tradition seems to be a barrier. This is concerning when considering the environmental and climatic changes that are happening and may continue to happen at more intense levels, further exacerbating the conditions in which people live, which will adversely affect women much more than men.

The Marshall Islands has adopted a selection of developmental programmes to address gender inequalities and injustices against women's rights. These include: the National Policy on Gender Mainstreaming (2015), the Convention on the Elimination of All forms of Discrimination Against Women (2016), the Convention on the Rights of the Child, and other regional and global efforts. The Marshall Islands also provides opportunities for empowerment. The implementation of existing charters and policies may prove effective in transforming women's place in society, especially when these policies and projects are supported by global entities such as the World Bank and United Nations Development Programme, which advocate for women's rights and representation. Marshallese women are an integral part of society. Their place at home and in the community is the rudder that steers the family. If Marshallese society prefers to continue moving forward alongside the rest of the world, mothers as rudders need updates in the form of proper mindsets, improved capacity, and a louder and more prominent voice in all aspects of development in order to further propel the country towards longevity and resilience.

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The importance of indigenous freshwater foods for rural women in Guadalcanal Province, Solomon Islands

Chelcia Gomese,[1] Jillian Tutuo,[1] Joy Ellen Alfred,[2] Evelyn Sendo,[3] Malachi Tefetia,[2] Jocelyn Tepai,[4] Patricia Maike,[4] Priscilla Pitakaka,[5] Anouk Ride[1] and Hampus Eriksson[1]*

Background

Pacific Islanders are among the biggest consumers of aquatic foods – both animals and plants – in the world (Bell et al. 2009). On average, a Solomon Islander consumes 73 kg of aquatic food per year, and after roots and tubers, it is the most frequently consumed food group in the country (Farmery et al. 2020). Wild foods collected from environments such as forests and water bodies are increasingly being recognised as important food sources, especially in rural areas (Bogard et al. 2021). About 68% of all households in Solomon Islands catch fish or shellfish, and one-third of all households in urban areas are engaged in fishing activities (SINSO 2015). Indigenous food plants[6], which support rural food and nutrition security, are found throughout the Solomon Islands, and are part of an exchange system that has evolved throughout the centuries (Ross 1978). This system, however, has been disrupted in recent decades through the importation of processed and unhealthy foods that cause devastating public health outcomes (Andrew et al. 2022). Underneath the contemporary driver of imported unhealthy foods is a strong foundation of traditional foods and practices, which offer an opportunity for more resilient and healthy societies. For example, indigenous foods and practices were cornerstones for rural food security during the COVID-19 pandemic in Solomon Islands (Eriksson et al. 2020) and in other Pacific Island nations (Ferguson et al. 2022).

Innovating with traditional foods is increasingly viewed as a way to work towards positive changes in nutrition and move away from imported foods. Many aspects of rural food production, processing, marketing and preparation are traditionally the domain of women (Ross 1978). Women and girls play a crucial role in ensuring the sustainability of food for rural households and communities. This subsistence fish catch is vital to food security for families and rural communities, and is equally important for maternal and child nutritional health (Albert et al. 2020). Women, also play a dominant role by selling goods and organising local village markets, where they can sell fish and cooked food (WorldFish 2021). Women have a key role to play in the positive transformation of food systems for the health of people and the environment.

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[2] Guadalcanal Provincial Government
[3] Ghatapa Association Women's Ministry
[4] Ministry of Women, Youth, Children and Family Affairs
[5] Ministry of Fisheries and Marine Resources
[6] Plant foods from the natural environment used in indigenous cultures prior to outside contact or for the purpose of this paper, food plants used by indigenous cultures over centuries.

Figure 1. Group photo of representatives from WorldFish, Ministry of Fisheries and Marine Resources, Ministry of Women, Youth, Children and Family Affairs, and the Guadalcanal Provincial Government during the opening ceremony. © Regina Lepping

Figure 2. Group photo of the participants. © Regina Lepping

Celebrating indigenous foods and traditional livelihoods is important for reminding societies to consume local foods and use cooking practices of the past. These foods, and the way they are prepared, are sources of culinary identity, which may counterbalance some of the more modern unhealthy eating habits and foods. To celebrate traditional foods and practices, WorldFish – in collaboration with the Guadalcanal Provincial Government and the Ghatapa Association[7] – hosted an indigenous freshwater foods cooking competition (Fig. 1). The main objectives of the event, held on 19 October 2021, was to increase awareness and recognition of: 1) indigenous aquatic foods in the everyday diets of women, 2) the nutritional value of Indigenous foods, and 3) the role of rural women in community-based fisheries management.

The Women's Development Division (under the Guadalcanal Provincial Government) works closely with 360 women's groups that have been registered with the office. Of the 19 rural community women's groups targeted by the division, 4 are women's savings and credit clubs, and 15 are church women's groups (Women's Development Division, Guadalcanal Provincial Office unpublished data). The competition was part of the rural women's day programme for North Guadalcanal women and young girls. Groups that participated in the celebrations included Numbu Women's Fellowship, Numbu Savings Club, Kuara Women's Fellowship, Leivatu Savings Club, Selapungi Savings Club, Pitukoli Savings Club, Ligilavolaka family church and surrounding village dwellers (Fig. 2). The aquatic foods competition was held at Sinagha, located within the Ghaobata ward, in the North Guadalcanal region of Mbolomona. Guadalcanal Province has four main regions – Tasimauri, Tasimate, Mbolomona and Ghana (Wairiu 2007).

Importance of freshwater aquatic foods

The general image of island food systems is that they are dominated by aquatic foods from the ocean. The high islands of Melanesia, however, are also places of rich freshwater ecosystems. The freshwater ecosystem in the Solomon Islands includes rivers that are 30–40 km in length such as on Guadalcanal, and many upland streams on the other islands. Information on freshwater food resources in Solomon Islands is very limited. The earliest work that was recorded and published on fresh water and brackish fish was done by Gray in the mid-1970s and focused on Guadalcanal (Polhemus et al. 2008). Just like the ocean, freshwater ecosystems are an important source of aquatic foods that provide nutrition and livelihood opportunities for rural communities.

Women in inland areas harvest a range of freshwater aquatic foods consisting mainly of fish, shellfish and freshwater crustaceans from small streams and ponds. Very few of these practices have been documented, but the consumption of aquatic foods in the rural highlands is lower than that consumed on the coast, due to limited access (Bell et al. 2009). Access to rivers and streams for people living in the rural highlands can be difficult compared to those people living near the coasts because of the steep terrain. From the authors' own observations and upbringings, we know that fish and shellfish collected from freshwater systems are important in traditional cooking and food preparation.

There is some interest from the women's groups to start tilapia (a non-native fish species) ponds near their homes, with assistance from the Fisheries Division under the Guadalcanal

[7] Ghatapa stands for Ghaobata, Tathimboko and Paripao, three wards within two constituencies, North Guadalcanal Constituency and North East Guadalcanal Constituency.

Figure 3. Woman wrapping fish in banana leaves before cooking on hot stones. © Regina Lepping

Figure 4. A woman cooking food inside a length of bamboo.
©Photo by Regina Lepping

Figure 5. Two women preparing a traditional oven for cooking.
©Regina Lepping

Provincial Government. This is in response to an interest in both starting livelihoods projects and having nearby access to food security. Ponds constructed near homes would be easier for women and their families. The projects are pending assessment from the Fisheries Division. This could be a good contributing source of additional aquatic food for inland households where access to aquatic foods is generally limited.

Aquatic foods and the links with tradition

Our event focused on celebrating the links between aquatic foods, nutrition, women and traditions. The different dishes that were prepared each have their own special meaning. The food, and the way it is traditionally prepared, is significant in cultural events such as marriages, settling disputes, and the giving of gifts. Different dishes were selected from different tribes and regions, each with different ways of preparation and cooking. Like many rural Solomon Island communities, the traditional ways of cooking in the Mbolomona and Tasimate regions are still used. Some of these include the *na umu*, which involves steaming and roasting root crops and vegetables on hot stones and banana leaves in an earth oven (Fujii 2014). In this area, food is cooked in bamboo as well. Figures 3, 4 and 5 show women preparing food using different traditional ways of cooking.

The groups put on an amazing display of cooking practices befitting of a celebration of indigenous foods. For example, the women of the Leivatu women's savings club prepared the *makoi ke'u* and *saunge* dish (freshwater shells mixed with coconut cream) which is a special dish prepared for chiefs during special occasions (Fig. 6). The Numbu women's fellowship group prepared *gura* which consists of river shells, taro and slippery cabbage (Fig. 7). The Numbu savings club prepared river shells in coconut cream with pepper and tomato (Fig. 8). A second group from the Leivatu women's savings club prepared *se* (lesser yam) and *raghoragho* (freshwater fish). *Pana* is mashed in coconut cream and the freshwater fish is wrapped in island cabbage and cooked in coconut cream. This is an important meal prepared for men after the mounting (preparation of *pana* and yams).

With limited access to fresh aquatic foods, other sources of modern products can be used as an alternative. For example, the Selapungi Savings club prepared slippery cabbage cooked with coconut cream in a bamboo with a tinned fish brand called 777 as an alternative to fresh fish – exemplifying that traditional can meet modern in positive ways. With the addition of rootcrop, this forms a well-balanced diet with the inclusion of all key food groups (Fig. 9).

Furthermore, the value is not restricted to the food itself, but also to the cooking utensils used to cook the meals. While many rural communities may use plastic plates and ceramic cups for eating, traditional cooking styles and the use of traditional cooling bowls are still adopted. The bowls mostly used by the women are called *popo*.

Indigenous foods and nutrition

There is an important link between indigenous foods and nutrition, which for a long time has been overlooked as a countervailing force to store-bought unhealthy foods – Indigenous foods are more nutritious compared to processed foods (Anderson et al. 2013). But with the increase in imported food such as rice and noodles, more women are preparing these imported foods which are often high in saturated fats, added sugar and salt (Andrew et al. 2022). Aquatic foods are important for the health of all, especially for mothers and children as they are good source of protein, essential fatty acids, and key micronutrients (Hicks et al. 2019). The inclusion of these foods will contribute to a more diverse diet and better nourishment. As our event made rural areas in Ghaobata ward have a lot of Indigenous foods and areas that are inland to catch freshwater fish or shellfish only for consumption (Fuji 2014). The cooking competition made this link apparent, and for a day it was deservedly celebrated.

This event, and others like it, can be important venues for discussions about what a positive food system transformation can look like, grounded in local nutritious foods. Celebrating the role of indigenous aquatic foods and sharing recipes is a fun and engaging way to mobilise a movement that supports positive change for people and planet. Advocacy materials, such as cookbooks (Duarte et al. 2020) and popular media (https://www.pacificislandfoodrevolution.com/) are important for helping shape this agenda.

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Figure 6. Makoi ke'u and saunge (freshwater mussels cooked in coconut cream). ©Regina Lepping

Figure 7. Gura River shells (freshwater mussels) with taro and slippery cabbage. ©Regina Lepping

Figure 8. River shells (freshwater mussels) in coconut cream with pepper and tomato. ©Regina Lepping.

Figure 9. Presentation of the dish consisting of potato, tomato, pepper, leeks and fish. ©Chelcia Gomese

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Coral rehabilitation and coastal protection in Sawana Village, Fiji

Isimeli Loganimoce[1] and Semisi Meo[1]

This article showcases the strength of a diaspora community and rural women's group effort in coral rehabilitation and coastal protection in Sawana Village in Lau Province, Fiji.

Introduction

Coral reefs are among the most biodiverse and productive marine ecosystems (Wilkinson 2008). On a global scale, one-fifth of all coral reefs have been destroyed, and half of the remaining reefs are endangered (Wilkinson 2008; Burke et al. 2011; Hoegh-Guldberg 2014). Beyond their ecological importance and their role in coastal protection, coral reefs and associated ecosystems (i.e. seagrass beds, mangroves, mudflats) have important economic and social values in Fiji, particularly for fishing, tourism and recreation. Coral reefs, however, are impacted by multiple and intensifying pressures from the impacts of land-based development, increased fishing and climate change (Dutra et al. 2021). These challenges and pressures require responses at global, regional, national, and local levels, including traditional environmental management and approaches to improve livelihoods of communities dependent on coral reefs (Colls et al. 2009).

In the Pacific, the protection and conservation of coral reefs is supported by the participation and collaboration of governments, non-governmental organisations, scientists, volunteers, and local communities in setting up mangrove and coral nurseries (Govan et al. 2009). One of the main conservation tools being implemented in the Pacific, including Fiji, is community-based marine managed areas. This approach revolves around a participatory process on the part of conservation practitioners, and the resource owners implementing adaptive approaches to sustainably use their marine resources. The Fiji Locally Managed Marine Areas (FLMMA) Network has been successfully implementing the community-based adaptative management (CBAM) approach across Fiji for two decades. Globally, regionally and locally, many coral reef restoration projects are being implemented (Ammar et al. 2000; Rilov and Benayahu 1998).

Background

Sawana Village is on the Fijian island of Vanuabalavu, in the Lau archipelago. Villagers are predominantly of Tongan origin, and church services are conducted in both Tongan and Fijian.

The Sawana Women's Association (SWA) consists of members of the rural women's group and the diaspora women's group living in urban centres outside of Vanuabalavu. SWA is well established and has a strategic plan for 2020 to 2024. Implementation of SWA's strategies is progressing well, particularly with regards to the coastal rehabilitation programme. For this programme, Conservational International (CI)-Fiji is providing technical support to the Vanua o Lau province under the Lau Seascape Strategy to plant 200,000 coral fragments in the 13 districts within Lau Province. CI-Fiji is also assisting with a coral planting programme to connect the diaspora community with the rural women's group, and supporting social cohesiveness with the intention of sharing capacity with other women's group and to consolidate their role in managing natural resources in their villages.

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Members of the Sawana Women's Association applying the coral planting training with assistance from youth and men. Image: ©Livai Tubuitamana

Sawana women participating in the coral planting programme. Image: ©Isimeli Loganimoce

Group photo after the initial consultation of the coral planting program with the Sawana diaspora women's group with Lau Seascape partners and facilitated by CI (Fiji) marine team. Image: ©Isimeli Loganimoce

The Coral Restoration Initiative

Coral reef restoration could help countries deliver on national commitments to the Paris Agreement on climate change. The United Nations Decade on Ecosystem Restoration aims to scale-up ecosystem restoration efforts globally in order to meet the Sustainable Development Goals linked to conserving biodiversity, ending poverty, improving livelihoods, ensuring food security, and combating climate change. Coral reef restoration efforts are now implemented in at least 56 countries (Bostrom-Einarsson et al. 2020), but there is limited guidance on the efficiency and efficacy of various methods, particularly with regards to scale, cost and regional specificities.

Lau Province's waters are biologically rich and support habitats that depend on healthy island ecosystems that are a cornerstone to climate resilience. The Lau seascape, however, is threatened by unsustainable land-use methods (e.g. excessive use of chemicals, unfenced livestock), unsustainable fishing methods, pollution, illegal fishing by locals, illegal fishing by commercial vessels, invasive crown-of-thorns starfish, unsustainable tourism development, physical damage to reefs from anchoring, invasive species, and unsustainable coastal development. CI, in collaboration with partners and the chiefs of Lau, has developed a strategic plan to manage natural resources. and making sure that this management is harmonised among the decision-making entities in government and Lau's traditional chiefly leadership.

Currently, all districts in Lau have developed a management plan. This process has incorporated high-level issues ranging from ridge to reef to ocean within the districts and integrated interventions to improve ecosystems generally. One of the main issues identified by all districts in Lau, is coral degradation caused by changes in weather patterns and climate change. In supporting this issue, the Lau Seascape initiative – a Conservation International programme being implemented in Lau Province – have been requested by Lau chiefs forum to assist communities and various groups with reviving degraded coral habitats by implementing restoration programmes. From there, various communities and groups have requested restoration programmes to be implemented in their coastal reef areas.

CI had started assisting communities by carrying out general awareness on the coral restoration process. From this, SWA has been endorsed by its chiefly forum to take the lead in implementing the coral restoration programme. The includes the engagement of the SWA diaspora women's group to support the SWA rural women and the village with the resources needed to implement the programme effectively and efficiently.

Significance of the diaspora women's group

SWA was established and registered in 2014 with the Ministry of Women, Children and Poverty Alleviation, with the aim of assisting and supporting its village and contributing to the sustainable development and exploration of other alternative livelihoods. Initially, the SWA diaspora women's group was supported by the Women's Empowerment Programme (within the Ministry of Women, Children and Poverty Alleviation) and included enhanced capacity building on business skills, alternative livelihoods, and establishing a successful association. Out of these training sessions, SWA developed the capacity to write grant proposals to support the implementation of their strategic plan. The group has since developed two strategic plans, one for 2014 to 2018, and an updated version from 2020 to 2022.

The SWA diaspora group was endorsed by the chiefly forum to support and participate in any village development. An activity that is currently underway is the establishment and coordination of a coral restoration programme. The SWA urban women had requested the CI to conduct a general awareness about the Lau Seascape Initiative, its vision, strategies, and approach to protect and sustain resources in perpetuity. The SWA urban women supported the coral planting initiative and actively participated with the rural women group to undertake a coastal protection project through the restoration of corals in front of the village. Permission was granted from the chief with the allocation of an area to install the coral restoration project in their marine area.

In addition, the proactive engagement, and the respect of the SWA urban women to consult with internal groups in the village are the key success factors to gain the rapport and the trust to participate in the programme. The diaspora women had set out a workplan with CI to carry out the restoration program in Sawana. The CI team visited the village on 26 March 2022 with the essential materials and technical skills to train the communities in planting coral fragments.

Results of first phase of coral restoration

There were four steps done in the coral restoration training process:

Step 1. Coral frame preparation: This process involves the women preparing the frame and tying cable ties onto the frames. The women managed to attach 2000 cables on the 4 racks to deployed.

Step 2. Snipping of coral fragments: Women, men and youth were trained on theory and in on how to carry out this process of snipping coral fragments. Afterwards, the group left to collect coral fragments to be tied onto the cable ties that were already attached by the women.

Step 3. Attaching coral fragments to the frame: Coral fragments were then attached onto the frames using the cable ties This step was carried out collectively with the support of the women, men and youth of Sawana.

Step 4. Deployment of coral racks: The four racks were deployed directly to sites pre-selected and agreed on by community leaders. The deployment step was conducted by the women.

Conclusion

The coral restoration activity in Sawana has strengthened the functions and relationship of the SWM diaspora women's group, thus gaining the rapport and respect to engage in their village development. Overall, 10 women were trained on nursery coral propagation methods. In addition, women and youth were also trained to carry out monitoring and replacement of unhealthy coral fragments. In total, 2000 coral fragments were planted on the racks.

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Women's involvement in managing government development projects: A case study from Solomon Islands

Nina Lean Taniveke-Harry[1]

Background

In Solomon Islands, government development programmes comprise projects that reflect the government's development policies. They are activities that the government of the day wishes to achieve, and are implemented by respective government ministries and their stakeholders. These programmes aim to improve community livelihoods with regards to market access, healthcare services, education and information. A cross-sectoral approach to stakeholder engagement and project management is an important requirement for achieving government development programmes. The Solomon Islands National Development Strategy 2016–2035 (Solomon Islands Ministry of Development Planning and Aid Coordination 2016) emphasises inclusive partnership and the country's commitment to achieve national development outcomes.

Mainstreaming gender into government ministries has been a priority for Solomon Islands since 2010 (National Gender Equality and Women's Development [GEWD] Policy 2016–2020). A policy outcome in the GEWD 2016–2020 includes equal participation by both men and women in leadership, governance and decision-making. An expected outcome from gender mainstreaming is that women have equal opportunities with men to be recruited to all levels within government ministries, and participate in all roles, including managing government development projects.

Most socioeconomic literature talks about women being beneficiaries of any development project but not as leaders in progressing development (Gill et. al. 2009; Labuinao 2020). In fact, research has shown that, in government projects, women mainly perform administrative roles, including planning activities, organising events, facilitating meetings, performing procurement duties, project monitoring, evaluation and reporting. Lawani and Moore (2016) found that women tend to perform tasks that are perceived to be "less tough", and usually manage projects that are relatively small in scope and cost, and technology dependent.

The roles that women play in the formal sector with responsibilities for government development programme and projects are explored in this paper. The case is the Freshwater Fish Hatchery project in the Solomon Islands Ministry of Fisheries and Marine Resources (MFMR). The involvement of women in project management is described, the benefits and challenges identified, and opportunities for improvements proposed.

Methodology

Literature review

A desktop review was performed whereby literature regarding women's participation in development projects was collected and reviewed. Recent policy documents were retrieved from online sources on topics regarding gender equality in Solomon Islands, as well as studies on women managing government projects.

Face-to-face interviews

A qualitative research approach was used to collect information for this article during May and June 2022 to reveal women's views on their participation in the MFMR Freshwater Fish Hatchery project. Internal interviews were setup with the officers of the Aquaculture Division, Project Management Division and Mekem Strong Solomon Island Fisheries team who are directly involved in the project. In total, 16 people were questioned independently; 9 were female officers, 4 were male officers and 3 were male contractors to the project. Interviews were done face to face using predetermined structured interviews. A narrative analysis was done on the primary data obtained in order to support literature reviews and observations from meeting minutes and other internal project documentation.

Freshwater fish hatchery project

MFMR has an ongoing development programme called Community Fisheries Livelihoods. This programme supports rural fishing communities through: 1) infrastructure development, 2) supplying and improving fishing technologies, and 3) providing information and advice to the public regarding community fisheries livelihoods. The MFMR Freshwater Fish Hatchery project aims at improving community livelihoods, supporting food security and economic growth in communities, and promoting commercial aquaculture development in the country (Anon 2018b). It also aims at becoming a research centre to support aspiring academic professionals in the area of fisheries and aquaculture development.

This is a national project and the first of its kind to be built and managed by the Solomon Islands Government. The hatchery is 32 km northwest of Honiara on Guadalcanal. The site is located along the coastline and was once known as the Aruligho International Centre for Living Aquaculture Resources Management site. It is jointly funded by the Solomon Islands Government and the New Zealand-funded

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Figure 1. Eastern view of 10 fishponds (25 m x 15 m) at the project site. © Sebastian Misiga

Figure 2. The water and offgrid solar installation facilities to power the centre. © Sebastian Misiga

Mekom Strong Solomon Islands Fisheries (MSSIF) programme, and has promoted an inclusive approach in all of its development stages. The Solomon Islands MFMR Aquaculture Division and Project Management Division, with support from the MSSIF team, are responsible for setting up the national aquaculture centre.

The project has four phases: initial phase, designing and planning, execution, and project closure. The execution phase has four development stages, the first of which will focus on infrastructure development. The third stage will train fish farmers and import genetically improved farmed tilapia (GIFT). The final phase is all about supplying male GIFT fingerlings to rural fish farmers across the country.

Currently, the project is in the execution phase, and the construction of an office building, hatchery building and fencing of the project site are all taking place. In addition, 10 fish ponds (25 m x 15 m) are being (Fig. 1) along with infrastructure for water and solar power supply (Fig. 2). Completion of supporting infrastructure for the national aquaculture centre includes the construction of staff residential homes (currently at the contracting stage), improvement of a post-entry quarantine facility, and landscaping (currently at the tender preparation stage). The hatchery is scheduled to be completed and operational by the first quarter of 2024.

Women's role and participation in the project

Five contractors are currently working at the project site, and all are overseen by the MFMR's Project Management team. Of the officers directly involved in the project, 73% are women who are permanent officers alongside their male colleagues and are dedicated to the development of the national

Figure 3 Signing the memorandum of understanding with landowners during the cultural ceremony, *chupu*. © Francis Pituvaka

Figure 4. Technical Working Group reviewing the Ministry of Fisheries and Marine Resources gender strategy. © Nina Lean T. Harry

aquaculture centre. Both male and female officers play roles in supporting and managing the project's progression at both the administration level and in the technical fields. Two of the three project leads who are responsible for decision-making in the participating divisions are women.

Project initiation phase

In the project initiation phase between 2010 and 2016, decision-making was male dominated. The MFMR executive personnel and management team who were mainly male (75%) at that time, took up the active role in pursuing the tilapia initiative and establishing a national aquaculture centre in recognition of the government policies of its Corporate Plan: 2015–2018 and the Solomon Islands Democratic Coalition for Change government policy 2018. The aim was to develop and promote the country's aquaculture sector as an alternative option to offset the challenges faced by the capture fishery (Anon 2018b) and support livelihood and food security. With continuous interest by MFMR on the project, in 2017 the Cabinet approved the concept and proposal for the national aquaculture centre, which was initially focused on Nile tilapia. Funding was allocated through the Solomon Islands Government development budget to MFMR for beginning the project and donor support was secured through MSSIF.

Design and planning phase

During this stage, discussions were mainly on defining the project's scope, creating plans and identifying and securing a suitable project site. A feasibility study was performed by the Pacific Community in 2018 to support MFMR in setting up the project (Pickering 2018). The proportion of women among the participating divisions at this time was 40% and most of the women were junior officers. Women participating in this phase engaged in planning the whole project and outlining phases of development that would follow. Women took the lead in organising meetings with selected stakeholders and a cultural ceremony called *chupu* with the land-owning group at the project site (Fig. 3). Women led awareness programmes in communities for the project's beneficiaries, and performed logistics; facilitated meetings, workshops and training sessions; and performed secretarial duties at the in-house committee meetings. Decision-making at this stage included women although they were fewer in number as confirmed by meeting records of members' attendance. Respondents felt that their contributions carried weight in decision-making.

Gender advocacy

Throughout the designing and planning phase, and as part of the initiation phase, gender advocacy in MFMR was widely promoted, and gender equality was extensively communicated across government ministries. As a result, in 2014, gender focal points were appointed in government ministries,

Figure 5. Women inspecting and verifying construction of steel rod bars of the fish ponds. © Nina Lean T. Harry

Figure 6. Women assessing the area for demolition works and site clearance. © Nina Lean T. Harry

Figure 7. An informal group discussions on the project progress at the project site. © Nina Lean T. Harry

including MFMR,[2] and a gender analysis of the fisheries sector in Solomon Islands was published (Anon 2018a). A call for the review of the outdated MFMR gender strategy 2011–2013 was announced, and so an internal gender technical working group was formed in 2021 to review the strategy (Fig. 4). In addition, officers attended gender training workshops led by the Ministry of Women, Youth, Children and Family Affairs. MFMR also held gender training for its staff in 2021. With the increase gender advocacy within the MFMR and across government sectors, the ministry recognised the need and value for gender equality in its recruitment into the sector. From around 2017–2020 the MFMR underwent a restructure program in its recruitment that allowed the aquaculture unit and the project management unit to become divisions of their own. This paved the way for more females being recruited into the aquaculture and project management divisions. Consequently, between 2018 and 2020 women were recruited to hold leadership and senior positions in the project.

Execution phase

The project entered its current execution phase with women leading and actively participating in decision-making at the top level, organising events, performing secretarial and administrative duties, and being heavily involved in project procurement processes, including tendering and contracting for the construction of infrastructure.

The Project Management Division is 60% women, and is led by a female who is responsible for coordinating, facilitating and finalising the annual MFMR 5-year Medium Term Development Plan document. This is the annual submission of the government's Development Budget Bids to secure funds for the ongoing project. Division staff are also responsible for the monitoring, evaluation and reporting of the project's construction phases to MFMR (Figs. 5 and 6), contributing to resolving social issues raised by contractors on site, and providing recommendations for project advancement and appraisal (Fig. 7).

Male interviewees stated that women are respected for their role in administrative duties, their organisational skills, and in project procurement processes. Contractors also expressed that women officers worked well

[2] See: http://www.mwycfa.gov.sb/what-we-do/gender-equality-women-s-development.html

alongside the contractors at the project site, and handled project risk professionally. They were described as coordinating activities easily with core project beneficiaries who are mainly the adjacent communities. Male project colleagues also stated that women are easier to work with and are the backbone in moving the project forward. This latter statement is supported by Nyong and Archibong (2019), who stated that women are the heart of development in terms of having control over economic activities and are partners in the development of their nations.

Gender relationship and cultural sensitivity

Project staff work well together as a team. Interviews suggested that 80% of men agreed to support female colleagues on the team. The workload is shared equally among women and men in achieving goals within project timeframes. All women said that their male colleagues were supportive of women's leadership and decision-making with regards to the project. Information-sharing regarding the project's progress among female and male colleagues was excellent. For example, opinions and ideas on progressing the project are expressed and shared openly among project team members. Also, decision-making comes from a committee point of view, where women make up 7 out of 14 members.

When dealing with stakeholders from other line ministries and from other organisations, the majority of whom are male, female interviewees stated the same sentiments: that male workers were supportive of them with regards to project issues. They have confidence in having omen taking the lead in project areas of concern. Again, having the same goal in developing the centre for a better future encourages participation, effective cooperation, and collaboration among genders and stakeholders.

At the same time, managing a government development project in a rural community requires an in-depth knowledge of local cultural and traditional values. As suggested by Lawani and Moore (2016) in their study, cultural factors must be considered when implementing project management in a developing country. The project's female officers familiarised themselves with the area's customs and cultures, and the approaches taken in managing the project considers the involvement of communities in the project's vicinity. Communities and landowner groups were consulted prior to the project's development. A local community survey was conducted to obtain views regarding the project setup. Consultations were held with respective community leaders as well as the Guadalcanal provincial office before beginning the project. A Guadalcanal cultural ceremony was held for the government, communities and landowners as a way for parties to cooperate and support the project, and to declare their intention to develop their land. Participants were offered an awareness programme to enhance their understanding of the development on their land. Ongoing formal and informal interactions with local communities strengthen the relationship between the government and local communities.

While both male and female officers have been involved in these activities, male colleagues are typically the ones to handle social issues when they are encountered. In those cases, women became "back benches" because they lack confidence in dealing with disagreements because it is usually men who are instigators of any social unrest within the project. However, the presence of women in matters openly discussed usually calms the atmosphere and a heated discussion will conclude with favourable resolutions. This is consistent with the finding by Henderson and colleagues (2013) who reported that an advantage of women playing roles in managing projects is their "presence"; that is, the power of a female presence to diffuse arguments and conflicts.

Benefits

This study found that 100% of female interviewees benefited from being part of the Freshwater Fish Hatchery project. About 80% of these female officers are less than age 35 and, therefore, are career oriented and view the project as a learning avenue in building their careers. The project has also improved their project management skills, as well as their skills in monitoring and report writing. Women expressed satisfaction with broadening their knowledge and understanding the government's procurement processes with regards to the project. Boosting confidence in performing and facilitating meetings, training sessions and workshops were also some of the benefits shared by 50% of the interviewees. Another benefit identified was an enhanced relationship between stakeholders who are involved in project development, especially with the contracted companies on site. Participating in the project has strengthened their relationship with nearby communities and established easier communication channels with the people. Henderson et al. (2013) confirmed that women's strength in project management lies in their communication skills, collaboration and professional relationship building. Likewise, the project has helped to improve women's individual negotiation skills, which are needed to convince, influence and satisfy key project stakeholders.

Challenges

According to Henderson et al. (2013:765): "each project represents a new beginning in terms of a unique blend of requirements for, and constraints on, project scope and objectives, resources and cost and quality targets." This statement reflects the challenges confronted by the project team regardless of gender. Challenges such as managing contracts within a project timeframe, dealing with budget delays, budget constraints due to low cash flow and the need to chase approvals from multiple government ministries affects the achievement of project key performance indicators.

In addition, contractors sometimes fail to meet deadlines due to multiple reasons including poor financial management, delay of construction materials from suppliers due to COVID-19 restrictions, and bad weather. This places pressure on everyone and can affect individual work performan within MFMR.

Under such pressures female officers stated that managing a team of male-dominated companies can be a challenge whereby female officers sometimes feel insecure and lack confidence to communicate instructions to contractors on site. Lacking the technical knowledge in construction field

required women to consult the external infrastructure project manager and the Ministry of Infrastructure and Development for matters relating to technical areas of building constructions and their processes. A literature review by Angela Paneque de la Torre (2020) supported the idea that managing projects is a male dominated profession because traditionally it focuses industries like construction which are traditionally male-dominated.

Conclusion

The MFMR Freshwater Fish Hatchery development project anticipates opening the national aquaculture centre by early 2024. Women on this project team have displayed active participation in enhancing and achieving the government's development policy priorities. It is evident that more awareness of gender equality objectives and mainstreaming in the public service and more equitable hiring practices in the MFMR have increased the number of women at all government levels. This has not only created new career opportunities for women but has also been a platform for women to prove that they are able to engage in all aspects of project management in a setting where this has not been the cultural norm. Along with having female leaders and role models, support from male colleagues has been instrumental in bringing about this shift within MFMR.

Furthermore, successful and sustainable development comes from the inclusive participation of all relevant stakeholders. Understanding the objectives of the project is an important step in progressing project development. Both women and men must learn to develop a high degree of professionalism in delivering project deliverables, and for women – in a traditionally male-dominated field – overcome the fear associated with managing projects. This will be assisted by familiarisation with government processes to properly implement the project on time, and within the scope and budget.

Active collaboration and communication with government stakeholders, contracted companies and beneficiaries advances the project development, and so more training sessions for both women and men to build their capacity in development projects is required. Government policies and strategies are to be gender sensitive in their implementation so as to support development projects in communities.

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Women fish too: Invisible women in tuna industries[1]

Kate Barclay[2]

The assumption that the tuna fishing industry is a man's world is not only misleading, but also damaging.

In the coastal Indonesian city of Bitung, women who fish cannot formally register their occupation because the registration system has no option for women to register as a fisher, but defaults their occupation as "housewife". Women fishers thus miss out on government support provided to fishers. The assumption that the fishing industry is dominated by men, or that only men fish, is not only wrong, but damaging.

Given that women make up half of the world's population, it is important to know if the development of fishing industries benefits both women and men. A first step towards determining this is making women visible through gender-disaggregated data in order to gain a better understanding of how women are impacted. It is estimated that more than 300,000 people are employed in tuna value chains in Southeast Asia and the Pacific Islands (Barclay et al. 2022). In the Pacific, there are around 22,350 tuna-related jobs (Ruaia et al. 2020), about one-third of which is in fishing and almost all of those involved are men. About two-thirds of all tuna-related work is in processing and ancillary industries, where women are the majority (Barclay et al. 2022). In Thailand, around 80,000 people - mostly women - work in tuna processing (Asia Foundation and International Labour Organization 2015). Tuna fishing, processing and trading are also big industries in Indonesia – which has by far the largest catch of any country in the region – and the Philippines.

Still, there is so much about women in fisheries value chains that is unknown. The western and central Pacific Ocean tuna fisheries, estimated to

Tibo tibo fisheries businesswomen in Bitung, Indonesia.© Nicholas McClean

[1] This is an excerpt from a longer paper titled Tuna is women's business too: Applying a gender lens to four cases in the Western and Central Pacific. It is available for free from the publisher's website: https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12634

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science, and initiatives inspired by feminism are often viewed with suspicion. Public policy towards fishing views social benefit as the gross value of production or contribution to the national gross domestic product, perhaps total job numbers. And that is as far as it goes. It is a blunt instrument.

Research into several key regional tuna fishing ports – Bitung in Indonesia, General Santos City in the Philippines, Noro in Solomon Islands, and Levuka and Suva in Fiji – aimed at better understanding where women are in within tuna value chains. It found industrial tuna vessel crews are 100 percent men in Bitung and General Santos City (Barclay et al. 2022).

Noro, Levuka and Suva were an exception, however, with a handful of women trained as cadets in recent donor-funded programmes. Women are usually involved in fishing companies as office workers and managers, although they are generally in lower position levels, with the higher prestige and remuneration roles mainly occupied by men.

Fishing vessels are some of the most dangerous workplaces in the world. The negative impacts of industrial tuna fishing include long absences from home and the risky nature of both fishing work and the living conditions onboard some vessels, where human rights abuses have been recorded, including when docked in ports (Environmental Justice Foundation 2019). Port areas tend to have high rates of gender-based violence, sexually transmitted infections, and drug and alcohol use. These problems affect crew members, as well as their families.

As in other kinds of seafood industries, processing line work is mostly done by women. In Bitung, 70 percent of cannery employees are women, while managers are virtually all men (Barclay et al. 2022). In General Santos City, processing plant employees are 80 percent women, while in Noro and Levuka, women make up 64 percent and 65 percent, respectively, of tuna processing plant employees (Barclay et al. 2022). Women gain employment at all levels of processing plants from the processing lines to quality control, and some in management. Wages are often not high, but formal employment brings benefits such as maternity leave and insurances that informal work does not offer.

In informal tuna processing, the picture is much more diverse. Smoked tuna, or *cakalang fufu*, enterprises in Bitung are often owned by women but the labour is done by men, while women in General Santos City are heavily involved in making tuna snacks and condiments *chicharon* and *dayok*. In Solomon Islands, women cook tuna rejects from industrial fleets and tuna from small-scale fisheries as fish and chips or traditional baked products, and sell it in local markets.

The case of SolTuna cannery in Noro shows the benefits that can result from taking a gender lens to the processing environment, thereby leading to a better understanding of the reasons behind high absenteeism and turnover. Some female factory workers, who are first in their families to have a regular wage-earning job, had little financial literacy and were unable to make their wages last the full pay period. They took days off to raise cash in the markets. Women were also leaving factory work once they had children due to a lack of affordable childcare nearby and informally sold items in the market instead due to the convenience.

Once SolTuna had a better understanding of their female workforce, they worked with human resources specialists who devised a culturally appropriate family budget. The

Women selling fish and chips in the market at Noro, Solomon Islands. © Kate Barclay

result was a 6 per cent drop in absenteeism and reports of a happier workforce (International Finance Corporation 2022). A childcare centre is now being built near the factory.

All of these strategies can be considered and implemented in many other factory lines in tuna-dependent communities to improve the lives of women, and the communities they are part of.

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Break the bias: First female crew set course for Pacific fishing industry[1]

SUVA, Monday 13th June, 2022 – Opening career pathways and providing equal opportunities for women is the focus of a world-first initiative that sees an all-female deck crew set off on their first fishing trip on a tuna longline vessel, today. The collaboration between SeaQuest Fiji and the Pacific Islands Forum Fisheries Agency seeks to begin addressing some of the issues creating the sizable gender imbalance in the Pacific tuna industry.

Pacific Islands Forum Fisheries Agency Director General, Dr. Manumatavai Tupou-Roosen said the women on this crew were pioneers, charting a new direction for the Pacific and the world by challenging the status quo.

> "The research tells us that most women's jobs in Pacific fisheries are in processing (small scale and commercial) and marketing for the domestic market. Women working on fishing vessels are exceedingly rare. There are a multitude of reasons why we don't see women on fishing vessels from socio-cultural beliefs, family obligations, lack of skills and experience to attitudes to what roles women can play. The uphill battle these women have faced to be on this vessel today is a testament to their strength, determination and commitment to their training. They are an inspiration for us and for generations to come."

SeaQuest CEO, Brett Haywood said he was proud of his crew and how far they had come, especially as a 100% Fijian owned and staffed company.

> "What started out as an ambitious hope to train and put forward an all-female deck crew for this very first voyage, has morphed into also having two senior officers, a first officer and an engineer onboard - which is an amazing achievement," said Mr Haywood. We are at this point in our journey thanks to the collaboration with FFA and the Fiji Maritime Academy (FMA) who supported the women in completing the formal training to attain the skills and knowledge to become a competent longline vessel crew. This is the first crew we are putting out to fish for our company post-covid so it is particularly symbolic for us that it is also our very first all female deck crew. We know they will make us proud."

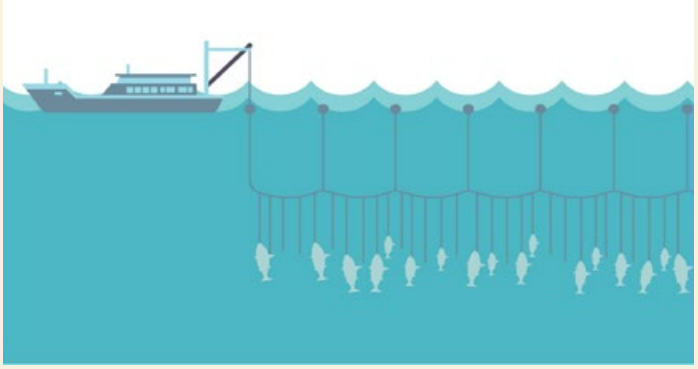
Seaka II Chief Officer Joana Kotoicikobia Vakaucautadra said she had dreamed of being the captain of a fishing boat since she was seven years old.

> "This journey with this wonderful group of fellow women is a culmination of my efforts to achieve a position onboard a fishing vessel. I worked hard and never gave up. I hope that this success shines a light on a new pathway for younger women who may now see this career as an option."

The fishing vessel will have two experienced, male, deck crew trainers present to provide direction on safe procedures and handling of fish, and help run safety drills. The women will be out to sea for a 2 week fishing trip. This female crewing initiative is the first phase of a project that is planned to be progressively rolled out in other Pacific countries by the Pacific Islands Forum Fisheries Agency with local partners.

What is longlining?

The two most important industrial fishing methods for tuna in the Western and Central Pacific Ocean are purse seine fishing and longline fishing.Longline fishing feeds out long lines with hooks into the open ocean. The crew of a longliner bait single hooks (manually or by machine) and feed out lines that maybe more than 60 km long. The hooks are on short lines (called branch lines) that hang off the main line. One longline may have 3,000 hooks. The depth at which the hooks hang in the water is crucial for attracting the desired tuna. This is regulated with a line thrower to produce a curved mainline between floats, and thus cover a range of depths. Longlines are not anchored: they drift near the surface, and are marked by radio beacons which the vessel uses to find them. It may take up to 11 hours to haul in a longline. There are different types of longline vessels. Most are large vessels of between 30 m and 70 m long. The length of time they spend away from port fishing determines the type of refrigeration they use to store the tuna catch. Vessels that are a t sea for short periods usually have ice for cooling, whereas those that are at sea for many months at a time contain freezers capable of snap - freezing the tuna and keeping it at less than – 40°C. Longline fisheries target adult bigeye, albacore and yellowf in tuna. This fishery accounts for 10 – 13% of the tuna caught in the Western and Central Pacific Ocean. However, the tuna caught this way is more valuable, as they are larger and can be landed in better condition. This is the main fishing method used for producing high quality sashimi.



[1] This article is extracted from a Pacific Islands Forum Fisheries Agency press release available from: https://www.ffa.int/node/2711#

Profiles of the deck crew

Joana Kotoicikobia Vakaucautadra, Chief Officer

Joana Vakaucautadra is the Chief Officer on the Seaquest Fiji vessel Seaka II, holding a Master Class 5 certificate. As CO she supports the captain by overseeing the operation of the vessel. One of the barriers for women in commercial fisheries is that male crews often underestimate the skills of women, when they can be just as effective. Joana says women have a place in the industry and she is seeking higher qualifications. All-female crews will one day work their own vessels.

Linda Fong, Engineer Cadet

Linda Fong joined the fishing industry for the experience, travel and income. Her initial training is in engineering and as a watchkeeper. While there are few females on the commercial fishing vessels, Linda says she and her colleagues are showing they are just as good as anyone else at their jobs. More people are becoming aware of careers for females in the industry. She hopes to advance her own career and become a marine engineer.

Sereana Railala Cakacaka, Bosun

A love of travel and fishing led Sereana Cakacaka to start as a deckhand for a tuna longliner operating out of Fiji. Her work covers fishing operations, basic maintenance and general duties. While females make up only a small number on commercial fishing boats, this is changing as the industry becomes more inclusive. Sereana's advice is to listen and learn. Apart from her own job satisfaction, her work is making a difference in her family and community. Sereana sees good opportunities in the future and wants to go higher in her career.

Kasanita Vakarairai, Deckhand

Kasanita Vakarairai says women are commonly found in jobs such as teaching and nursing, but fisheries also offers potential. Her job offers a good income and the opportunity to travel. Kasanita says barriers to fisheries for women can be overcome with work experience and support. More people are becoming aware of careers in fisheries and she aims to gain more senior roles.

Joana Kasani, Deckhand

Joana Kasani has spent nearly a year as a deckhand on both a fishing and merchant vessel. She completed a basic fisheries course after wanting to try something new, and enjoys her time at sea. As her experience and skills increase, Joana is confident that she, and other women, have a future in fisheries. Anything is possible, she says, with hard work and more awareness.

Adi Kelera Lutunauga, Deckhand

Adi Kelera completed a fisheries course on fish handling, vessel maintenance and general duties. Apart from earning an income, she enjoys going out to sea and the chance to visit different places. Women are often unaware of fisheries as a career and the mostly male industry can be challenging. It is important to work at a very high level, and aim to succeed. Her own ambitions are to learn more and to one day be captain.

Viviana Vakavuraka Bogitini, Deckhand

Viviana Vakavuraka Bogitini believes this career is not only for boys, that we should also encourage young women to pursue this field. This is Viviana's very first trip in a fishing boat. The mother of one is looking forward to learning new things and pursuing this career opportunity. She has undertaken a deckhand training course.

FFA press release: https://www.ffa.int/node/2711#

Pacific news service: https://pina.com.fj/2022/06/13/first-female-crew-set-course-for-pacific-fishing-industry/

FBC News: https://www.fbcnews.com.fj/news/first-all-female-crew-set-off-on-first-fishing-trip/

Fiji Times: https://www.fijitimes.com/a-world-first-first-all-female-deck-crew-for-fiji/

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About Pacific Islands Forum Fisheries Agency (FFA)

FFA assists its 17-member countries to sustainably manage fishery resources that fall within their 200-mile Exclusive Economic Zones (EEZs). FFA provides expertise, technical assistance and other support to its members who make decisions about their tuna resources and participate in regional decision making on tuna management.
Find out more here: www.ffa.int

Promoting women's participation in Kiribati's maritime sector

Josephine Kalsuak[1] and Tiantaake Mariana[2]

On 18 May 2022, women in the maritime sector across the globe commemorated the International Day for Women in Maritime. The theme of this year's celebration was "Training – Visibility – Recognition: Supporting a barrier-free working environment".[3] In recognition of the gender imbalances within the maritime sector, this day is celebrated annually to acknowledge the shift and diversity in this sector towards the recognition of women. The Kiribati Women in Maritime Association (K-WIMA) used this commemoration day to celebrate the many I-Kiribati women who contribute to the current and future development of the maritime sector in Kiribati by launching the association's strategic plan for 2022 to 2027.

The K-WIMA five-year strategic plan comprises four pillars:

- Recognising women's leadership in and contributions to the Kiribati maritime sector.
- Creating opportunities and active representations of women in the maritime sector.
- Advocating and supporting decent work for women in maritime sector.
- Ensuring the visibility of women in maritime sector for sustainable future careers.

These pillars are designed to achieve goal 5 of United Nations Sustainable Development Goals, and focuses on gender equality and empowerment of all women and girls.[4] A key priority area of this goal calls for growing economic wealth and leaving no one behind in Kiribati's National Development Plan.[5]

K-WIMA's strategic plan for 2022 to 2027 is a milestone achievement for this organisation in promoting the recognition, visibility and capacity building of women in Kiribati's Maritime sector. The president of K-WIMA, Tiantaake Mariana, and the Honourable Minister of Information, Communication and Transport, Tekeeua Tarati, endorsed and launched the strategic plan. The minister's endorsement demonstrated the continuous support of the ministry to K-WIMA.

K-WIMA was established in 2018, through the assistance of the Pacific Community, the International Maritime Organization, and the Pacific Women in Maritime Association. K-WIMA was registered and recognised by the Government of Kiribati through the Ministry of Women, Youth, Sport and Social Affairs in February 2019, and officially launched in March 2019.

The development and launching of K-WIMA's strategic plan was made possible through the Pacific People Advancing Change Program (PPAC under the Human Rights and Social Development Division. The programme supports Pacific-style advocacy campaigns on a range of critical human rights issues. With funding from the European Union, the Swedish and Australian governments, and the United States Agency for International Development, PPAC targets civil society organisations in the Federated State of Micronesia, Tonga, Marshall Islands, Solomon Islands, Kiribati, Tuvalu and Vanuatu. The programme includes advocacy training workshops, ongoing mentoring, and the provision of small grants.

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Launch of K-WIMA on 15 March 2019 at the Marine Training Center in Kiribati. (Image: ©K-WIMA)

Exploring gender and food taboos in fisheries of the Global South

Ayodele Oloko,[1] Sarah Harper[2] and Kafayat Fakoya[3]

Food taboos are often seen as a way to preserve cultural identity and create a sense of belonging among people living in some communities. Our study explores gender dimensions of food taboos in the context of fisheries in the Global South.

Taboos are understood to be religious activities or rituals designed to make supernatural creatures produce or prevent specific results. These rituals are often used in combination with specific plants or animals, or in certain areas as a way to avoid overexploitation or destruction of natural resources. These taboos, then, can serve as a mechanism for resource management, conservation and human health (Kajembe et al. 2003). Such taboos are often linked to cultural perceptions, practices and beliefs about human health hazards (Oloko et al. 2013; 2021; 2022).

Dietary taboos are used in relation to specific life phases or events of humans such as menstruation, pregnancy, childbirth and lactation, sickness, and mourning (Colding and Folke 2001). Often, tribes or families that have placed a taboo on a specific fish species are not permitted to consume or capture that species, which thereby influences people's eating habits and diets (Meyer-Rochow 2009). Food taboos can change over a person's lifetime as observed in some parts of the Global South. For example, food taboos have been observed in Malaysia's Orang Asli tribe, Nigeria's midwest, and parts of the Congo (Meyer-Rochow 2009). Food-related taboos can also vary by gender, with some taboos restricting fisherwomen from consuming certain foods, while other taboos focus on men and the foods that they harvest. For example, pregnant fisherwomen in Nigeria's Ishan, Afemai and Isoko divisions are strictly prohibited from consuming marine and freshwater snails in order to avoid causing unnecessary salivation in newborns. Fishermen are are likewise forbidden from consuming snails in areas such as the Urhobo and Ika divisions of Nigeria because it is believed that eating them reduces a man's strength during fishing and wars (Meyer-Rochow 2009; Ekwochi et al. 2016). Gender-specific food taboos such as these can lead to gender-differentiated nutrition and health outcomes, yet this has received limited attention in gender and fisheries literature and associated studies (Chakona and Shackleton 2019).

Food taboos are known in almost all human societies as an institutionalised set of rules that govern the consumption of certain foods (Chakona and Shackleton 2019). These regulations frequently target pregnant women fisherfolk in order to prevent what are perceived to be harmful effects of these foods on newborns. Pregnant women, for example, are usually prohibited from consuming the richest food sources containing iron, carbohydrates, animal proteins, and micronutrients in Ethiopia, Gambia, Nigeria, Gabon, and the Democratic Republic of the Congo (Chakona and Shackleton 2019). This is primarily due to concerns that: 1) the child will develop bad habits after birth; 2) will be born with diseases; 3) women will experience delayed labour due to certain foods causing women to give birth to large babies; and 4) certain foods will cause continuous menstruation and result in infertility (Chakona and Shackleton 2019). For example, women in Madagascar are prohibited from consuming a specific species of eels during pregnancy because it could induce miscarriage or multiple births (Jones et al. 2008).

Fishermen have fewer food taboos to adhere to than women, but some male-targeted taboos do exist, such as those based on religious values, which might have a health-related basis. Men may be restricted from eating certain foods and may be an expression of male superiority or differences in skills between both sexes.

In Papua New Guinea, a fisherman who intends to go shark fishing must not only refrain from sexual activity for a while but also fast, pray and drink a huge amount of saltwater. It is strictly prohibited for fishermen to consume fish species such

Nigerian fisherwomen

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as flatfish and stingrays before going fishing (Meyer-Rochow 2009). Related to this is alcohol consumption. When going out to fish, coastal fishermen are not allowed to drink alcohol. This taboo stems from the Islamic belief that drinking alcohol makes the body impure (Shilabukha 2015). If a fisherman is suspected of drinking alcohol, he is not allowed to participate in fishing activities in order to avoid misfortune and other hazards while fishing. This helps to reduce overfishing and helps enable fish to spawn, produce young, and grow to maturity. The result is that this taboo also serves as a conservation strategy.

Among fisherfolk in north coastal Kenya, *bocho* (stonefish species) is considered to be a bad omen and signifies ill luck or misfortune if it is consumed (Shilabukha 2015). Certain fish species, on the other hand, can be avoided for a variety of plausible reasons, not just dietary ones. One reason is that some animals are considered "unclean". In northeastern Madagascar, toxins have been discovered in some marine animals such as turtles, eels, sharks and certain saltwater fish, and so are considered taboo foods for both men and women (Golden and Comaroff 2015).

Certain animal species, such as marine and freshwater snails, are also respected and given strict protection by some cultures in Nigeria, and may not be touched, killed or eaten (Ntiamoa-Baidun 2008). This is a very common practice among fishermen of the Gas and Ewes ethnic groups in Adaklu, Ghana. At the Tocantins River in Brazil, it is prohibited to consume certain foods, such as fish. These are known as *carregado* or *reimoso* fish. *Carregado* is a term used by fishing communities throughout Brazil, and refers to fish that are thought to exacerbate illness or cause wounds, inflammation, and other health issues when eaten by fisherfolk (Begossi, unpubl. data).

Gender-specific food taboos can have an impact on the health and nutrition of vulnerable women fisherfolk in the Global South because women are often subjected to different degrees of nutritional stress, which increase their chances of developing a range of negative health issues and outcomes. This can be minimised, however, by educating and encouraging fisherfolk, especially women, to consume a diverse and healthy diet with essential micronutrients such as those derived from a variety of fish. Women-oriented nutritional intervention programmes should also be developed and implemented in Global South fishing communities to overcome these vulnerabilities that jeopardise their wellbeing and development. Fishermen are subject to fewer food taboos than women, suggesting that in communities where taboos are upheld, men have far more access to healthy foods. Even though avoiding certain fish may be a good idea due to health threats or as a strategic measure to conserve fisheries resources, it is uncertain – and possibly unscientific or unethical – to restrict all people from consuming fish containing essential nutrients. This situation tends to reflect a culture in which food taboos are imposed in favour of certain groups – the strongest or dominant group, to the detriment of those who are already vulnerable or marginalised.

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Women in fisheries profiles

Mereseini Rakuita

From a girl by the sea to Principal Strategic Lead

Sian Rolls[1]

In a village by the deep blue waters of Natewa Bay in Fiji, a loving mother and father sowed the seed of equality in their home. Mereseini Rakuita grew up playing in the ocean, collecting firewood and coconuts, and eating pawpaw and oranges fresh from the plantation.

> *"Growing up in a coastal community, I got to see on a daily basis how my mum and aunts and grandmothers would go out to the shore to put food on the table."*

> *"My mother grew up in a setting with clearly demarcated gender roles, but was applying gender equality principles without me realising it at the time. She'd make sure that if I washed dishes, my brothers would too; if one of us came home late, girl or boy, your food was kept; you messed up, you got a telling off just like your brothers – you don't get your hair cut off just because you're a girl."*

This early demonstration of equality in the home, despite a prevailing patriarchal culture, ingrained a standard of behaviour that has guided Mereseini's life journey.

> *"A lot of times we undervalue our upbringing and how that shapes the person that you become later on in life – the roles that you take up and how that upbringing impacts on how you see things at work."*

From the seaside, the family moved around the country as civil servants often do – from the northern island of Vanua Levu, to the Western Division, and then to the capital, Suva.

> *"I spent a few years in different towns around Fiji and that gave me an opportunity to befriend children from other cultures – giving me an insight into the different circumstances and lived experiences of different families, which shaped my thinking on issues that I got to deal with as an adult. I had a great upbringing, with great parents who taught me the value of hard work, of commitment, and of achieving the things you put your mind to. But also empathy, compassion and basic human decency that's needed in every place that we serve."*

And service was indeed her guiding star – after finishing legal studies, there was no question of where to go to next.

> *"My father used to take me to his office and as a little girl, I'd walk in and tell myself 'I want to work in an office like this'. I didn't know what work I wanted to do – but moving from town to town and following my dad around communities really inspired me to venture into the public sector to serve people."*

Mereseini joined the ranks of the civil service on the precipice of change. After joining, many senior staff were retiring and leaving positions open to younger civil servants to take up leadership.

> *"Many of my mentors retired; opening a window of opportunity for me and my colleagues. As a young woman lawyer being promoted to a senior position made me realise I had the capacity to perform the role, but I may not necessarily have had the opportunity otherwise. With capacities, it doesn't have to do with gender or age – but back in my early civil service days, my workplace was a boy's club and getting into that space wasn't easy."*

The issue, she says, was not a malicious one. It was, simply, gender blindness.

> *"They're all good people. I had great mentors who were men and women who taught me how to write a good legal opinion, but nobody was thinking about gender equality. No one was thinking about the impact of the gender blindness on policy, procedure or infrastructure."*

This is part and parcel of Mereseini's motivation to keep moving forward – from civil service to politics and now the Pacific Community (SPC) to make a change.

As Principal Strategic Lead – Pacific Women, Mereseini stands shoulder-to-shoulder within the executive team at SPC. Reporting directly to the Director-General,

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Dr Stuart Minchin, to elevate the importance of gender equality in the work of the whole organisation.

> *"SPC is spearheading some great initiatives. The Women in Leadership programme is looking at women in the workplace; both for the professional setting but also considering the unpaid care economy and its impact on deliverables at work."*

When considering equality in the workplace, Mereseini reflected on her own experience as a working mother.

> *"My three children are my greatest achievement. My youngest is six years old. I had him when I was a government minister. I could bring the baby to the office and breastfeed during the day."*

Acknowledging a level of privilege, she's encouraged by recent developments at SPC like a creche for the Nabua Campus in Fiji. "I think every organisation should look into what they're doing to support women, including those who may not yet be at a senior level – and I'm glad to see SPC leading the way on this."

Alongside "internal" work, the organisation is making great strides in advancing gender equality in sectors such as fisheries.

Mereseini knows the pressures of governments to meet their own gender equality commitments – she held the Ministry of Women, Children and Poverty Alleviation portfolio and travelled to Geneva as head of the delegation for the 69th session of the Committee on the Elimination of Discrimination against Women (CEDAW) in 2018. In preparation for the questions from the Committee, she reviewed the available data to get a clear picture of the situation of women and girls in her country.

Preparing for CEDAW was a "light bulb" moment that cemented her lifelong commitment to gender equality in her career. The data confirmed and quantified vast gender disparities, highlighting the significant volume of work needed to address gender inequalities.

> *"Looking at the statistics on labour force participation of women and gender-based violence really, really showed the amount of work and the type of work that had to be done. We could see the sectors that are 'traditionally male oriented' and overlook the contribution and role of women, like fisheries."*

For example, Pacific women comprise 70–90 per cent of the tuna processing force but continue to face barriers to safety, transportation, managing the burden of unpaid care work in the home, and limited skills development and promotional activities.

> *"By producing gender-disaggregated data and tools, it gives us the insight to further support Pacific Island countries and territories to tailor their policies accordingly – something that SPC has been doing for decades."*

> *"For those working on the ground, there has been the development of tools and resources to support tailored application of gender as well as increased training facilitated through the Fisheries, Aquaculture and Marine Ecosystems (FAME) Division and the Human Rights and Social Development Division to mainstream gender in the policy and programming work of national fisheries agencies."*

> *"Through FAME, there has also been a growing body of research on gender and fisheries through country assessments as well as pre-harvest and post-harvest*

Mere with staff at CePaCT © SPC

Mere with Sarlesh Kumar at the SPC Plant Health Laboratory. © SPC

fishing activities. The work of the latter unearthed the volume of work that women are doing that really solidifies the kind of work that I would see the women back home in Natewa Bay doing; they're venturing into new roles in the harvesting, value-adding and marketing space and breaking resistant gender barriers. So, I'm also glad to see the FAME Aquaculture team supporting the women oyster fishers in the Rewa River Delta in Fiji, and enabling their greater market access and training to address health and safety aspects for the safe consumption of wild oysters."

These initiatives are bringing to life the parallel work on strategies such as the recent and first Pacific Framework for Action on scaling-up Community-based Fisheries Management (2021) and a key guiding regional fisheries instrument *A new song for coastal fisheries – pathways to change: The Noumea strategy*. Also underway is a gender equality, social inclusion and human rights handbook highlighting the social dimensions across onshore and offshore operations, at port, or in science and management in the tuna industry.

With gender mainstreaming a significant priority for SPC as it moves to implement more integrated programming under the organisation's Strategic Plan 2022–2031, this volume of work shows promise in existing initiatives and ways of working. To build on the successful work thus far, an ambitious task has been placed before Mereseini.

"In my role, I'm looking across the whole organisation to see what we're doing as an institution on gender equality. Then seeing where we as SPC need to go from here to sustainably mainstream gender equality as part of the people-centred approach to science, research and technology across the Sustainable Development Goals. It's not something that can happen overnight. While we are doing this work, it must also be done properly. We need the right motive for substantive, sustainable change."

While this is an ambitious mandate and a large organisation in the midst of change in front of her, Mereseini is not one to fear complex challenges.

She is inspired daily by her mother, and remains steadfast in her commitment to gender equality since those early days by the ocean.

"I've got all this education she didn't, what excuse do I have not to do the work?"

"She was able to teach me all these great things. So, rooted in faith and the ultimate belief that nothing happens by accident, I don't see roadblocks or challenges – I see stepping stones. Every time I look back at an issue I encountered or a challenge I overcame, I see that it was an opportunity for development, to work differently or to strategise – pushing my capacity to its limit."

"So, for gender equality and the principles that surround it – it has to do with behaviour and how our minds are shaped, especially in the circumstances we find ourselves in. It's not just something that can be taught in school or a workshop. It goes back to parents and how we raise our children."

Women in fisheries profiles

Teri Tuxson

Assistant Coordinator for the Locally-Managed Marine Area (LMMA) Network International

"I've always loved the sciences, and originally wanted to pursue a career in coral reef ecology; however, I also really wanted to help my Pacific peoples and this led me to where I am now, working in community-based fisheries management" – Teri Tuxson.

Caroline Vieux[1] and Teri Tuxson[1]

Teri Tuxson currently works for the Locally-Managed Marine Area Network International as the Network Assistant Coordinator is based in Suva. She was born and raised in Suva, and is the daughter of Viki Fakraufon from Rotuma, a remote Polynesian island in northern Fiji, and Bob Tuxson, who originally came to the Pacific as a biologist with the Smithsonian Museum and then later returned with the Peace Corps. Much of her love for the ocean comes from her parents. She has studied biology, both in Fiji and the United States, and has recently completed a postgraduate diploma in climate change adaptation, and will be starting a Master's program in community-based fisheries management at the University of the South Pacific.

When you remember the Fiji of your childhood, what strikes you as a major change?

When I was a kid, it seemed like people cared more for their surroundings and their environment, civic pride was higher than it is today. Especially here in Suva, pollution is out of control, and it starts with the little things, throwing something out the bus window, which will eventually end up in the ocean. Some days, it seems an uphill battle to try and make a change. There were also a lot more environment and litter awareness campaigns than there are today – in the schools and in the media – enabling our youth to connect with their environment and take greater ownership over their surroundings, I feel like we've lost a lot of that. I think we each have a responsibility to our environment, to our families, and to one another, and that used to be inherent in our Pacific culture' living in the city, it is more obvious that part of our traditional ways are dying.

I see you that you have spent six years working on superyachts all over the world? What were your responsibilities and what made you eventually come back to Fiji?

I was employed as deck crew, which is mostly a male-dominated position, starting as deckhand, working my way up to bosun, then finally as mate, earning my licence to drive 200-tonne boats. Working on deck, you are responsible for navigational watches and helping the captain drive the ship, maintain the exterior of the vessel and all tenders, and as mate, you're also responsible for crew management and logistics. It was a great experience, traveling to exotic places, meeting interesting people, but I really missed working in conservation, I missed the Pacific, and I wanted to be back helping my community, and while it was fun and enabled me to travel, I felt unfulfilled. I'm much happier now that I'm back in Fiji and working with Pacific communities.

Your mother is from Rotuma, what have been your links with this island, do you still go and how are fishing communities doing there?

Growing up, we went quite often at Christmas because we have a lot of family that still live on the island, and also before COVID-19 we would try to go once a year. When I returned from my undergrad studies, I was a volunteer with the LajeRotuma Initiative, a non-profit working with communities, traditional leaders, women's groups, and school students on the island. The initiative currently serves as an entry point for foreign scientists wanting to conduct research on the island. In the beginning, the LajeRotuma Initiative had a marine focus and we did a lot of community

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engagement about maintaining the health of marine resources, and I was lucky enough to be part of the dive team that surveyed the island's reefs to determine the health of the inshore marine environment. Rotuma is interesting in that it actually doesn't need much in the way of marine conservation and management efforts. This is because fishing pressure is quite low there, the reefs are healthy, and there isn't a lot of fishing occurring that warrants full-on management initiatives. Of course, there are always areas where things can be improved but the island communities aren't suffering from a decrease in marine resources, like in many other places in Fiji.

What do you do for the LMMA Network International?

Currently, I am the Assistant Coordinator. Basically, we work across the region, empowering communities to manage their resources with minimal external help, and we also perform an advocacy role for raising diverse community voices at various levels, among other things. My first task when I joined in early 2020 was to coordinate surveys around the Pacific to determine the impacts of the COVID-19 pandemic on island and coastal communities. Now, my main focus is assisting with the Network's 100% Solution through our project under the Pacific-European Union Marine Partnership project funded by the European Union and Sweden. The project's focus is on scaling up community-based fisheries management in Melanesia; so, it is trialing a brand-new approach to empower a majority of the communities instead of the current model of supporting single communities or districts. More than 80% of Pacific coastal communities don't receive support with fisheries management so this new approach aims to empower women, men, and youth equally to take these first steps. I'm working a lot on the monitoring and evaluation part of the project but assisting in other ways too.

What do you see as a significant achievement in your position so far?

Through our COVID-19 work, we were able to engage over 15 organisations in 8 countries across the Pacific, conducting 400 surveys, targeting both women and men fishers, in over 170 communities. That was a big milestone for me, and without the organisations on the ground, we would not have been able to achieve the success that we did. We were then able to publish these results and policy recommendations in the journal Marine Policy, under the guidance of Dr Sangeeta Mangubhai and Dr Caroline Ferguson, with many of our co-authors also participating for the first time in the publishing process, myself included. I think it's a great example of what can be achieved when we all work together.

What do you like about working for the LMMA Network International?

The most exciting thing about working for the LMMA Network is promoting the 100% Solution and trialling this brand-new strategy that we are using in the PEUMP project. So many communities are left out because we haven't figured out a successful model of how to scale up coastal fisheries management. Hopefully, the work we are doing here will prove that we can reach a majority of communities if we just change our approach and our way of thinking, and this approach includes women whom we don't want to be left outside of the decision-making arena when they are playing such a key role in the fisheries sector. I also like the people. I'm blessed to be able to learn from, and be supported by, so many experienced and clever people – our network advisors, our partners on the ground, and my mentor and our network coordinator, Caroline Vieux. I am grateful to be here.

What would you like to say to all women involved in fishing or fisheries management in the Pacific region?

Value your traditions and hold on to the ways taught to you by your elders. The world is changing quickly but retaining our traditions and values helps maintain our connection to the ocean and our surroundings. Also don't be afraid or shy to speak up if you see changes in your marine environment or in the state of your resources. Men and women occupy different spaces in the sphere of fishing and these changes may not get noticed if women don't make their voices heard.

Women in fisheries profiles

Shaunalee Katafono

Co-Director for TraSeable Solutions

Reimagine: Transforming Pacific fisheries and agriculture through collaborative, transparent, traceability

Shaunalee Katafono[1]

Shaunalee Katafono is originally from Satufia Satupaitea and Tufutafoe in Samoa. She has a Bachelor and Postgraduate Diploma in Marine Science from the University of the South Pacific, and a certificate IV in fisheries enforcement and compliance. Shauna worked for the Samoan Ministry of Agriculture and Fisheries as an Offshore Fisheries Compliance Officer from 2015 to 2016.

In 2017, Shauna moved to Fiji where she set up, with her husband Ken Katafono, a Fijian company called TraSeable Solutions. The company's core competencies are in digitalisation, traceability, large-scale surveys and data collection in Fiji and other Pacific Islands, and working primarily in the fisheries, agriculture, forestry and technology sectors. The company supports businesses and organisations in these sectors to meet quality standards, access new markets, and earn greater revenue for their products and services. Shauna is both the co-founder of the company and the operations manager.

Shauna's day-to-day work at TraSeable is diverse and keeps her busy. She advises on the strategic direction of the company, helps develop and maintain business relationships, and provides administration oversight with regards to payroll, bookkeeping, staff recruitment, and contracting. She also supports research, development and implementation of agriculture and fisheries-related digital tools and services to farmers and fishers across the Pacific region.

Shauna also serves as their gender focal point and provides in-house capacity building training for TraSeable staff as well as for external stakeholders, including fishers and farmer organisations. In between running a company, she also works as a consultant to support those working on inshore and offshore fisheries, gender and climate change.

What inspired you to set up TraSeable Solutions?

Growing up in Samoa surrounded by the ocean and coastal communities, I grew a passion for the ocean early in life and later in fisheries as I got more involved in it from my university days. I've always had a desire to contribute to fisheries and the communities that depend on it and so through our business I find ways to do this.

Having worked in fisheries and settling back in Fiji, my husband and I saw an opportunity in the seafood traceability space in the Pacific and took the chance to utilise our skills, knowledge, and connections in fisheries and technology. We saw digital seafood traceability as an opportunity for communities and countries in the Pacific to better account for and understand what is taken from the ocean to ensure the future sustainability of our fish. That vision and opportunity has broadened to other resource-based sectors but fisheries holds a special place for our company because it is where we started. This is reflected in our logo, which depicts a fish and name, TraSeable.

What aspects of your work inspires you?

The thought of being able to help others succeed in their efforts is what really inspires me. And being able to see how technology, data, and our digital tools and services supporting fishing companies, fishers and their communities to reach their goals is exciting. Working alongside my husband on things we're both passionate about has always been a positive, with some challenges, of course.

As a consultant, I've partnered and worked with mostly women who are experts on gender, climate change, fisheries, and agribusinesses and that is a huge inspiration for me as a "newbie" in the consulting space.

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What are some of the challenges or hurdles you have had to overcome to get to where you are?

A lot of the challenges I faced had to do with my self-confidence and a severe case of "imposter syndrome". I started a company not long after university with very limited experience and business know-how, so I often felt like people around me weren't taking me seriously, or they'd rather speak to my husband instead. Working in the fisheries industry, which is very male dominated, was often intimidating, having to liaise with mostly men at the helm of companies who have been there for decades.

Overcoming my fears of public speaking and being put in the spotlight to talk about our work has also been something I've needed to continuously work on and motivate myself for because I preferred to be in the background. So, stepping out of that comfort zone and overcoming my shyness to be able to network with various stakeholders in the fisheries sector has been something I've learned along the way with the support of my husband.

I also understood what my weaknesses were and so took the opportunity to invest in personal development coaching, which helped me work through some of those challenges.

Why have you been doing increasing work on gender and fisheries?

I've always loved working in the fisheries space, whether it's training crew members on a fishing vessel, in processing facilities, or meeting with government and industry leaders. Since learning more about gender prior to the COVID-19 pandemic, I realised the importance of applying a gender lens to all aspects of our work to develop relevant digital solutions that catered to the different needs of our clients. And during the COVID-19 pandemic, opportunities presented itself to do more work in the gender space.

I think failure to account for gender considerations in the design, implementation and monitoring of any intervention often leads to missed opportunities, and I hope to able to support other fisheries practitioners in building their capacity to apply a gender lens to their work for more equitable participation and opportunities for all. That's why I've taken more interest in working in those areas.

What suggestions would you give other women who are aspiring to set up and run their own companies?

Women can do anything they put their hearts and minds to! If there's something you're passionate about that you think could be turned into a business, then research it, talk to your families, friends and professionals in your circles to bounce your ideas off them. If it makes business sense and you think you can do it, then just go for it.

Don't be afraid to network with people in your sector or industry – I was always too shy to approach people at first but forced myself to try and over the years that has opened a lot of doors for me and our business.

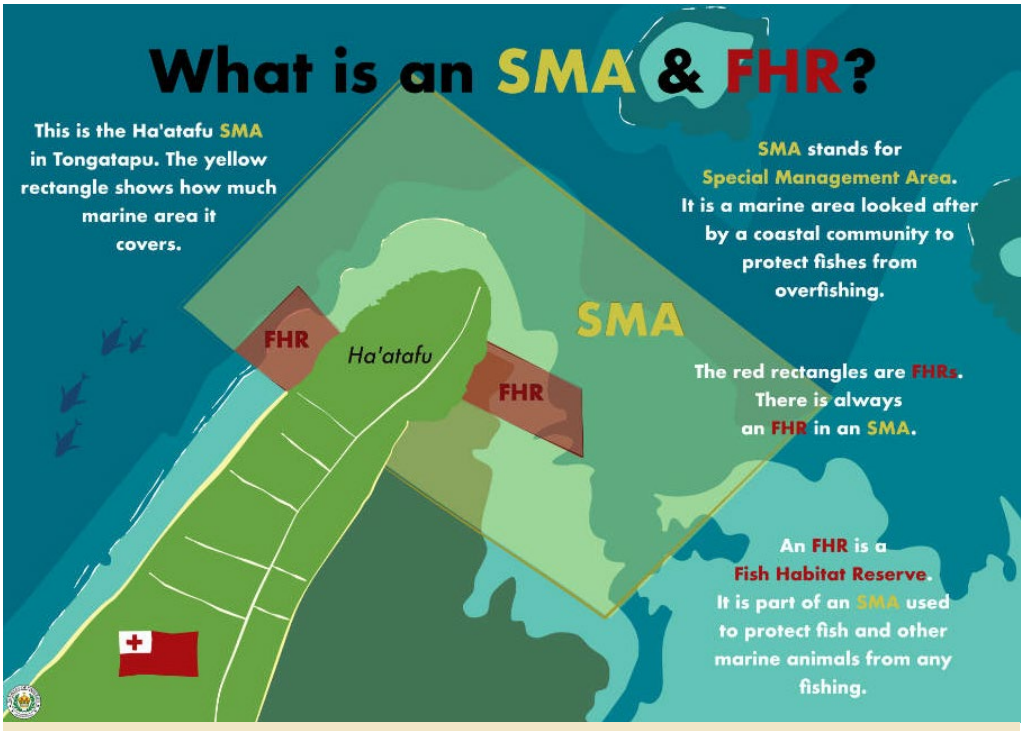
TraSeable Solutions website: https://www.traseable.com

Empowering communities in Tonga to protect marine resources and secure livelihoods: A case study for the Too Big To Ignore Global Partnership on small-scale fisheries

Margaret Von Rotz,[1] Ariella D'Andrea[2] and Solène Devez[3]

Small-scale fisheries make up the heart of many Pacific Island communities and, for many families across the Pacific, these fisheries are the key to their livelihoods. To secure those livelihoods, member states of the Food and Agriculture Organization of the United Nations (FAO) have adopted Voluntary Guidelines for small-scale fishers' rights to be properly implemented and protected. Doing so not only protects marine ecosystems from overfishing and overdevelopment, it also protects communities by recognising the professional work done by their small-scale fishers and the need to protect fishers' rights in the face of climate change and globalisation. This case study focuses on Tonga and how Tonga's community-based fishery management programme, with improvements, is a potential model for implementing the Voluntary Guidelines and achieving Sustainable Development Goal 14b – to provide sustainable access for small-scale artisanal fishers to marine resources and markets.

The Too Big To Ignore Global Partnership for Small-Scale Fisheries Research (TBTI) is made up of over 400 members from 81 countries, all of whom are contributing information, country profiles and book chapters to tell the full story of small-scale fisheries and the implementation of human rights.[4] TBTI contributors assess the implementation of FAO's Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) for each individual country profiled. The SSF Guidelines help to inform policy discussions regarding small-scale fisheries by: 1) examining small-scale fisheries' contribution to the local economy, and any legal protections for small-scale fishers' livelihoods; 2) recognising small-scale fishers' professional work along the value chain; 3) recognising the role of women in small-scale fisheries; and 4) investigating the impact of climate change



Special Management Areas and Fish Habitat Reserves (Source: Smallhorn-West et al. 2020).

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[1] The authors of this article have completed a template provided by TBTI to analyse country legislation on small-scale fisheries, prepared an e-book chapter and a regular book chapter on Tonga, under the initiative Unlocking Legal and Policy Frameworks for Small-Scale Fisheries: Global Illustrations, available at http://toobigtoignore.net/unlocking-legal-and-policy-frameworks-for-ssf-global-illustrations/

on small-scale fisheries. Essentially, we, the authors of this article, in collaboration with partners from FAO and the Tongan Ministry of Fisheries, analysed how human rights for small-scale fishers are being implemented, and how they can be improved.

Our focus was on Tonga, a country of some 150 islands with a maritime jurisdiction that covers over 700,000 km^2 (Gillett and Tauati 2018). Naturally, fishing is an important part of Tongan culture and lifestyle; in fact, Tonga's marine and coastal resources are worth nearly twice as much as the country's total exports (MACBIO 2015). Foreshore and marine resources belong to the Crown, but Tonga's recent move towards more participatory forms of fishery management in the last couple of decades makes the country an interesting case study for small-scale fisheries management strategies.

Tonga's coastal communities can apply to the Special Management Area (SMA) programme within the Ministry of Fisheries, which grants exclusive use and management rights to the adjacent marine area, with clearly defined boundaries. These SMAs are designated as such by the Minister of Fisheries by way of regulations to implement community-based fisheries management. SMAs are managed by Coastal Community Management Committees made up of the Town Officer and representatives of relevant stakeholders, such as small-scale fishers and women. Together, the committee of each SMA plan, monitors and enforces the Coastal Community Management Plan for that community, which includes activities defined in legislation such as subsistence, recreational and small-scale commercial fishing. The Coastal Community Management Plans complement other management measures included in Tongan laws and regulations that also apply within SMAs, and cover authorised fishing methods (e.g. diving or gleaning), when and where species can be fished (e.g. for sea cucumbers), and the size and safety of boats.

Our work mainly examined key legislation, such as the Fisheries Management Act (2002) and Fisheries (Coastal Communities) Regulations (2009), and non-binding, yet salient, policies such as the Tonga Fisheries Sector Plan (2016–2024) and the Tonga National Fisheries Policy 2018. We surveyed these documents to see how each did, or did not, implement the core provisions of the SSF Guidelines. The SSF Guidelines' core provisions include small boat registration and safety, labour rights and social security for small-scale fishers, access to marine resources and fishing rights, co-management and participatory surveillance, gender equality, responsible fish trade, and disaster and climate change readiness. These core provisions are guided by basic principles also set by the SSF Guidelines, such as human rights, respect of cultures, equity, accessibility, transparency, ecosystem approach to fisheries, gender equity, and more. We also added crucial context to our study to include the effects of the January 2022 volcanic eruption and the Covid-19 pandemic to small-scale fisheries, which demonstrates communities' resiliency and ingenuity.

In terms of successful implementation of the SSF Guidelines, Tonga excels through its SMA participatory management system. Through the establishment of an SMA, exclusive rights are granted to coastal communities to manage their own community, which embodies important principles (e.g. justice, fairness and appropriate preferential treatment) and allows for an ecosystem approach to fisheries management to curb overfishing. This is echoed in specific provisions (e.g.

Rules of a special management area and a fish habitat reserve (Source: Smallhorn-West et al. 2020)

preferential access for local fishers) that promote participatory fishing rights allocations. For most reef fisheries, the allocation of fishing rights is accomplished through the registration of authorised fishers and fishing vessels in each SMA, and through permits required for subsistence and small-scale fishing within an SMA. Importantly, subsistence fishers are exempt from general licensing requirements made under general fisheries legislation, demonstrating underlying principles of equity between socioeconomic classes mentioned in the Tongan Constitution (1875, as amended). Additionally, monitoring, control and surveillance measures to promote compliance and reduce illegal, unregulated and unreported fishing are apparent in Tongan law and policy, which also provide for participatory surveillance within SMAs. Lastly, there is evidence that small-scale fishers' associations are promoted through their representation in SMA committees.

There are other general marine resource provisions that are not specific to small-scale fishers and, thus, there is room for improvement in the context of securing rights for small-scale fishers. While boat safety regulations exist, current maritime legislation does not regulate the safety of boats less than 8 metres in length, which is a common size used in Tongan small-scale fisheries. There are also health and safety standards for fish processing and export, but nothing specific to small-scale commercial fishers. Similarly, there are capacity building programmes for fisheries officers, but these are not specific to small-scale fisheries either. Furthermore, Tonga has policies that recognise how small-scale fisheries are vulnerable to natural disasters and climate change, but Tongan laws fail to specify how fishers would receive protection from such risks.

Placards placed in a Tongan Special Management Area. (Images: ©Ariella D'Andrea, SPC)

In the context of gender, Tonga has certainly made strides, although Tonga's Constitution still outlines how land is passed down through male heirs only. There is considerable recognition by the government across all levels of the need for women's representation and the role they play in small-scale fisheries. Their role is recognised and outlined in the Tonga Fisheries Sector Plan (2016–2024), and women are represented in national fisheries management committees and in the committee for each SMA, but there are still no specific legal protections for women in small-scale fisheries along the value chain. Tonga has also adopted the *National Women's Empowerment and Gender Equality Policy and Strategic Plan of Action 2019–2025*, which includes special treatment considerations for women but without specificity to small-scale fisheries.

Lastly, there are topics that Tonga could consider further in order to ensure more complete implementation of the SSF Guidelines. These include not only legal protections for women but also special treatment for them, including capacity building to advance gender equity overall. Additionally, small-scale fishers in general would benefit from having specified labour rights or social benefits along the value chain, including employment, decent work and social development. Furthermore, any attempts in law and policy to recognise small-scale fishers as professional workers would be a major step forward in securing their rights.

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New projects
New research

Gender differences in perceptions of coral reef management and conservation outcomes in Fiji, Indonesia, Kenya, Madagascar, Papua New Guinea and Solomon Islands

Sarah Harper,[1] Sangeeta Mangubhai,[2] Georgina Grace Gurney,[3] Natalie Ban[1] and Emily Darling[4]

Sociocultural norms shape people's roles, responsibilities and knowledge related to the use, conservation and management of natural resources. This results in variation, both across and within the contexts of different people's needs, priorities and concerns, and how they respond to, and are affected by, conservation and resource management (Gurney et al. 2015). Such heterogeneity exists, to varying degrees, everywhere and is experienced across many societal divisions, including gender. Women, men and gender minorities have differentiated experiences in terms of access to, benefits from, and control over natural resources and spaces, with substantial inequalities existing in many contexts (Baker-Médard 2017; Lawless et al. 2019). While many factors drive inequalities, gender inequalities are pervasive and widespread across geographies and other demographic gradients, with women often being marginalised across all sectors of society, especially within natural resource sectors. Closing the gender gap and reducing inequalities has been widely articulated as fundamental to sustainable development and to many other goals at the human–environment nexus. Meanwhile, global conservation policy has emphasised the importance of balancing the needs of people and nature in order to achieve effective and equitable conservation efforts in order to protect increasingly threatened species and spaces around the world. Yet, many challenges remain in understanding and mitigating the trade-offs that exist in realising conservation goals in a socially equitable way (Bennett et al. 2021).

The Wildlife Conservation Society (WCS), with funding from the John D. and Catherine T. MacArthur Foundation, has undertaken a multi-year, multi-country initiative to assess the critical social and ecological outcomes of conservation

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Fishers from Madagascar hauling in a fishing net. © Julie Larsen Maher

Top: Women mending nets on Koro Island, Fiji - Bottom: A fisher passes a couple on a scooter along the Kenyan coast. © Emily Darling

Women involved in the marketing and transport of fish near a landing site in Solomon Islands. © Emily Darling

investments in order to improve coral reef ecosystem health and the wellbeing of associated coastal fisheries communities (Gurney et al. 2019). The first step of this initiative was the transdisciplinary development of the Marine and Coastal Monitoring (MACMON) Framework, a social-ecological systems monitoring framework for coral reef fisheries management and conservation (Gurney and Darling 2017; Gurney et al. 2019). The framework is based on Nobel-prize winner Elinor Ostrom's social-ecological systems framework (2009) and is intended to form the basis of ongoing monitoring undertaken by the WCS Coral Reef Program in the future. The MACMON Framework was first implemented in 2016, and now covers more than 150 coral reef sites in six countries.

The WCS will explore gender-differentiated impacts of coral reef management using data from the MACMON Framework. Coral reefs are among the most diverse marine ecosystems on the planet, and are a critical source of livelihoods, cultural identity and food security for millions of people who depend on the fisheries connected to these environments (Teh et al. 2013; Darling and D'Agata 2017). As linked social-ecological systems, coral reefs are a critical case study for investigating environmental governance through an equity lens, whereby social and ecological objectives and outcomes are evaluated. Here, we focus on gender equity as a starting place, with the aim of broadening this in future iterations of this work for a more comprehensive look at the various intersecting and potentially compounding identity characteristics that influence how coral reef management outcomes are experienced.

Understanding gender-differentiated outcomes of fisheries management around the world is chronically hampered by a lack of gender-disaggregated data. The dataset collected by WCS coral reef programmes in Fiji, Indonesia, Kenya, Madagascar, Papua New Guinea and Solomon Islands, provides a unique opportunity to explore natural resource management initiatives and their impacts by gender. Although the MACMON Framework was not designed specifically to shed light on gender inequities, sociodemographic data collected included key identities, such as gender, to enable socially disaggregated analyses. From this rich dataset we are exploring how gender and other aspects of equity are related to the social outcomes of coral reef fisheries management and conservation initiatives. Specifically, we are focusing on: 1) gender differences in perceived impacts (costs and benefits) of management, both at a personal and community-level; 2) perceptions of who benefits most from management; and 3) whether the distribution of benefits is perceived as fair. The responses were captured through ordinal Likert scale questions as well as open-ended survey questions, allowing for a deeper dive into how responses might differ based on gender. Open-ended responses will be grouped into various domains of human wellbeing, as outlined in Ban et al. (2019), to highlight the aspects of human wellbeing that are either supported or challenged by coral reef management efforts, and whether these differ by gender. For example, we will be contrasting men's versus women's perceptions about the positive and negative impacts of management on various domains of their wellbeing. In addition to the gender analysis of survey data, this study will include conversations with, and reflections by, WCS country teams on the process of data

collection and how best to collect data in the future to evaluate gender equity of management in the various country contexts where WCS has its programmes.

Gender equality goals and targets have been clearly articulated at the international level through norm-building instruments such as the United Nations Convention on Biological Diversity, Sustainable Development Goals and more recently within the United Nations Framework Convention on Climate Change. Emphasising and aligning the aims of conservation programmes with these broader goals at the social-environment nexus is key to their realisation at the local level, and to ensuring that conservation programmes are delivering on both ecological and social objectives. This research aims to help conservation organisations better understand and integrate gender into management and help advocate for evidence-based policies in new policy spaces, such as those supporting the realisation of the Sustainable Development Goals (Wabnitz et al. 2021) and the implementation of the *Voluntary Guidelines for Sustainable Small-scale Fisheries* (FAO 2015) – both of which include gender equality as key themes. Increasingly, donors and funders are requiring inclusion of gender analysis across environment and development projects and programmes, and the insights of this study will contribute to both scholarship and practice on how best to do this to support gender equity in coral reef conservation. Additionally, the insights that emerge from this project will contribute to broader conversations in conservation spaces on how to reconcile environmental and development objectives and outcomes within environmental governance and, in this case, specifically in coral reef management. Stay tuned for the findings of this work as they emerge over the coming year!

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New projects
New research

New research: Barriers to and benefits of women's participation in fisheries management in Fiji

Caroline E. Ferguson,[1] Sangeeta Mangubhai,[2] Tanya O'Garra[3] and Elisabeta Waqa[4]

In Fiji, *iTaukei* women and men[5] both play critical roles in harvesting, processing and marketing seafood in rural villages (Thomas et al. 2020); yet women's participation in fisheries management is often marginal (Rohe et al. 2018; Mangubhai and Lawless 2021). Given their significant contributions to and reliance on fisheries, the inclusion of women in fisheries management is critical for ensuring the sustainability of marine resources and the equitable distribution of their benefits. To understand and address the barriers to, and benefits of, women's participation in fisheries management, we will conduct in-depth interviews with *iTaukei* women and men in four rural Fijian villages.

We will consider how individuals' gender, age, marital status, and migrant status affect their participation. This is known as an "intersectional" approach (Crenshaw 1990), recognizing that "women" and "men" are not homogeneous groups. There are important social differences among women and among men that are shaped by other identities, such as age and ethnicity. For example, a young, unmarried woman might have different rights, privileges, and responsibilities than an older, married woman in the village.

This research will integrate and expand on survey work in 2019 and 2020 in 146 villages by research partners at the Locally Managed Marine Area Network (LMMA), Fiji LMMA Network, Wildlife Conservation Society, Imperial College London and Middlesex University. A sensitivity analysis of the survey data indicated that women's participation in fisheries management was associated with a range of positive outcomes, including household assets, fish catch, subjective well-being, and perceived benefits of village-level fisheries management through increased cooperation and knowledge. Our in-depth interviews will investigate how and why women and men participate in fisheries management, the barriers women and men face to participation, and how participation shapes their support for fisheries management efforts.

Fisheries management in Fiji

Fisheries management in Fiji lies at the interface between customary and administrative law. Customary law is based on a centuries-old marine tenure system rooted in community-level decision-making and enforcement, whereas administrative law is rooted in the national Constitution.

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[5] *iTaukei* refers to ethnic Fijians.

Fishing along the foreshore in Suva, Fiji ©Tom Vierus


TABLORO

Women play diverse but often under-represented roles in both customary and administrative fisheries management systems, according to their intersecting identities. For example, according to customary law, women have varying ownership and user rights to fishing grounds according to the clan they belong to and whether they married into the village; those belonging to, or who married into, chiefly clans have more rights than than women who married into other clans; and those from the village usually enjoy more privileges than those who married into a village (Vunisea 2016).

Despite their importance in Fiji's fisheries, women have rarely been included in fisheries development, management, and national and international conservation efforts, which have historically focused more on activities dominated by men –such as high-value commercial harvesting – and less on activities dominated by women – such as subsistence harvesting, gleaning and non-harvest activities (Weeratunge et al. 2010; Mangubhai and Lawless 2021). Furthermore, women's contributions to fisheries are often unpaid, part-time, opportunistic, and "viewed as an extension of household duties" (Mangubhai and Lawless 2021). These factors combine to result in women being underrepresented in fisheries decision-making and, in some cases, having inequitable access to natural, social and material resources (Rohe et al. 2018).

Gender inequalities can worsen environmental challenges and can, in turn, be exacerbated by environmental change. For example, gender inequality can lead to greater food insecurity (Agarwal 2018) and the reduced effectiveness of marine protected areas (Kleiber et al. 2018; Lawless et al. 2021). Meanwhile, environmental problems such as resource scarcity, climate instability, and natural disasters can amplify gendered vulnerabilities to environmental changes and shocks, increase women's labour burden, and increase the incidence of gender-based violence (Castañeda Carney et al. 2020; Ferguson 2021; Resurrección and Elmhirst 2009; Lawless et al. 2022). In order to achieve gender equality in fisheries management and the associated benefits to the environment and society, research is needed to understand and support both women's and men's roles in fisheries management, in Fiji and beyond.

This research will address the following research questions:

- How do *iTaukei* women and men engage in Fiji's customary and national fisheries management systems?
- How does engagement in fisheries management vary among women and men across intersections of identity (i.e. based on their age, marital status, and migrant status)?
- How does women's and men's engagement in fisheries management decision-making shape their perceptions of benefits and support for fisheries management?

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A global review of women's experiences in governing small-scale fisheries

Madu Galappaththi,[1,] Derek Armitage[1] and Andrea M. Collins[1]*

This article shares the key findings of a global review on women's experiences in shaping and influencing small-scale fisheries governance. The open access, full-text article on this review was recently published in Fish and Fisheries (https://doi.org/10.1111/faf.12672).

An estimated 45 million women make up 40% of the workforce in small-scale capture fisheries (SSF) worldwide (Harper et al. 2022). However, their representative voices concerning challenges, interests and priorities tend to be left out of SSF decision-making spaces (Bennett 2005; Gissi et al. 2018; Kleiber et al. 2017)little attention has paid to the role of gender in the development process and, more specifically, the work done by women in the overall management of fisheries. Lack of attention to the gender dimension of fisheries management can result in policy interventions missing their target of creating sustainable livelihoods at the community level. There is little doubt that fishing-dependent communities have a vital role to play in the overall development process of many coastal West African States, but without a complete understanding of the complexity of gender roles, the goal of sustainable livelihoods is unlikely to be achieved. In a bid to improve knowledge about gender roles in fishing communities, and to provide policy makers with some guidance as to where interventions might be most useful, a workshop was held in Cotonou, Benin (West Africa, while undermining their contributions and perpetuating gender inequity. Women are empowered when treated equitably, their local economies grow, and fisheries resources become more sustainable (Barclay et al. 2021; Thomas et al. 2021).

We have a limited scholarly understanding about how to meaningfully engage women in SSF governance despite decades of studies that have focused on gendered dimensions of SSF (Frangoudes et al. 2020; Kleiber et al. 2017). To this end, a comprehensive synthesis on the state of current empirical evidence on women's engagement in SSF governance has remained a critical gap in applied scholarship and practice. To

Figure 1. Geographical locations of case studies.

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address this gap, we conducted a systematic scoping review of peer-reviewed empirical literature. Our review was guided by three research questions:

1. What is the scope of empirical literature on how women participate, influence and shape SSF governance?

2. What specific roles do women perform in SSF governance processes?

3. How do women shape and influence governance outcomes, and what barriers do they face in doing so?

We identified, characterised and assessed the evidence base at the intersection of gender and SSF governance. This included 54 empirical case studies of how women have managed to shape and influence decision-making, rules and collective action across the globe (Fig. 1).

Our results confirmed the crucial need to embed gender in the empirical examination of SSF governance, and to deliberately expand the current evidence base on this topic (see also Frangoudes et al. 2020; Gopal et al. 2020; Kleiber et al. 2017; Weeratunge et al. 2010; Williams 2019)

The findings also revealed that the institutional contexts within which women participate encompass a broad spectrum of arrangements (e.g. rules and regulations, and participatory arrangements such as co-management, social norms, customary practices, and relational spaces).

We also identified a typology of governance tasks performed by women in SSF. This typology included leadership roles and active participation in decision-making; relational networking and collective action; exercising agency and legitimacy; resource monitoring; knowledge sharing; meeting attendance (with no/less participation in decision-making); and activism and mass mobilisation.

The review also synthesised the governance outcomes achieved by women. These outcomes, for example, included improved socioeconomic contributions, gaining recognition for their previously "invisible" roles, and claiming user rights (See Freitas et al. 2020; Gallardo-Fernández and Saunders 2018; Gustavsson et al. 2021).

Women, however, face substantial barriers to their effective participation, such as gendered power hierarchies, gender-restrictive norms, household obligations, and lack of access to and control over resources (Baker-Médard 2017; Mangubhai and Lawless 2021). Our findings related to these barriers resonated with our current understanding about the root causes of gender inequity within SSF contexts (See Fabinyi and Barclay 2022; Kleiber et al. 2017; Koralagama et al. 2017; Lawless et al. 2019).

Furthermore, we drew broader insights based on the patterns that emerged across the literature. We found that women's governance roles and contributions are closely linked with how gender was treated as a key topic of discussion within decision-making processes. Gender was largely excluded as a topic of discussion in contexts where women only participate in day-to-day operational tasks such as resource monitoring (see de la Torre-Castro 2019; Kleiber et al. 2018). In contrast, our findings revealed that women's participation in problem solving demonstrated their agency and legitimacy in influencing decision-making (see Gallardo-Fernández and Saunders 2018; Harper et al. 2018).

Our review also highlighted the practical implications of improving women's meaningful participation in SSF governance. For example, it is crucial to explore the breadth of governance arrangements to include informal spaces where women are already active (e.g. social events, religious ceremonies, self-help groups). This way, the focus of efforts to improve women's participation can deliberately extend beyond formal and semi-formal arrangements (e.g. quotas, rights, co-management), which often tend to get attention. Another implication was the need to build flexibility into governance arrangements in order to continuously adjust in response to current and emerging changes broadly within SSF, such as the aging fisher populations and re-organisation of fishing activities from communal to household enterprises.

While the synthesis was not intended to evaluate the level of success of the governance interventions reported in the literature, we drew insights about the kinds of outcomes needed to meaningfully advance gender equality. For example, the cases where deeply gendered practices and power relations were challenged were of particular importance to the critical examination of gendered governance outcomes (e.g. Gallardo-Fernández and Saunders 2018). Another highlighted implication was how women's efforts link with societal values in ways that may help legitimise their representation in SSF governance (Freitas et al. 2020; Harper et al. 2018; Ko et al. 2010). The findings here revealed the importance of paying attention to the role of men in recognising and facilitating women's efforts, starting with the openness to involve women in discussions where they were previously excluded.

Learning from these experiences is crucial to identifying the entry points to efforts that seek to meaningfully engage women in fisheries management, improve conservation and stewardship, and foster gender-equitable outcomes.

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