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Gender analysis

of the coastal fisheries and aquaculture sector in the Republic of Kiribati

Ministry of Fisheries & Marine Resources Development

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Acronyms

CBFM	Community-based fisheries management
CEDAW	Convention on the Elimination of All forms of Discrimination Against Women
FGDs	Focus group discussions
GDP	Gross domestic product
GESI	Gender equity and social inclusion
HIES	Household Income and Expenditure Survey
LMMA	Locally managed marine areas
MELAD	Ministry of Environment, Lands and Agricultural Development
MFMRD	Ministry of Fisheries and Marine Resources Development
MPA	Marine protected area
MWYSSA	Ministry of Women, Youth, Sport and Social Affairs
PLGED	Pacific Leaders Gender Equality Declaration
PPA	Pacific Plan for Action on Gender Equality and Women's Human Rights
PROP	Pacific Islands Regional Oceanscape Program
SPC	Pacific Community

Glossary of I-Kiribati terms

General

I-Kiribati term	English term
te boonamo	Traditional practice where villagers went fishing in a particular area and used coconut fronds (or *te rai*)
botaki	Event, celebration or ceremony
botaki n unimwane	Council of Elders
bwabwai	Swamp taro
kainga	Extended family
katei bwibwi	Local seawall built with sticks and filled with plant materials
te kiakia	Small traditional house or hut with a raised floor
mwaneaba	Traditional meeting house
te non	Noni (*Morinda citrifolia*) tree
tabutabu	Observation or following of taboos
unaine	Elder women
unimwane	Elder men
utu	Familial clans
te waa	Traditional canoe

Traditional beliefs and traditional fishing and management practices

I-Kiribati term	Description
te burae	A fishing practice that uses a feather lure.
te ibunroro	A traditional method for mixing *te koikoi* (clam) with coconut milk and other ingredients and then cooking it inside coconut fruit on an open fire.
te kabwara	Drop-stone fishing , a fishing practice that involves dropping a stone with chum and bait over the side of a boat. Fish chum and a fishing hook are placed onto a leaf (e.g. beach gardenia, breadfruit, banana) and then secured to a medium-sized rock. When the stone has reached the desired depth, a quick jerk to the line releases the knot that keeps the bait, the chum and the stone together. The chum disperses with the current, creating a plume that fish can follow to the bait, while the stone sinks to the bottom.
kai ni kareke, kai-ni-kiika	An iron rod or wire used for fishing or hunting octopus in crevices.
te kamata	Knowledge of the different kinds of holes you find on mudflats for different species.
kaonono	A traditional gifting system involving the sharing of fish and other produce.
katei bwaenaata	A traditional practice that involves building a rock pile to give fish a place to live and people the opportunity to fish. *Te bwaenaata*, which are abandoned rock piles, often create a home for a variety of small fish species.
te kateitei	A fishing practice that involves leaving a gill net from night until daybreak.
katanrake or kauamwanai	The catching of nearshore crabs by hand using a a basket weaved from coconut leaves and grilled coconut as bait.
te kibee	A traditional practice where people harvest at night on low tide by hand or with gears such as spears or scoop nets.
te koikoi	A traditional gleaning method used to harvest *te koikoi* (clam).
te maa	A fish trap built from rocks.
te matawere	A ritual to ensure other male fishers are not successful at catching fish.
te nii burae	A special technique that entails tying a feather to a fishing line (to act as a lure) to catch fish, especially tuna.
te ororo	A fishing method where by fishers use a crowbar and open pipe to make sounds disturbing the fishing ground resulting in the fish to be trapped in the gill nets the fishers set.
te rai	A fishing method whereby coconut leaves that are braided or secured with the rootlets of the pandanus tree to form a 'gill net'. More than 20 people surround and hold each corner of the *te rai* and bring the ends closer together so that fish are trapped inside and unable to escape.
te uaakeang	*Uaa* is a Kiribati root word for *uaakinna* meaning 'to drag' and *keang* is the local name for seagrasses. *Uaakeang*, therefore, means 'dragging seagrasses'.
te uu	Traditional traps used to catch eels, mostly for special events or big celebrations (e.g. birthdays).
te wai	Spearfishing in shallow water using a hand spear.
te waibo	A fishing method used to catch sea worms, where by fishers push coconut veins in to sea worms holes and try to make sea worms emerge from the hole.

Executive summary

Fishing has long been a central activity, not only for sustenance but also as a means of cultural expression and identity for the people of Kiribati. With the commercialisation of fisheries in the 1960s and subsequent aquaculture investments in the 1980s, fishing practices have evolved, influencing traditional methods and livelihoods. However, the scarcity of gender- or sex-disaggregated information on fisheries and aquaculture impedes a comprehensive understanding of the roles and contributions of both women and men in these vital sectors, hindering efforts towards inclusive and equitable resource management. The Ministry of Fisheries and Marine Resources Development (MFMRD) recognises that, by mainstreaming gender into the planning, implementation and development of fisheries and aquaculture and fostering broader inclusive policies, Kiribati is not only advancing gender equality but also enhancing the resilience and productivity of the sector.

A gender analysis of the coastal fisheries and aquaculture sector in the Republic of Kiribati was conducted by MFMRD in partnership with the Pacific Community (SPC) between 24 October 2023 and 29 January 2024. A desk review was first completed to synthesise all available gender-related information on fisheries and aquaculture. An institutional analysis and capacity assessment was conducted of MFMRD as the main fisheries agency responsible for the sustainable management and development of the fisheries and aquaculture sector by adapting SPC's Stocktake of Gender Mainstreaming Capacity survey instrument. The institutional analysis covered five main areas: political will and commitment to gender mainstreaming in government; organisational culture that supports or does not support gender mainstreaming; accountability and responsibility mechanisms to support gender mainstreaming; technical capacity to mainstream gender; and availability of adequate resources to finance gender mainstreaming. Finally, focus group discussions (FGDs) were conducted with selected fishers from 11 communities from three atolls in the Gilbert Islands (Tarawa, Maiana, Nonouti) and one in the Line Islands (Kiritimati).

Traditional houses on South Tarawa. © Sangeeta Mangubhai

The institutional analysis highlighted the progress MFMRD is making internally as well as gaps for further investment. Overall, MFMRD is considered by its staff as an equal opportunity workplace. Non-discriminatory recruitment processes have enabled women to shift to leadership positions on their own merit. Even in positions that are heavily male-dominated, such as fisheries observers, Kiribati appears to be making greater strides than most Pacific Island countries. MFMRD has worked with the Ministry of Women, Youth, Sport and Social Affairs (MWYSSA) to support livelihood opportunities for women, including those living with a disability, working in the fisheries and aquaculture sector to help diversify their income. However, despite considerable interest and willingness among senior staff to integrate gender considerations into fisheries and aquaculture, MFMRD faces challenges due to its limited technical capacity and resources to effectively mainstream gender within the sector. Furthermore, MFMRD does not have a dedicated unit or persons assigned the responsibility of mainstreaming and integrating gender into the Ministry's divisions, programmes and projects.

FGDs in communities highlighted that fisheries are highly gendered and that gender efforts, therefore, are particularly relevant to the sector. There were few aquaculture projects being implemented by communities to enable a detailed gender analysis to be undertaken. The study found differences between women and men in the fisheries they targeted, traditional practices they used, their preferred gear types, and their roles and responsibilities along fisheries value chains. Women played an important role in fishing and more often were responsible for the post-harvest processing and selling of fish caught by men. In general, most fishers (regardless of gender and age) did not have bank accounts and did not access microcredit loans for fisheries or aquaculture. The roles of women and men in fisheries have changed (compared to the past), with women either playing more prominent roles to support their families and, in some cases, to compensate for men being less engaged in fishing. The negative impact of kava consumption on subsistence fishing and livelihoods was highlighted across all atolls surveyed. These findings and others documented by this study reinforce the gender aspects of fisheries that are important considerations for MFMRD, and provide further evidence of the need for gender mainstreaming in fisheries and aquaculture.

Several opportunities and recommendations emerged during interviews with MFMRD and MWYSSA staff for the institutional analysis and during FGDs with fishers across four atolls in Kiribati, which have informed the recommendations below. These were reviewed by MFMRD staff in workshops held between 18 and 22 March 2024 in Tarawa.

Ensure institutional policies and plans support gender mainstreaming

1. **Political commitment.** The current high commitment for gender mainstreaming in MFMRD needs to be maintained through the highest levels of political leadership.
2. **Policy improvement.** Gender equity and social inclusion (GESI) should be integrated into policies being developed by MFMRD and MYWSSA.

    Ministry Strategic Plan. Current efforts to update the Ministry Strategic Plan for the period 2024–2027 present an opportunity to meaningfully integrate GESI considerations into the strategic priorities and actions of MFMRD.

    National Gender Policy. By partnering with MWYSSA and actively participating in the revision of the Kiribati National Gender Policy, the MFMRD can ensure that the revised policy incorporates the gender needs and aspirations specific to fisheries and aquaculture.

Improve GESI in community-based fisheries and aquaculture projects

3. **Gender analysis.** Where data are lacking, MFMRD staff should undertake gender analyses of the communities with which they work, to gain insights and better understanding of the roles, contributions, and constraints of women and men in fisheries and aquaculture. The data collected with communities will be valuable for multiple projects.
4. **Disaggregated data.** The collection of relevant disaggregated data (e.g. by sex, gender, age, (dis)ability, other factors of diversity, etc.) across MFMRD divisions and units is essential. The data not only support targeted interventions to address gender disparities but also enable the formulation of evidence-based policies and programmes that promote gender equality, enhance women's empowerment, optimise the overall productivity and sustainability of fisheries and aquaculture activities, and contribute to monitoring and evaluation (Recommendation 14).
5. **Traditional knowledge and practices.** MFMRD should further invest in the documentation of traditional knowledge and practices in fisheries held by women and men. Doing so would help preserve valuable cultural heritage and ensure its transmission to future generations, and may be valuable for the sustainable management of marine resources.

6. **Inclusive extension services.** It is essential to establish GESI-responsive extension services that can be provided by trained MFMRD staff, cater to the specific needs and circumstances of both women and men in coastal communities, and address gender-specific barriers. These services should encompass a wide range of topics, including but not limited to fisheries laws and policies, fishing techniques, aquaculture practices, post-harvest processing, marketing strategies, and business management.

7. **Supporting women and youth.** Supporting women and youth is required to foster an inclusive fisheries and aquaculture sector in Kiribati. Acknowledging the crucial contributions of marginalised groups, particularly women and youth, initiatives must be strategically crafted to amplify their participation and leadership roles in culturally sensitive ways.

8. **Gender-sensitive value chains.** Encourage the development of gender-responsive value chains and market systems that recognise and reward the contributions of women along the entire production and distribution process. This includes gender-equitable access to productive assets, such as land, water, fishing gear, and technology, addressing traditional barriers and inequalities that limit women's participation and productivity.

9. **Inclusion in community-based fisheries management and decision-making.** The inclusion of women, youth and persons with disabilities in community-based fisheries management and decision-making processes in culturally sensitive ways, is paramount to achieving sustainable and equitable fisheries governance in Kiribati. To achieve true inclusivity, existing barriers that hinder the participation of women, youth and persons with disabilities must be addressed in culturally sensitive ways.

10. **Aquaculture.** Given the lack of public or internal information on the gendered aspects of aquaculture, MFMRD could benefit significantly from investing in better documentation of gendered aspects of its aquaculture investments and support to local communities. This information can inform the design of more inclusive policies, programmes and livelihoods that address gender disparities, empower women, youth and other marginalised groups in aquaculture, and enhance the overall productivity and resilience of the sector.

Improve MFMRD's technical capacity for GESI mainstreaming

11. **Training.** Investing in building the knowledge and capacity of MFMRD staff is essential to advance GESI within the fisheries and aquaculture sector. MFMRD staff need to understand GESI principles and develop practical skills to integrate these principles into their daily work. There should also be a longer-term plan to fully institutionalise GESI training within MFMRD, ensuring the sustainability and continuity of efforts.

12. **Designing gender and socially inclusive fisheries and aquaculture projects.** All new projects should have specific objectives, activities and deliverables that contribute towards gender equality and broader social inclusion in fisheries and aquaculture in Kiribati. This requires investing in improving the capacity of staff in the Planning Division, which reviews all major proposals from external organisations.

Strengthen institutional conditions for gender mainstreaming

13. **Resources for gender mainstreaming.** Allocating financial and human resources for gender mainstreaming is crucial to establish an enabling environment for inclusive policies and programmes tailored to address the specific needs and challenges encountered by women in the fisheries and aquaculture sector. The appointment of a Senior Gender Officer is essential to mainstream gender across all divisions and areas of work within MFMRD. Enhancing gender budgeting and planning mechanisms will ensure that financial resources are effectively allocated to initiatives that promote gender equality and women's empowerment.

14. **Monitoring and evaluation.** Monitoring and evaluation are indispensable components of effective gender mainstreaming efforts within MFMRD. Robust monitoring and evaluation mechanisms need to be established to systematically track progress towards gender mainstreaming goals. By regularly monitoring and evaluating gender mainstreaming efforts, the MFMRD can identify areas of strength and areas needing improvement, thereby ensuring greater accountability and transparency in its initiatives.

Invest in partnerships and collaborations

15. **Strengthening MFMRD's relationship with MWYSSA.** MFMRD should further invest, strengthen and expand its current relationship with MWYSSA to support mainstreaming efforts in the fisheries and aquaculture sector. The partnership could prioritise helping develop policies (Recommendation 2), improve the design of future projects (Recommendation 12) and address training and capacity needs (Recommendation 11).

1. Introduction

1.1 Background

The Republic of Kiribati has one of the largest exclusive economic zones (EEZs) in the Pacific, spanning 3.55 million square-kilometres. The islands and atolls (810.8 square-kilometres) support a rich culture that is highly dependent on its ocean resources for its survival. Low land mass and geographic remoteness limit economic diversification and make the country extremely vulnerable to the effects of climate change (Mangubhai et al. 2019). Kiribati's economy is heavily reliant on fisheries, remittances and international aid (DFAT 2021). Agriculture, fisheries and forestry contributed 26.2% to the gross domestic product (GDP) in 2020 (Kiribati National Statistics Office 2020). There is no recent data on the contribution of fisheries to the GDP; however, fishing contributed 8.0% to the national GDP in 2021 (Gillett and Fong 2023). The 2019–2020 Household Income and Expenditure Survey (HIES) found households in Kiribati were heavily engaged in agriculture (92%), livestock (83%), fisheries (44%) and copra/coconut production (42%) (Kiribati Ministry of Finance and Economic Development 2021). The average household income was estimated at AUD16,704 (median of AUD12,007) with income mainly sourced from employment-related activities (i.e. salaries and income from the sale of primary produce), and accounting for 80% of gross household income. However, this figure is skewed by data from Tarawa and the distribution of household income is not even across the country; in other words, around 50% of household income in Kiribati is accounted for by 40% of the population (Kiribati Ministry of Finance and Economic Development 2021).

Kiribati's fisheries sector is divided into coastal fisheries, which are subsistence and small-scale commercial fisheries that occur in lagoons, reefs and nearshore areas, and offshore fisheries which are dominated by the industrial-scale commercial tuna fishery in offshore waters (Kiribati National Statistics Office 2020). The estimated production from coastal subsistence

Fishing trip on canoe. © Francisco Blaha

Gender describes the way men and women are raised to take on different responsibilities and social roles. These gender roles vary between cultures and change over time.

Gender equality refers to women and men having equal rights, responsibilities, and opportunities. Gender equality means the interests, needs and priorities of both women and men, and the diversity of the populations within those groups (e.g. old, young, abled bodied, disabled) are taken into consideration. Gender equality concerns men as well as women. However, gender equality has a particular focus on improving the rights and opportunities of women, due to persistent inequalities, and the greater level of disadvantage, experienced by women as a group.

Source: Kiribati's National Policy on Gender Equality and Women's Development 2019–2022

fisheries in 2021 was 11,000 tonnes valued at AUD30 million, while the estimated production from coastal commercial fisheries was 8000 tonnes valued at AUD31 million (Gillett and Fong 2023). In contrast, tuna catch by locally-based longliners was 2686 tonnes valued at AUD17.6 million, and catch by offshore-based longliners was 349,345 tonnes valued at AUD601.4 million (Ibid.).

With a per capita consumption ranging from 49.6 kilogrammes (edible quantity) to 79.5 kilogrammes (quantity as purchased) per year, locally caught fish, shellfish, and other marine resources provide essential dietary protein, contributing to the nation's food security and nutrition (Gillett and Fong 2023). Fisheries are critical to the improvement in nutrition of vulnerable groups, like pregnant women and children younger than five years of age (MFMRD and SPC 2019). The 2020 national census found that the majority (69%) of household fishing was for consumption only, while 20% of fishing households sold a portion of their catch for income; fewer than 1% of households reported customary practice as their main purpose for fishing (Kiribati National Statistics Office 2020). The 2019–2020 HIES highlighted the importance of fisheries to Kiribati, with 57% of people involved in primary activities, such as fishing or gleaning for seafood (Kiribati Ministry of Finance and Economic Development 2021). Nationally, 11% of individuals aged five years and above in Kiribati were involved in fishing and seafood gathering activities, with participation higher in rural (16%) compared to urban (5%) areas. The HIES found coral reef and lagoon fish accounted for 70% of all fish caught, and invertebrates accounted for 19% of total catch.

Coastal fisheries are deeply rooted in Kiribati's cultural traditions, serving as a means of social cohesion and the preservation of ancestral practices. In many communities, fishing is a way of life, fostering a strong sense of identity and connection to the ocean. Traditional management practices, such as rotational fishing closures, spawning seasons and controls on the amount of catch taken were more commonly practised in the past (Johannes and Yeeting 2000). The *mwaneaba* (meeting place) and *unimwane* (male elders) historically played an important role in resource allocation and management (Tabokai 1993), and continue to play an influential role in these decisions at the village and island levels today.

To ensure the sustainability of these vital coastal fisheries, Kiribati is increasingly focusing on responsible resource management and conservation efforts, recognising the importance of these resources to both present and future generations. Aquaculture is a priority for Kiribati and the Ministry of Fisheries and Marine Resources Development (MFMRD) is currently investing in giant clams (*Tridacna* spp.), seaweed (*Kappaphycus alvarezii*), sandfish (*Holothuria scabra*), and milkfish (*Chanos chanos*). There are limited publicly available reports on aquaculture in Kiribati. Mangubhai et al. (2019) provided a short summary of the history of aquaculture investments in Kiribati, and Lindsay et al. (2022) provided a recent synthesis of efforts in the Pacific region, including Kiribati. There are significant challenges to implementing aquaculture, and the 2021 aquaculture production of Kiribati was estimated at two tonnes and valued at AUD10,000 for farmers (Gillett and Fong 2023). The 2019–2020 HIES found aquaculture involvement was low (approximately 1%) and largely focused on clams and milkfish (Kiribati Ministry of Finance and Economic Development 2021).

Gender is relevant to all sectors and plays a significant role in Kiribati society (SPC 2015). Kiribati's National Policy on Gender Equality and Women's Development 2019–2022 provides a definition of 'gender' and 'gender equality' (see insert box). As women's involvement in fisheries and aquaculture often differs from men's involvement, reflecting traditional gender divisions of labour, it is essential to recognise and value their contributions to sustainable fisheries and aquaculture management and development. While the traditional division of labour still exists in Kiribati, there is growing recognition of the importance of women's contributions to both the family and the economy (Committee on the Elimination of Discrimination against Women 2019). However, it is important to acknowledge that women's participation in fisheries globally, including the Pacific, is underrepresented in the literature despite their contributions to both subsistence and commercial fisheries. Furthermore, there are no studies that examine the gender dimensions of aquaculture in Kiribati.

1.2 Scope and rationale for this report

A gender analysis of the coastal fisheries and aquaculture sector in Kiribati was conducted in partnership with, and with the support of, MFMRD. A gender analysis can be used to examine the gender, social and cultural norms and power relations that influence individuals' access to resources and services, participation, decision-making, opportunities and overall well-being (Barclay et al. 2021). This report includes: (a) a desktop review of all known information on gender in fisheries and aquaculture; (b) an institutional analysis and capacity assessment of MFMRD as the main fisheries agency responsible for the sustainable management and development of the fisheries and aquaculture sector; and (c) a socioeconomic survey of selected fisher communities from the Gilbert and Line Island groups.

The rationale for this report is to support MFMRD and relevant stakeholders to:

- increase their understanding of the different roles of women and men in the fisheries and aquaculture sector, including their different needs, barriers they may face, and potential opportunities for support based on their different roles and needs;
- integrate a gender lens into internal processes, including project planning and design, day-to-day fisheries and aquaculture management, the implementation of development projects, and the provision of fair and inclusive services to coastal communities and other beneficiaries; and
- assist national gender mainstreaming efforts by identifying gaps and opportunities in order to strengthen institutional, policy or capacity frameworks that enable improved mainstreaming in fisheries and aquaculture.

Fishing boats on the beach, Kiritimati. © Margaret Fox

2. Methodology

2.1 Desktop review

A desktop review was conducted of peer-reviewed and grey literature written in English between 1993 and 2023, to examine the gender dimensions of the fisheries and aquaculture sector in the Republic of Kiribati. A range of databases or search engines were used, including Google Scholar, ResearchGate and Toksave, and websites of key organisations were searched for relevant publications (e.g. MFMRD, the Pacific Community [SPC], WorldFish). Additional reports were identified and provided by MFMRD and SPC.

2.2 Institutional analysis of the fisheries and aquaculture sector

An institutional analysis was conducted of the MFMRD between 24 October and 09 November 2023. The underlying premise of the institutional analysis was that, while the Ministry of Women, Youth, Sport and Social Affairs (MWYSSA) has a leadership role in mainstreaming gender and women's rights across all aspects of society, they are not solely responsible for achieving it, and it is incumbent on all ministries to ensure gender equality is mainstreamed into their respective sectors. This requires political commitment as well as the government structures and systems, including legislation and policies, to effectively mainstream gender across all ministries (SPC 2015).

The SPC Stocktake of Gender Mainstreaming Capacity survey instrument was modified to conduct an institutional and sector-specific analysis of MFMRD. The survey instrument covered five main areas:

- **A** political will and commitment to gender mainstreaming in government;
- **B** organisational culture that supports or does not support gender mainstreaming;
- **C** accountability and responsibility mechanisms to support gender mainstreaming;
- **D** technical capacity to mainstream gender; and
- **E** availability of adequate resources to finance gender mainstreaming.

Given the length of the survey, MFMRD staff were only asked questions in topic areas that were relevant to them. For example, questions in A, B, and E were targeted at directors or heads of units, B, C and E at Corporate Services, and D at technical staff (e.g. fisheries and aquaculture officers). Additional questions were asked of technical staff on the approaches they were actively using to integrate gender into their day-to-day work and projects, following the methodology used in Mangubhai and Lawless (2021). Twelve staff from MFMRD (seven women, five men) were interviewed. These included 10 staff from the coastal fisheries division (three in aquaculture, seven in coastal fisheries), one from the Planning Division, and one from Corporate Services. Interviews conducted with two women from MWYSSA focused largely on their respective relationships with MFMRD and other sectoral ministries, and their roles and approaches to gender mainstreaming.

Analysis: All interviews were transcribed using Otter, a speech-to-text transcription application. Using a three-phase methodology for coding described by Saldana (2009), an interactive grounded theory approach[1] was employed to code and analyse the qualitative transcripts. To decipher the core meaning of responses across the broad themes and each sub-group, short phrases that captured the essence of the information that respondents shared were first identified. In the second stage, responses were grouped into categories according to themes that emerged from the data. A third review was completed to consolidate a smaller group of categories to better visualise and represent the data. For approaches, barriers and opportunities, a qualitative and semi-quantitative analysis was undertaken of the data, with a '1' (presence) or a '0' (absence) given for each category. For example, if an approach was mentioned or described, it was given a '1' and, if not, a '0' was given. Approaches, barriers and opportunities were recorded for each individual. The number of participants were tallied for each to identify which approaches, barriers and opportunities were frequently described.

[1] Grounded theory is a systematic methodology that is applied to qualitative research. The methodology involves the development of hypotheses and theories through the collection and analysis of data, and application of inductive reasoning (i.e. broad generalisations or principles are derived from a body of observations).

2.3 Case studies

A gender analysis of fisheries and aquaculture was conducted on Tarawa, Maiana and Nonouti atolls in the Gilbert Islands, and on Kiritimati Atoll in the Line Islands (Fig. 1). Focus group discussions (FGDs) were conducted in 11 villages – Nanikaai, Tebikenikua (South Tarawa), Kainaba, Abaokoro (North Tarawa), Buota, Bubutei (Maiana), Autukia, Benuaroa (Nonouti), Banana, Poland and Tabwakea (Kiritimati). Villages in the Gilbert Islands were surveyed 31 October–15 November 2023 and 19–29 January 2024. Villages in the Line Islands were surveyed 28 November–06 December 2023.

Six FGDs were held per village with young women (18–29 years), middle-aged women (>30 years), young men (18–29 years), middle-aged men (>30 years), and both elder men (*unimwane)* and elder women (*unaine*). Elders were treated separately to recognise their unique role in Kiribati society, and their strong influence over family and village matters. In general, elders are the people who are the oldest in the village (usually 60+ years of age or those with white hair); however, in communities where there are not enough people above 60 years in age, slightly younger, mature adults can assume the role of elders. Where staff were available, FGDs were led by a staff member of the same gender from MFMRD – meaning, women interviewed women and men interviewed men. All interviews were conducted in the I-Kiribati (Gilbertese) language. The survey instrument was reviewed by MFMRD staff and piloted in Banraeaba Village on Tarawa Atoll on 27 October 2023, and minor adjustments were made. The FGDs were divided into seven thematic areas:

1. time diaries;
2. gender roles, responsibilities and traditions;
3. selling and marketing;
4. decision-making and access to and control over resources;
5. access to capital and financial institutions;
6. external impacts; and
7. access to support and external opportunities and aspirations.

The total number of surveys conducted is shown in Table 1. After the surveys were completed in two communities in South Tarawa, the results were reviewed again to ensure consistency between different interviewers. Two additional questions were added for clarity, and one was removed due to redundancy. The FGDs with young men from Nanikaai Village was misplaced and is therefore not included. In Kainaba Village, two elder women joined middle-aged women, and the 18 middle-aged men who wanted to participate in the study were divided into two groups but their data were analysed together.

Fishers landing catch in South Tarawa. © Sangeeta Mangubhai

Family fishing, Kiritimati. © Margaret Fox

Table 1. The number of fishers and aquaculture farmers (in parentheses) involved in focus group discussions in each of the 11 villages surveyed.

Atoll	Village	Women	Men
Tarawa (South)	Nanikaai	Young women (6) Middle-aged women (6) Elder women (3)	Middle-aged men (10) Elder men (4)
	Tebikenikua	Young women (8) Middle-aged women (10) Elder women (9)	Young men (8) Middle-aged men (6) Elder men (3)
Tarawa (North)	Kainaba	Young women (5) Middle-aged women (11) Elder women (2)	Young men (7) Middle-aged men (9, 9) Elder men (5)
	Abaokoro	Young women (11) Middle-aged women (13) Elder women (8)	Young men (9) Middle-aged men (8) Elder men (10)
Maiana	Buota	Young women (6) Middle-aged women (9) Elder women (13)	Young men (10) Middle-aged men (9) Elder men (3)
	Bubutei	Young women (9) Middle-aged women (8) Elder women (6)	Young men (9) Middle-aged men (11) Elder men (4)
Nonouti	Autukia	Young women (5) Middle-aged women (13) Elder women (3)	Young men (4) Middle-aged men (9) Elder men (3)
	Benuaroa	Young women (8) Middle-aged women (21) Elder women (1)	Young men (6) Middle-aged men (12) Elder men (8)
Kiritimati	Banana	Young women (1) Middle-aged women (2) Elder women (8)	Young men (5) Middle-aged men (10) Elder men (2)
	Poland	Young women (12) Middle-aged women (17) Elder women (5)	Young men (16) Middle-aged men (13) Elder men (8)
	Tabwakea	Young women (3) Middle-aged women (1) Elder women (3)	Young men (3) Middle-aged men (8) Elder men (1)
Total	**11 villages**	**Total** **Women: 246** **Young women: 74** **Middle-aged women: 111** **Elder women: 61**	**Total** **Men: 242** **Young men: 77** **Middle-aged men: 114** **Elder men: 51**

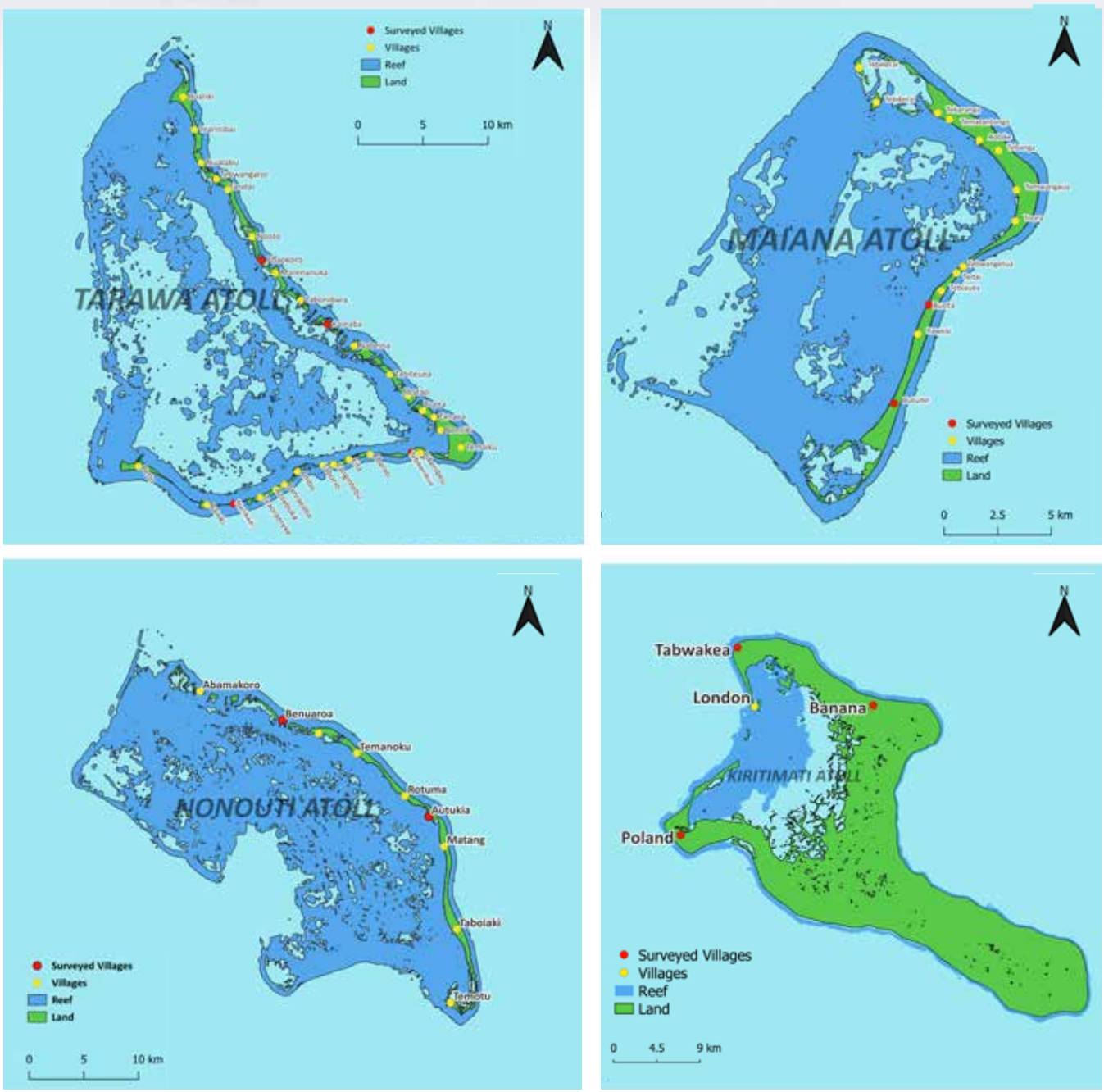


Figure 1. Map of Kiribati showing the four main atolls and villages surveyed. From top to bottom: Tarawa, Maiana, Nonouti, Kiritimati atolls in Kiribati.

Analysis: All I-Kiribati terms were reviewed and checked by multiple MFMRD staff, including those who collected the data. Qualitative analysis of the data was undertaken using the same approach described under the institutional analysis (section 2.2), using a three-phase methodology for coding (Saldana 2009). To help understand the roles that different groups play in their household and community, participants were asked to complete (as a group) a 24-hour diary to reflect an average day. To allow for comparison across social groups, activities were harmonised around six categories adapted from Rubiano-Matulevich and Viollaz (2019): (1) livelihood (including paid work and unpaid work focused on the production of goods for the market); (2) unpaid domestic work (including cooking, cleaning and caring for children and the elderly); (3) personal care (including sleeping, eating, resting); (4) kava drinking; (5) leisure (including hobbies, games, sports, socialising); and (6) culture/religion. Culture and religion were listed together because they were only mentioned by one group. It was not possible to distinguish between fishing or gleaning for food versus income, and hence any fishing or gleaning activity is included under livelihoods. While kava drinking is considered part of leisure time, this was separated due to the negative impact it sometimes has on fisheries. The Glossary of I-Kiribati terms provides words commonly used by fishers, as well as gear, traditional fishing methods and beliefs. In this report, we use the I-Kiribati names for species and provide a full list of the local, common and scientific names in Annex 1.

3. Gender and fisheries

3.1 Gender roles and issues in I-Kiribati traditional and modern society

Traditionally, Kiribati's society is patriarchal where men typically hold positions of authority and power both within the family and in the broader community, and women manage the house and its members while assuming the roles of wife, mother and daughter (Taboneao et al. 1993). Roles in the household and expected behaviours are determined both by age (and marital status) and by gender (Burnett 2022). Villages and communities are still governed by the *Botaki n Unimwane* (Council of Elders), elder men who represent the family or clan, and by the *mwaneaba* or community council (see box insert). As land rights are passed down from fathers to sons, women who are not married or who are divorced are often left without land (Taboneao et al. 1993).

Cultural norms are strong, particularly in the remote communities in the outer islands, including North Tarawa. For example, community-based fisheries and aquaculture projects often require both female and male MFMRD officers. This is because:

> *"working with the opposite sex is culturally sensitive especially for female officers, as it may sometimes lead to different interpretations by women in the villages. This is something that female staff have to be mindful of at all times in order to avoid potential conflicts that may arise from misinterpretations from women of the village."* (Nikiari et al. 2021)

Like other parts of the Pacific, gender roles and norms in Kiribati are evolving, influenced by external factors, such as increased access to education, urbanisation and increased opportunities for women to work in occupations that have historically been associated with men (Caulfield 2018; Committee on the Elimination of Discrimination against Women 2019; Kagan 2016). However, this shift is not without its challenges. Kiribati has one of the highest recorded rates of violence in the Pacific region, with 68% of women experiencing violence by an intimate partner (SPC 2010). A 2019 study found 57% of men in South Tarawa reported perpetrating physical and/or sexual violence against a wife or female partner within the past year, while 38% of women stated they had experienced physical and/or sexual violence from their husband or male partner over that same period (Miedema et al. 2019). Combating gender-based violence remains a priority for the Government of Kiribati and is a key programme for MWYSSA.

Botaki n Unimwane

The traditional power and authority of the Botaki n Unimwane remains strong in many parts of Kiribati. Normally, women sit behind their husbands in the m(w)aneaba with their role confined to serving food and drinks and cleaning up after her husband has eaten. While this is what the women do at these meetings, it misleads outsiders' interpretation of the full role of women. Any woman who has ideas and comments can contribute through their spouse or other male family member who sits in the traditional decision-making circle, not unlike requesting a Member of Parliament to raise an issue of importance for a certain group. Some islands are more relaxed, giving women opportunities to speak up, while on other islands women cannot openly voice their opinion at these traditional meetings.

Source: Committee on the Elimination of Discrimination against Women. (2019) Combined Initial, Second and Third Periodic Reports Submitted by Kiribati under Article 18 of the Convention (CEDAW/C/KIR/1-3). United Nation Convention on the Elimination of All Forms of Discrimination against Women.

3.2 Gender in fisheries

In Kiribati, fishing skills and ability are considered a symbol of social status and respect among men (Chapman 1987). Similar to other Pacific Island countries, men have historically dominated in fishing activities at sea while women have been engaged in gleaning and harvesting of marine resources, especially invertebrates (e.g. shellfish) in shallow nearshore areas accessible by foot (Kiribati Ministry of Finance and Economic Development 2021; Kiribati National Statistics Office 2020; Lambeth and Tuara 1999; Taniera and Mitchell 1995). Women were actively involved in the gleaning of inshore areas because it takes relatively little time, can be done close to home, does not require complex or costly gear, and young children can join (Tekanene 2004). Traditionally, if a husband borrowed a canoe or fishing gear, the wife was responsible for providing a share of fish to the canoe owner; this is known as the 'canoe share' or *tibwan te wa* (Tekanene 2004).

Traditional fishing practices are also gendered, with some forms of fishing (e.g. *te uaakeang*) mainly practised by women (Tioti et al. 2021), while others (e.g. *te uu, te kabwara*) are practised by men (MFMRD staff, pers. comm.). Previous authors have documented some gendered fishing practices. For example, Taniera and Mitchell (1995) described how women caught octopus at night using coconut frond flares or used pressure-kerosene lamps for light to catch eels. Fay et al. (2007) described how shellfish, such as ark shells (*Anadara* spp.), were often harvested by women in South Tarawa from intertidal seagrass areas and were a major source of protein as well as livelihood. However, descriptions of fisheries or aquaculture are limited, particularly those that examine gender dimensions and considerations.

Until recently, women's participation in fisheries has been largely invisible and underrepresented in the literature despite their significant contributions to both subsistence and commercial fishing activities. Some of this stems from the failure to include and account for gleaning in fisheries, and there are increased calls to include gleaning in national fisheries statistics (Food and Agriculture Organization [FAO] et al. 2023; Grantham et al. 2020). The recent 2019–2020 HIES and 2020 census are excellent examples of Pacific-led efforts to disaggregate the data by sex and provide insights into the role of women in fisheries and aquaculture (Kiribati National Statistics Office 2020).

The 2020 census found 47% of households engaged in fishing activities (33% in urban versus 63% in rural areas) (Kiribati National Statistics Office 2020). The census also documented 53% of all male-headed households involved in fishing, compared to 33% of female-headed households. More boats were owned by male-headed households (89%) compared to women-headed households (11%). Net fishing was the most popular in Kiribati overall (49%, largely undertaken by men[2]), followed by gleaning (19%, largely favoured by women) (Kiribati Ministry of Finance and Economic Development 2021). Women did not use spearguns or traps, and did not freedive or scuba dive. Women almost exclusively fished for invertebrates (82%), although some targeted reef fish (19%) and pelagic fish (1%). Rural populations were harvesting more invertebrates (21%) than those living in South Tarawa (12%). Shifts in the division of labour and the increased commercialisation of

[2] Kiribati National Statistics Office 2020 documented 5254 men fishing with a net compared to 135 women.

Fishers gleaning on intertidal flat, Tarawa. © Franck Magron

MFMRD staff conducting fish market surveys, Tarawa. ©SPC

fisheries has meant that women who traditionally (and historically) did not fish from canoes or boats have been documented using these two forms of transport since the 1990s to fish on outer reefs, especially in South Tarawa (Taniera and Mitchell 1995; Tikai 1993).

Women are also responsible for the drying and salting of fish, which is an important food source during periods of bad weather (Taniera and Mitchell 1995). While there are few women who fish for sea cucumbers, women are involved in the post-harvest processing of animals which, in most cases, are caught by their spouses (Purcell et al. 2016). Women have also been the main ones responsible for the handling, marketing and selling of fish throughout Kiribati (Molai et al. 2019) and participating in *kaonono*, the cultural sharing and exchange of fish (Tikai 1993). A 2003 study of women fish vendors in Tarawa found the fish trade was poorly paid and undertaken in difficult and unsanitary working conditions, amidst a lack of awareness of labour rights (Tekanene 2004). Furthermore, the vendors had no mechanisms to have their needs and concerns heard and addressed.

Concerns about the degradation and depletion of marine resources was recognised as far back as the 1990s (Fay-Sauni et al. 1998; Lambeth and Tuara 1999). Sustainability requires consideration of all fisheries methods and gear used, as well as the species targeted by women and men in specific areas (Tioti et al. 2021). Given women are major users of fisheries resources, especially invertebrates, it is important to engage them in decision-making related to the sustainable use of these resources. The exclusion, for example, of women in fisheries management can result in a failure to address habitat destruction and over-fishing in Kiribati (Gotschall 2021; Tioti et al. 2021).

3.3 Gender in aquaculture

Aquaculture is recognised as an important investment area with potential to expand job opportunities and income generation. However, there are challenges for export-oriented aquaculture, as it competes with other countries with lower production costs and efficient transportation links to key markets (Kiribati National Statistics Office 2020). Currently, the HIES do not disaggregate aquaculture from livestock, and there is little available information on the roles of women in aquaculture, with the exception of seaweed. Women have been involved in all aspects of seaweed farming (e.g. planting, harvesting, drying, selling) since its introduction in the 1980s (Taniera and Mitchell 1995). In many cases, seaweed farming is a family activity involving women, men and children (Swanepoel et al. 2020). There have been efforts to examine the barriers hindering I-Kiribati women from developing seaweed-based food supply chains using existing edible seaweed resources available on the atolls to improve dietary diversity and nutrient intake (Butcher et al., 2020; Swanepoel et al. 2020). For example, barriers include low literacy, no access to training on seaweed harvesting and processing, a lack of social support, and a lack of support in the public marketing of seafood products to potential customers (Swanepoel et al. 2020). Although information and training were previously provided to men, this is an example of shifts in the division of labour and the need for training to correspond with the increasing number of women farming this seaweed.

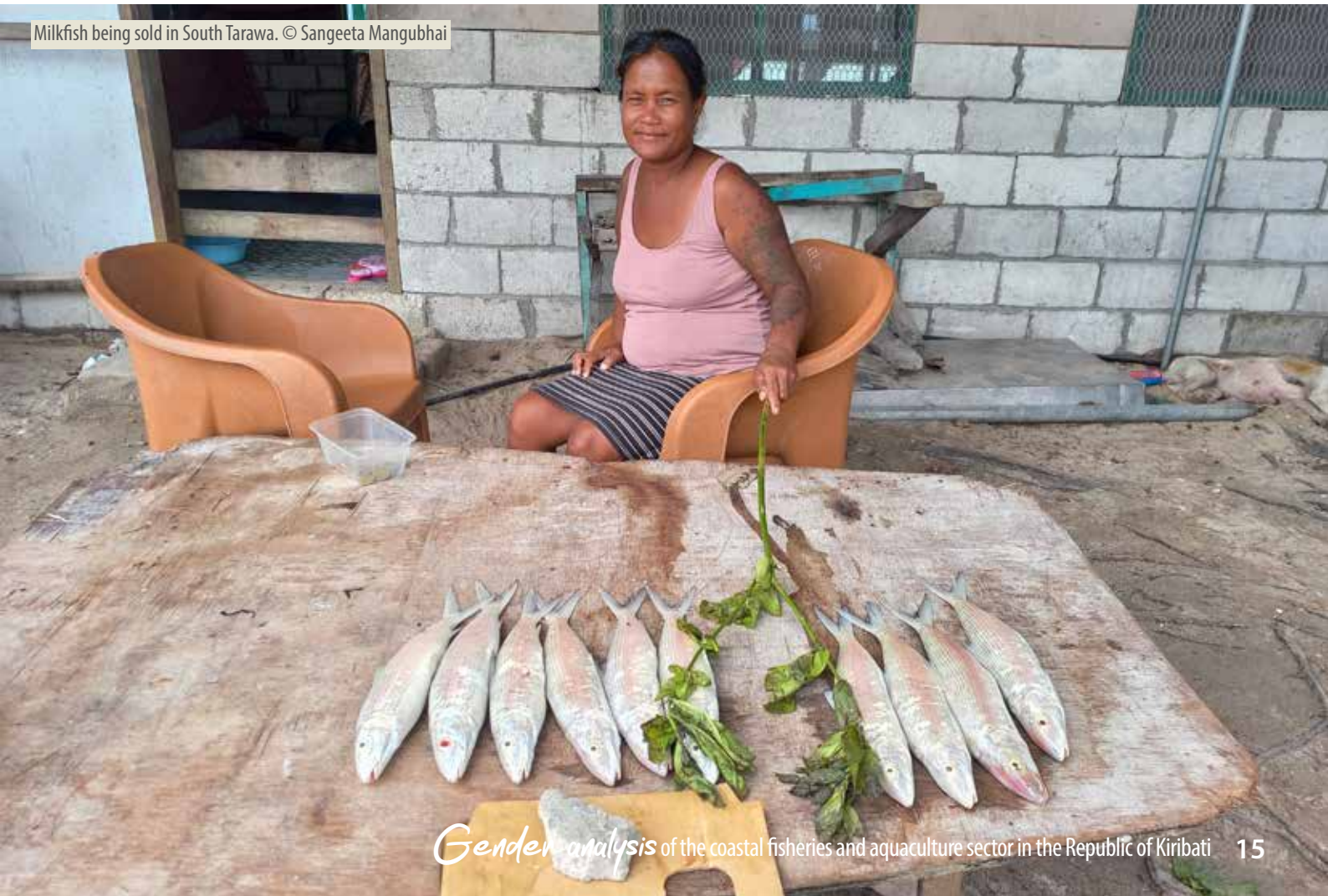
Fish gutting, Maiana. ©Margaret Fox

4. Analysis of the enabling factors to mainstream gender in Kiribati's fisheries sector

4.1 Global and regional commitments to gender equality

Kiribati ratified the 1979 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 2004, and the Convention was translated into the I-Kiribati language to increase public knowledge and awareness. The 2019 CEDAW report noted that the country had made substantial progress in the number of women holding decision-making positions in public service, and gender parity had shifted with better representation of women on decision-making bodies, such as boards of public companies, and the appointment of commissioners to the Public Service Commission (Committee on the Elimination of Discrimination against Women 2019). Women have become successful owners of private companies and businesses. While parliament and island councils continue to be male-dominated, the number of female candidates and women winning seats in national elections is increasing (Ibid.).

Kiribati has committed to several regional agreements centred on gender equality – including the 2017 Pacific Platform for Action on Gender Equality and Women's Human Rights (PPA) and the 2012 Pacific Leaders Gender Equality Declaration (PLGED). The PLGED Trend Assessment Report (2012–2016) recognised the strides and progress Kiribati had made including, for example, the creation of a separate ministry (MWYSSA), the implementation of the Strategic Action Plan to eliminate sexual and gender-based violence (2011–2021), and legislative changes.



Milkfish being sold in South Tarawa. © Sangeeta Mangubhai

Parliament house in Tarawa. © Sangeeta Mangubhai

4.2 Kiribati's commitments and frameworks to advance gender equality

Kiribati's Constitution (published in 1979 with amendments through 2015) safeguards the fundamental rights and freedoms of its citizens, including the right to life and personal liberty, freedom from slavery and any form of inhuman or degrading treatment, ownership of property, and freedom of expression and movement. All citizens are entitled to these rights and freedoms, regardless of "race, place of origin, political opinions, colour, creed or sex". However, while the Constitution of Kiribati contains an anti-discrimination clause, it does not include "sex as a protected ground". What this means is that discrimination against women is not in breach of the Constitution and not prohibited by law; individuals, therefore, do not have the right to seek recourse if they experience such discrimination (SPC 2015). There is no reference to gender in the Constitution and there is some mismatch between constitutional guarantees and cultural norms and practices where there are strong beliefs that the man is the head of the family and decision-maker (Ibid.). Traditionally, family land ownership and inheritance laws are patrilineal and "under the Native Lands Ordinance 1998, estates are distributed such that the eldest son receives a greater share than that of his brothers, and that the shares received by sons exceed the shares received by daughters" (UN Women 2022). Women still face barriers in accessing education and employment due to societal expectations and other cultural factors (Committee on the Elimination of Discrimination against Women 2019).

Two policy documents that are critical to address gender inequalities have recently expired – the National Policy on Gender Equality and Women's Development (2019–2022) and the National Approach to Eliminating Sexual and Gender-based Violence in Kiribati: Policy and Strategic Action Plan (2011–2021). These policies aim to address social and cultural norms and practices by encouraging shared values among family members. MWYSSA has focused its resources and efforts on the five focus areas in the national gender policy: (1) progressively implement a gender mainstreaming approach to achieve gender equality; (2) improve the economic empowerment of women; (3) support stronger, informed families; (4) improve women's political representation and leadership; and (5) eliminate sexual and gender-based violence. These policies represent a commitment from the Government of Kiribati to eliminate discrimination across all sectors by providing equal opportunities and equal access to services and justice so that all of its citizens can reach their potential in their economic, political, cultural and social lives.

There have been significant investments in male advocacy programmes, adolescent girls' initiatives, and efforts to mainstream gender throughout key line ministries (especially the police and Ministry of Health) and to build their capacities to respond to gender-based violence. New curriculum content initiated under the Kiribati Education Improvement Programme in 2011 highlighted the virtue of respectful relationships, peaceful families and gender equality. The Kiribati Development Plan 2016–2019 prioritises "gender equity and empowerment of women", while Kiribati's 20-year vision states that the government will mainstream gender throughout policies, plans, budgets and programmes in favour of equal opportunity for women and men. The 20-year vision specifically recognises the vulnerability of women to domestic violence, economic

shocks and environmental hazards and the disadvantages they face in labour markets. Kiribati's labour laws and regulations[3] prohibit bias and prejudice based on various factors, such as ethnicity, race, colour, religion, political opinion, nationality, social standing, disability, sexual orientation, age, social or economic class, pregnancy, marital status, or family obligations (SPC 2020). While there are no official records of discrimination in employment or salary, there have been instances where cultural obstacles hindered women from taking on a more active role in the national economy (Ibid.).

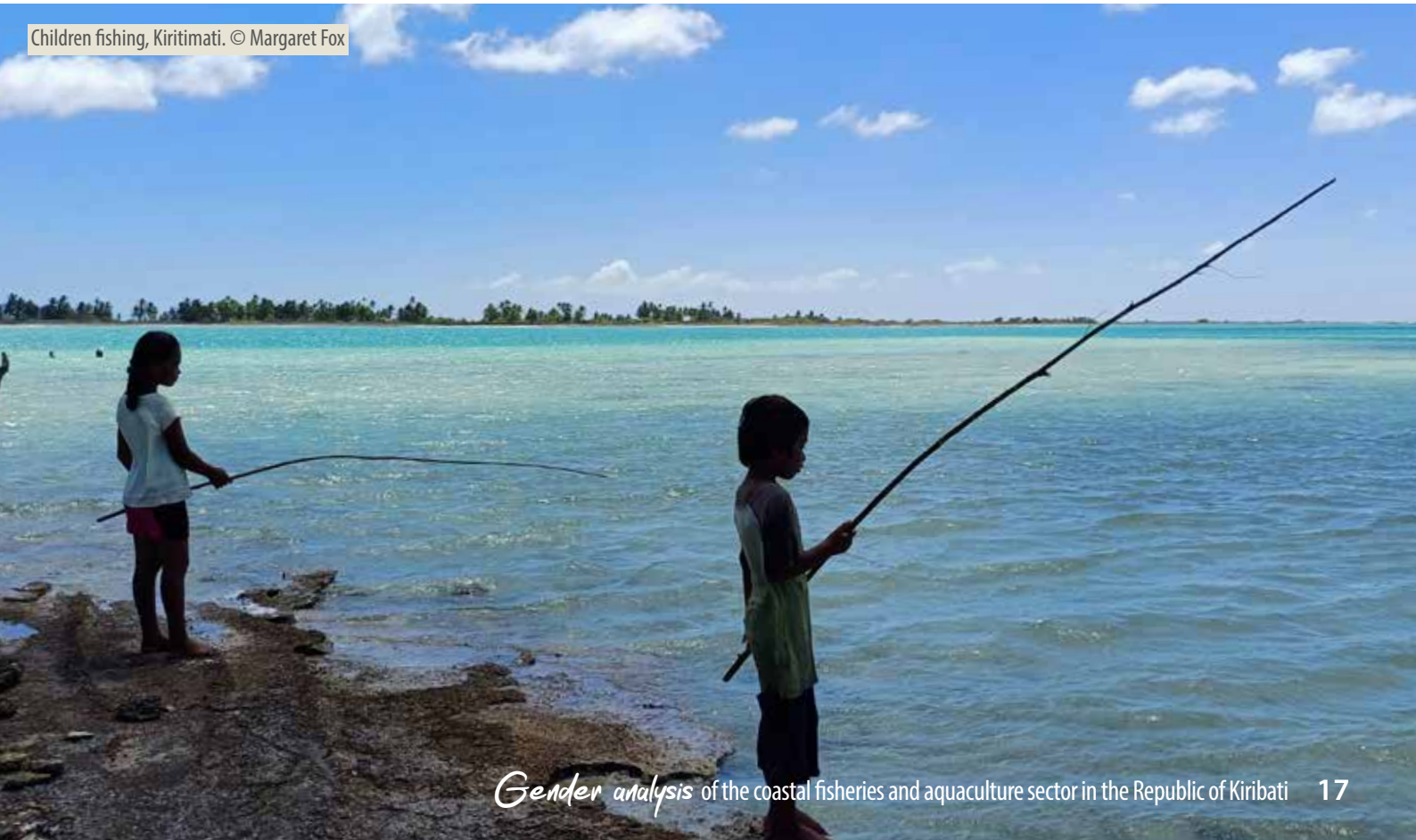
4.3 Mapping marine resources and fisheries policies, strategies and frameworks

The 2010 Fisheries Act is the primary legal instrument for the conservation, management and development of fisheries resources for the people of Kiribati. The Act mandates MFMRD to regulate and control access to fisheries resources and to ensure that regulations achieve the sustainable use of fisheries resources. The Fisheries Act recognises customary fishing rights and stipulates that persons can only "take fish in any sea or lagoon area or on any reef forming part of the ancient customary fishing ground" if they are a member (e.g. *kainga, utu*) of the community to that area or have a licence (Article 18). However, the overarching policies central to the development of coastal fisheries are the Kiribati Vision for 20 years 2016–2036, Kiribati Development Plan (2016–2019) and Kiribati National Fisheries Policy 2013–2025.

Under the 1969 Foreshore and Land Reclamation Ordinance, the foreshore and seabed are owned by the Crown[4], subject to the public rights of navigation and fishing, and passing over the foreshore. This, therefore, allows for the recognition of customary rights to fish in marine areas (Graham and D'Andrea 2021). The 1984 Local Government Act (amended in 2006) stipulates that island councils have direct jurisdiction over the use of natural resources, which includes "land use, agriculture, and all fisheries located within the 'waters adjacent' to it, extending 3 nautical miles seaward" (MFMRD and SPC 2019). This allows Councils to also regulate and control fishing activity in coastal waters, through specific by-laws, which vary by island, provided they do not conflict with provisions under the Fisheries Act and 2007 Environment (Amendment) Act.

SPC conducted and published a comparative analysis of national legislation against gender and human rights requirements, as applicable to coastal fisheries and aquaculture in Kiribati (Graham and D'Andrea 2021). The study specifically looked at five human rights: (a) non-discrimination and gender equality; (b) security of tenure, access to natural resources and food; (c) a healthy and safe environment; (d) participation and democratic governance; and (e) rights to work and rights at work. A brief summary of the findings that are relevant to a gender analysis of fisheries and aquaculture is provided below:

[3] Employment and Industrial Code 2015. Available at: http://www.paclii.org/ki/legis/num_act/eairc2015388.pdf (accessed 20 November 2023).
[4] Crown is land that belongs to the State.


Children fishing, Kiritimati. © Margaret Fox

- Regulation 2(3) of the 2019 Fisheries (Conservation and Management of Coastal Marine Resources) Regulations stipulates "the inclusivity of the community in fisheries management through recognising and enforcing community-based fisheries management plans".
- While I-Kiribati women have access rights under law, their activities may be regulated by decisions made by the elders and other men from their communities or area who can decide when to close or restrict access to certain fishing areas. Gender norms may make it difficult to challenge these decisions.
- Persons without customary rights (which is increasing with migration) must apply for an annual fisheries licence to fish.
- Article 11 of the Native Lands Ordinance contradicts Kiribati's Constitution because it stipulates that "[a] daughter will receive fishponds or fishtraps if there are no sons of the owner, or if the parent or her brother so decides".
- Greater recognition of economic and social rights in the Constitution and inclusion in statutory legislation and subsidiary regulations can also help protect the environment and coastal fishers' livelihoods from the actions of third parties.

The National Coastal Fisheries Roadmap 2019–2036 recognises the importance of engaging women in coastal fisheries development, including gender-inclusive fisheries cooperatives and activities (Gotschall 2021). A key guiding principle of the roadmap is to: "Recognize women, youth, and vulnerable group's contribution to coastal fisheries and promote more inclusive fisheries management platforms and livelihoods." The Roadmap aligns with regional (i.e. SPC's A New Song for coastal fisheries – pathways to change: The Noumea Strategy) and global commitments (i.e. The Food and Agriculture Organization [FAO] of the United Nations Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication).

4.4 Enabling factors and environment for gender mainstreaming in fisheries

A stocktake of the gender mainstreaming capacity of the Government of Kiribati summarises key achievements as well as areas for improvement (SPC 2015). However, the stocktake focuses more broadly on government and does not provide specific recommendations for individual ministries. The key findings of the MFMRD institutional analysis presented in this report enables a deeper understanding of the MFMRD standpoint and how the ministry is investing in gender mainstreaming, and it provides a baseline from which to improve. The results of the institutional analysis of MFMRD are presented under each of the five thematic areas listed in the survey instrument of the SPC stocktake of gender mainstreaming capacity.

4.4.1 Political will and commitment

> The United Nations defines gender mainstreaming as *"the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality"* .
>
> Source: United Nations Economic and Social Council (ECOSOC) 1997

MFMRD staff interviewed demonstrated little to no understanding of the term 'gender mainstreaming'. While none of the MFMRD staff could provide a comprehensive definition, two staff members recognised that gender mainstreaming included "ensuring that gender is taken into account into different aspects of work policies and accounting for gender in our work" (W1) and "integrating gender into [MFMRD's] development programs" (W2). These two staff had some exposure to gender concepts through their involvement in externally funded projects, which had specific gender components and requirements. Other staff members described gender mainstreaming as matters concerning women and men, ensuring the inclusion of women and men (and, for some, youth), or aiming for gender balance within MFMRD which was equated with the achievement of gender equality. There was confusion on the differences between the terms gender, gender equality, and gender mainstreaming.

Given the low level of understanding of gender mainstreaming, a definition was provided in line with the United Nations Economic and Social Council (1997) (as shown in the preceding box), with examples before proceeding with the interviews. Where the term 'gender mainstreaming' remained confusing, especially for younger participants who had limited exposure

to the term, the term 'gender integration' was used for the remainder of the interview. Gender integration was understood to mean the degree to which MFMRD included or integrated gender into the different aspects of their work.

Senior managers shared that gender mainstreaming was rarely discussed at their level, although gender was being intentionally integrated into some projects and programmes, and the Corporate Division was required to follow government policy and standards to ensure non-discriminatory recruitment practices. When asked to rank the MFMRD's commitment to gender mainstreaming or gender integration, responses were mixed: two ranked the commitment low; five ranked it medium; and three ranked it high. Those who provided a medium to high rank explained that the MFMRD employed a high proportion of women, including in senior positions. Others highlighted that the MFMRD was prioritising gender and there were efforts to integrate it into their community work, as well as to meet trade, marketing or export requirements (e.g. set by the European Union). Those who ranked the MFMRD low stated that it was because there was insufficient political commitment or directive to integrate gender into the MFMRD mandate, noting that efforts were more externally driven (e.g. a requirement of donors or external partners). Another highlighted that gender was either missing from policies, not meaningfully included, or not adequately reflected in activities. One staff member with some experience in gender noted:

> *"My observation on how gender is integrated within the Ministry is* [that it is] *still* [in] *the early stages. It's just more on the surface, ensuring women participate but not going deeper into understanding how each gender group will be assisted or will benefit* – [that is] *if an intervention is suitable for different gender groups."* (W1)

The senior managers highlighted that the MFMRD as a whole, including the newly appointed Secretary (a male), recognises the increasing importance of gender in their work and there is currently no significant resistance or push-back from upper management levels. There is strong interest in doing more and being leaders in this space.

Four senior staff were asked about their knowledge and understanding of regional or national political instruments that support gender considerations for fisheries. One MFMRD staff who had worked previously for MWYSSA had knowledge of CEDAW and the United Nations Sustainable Development Goals (SDGs) and the requirements for Kiribati to meet these obligations. The Kiribati National Coastal Fisheries Roadmap 2019–2036 and Kiribati National Fisheries Policy 2013–2025 were the national documents cited. None of the staff interviewed were aware of other factors, systems, projects or programmes supporting gender mainstreaming in their respective ministries.

4.4.2 Organisational culture

There is no expectation or requirement for MFMRD staff to ensure that the differing needs of women and men are considered and encompassed in their work, although some managers recognised its value and encouraged staff to consider including women and youth when visiting communities. Gender is increasingly considered – and sometimes a requirement – in proposals for new projects with external funding agencies.

With the exception of MFMRD staff from two projects – the World Bank-funded Pacific Islands Regional Oceanscape Program (PROP) and the Australian Government-funded University of Wollongong's Pathways project on Community-Based Fisheries Management (CBFM) – the staff interviewed do not take part in regular meetings with other ministries or donors where gender issues or gender equality is discussed as a development consideration. As two staff explained:

Intertidal flat, Kiritimati. © Margaret Fox

> "*I haven't been to any meeting where this issue on gender is discussed, but I have been to meetings that have commended women for their participation* [on projects]." (W3)

> *"I think the* meetings *are generally done* [by those] *on a higher level, as we mainly implement what has been decided by the decision-makers."* (M1)

Organisational culture also includes consideration of MFMRD's relationship with MWYSSA. MFMRD has been working with MWYSSA to support livelihood opportunities for women in the fisheries and aquaculture sector to help diversify their income, and intentionally engages women living with a disability. For example, MFMRD and MWYSSA have provided joint training on adding value to fisheries products (e.g. making ice cream from seaweed). Both MFMRD and MWYSSA staff viewed these collaborative efforts as highly positive and successful, with the aim to collaborate more in the future. However, the Planning Division that oversees projects and their design do not engage with MWYSSA to ensure gender is integrated into new projects. Two staff stated that they felt comfortable enough to approach MWYSSA directly with specific gender questions or needs. It is worth noting that, prior to the COVID-19 pandemic, MWYSSA had a Gender Coordinating Committee comprised of gender focal points from each ministry; however, this committee has not been active for some time due to a lack of funding (i.e. venue, catering). No one interviewed from MFMRD mentioned the MWYSSA-led Gender Coordinating Committee or the appointment of a staff member to participate on that committee.

Human resource management policies, rules and regulations were viewed as supporting gender equality within the MFMRD by preventing discrimination – meaning that staff are hired based on their qualifications and experience. This was evident in the number of women at MFMRD compared to men, with nearly twice as many female staff as male staff, and many of the women holding level 4 and 5 positions (Table 2). Women participants felt the MFMRD actively promotes, supports and encourages women as leaders and decision-makers, and women have more opportunities to receive training to further their knowledge and skills, compared to the past. The skewed gender balance towards women in MFMRD was viewed as exemplifying the ministry's commitment to gender equality and the lack of barriers to women's employment there.

> *"I cannot think of any barriers at the moment ... because we at the Ministry, most of the employees are all women."* (W3)

Although some staff mentioned the lower number of men in the MFMRD, a consistent explanation as to why there were fewer men now compared to the past was not provided. Some men stated that women, when provided the opportunity, excelled in the workplace. Interestingly, one female senior manager suggested that early childhood gender norms, which encouraged girls to listen, learn and be obedient at school, may result in them being better educated and better prepared for the workforce. She contrasted this to boys who are given more freedom to play or 'misbehave'. A male senior leader explained:

> "*There is a change in the population, and there tends to be more females. We can even see* [that of] *those that are going for scholarships, it's more females that are going overseas and they're coming back into high positions. In the past it* [was] *very rare to have female secretaries. Now I think most of the secretaries from the ministries are female.*" (M1)

This is consistent with studies that have shown that, in recent years, more women have gained tertiary and professional qualifications and moved into the public sphere (Miedema et al. 2019). Others suggested that men may prefer physically demanding work and, thus, select other professions. This includes overseas employment under the Australia[5] or New Zealand[6] seasonal work(ers) schemes.

The low numbers of men were considered problematic in some areas of work, such as monitoring, control and surveillance, where women's safety was seen as a concern. However, MFMRD found that more women were applying for monitoring,

[5] See: https://www.dfat.gov.au/geo/pacific/engagement/pacific-labour-mobility
[6] See: https://www.workandincome.govt.nz/products/a-z-benefits/nz-seasonal-work-scheme.html

control and surveillance positions compared to men. Where men did apply for positions at MFMRD, it was noted that they did not perform as well during the interviews or answer the questions as effectively. Despite safety concerns, there was a sense of pride, among some, that Kiribati has the highest proportion of women serving as observers on foreign fishing vessels. Overall, the participants conveyed that MFMRD is an equal opportunity workplace, and non-discriminatory recruitment processes have enabled women to shift to leadership positions on their own merit, and into positions that historically have been held by men.

The collection of sex-disaggregated data is an important part of institutional structures to support gender mainstreaming. At the ministry level, there is not a policy or standardised approach with respect to the collection of sex-disaggregated data. However, MFMRD Human Resources collects data on the sex of MFMRD staff. While some senior-level staff mentioned the need for sex-disaggregated data on fisheries and aquaculture, there is not currently a mechanism in place to allow different divisions to access and use this data for their respective areas of work. Interestingly, no one mentioned the sex-disaggregated data collected, analysed and published through the 2019–2020 HIES and 2020 census, providing a rich baseline on fisheries and aquaculture in Kiribati.

Table 2. Gender statistics for positions held within the Ministry of Fisheries and Marine Resources Development (MFMRD) as of November 2023. Source: MFMRD

Grades	Positions	Women	Men
Level 3	Secretary	0	1
Level 4	Deputy Secretary	1	1
	Directors	4	1
Level 5	Principal Fisheries Officers	3	2
Level 6	Senior Fisheries Officers	5	5
Levels 7–9	Fisheries Officers, Officers	15	6
Total		**28**	**16**

Fishing boats stored on land adjacent to the lagoon. © Sangeeta Mangubhai

4.4.3 Accountability and responsibility mechanisms

MFMRD does not have a dedicated unit or persons (e.g. a gender focal point or experts) responsible for mainstreaming and integrating gender into its divisions, programmes and projects. A gender focal point is defined as someone who monitors the overall integration of gender into the work of the MFMRD, as opposed to someone who has some gender-related responsibilities linked to a specific task. Three women at the MFMRD were highlighted as gender champions – staff dedicated to breaking gender barriers, challenging gender stereotypes and working towards gender equality through their work and communities. Two of these staff members were fisheries staff working on projects with gender components (i.e. PROP, CBFM), while the third person was the Director for the Planning Division. All three were listed by some of their colleagues as gender champions within the MFMRD.

The PROP gender officer has attended some meetings relating to gender on behalf of MFMRD with, for example, SPC, Forum Fisheries Agency and the Australian Department of Foreign Affairs and Trade. She reports the outcomes of the meeting to her manager who shares relevant information with the MFMRD Secretary. Currently, staff terms of reference do not specify any responsibilities or performance measures linked to gender integration or mainstreaming in their day-to-day work. As the MFMRD does not have any gender equality goals, there is no measurement or evaluation of its gender mainstreaming activities.

4.4.4 Technical capacity

The MFMRD currently applies five approaches to integrate gender into its work and workplace: (1) non-discriminatory recruitment practices; (2) inclusion of MFMRD female staff in training opportunities; (3) increased number of women in leadership positions; (4) integration of gender into policies and strategic plans; and (5) implementation of the Kiribati Coastal Fisheries Roadmap gender components.

> "Some of the institutional trainings, that's also a very high priority for women to be engaged or to participate in those trainings." (W3)

The MFMRD staff also described six gender approaches they use when working in local communities, although the use of these approaches varies between units or are specific to particular projects: (1) include women in community workshops, trainings, surveys or consultations; (2) collect disaggregated data on attendance (e.g. workshops, trainings, consultations); (3) encourage and facilitate the inclusion of women in decision-making; (4) help women set up their own committees or organisations, that are recognised and supported by traditional governance systems; (5) support women's specific training requests or needs (especially around fisheries value-adding); and (6) collect sex-disaggregated socioeconomic data.

> "*We* [MFMRD] *are still trying to raise awareness to some communities* [on] *having women to be engaged in some of the decision-making. Like engaging more women in the circle,* [and] *providing a voice for decision-making under the mwaneaba system.*" (Approach 3, W3)

> *"I noticed that maybe having a network of women or an organisation for women can help. It's a very effective approach, because the women themselves feel they are part of the community. They have a safe space to talk about concerns and their future plans, development plans. So that's something new that is now integrated with the current structure of traditional governance. And we don't see any harm because women have been an organisation and association* [like] *faith-based organisations."* (Approach 4, W1)

> *"We have women's associations in the village. Those bodies have a few words to say when it comes to fisheries management. So we target those associations, to encourage them. And some that don't have that kind of association, we create their association. I will say the church does do a lot to help with gender. Every time we go to the village we usually have a women's church association which is led by women. We usually encourage people, especially women, so they can make their own decisions because they are also fishers."* (Approach 4, M3)

> "*We engage with* [the] *community, the women* [in the] *community ... They send the request or the director, they send the request to us to assist the community with their needs. We deliver the training on request and also we deliver the training based on our activities.*" (Approach 5, M2)

The CBFM project has made some strides towards the use of approaches 3 and 4, in ways that are respectful to the culture and traditions in the outer islands (Nikiari et al. 2021). For example, the project has been helping communities develop management plans (Tourism Authority of Kiribati 2024). They work with different groups to obtain their inputs into the management rules and the CBFM team then compiles all suggestions into a single document and presents it back to the community. This allows everyone's ideas to be included and valued, while avoiding comparisons on the origins of the best ideas or how much each group contributed. This approach is effective in communities where the ideas of certain groups, such as women and youth, may be less accepted by the public or considered in conflict with cultural practices and norms. Further, the results are more accepted as the approach respects – and does not undermine – the leadership roles of elders.

Aquaculture is a modern form of farming and, as such, there are fewer traditional rules on what women can and cannot do. The aquaculture unit is encouraging women to engage in some types of aquaculture, such as seaweed and *bêche-de-mer*, as they are undertaken in nearshore environments where women fish and are knowledgeable, while considering safety issues. Nonetheless, gender norms do determine the roles women, in particular, might play in aquaculture.

> *"... some parts of our programs are targeting only men, especially giant clams, especially the cultivation, because it is offshore and it's not safe for the women to be involved. But we now encourage both to come and participate in the* [projects in the] *outer islands. We have programs that we also encourage women to participate with. And that like seaweed or like beche-de-mer we engage them* [women] *because it is extremely safe for them. And it's not really that hard to do."* (W6)

MFMRD has shifted towards collecting sex-disaggregated data as part of its socioeconomic fisheries surveys. The recent socioeconomic fisheries assessments of Nonouti Atoll and South Tarawa, led by the MFMRD in partnership with SPC, are excellent examples of sex-disaggregated data collection, analysis and reporting (MFMRD 2020a, 2020b). However, there are no clear mechanisms for using the data collected to inform fisheries development projects or policy.

With the exception of two MFMRD staff, most MFMRD staff had not received gender training internally from MWYSSA or any other organisation. A staff member working for PROP had access to online training (with certificates) provided by the World Bank to those interested in learning about women's economic empowerment and how to mainstream gender into development. A second staff member learned about gender and gender mainstreaming through her own private studies. Although MWYSSA provides training on gender equality and gender mainstreaming, male-dominated sectors, such as sustainable energy and infrastructure, are being prioritised for this training. This suggests that the fisheries and aquaculture sector is either not considered a male-dominated sector or is not prioritised for this training.

Participants were asked to describe the three greatest barriers or constraints to integrating gender into their work and the actions needed to help overcome them. The seven main barriers described by participants are provided in Table 3 and summarised below, and actions and opportunities have been included under the recommendations (section 6). Culture was the most frequently described barrier faced by the MFMRD staff interviewed.

1. **Cultural norms, relations and traditions** shape and influence I-Kiribati society, and influence roles, responsibilities and decision-making in fisheries and aquaculture. All participants cited cultural norms and traditions as a barrier to gender mainstreaming efforts, particularly in the outer islands. However, participants noted that, even in the outer islands, cultural norms and traditions are changing in some communities. For example, in some of the outer islands, women are working outside the home while men are staying home to assume domestic responsibilities.
2. **Unequal opportunities in MFMRD** were noted due to an assumption that women are not capable or are 'scared' of certain jobs or tasks. For example, there is a perception that women lack certain technical skills, such as those needed to repair solar equipment, manage fish centres, and maintain and repair machinery, such as ice machines, that are required in remote locations. However, it was noted that there are two female MFMRD officers based in the outer islands who are skilled at fixing ice machines. In contrast, in other areas (e.g. research), women were afforded the same opportunities as men to learn to dive and conduct fieldwork. Both female and male staff expressed a gender bias that jobs with strong physical requirements are best suited for men.
3. **Lack of capacity** and access to training to build capacity for gender integration and gender mainstreaming were noted across all units and divisions. This includes a lack of understanding of basic concepts of gender equity, disability and social inclusion.
4. **Lack of gender expertise** within the MFMRD was highlighted, with no gender focal point and no one appointed specifically to support gender mainstreaming or integration across the MFMRD. While three gender champions were listed, these staff had their own projects or divisions and had received little to no training.
5. **Lack of funding for gender mainstreaming** was noted by senior managers. There is currently no budget allocation specifically targeted to enhance gender equality and empower women (see Section 4.1.5).

6. **Gender was viewed as a burden** rather than an essential best practice. For some managers, it was hard to invest time in thinking and learning about gender amidst already busy schedules, work plans and commitments.
7. **Lack of support for women in leadership positions** was cited by some of those interviewed.

Table 3. Barriers to integrating gender into fisheries and aquaculture.

Barrier	Quotes
Gender and cultural norms and traditions	"I think it's common in some of the Pacific Island countries in which women are not allowed to have a say in the decisions, like in the *mwaneaba* system. Traditionally there's a barrier … particularly in some of the islands that are still very conservative cultures." (W3) " … in relation to gender and our culture we see females, we always respect the males. So I think that's one challenge [when] doing community consultation … So [we] separate groups into focus groups, especially when in the *mwaneaba*." (W4) "In the village we have a lot of issues. When we encourage women on board that's where we have an issue. Men in the outer islands [are] very strong. People there, they don't like that. It is like we disrespect them when we do this kind of thing, like involving women, especially [in] decision-making they will say Oh, you [were] not taught well in childhood. You [are] supposed to know these cultural things. I have encountered those kinds of things a lot. They just see you [as] stripping their culture." (M3) "We asked them if they have volunteers to help us plant corals. We give the Council the opportunity to choose which people will be perfect. But most of the time, they will choose men. Boys, maybe young boys, teenagers. We haven't had any women participating … we had one [project] in Abaiang where the women asked if they [could] be involved in coral planting. Most of the time they asked their men [husbands, fathers], because it is easier for them to help [the women] out – and it's safer." (W5) "Now there's also a shift in our culture that they [men] are respecting women, women in the community, especially females involved in the consultations at the local *mwaneaba* and at the local houses. Before we hardly see females engaging or giving talks at the local *mwaneaba*." (W4)
Unequal work opportunities	"... in the fishery sector, more in the fisheries, technicians are occupied more by male. It's more focused on male because it's hard work working in outer islands, fish centres and doing maintenance of the solar power as well as the machinery. It's a male oriented work. While female you hardly see the female working in that focus area." (W4)
Lack of capacity	"For me it is gender awareness. If they don't have that understanding, they won't know the right way to approach gender. So I guess those in authoritative positions should receive training. It should be [a] compulsory topic that they need to learn about. It is part of management as well, as they will make important decisions around gender." (W1) "The majority thinks that gender is only about improving [and] uplifting the recognition and the role and the dominance of women, not about men. The majority consider that gender equality is about women only. It's all about women's development, women empowerment, it's about domestic violence, their safety." (W2)
Lack of expertise on gender	"Actually, we don't have [gender] focal points. But I have brought this matter up ... to have someone to look after gender. But at the ministry, we don't have anyone to know [anyone] to go to." (W2)
Lack of funding for gender mainstreaming	"If we don't have the budget for those kinds of programs, I might have to go for those [that are] involved in gender activities and just integrate those programs [into MFMRD]. Here at the moment. I cannot think of having any additional resources but I'll just focus on those [projects] who have been engaging the program on gender and then implementing these programs." (W3)
Gender as a burden	"I think it's best that we keep encouraging the Ministry to consider prioritising the gender mainstreaming into their programs because sometimes we are being overwhelmed with other works, and we tend to forget we were going to work on those gender programs." (W3)
Lack of support for women in leadership	"Yes, we now have a program on leadership. But I haven't seen any women participating." (W4)

4.4.5 Availability of adequate resources to finance gender mainstreaming

Most senior managers interviewed felt that the government and development partners were not financing gender equality adequately in their sector. There was no budget allocation targeted at enhancing gender equality and women's empowerment. The general (non-gender) budget of the MFMRD did not include a specific allocation for advancing gender equality and empowering women. However, many of the participants cited notable shifts in the way projects were implemented, and more effort towards the inclusion of women in fisheries and aquaculture support to local communities. This is reflected in the approaches increasingly being used, especially when working in the outer islands.

While several senior staff felt they needed a gender focal point and specific budget to help mainstream gender, it was challenging to secure new positions or funding for this and even more challenging to set up a division specifically tasked with this responsibility. In the interim, it was suggested that projects with some focus on gender (e.g. the PROP) may be best placed to lead gender mainstreaming because it collaborates with multiple divisions within the MFMRD to deliver its work. It was also suggested to consider future opportunities, in partnership with MWYSSA, to secure funding to support women in the fisheries and aquaculture sector.

Banraeaba Village where gender surveys were tested. © Sangeeta Mangubhai

5. Case studies

5.1 Tarawa Atoll

Only 22 of the islands in Kiribati are inhabited, with 109,630 (92.5%) of people residing in the Gilbert Islands, and 8850 (7.5%) living in the Line and Phoenix Islands (Kiribati Ministry of Finance and Economic Development 2021). Just over half the population of Kiribati lives in South Tarawa, with the remainder (47%) living in rural areas. Tarawa Atoll in the northern Gilbert Islands is 35 kilometres long with a land area of 31 square-kilometres and over 30 islets. There are 31 villages on Tarawa Atoll with causeways connecting the islets in South Tarawa, facilitating the commute between communities and employment opportunities in the main urban centres of Bairiki and Betio. High population and inadequate sanitation have polluted the coastal environment in South Tarawa, impacting fish (Pacific Private Sector Development Initiative [PSDI] 2021). South Tarawa is a popular place to sell fish due to its sizable population, access to ice and cold-store facilities, and cash-oriented economy (Kiribati National Statistics Office 2020). Milkfish is largely farmed on Tarawa, although most outer island councils have milkfish farms (Kiribati National Statistics Office 2020).

The national census recorded 31% of households in South Tarawa engaged in fishing activities (Kiribati National Statistics Office 2020). In 2020, 1024 households on South Tarawa were surveyed by MFMRD in partnership with SPC on: (a) household demographics and the consumption of finfish and invertebrates; (b) finfish fisheries; and (c) invertebrates fisheries (MFMRD 2020b). According to the study, 16% of the adult population were involved in fishing activities largely for consumption. However, fisheries represented an important source of income for 4% of households surveyed. Male fishers targeted fish for consumption (76.0%) or sale (23.0%), while female fishers targeted invertebrates (25.5%), fish (0.8%) or both (1.7%) (MFMRD 2020b). Invertebrates are largely harvested for consumption. In South Tarawa, fresh seafood consumption averages around 4.0 days per week, and canned fish 2.5 days per week, with the per capita consumption estimated at 31.7 kilogrammes per year for finfish and 5.0 kilogrammes per year for invertebrates (Ibid.).

5.1.1 Fishing for a living and gender roles

The gender roles of women and men residing in villages in South Tarawa (Fig. 2a) differed from those in North Tarawa (Fig. 2b). Despite living in the main business hub of the country, women in South Tarawa who participated in the surveys did not participate in livelihood activities and spent 6–7 hours per day on domestic work. This likely reflects the timing of the surveys – on a weekday when, for example, those in formal work would not have been present in the village. The amount of time spent on domestic duties did not significantly change throughout the lives of women; however, elder women invested more time in leisure activities than any other group (e.g. watching movies, engaging in social media, and playing bingo). Men based in South Tarawa who participated in the surveys spent 3–8 hours per day on livelihood activities (e.g. fishing) and 3–5 hours on domestic work. Men in South Tarawa notably spent more time drinking kava, especially the youth who reported spending 1–7 hours per day drinking kava (Fig. 2a).

In contrast, in North Tarawa, women of all age groups who participated in the FGDs invested more time in livelihood activities, with middle-aged women investing at least the equivalent hours as men (Fig. 2b). The amount of time women spent on domestic work (3.9 hours per day) versus men (3.5 hours per day) also did not differ substantially. Men in North Tarawa notably spent more time consuming kava, especially middle-aged men who spent 2–7 hours per day (averaging 4.3 hours per day) (Fig. 2b).

Each group was asked to identify the top 3–5 species they targeted for fisheries and for aquaculture, and then answer a series of questions on their fishing and farming practices on Tarawa Atoll (Tables 4–5). There were strong gender differences between women and men in terms of the species targeted, gear types used, and habitats targeted, consistent with previous research by MFMRD (2020b). Female fishers (from both South and North Tarawa) largely targeted invertebrate species using their hands or spoons, with only a small number using gill net, scoop nets, or fishing rods. Women travelled to mudflats, sandflats and seagrass areas by foot. Only a few targeted coral reefs. The time spent harvesting and the frequency of harvesting varied between fisheries species. Women from South Tarawa almost exclusively fished for food, while those in North Tarawa fished primarily for food and income.

In contrast, male fishers (from South and North Tarawa) targeted a range of fish species and only a small number of invertebrates (e.g. *te nouo, te bun, te ibo*). The men used a wider range of fishing gear, including gill nets, spearguns, pole fishing, fishing line and hook, and scoop nets. Male fishers largely travelled by foot, but some used motorbikes, swam or used canoe or boats to access a wider diversity of shallow and deeper water habitats, including pelagic or oceanic waters. The range in hours that men fished was greater, ranging from 0.5 (e.g. for *te nouo*) to 8 hours (e.g. for tuna) compared to women, ranging from 0.5 to 4 hours. Male fishers from South Tarawa also fished largely for food, although fishing for income was equally important to some.

Three of the four communities surveyed did not engage in aquaculture activities.[7] It was only in Kainaba Village (North Tarawa) that one family had a *te baneawa* (milkfish) pond, primarily for food. One community talked about previously farming seaweed, but this activity had ceased.

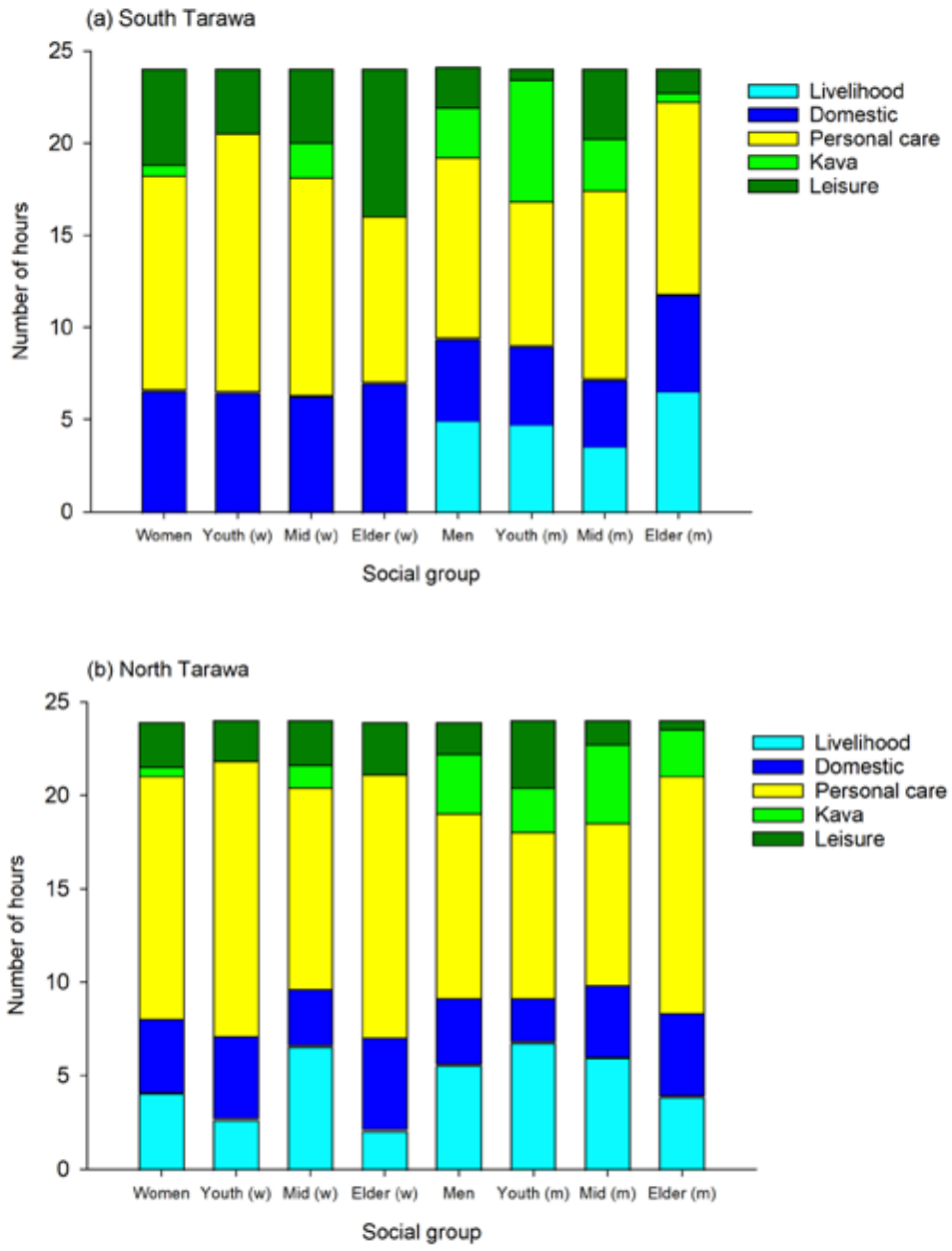


Figure 2. Comparison of time diaries across social groups on (a) South Tarawa and (b) North Tarawa. See methods for full description of the six activity categories. The number of participants in each group is shown in Table 1. "Mid" refers to middle-aged persons, "w" refers to women and "m" to men.

[7] MFMRD is investing in aquaculture in South Tarawa, including cage farming in Ambo and seaweed farming. However, these activities were not in the communities surveyed.

Fisheries activities and the roles that women and men play have changed over time, with different reasons provided. Changes in gender roles are not unique to Kiribati and have been seen in other parts of the Pacific (Thomas et al. 2021). Women from South Tarawa explained that most women had jobs and, thus, engage less in fishing and, if they do fish, they use modern fishing gear rather than traditional gear. However, other women from Tarawa indicated the opposite and felt women from South Tarawa were more involved in fishing or gleaning compared to the past. Some felt there were no changes and that the roles of women and men with regard to fishing have not changed over time; others shared that, while fishing historically was the role of men, this is not the case anymore with women (and children) more active and responsible for this activity. Other changes noted were the decline in some species (e.g. *te nouo*), which has reduced the fishing activities of women and made families more dependent on tin fish; this was not the case in the past when people could rely more on fresh fish and invertebrates.

Gill net fishing. © Hanich

Table 4. Main fisheries species and harvesting practices of young women and men (18–29 years), middle-aged women and men (>30 years), elder men (*unimwane*) and elder women (*unaine*) living in Nanikaai and Tebikenikua villages in South Tarawa, Kiribati. Under "Purpose(s)", the main reason for harvesting a species or group of species is shown in bold. '*' denotes traditional fishing gear (the definitions for which are provided in the Glossary of I-Kiribati terms). Fisheries species names are listed in Annex 1. '-' indicates that no information was provided.

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Young women	prawns	scoop net	coral reefs, sandflats	foot	1	2 times/week	**food**
	te iaia (egg mass of seahares)	hand	coral reefs, sandflats	foot	0.5	2–6 times/week	**food**
	te bun (ark shell)	hand, spoon	mudflats, seagrass	foot	0.5–3	6 times/week 2 times/month	**food**
	te koumwara (Pacific asaphis)	hand, spoon	mudflats	foot	1	2 times/month 6 times/week	**food**
	te nouo (strawberry conch)	hand, mask and snorkel	seagrass, mudflats	foot	0.1–2	2 times/week	**food**
Middle-aged women	*te iaia* (egg mass of seahares)	hand	sandflats	foot	0.5–0.75	2–6 times/week	**food**
	te bun (ark shell)	hand	seagrass	foot	2–3	2–3 times/week	**food**
	te buuroo (cowrie shells)	hand	seagrass	foot	3–4	1 time/week	**income** (local handicrafts)
	te bwere/katati (penshell)	hand	seagrass, mudflats	foot	1–2	2–3 times/week	**food**
	te ninimai (silver biddy)	gill net	lagoon	foot	2–3	2 times/week	**food**
	te nouo (strawberry conch)	mask and snorkel	seagrass, mudflats	foot	1–3	2–3 times/week	**food**
	te ntabwena (mudcrabs)	knife, scoop net	mudflat	foot	2	3 times/week	**food**
	te waro (mantis shrimp)	hand, coconut rib	seagrass, mudflats	foot	2	2 times/week	**food,** income (for church)
Elder women	*te koikoi* (clam)	spoon	sandflat (ocean side)	foot	0.5	During king tides	**food**
	te nouo (strawberry conch)	hand	lagoon	foot	0.5–3	1–2 times/week	**food**
	te koumwara (Pacific asaphis)	spoon	mudflats	foot	0.5	1 time/week	**food**
	te ika n aonora (reef fish)	gill net, fishing rod	lagoon	foot	3	1 time/week	**food**
	te bun (ark shell)	hand	lagoon	foot	3	1 time/week	**food**

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Young men	*te kataawa* (striped surgeonfish)	speargun	outer reef	foot	1–2	3 times/week	**food**
	te ikanibong (Humpback red snapper)	speargun	rocky areas	foot, swimming	2	–	**food, income**
	te ninimai (silver biddy)	gill net	shallow water	foot, swimming	2–3	2–3 times/week	**food**
	te maebo (bar-tailed goatfish)	speargun	coral reefs	foot, swimming	2–3	2–3 times/week	**food**
	te ikari (bonefish)	gill net	lagoon, deepwater	foot, swimming	2–3	2–3 times/week	food, **income**
Middle-aged men	*te nouo* (strawberry conch)	mask and snorkel	seagrass	foot	0.5–2	2–3 times/week	**food,** income, church, fundraising
	te maebo (bar-tailed goatfish)	gill net	lagoon	foot	1–2	2–3 times/week	**food**
	te ikari (bonefish)	gill net	lagoon	foot	1–2	1–2 times/week	**food, church, fundraising**
	te amori (silver biddy)	gill net	coral reefs	foot	1–2	2–3 times/week	**food**
	ikan n sonora (coral reef fish)	spear	coral reefs	foot	1–2	2–3 times/week	**food**
Elder men	*te nouo* (strawberry conch)	hand, mask and snorkel	seagrass	foot, canoe	0.5	3 times/week	**food, income,** medicine
	te ninimai (silver biddy)	gill net, pole fishing	mudflats, lagoon, ocean side	foot, swimming	1–2	1–2 times/week	**food, income,** medicine
	te okaoka (thumbprint emperor)	gill net, pole and line, fishing line and hook, scoop net	lagoon, ocean side	foot	2	1–2 times/week	**food, income**

Table 5. Main fisheries species and harvesting practices of young women and men (18–29 years), middle-aged women and men (>30 years), elder men (*unimwane*) and elder women (*unaine*) living in Kainaba and Abaokoro villages in North Tarawa, Kiribati. Under "Purpose", the main reason for harvesting a species or group of species is shown in bold. '*' denotes traditional fishing gear (the definitions for which are provided in the Glossary of I-Kiribati terms). Fisheries species names are listed in Annex 1. '-' indicates that no information was provided.

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Young women	*te ibo* (peanut worm)	sea worm remover	mudflats	foot	1–2	3–4 times/week	**food, income**
	te koumwara (Pacific asaphis)	knife, spoon	mangroves, mudflats	foot	1.5	1 time/week	**food, income**
	te koikoi (clam)	knife, spoon	coastal reefs, sandflats	foot	2	1 time/month	**food**
	te nouo (strawberry conch)	hand, mask and snorkel	channel, lagoon, mudflats	foot	1–2	5 times/week 1 time/month	**food, income**
	te mwanai (crabs)	mask and snorkel	mangroves, oceanside	foot	0.5	2 times/month	**food, income**
	te bwaua (mullet), *te ninimai* (silver biddy)	gill net	lagoon	foot	1.5	3 times/month	**food**
	te iaia (egg mass of seahares)	hand	lagoon	foot	0.5	1–2 times/week	**food**
Middle-aged women	*te ibo* (peanut worm)	thin pipe, stick	mudflats	foot	3	7 times/week	**food, income**
	te koikoi (clam)	knife, spoon	mudflats, lagoon	foot	0.5–3	2–7 times/week	**food, income**
	te nouo (strawberry conch)	hand	mudflats, seagrass	foot	1	2–7 times/week	**food, income**
	te nikatona (Quidnip-agus palatam)	hand, spoon	seagrass	foot	0.5–1	2–3 times/week	**food**
	te ika n aonora (lagoon fish)	gill net	lagoon	foot	3–4	6 times/week	**food, income**
	te koumwara (Pacific asaphis)	hand	near dredging area	foot	1	2 times/week	**Food, income**
Elder women	*te koikoi* (clam)	spoon, knife	lagoon	foot	0.75	2–3 times/week	**food**
	te katura (clam)	spoon	lagoon	foot	1–2	2–3 times/week	**food**
	te nouo (strawberry conch)	hand	seagrass	foot	0.5–1	1–2 times/week	**food, income**
Young men	*te nnewe* (lobster)	handspear, freediving	backreef, ocean side	foot	1–2	3 times/week	**income**
	te ikanibong (Humpback red snapper)	scoop net	reef flats (on ocean side)	foot	2–3	Daily (during last moon quarter)	**food,** income
	te tewe (goatfish)	scoop net	reef flats (on ocean side)	foot	2–3	Daily (during last moon quarter)	**food,** income
	te ninimai (silver biddy)	scoop net	reef flats (on ocean side)	foot	2–3	Daily (during last moon quarter)	**food,** income
	bai tabaa (juvenile squaretail mullet), *te tewe* (goatfish)	gill net	lagoon	foot	2–3	3 times/week	food, **income**
	te ibo (peanut worm)	sticks	mudflats (lagoon side)	foot	1–2	1–3 times/week	**income**
	te nouo (strawberry conch)	hand	lagoon, mudflats	foot	1–2	3 times/week	food, **income**
	ikan te nama (lagoon fish)	gill net	lagoon	foot	1–3	3–4 times/week	**food**
	te ika n aonora (reef fish)	scoop net, machete, torch, pole and line, hook, knife	oceanside	foot	2–3	new moon everyday	**food**

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Middle-aged men	*te nouo* (strawberry conch)	hand	seagrass	foot	2–3	3 times/week	**food, income**
	te ibo (peanut worm)	hand, sticks	lagoon (sand or mudflats)	foot	3–4	2 times/week	food, **income**
	te waro (mantis shrimp)	hand, pole and line	lagoon (sandflats)	foot	2	2 times/week	food, **income**
	te kiika (octopus)	*kai ni kareke**	ocean side, lagoon side, coral reef flats	foot	>1	6 times/week	**food**
	te ika n aonora (lagoon fish)	gill net	lagoon	foot	2–3	3–7 times/week	**food,** income
	te tewe (goatfish)	gill net	shallow water	foot	3–4	3 times/week	**food, income**
	te okaoka (thumb-print emperor)	fishing line and hook	lagoon	foot	5	3 times/week	**food**
	te ninimai (silver biddy)	gill net	shallow water	foot	2–3	3 times/week	**food**
	te ikan te rakai (reef fish)	handspear	lagoon	foot	1	5 times/week	**food**
	te rereba (trevallies)	gill net	shallow water	foot	3–4	3 times/week	**food, income**
	te nimnai (rabbitfish)	gill net	ocean side	foot	1–2	5 times/week	**food**
	te bwaweina (black-spot snapper)	pole and line	ocean side	foot	>1	2 times/week	**food**
	tuna	fishing line	oceanic waters	boat	8	3–4 times/week	**food, income**
Elder men	*te ika n aonora* (reef fish)	gill net, hook and line, lead sinker and bait	lagoon, oceanside	foot boat	2–4 (foot) 3–4 (boat)	3 times/week 3–4 times/week	**food,** income, church fundrais-ing
	ikan te nama (lagoon fish), *ika n aonora* (reef fish)	gill net	oceanside, lagoon, coral reef flats	foot, motorbike	3–4	everyday	**food,** income
	te tewe (goatfish)	gill net	lagoon, oceanside	foot	2–3	3 times/week	**food,** church fundrais-ing
	te ibo (peanut worm)	sticks	sandflats	foot	3–4	5 times/week	food, **income**
	te nouo (ark shell)	hand	lagoon	foot, motorbike	1–2	–	**food**

Remote communities in northern Tarawa located on the lagoon side of the atoll. © Sangeeta Mangubhai

Women in North Tarawa highlighted that people are receiving funds from the Government's Support Fund for the Unemployed[8] and, thus, are fishing less and wasting their money on kava. Multiple groups raised concerns about the excessive drinking of kava among men. Some women shared that men do not want to fish because they interpret gender equality to mean that women can perform men's roles (including fishing). Women also stated that they sometimes drink more kava than men because they have a right to enjoy themselves and this causes conflict within their families. Reduced fishing was resulting in higher dependence on imported goods (e.g. tin fish). Others highlighted that women are more involved in gleaning than in the past (e.g. for *te nouo*, strawberry conch) and know how to handle a gill net. Other changes the men noted was the preferred use of modern boats over local boats (*te waa*) for fishing.

Men from South Tarawa similarly had mixed responses on the changing roles of women and men. Some said that women have been involved more in fishing, such as *te nouo* (strawberry conch) and *te bun* (ark shell) fisheries, while others felt there were no changes in terms of women's roles in fishing and selling at markets. In contrast, men from North Tarawa highlighted increased engagement in the selling of seafood products to meet high demand from South Tarawa and to share the workload of women. For example, in the past, local produce from Kainaba Village was mainly breadfruit in coconut cream and *te ibo* (peanut worm); however, villagers now sell a variety of seafood products, such as *te waro* (mantis shrimp), *te nouo* (strawberry conch) and other clams. Men highlighted that both women and men from North Tarawa had shifted their fishing methods or practices; for example, women are more involved in gill netting and pole and line fishing in shallow waters compared to the past, while men glean instead of fishing in deeper waters. All groups of men highlighted that they generally are spending more time drinking kava at night and waking up at noon the next morning, leaving less time for fishing and requiring women to take on this burden. Elder men lamented that young adults are sleeping more while elders prepare their own breakfasts.

Women and men of all ages shared different examples of cultural beliefs and superstitions regarding fishing (Table 6) and traditional knowledge and fishing practices. Cultural beliefs and superstitions were highly gendered and largely focused on how specific actions could improve or reduce the catch of male fishers and none related to the impacts on female fishers. Beliefs and superstitions around women focused more on negative taboos relating to menstruation and are common in both urban and rural areas in Kiribati (Maulingin-Gumbaketi et al. 2022). Similar findings were recorded on Maiana, Nonouti and Kiritimati atolls.

Women and men had acquired traditional knowledge and fisheries practice by watching, listening and fishing with their parents or elders in the family. To preserve traditional practices, both women and men stressed the importance of taking their children out fishing to learn traditional knowledge and skills that would be valuable to them as adults to support their future families and themselves.

Shifts in traditional fishing practice occurred in both South and North Tarawa, despite the latter being considered the more traditional of the two. There were many examples of traditional fishing practices that were still used (e.g. *te maa, te kibee*) as well as many that had been lost or were no longer practised (e.g. *te uaakeang*). The use of traditional traps to catch eels (*te uu*) occurred in some communities but had been lost from others. One of the women's groups provided examples of the traditional ecological knowledge held by women; for example, they know that the first and last quarter of the moon is a good time for *te bwaitari* (jellyfish). Other women explained that they used a traditional practice involving octopus tentacles as bait to catch white eels. Men held their own traditional ecological knowledge; for example, they knew the moon phases that correlated with the spawning seasons of silver biddies, goatfish and bonefish. The shift away from some traditional fishing practices can likely be attributed to the increasing availability of, and preference for, modern fishing gear (Tables 4–5).

[8] This is a social protection measure, established in 2021 under MWYSSA, to support unemployed individuals aged 18–59 years facing poverty or hardship in Kiribati.


Eels and fish drying in the sun, Nonouti. © Margaret Fox

Table 6. Cultural beliefs or superstitions regarding fishing, held by different social groups in Tarawa Atoll.

Group	Beliefs or superstitions
Young, middle-aged and elder women, middle-aged and elder men	Menstruating girls and women should not go fishing as it brings bad luck (curses) to the fishing ground and causes poor catches for other fishers. This may include women not being allowed to cook food for male fishers or touch their fishing gear.
Young, middle-aged and elder women, young and elder men	*Mwiin te tia akawa* or *kabwara* holds that the place where the male fishers sleep cannot be disturbed and kids cannot play there.
Young women	*Te kabwangaraa* or *tewairaa* is a traditional ritual practised to help a male fisher catch more fish than others. One should not predict or discuss what a fisher might catch before s/he returns from fishing, as this will bring the fisher bad luck. *Te binekua* – the calling of whales – is a well-known traditional fishing belief used to attract whales, which holds that some fishers have the "power" to bring whales ashore.
Middle-aged women	There is a ritual that causes 10 or more yellowfin tuna to float on the sea surface waiting to be captured. However, the rule is that everyone should feed on those fish for the whole night and there should be no leftovers before sunrise or they will be cursed. *Te kauee* involves throwing old garlands on the fishing grounds and leaving them there for 10 minutes before they begin fishing. The belief is that this will attract big fish, such as sharks. A wife should stand by the beach with *te kamanainai* (a local, coconut-derived dish) to feed her husband before he hunts for eels, so that he will catch a more substantial number of large eels. Male fishers are not allowed to use their fingers to point out the location of their fishing ground as this may cause fish to escape.
Young men, middle-aged women	Male fishers are not allowed to sleep with their wives the night before they leave to fish, as this may bring bad luck.
Middle-aged men	*Matawere iaon te kaari* is the practice of male fishers using ritualistic chants prior to fishing for bonefish to ensure bonefish only eat their bait and not that of other (male) fishers.
Elder men	*Tabutabu* requires that certain families are not to fish or eat specific species (e.g. sharks, stingrays, turtles, pufferfish). In the past, some elders in the community did not allow children or others to take flat stones from the sea because they believed it would chase away fish and arkshells *(te bun)*.

5.1.2 Access, control and decision-making over resources

The majority of community members participating in the FGDs stated that marine resources were open access and that, in general, no specific fishing or aquaculture activities are disallowed for certain groups. However, there were restrictions that applied to all groups. Abaokoro (with the support of the Island Council) does not allow other groups to fish in the marine area of the village due to concerns about the unsustainable fishing practices of other communities; there are village wardens to ensure compliance. There are marine protected areas (MPAs) closed to fishing near Nanikaai Village and in North Tarawa (e.g. Buariki waters). In January 2024, the Friends in Nanikaai launched its *Nei Tengarengare* community-based fisheries management plan for the Nanikaai MPA[9] (MFMRD 2024; Tourism Authority of Kiribati 2024). Bikenamori Islet (known locally as the 'island of the large silver biddies') south of Tabonibara in South Tarawa was closed to fishing and has been supported by MFMRD. Youth from North Tarawa mentioned that a neighbouring village was protecting silver biddy during its spawning season by banning harvesting. Family-owned milkfish ponds (e.g. in Abaokoro Village) required the permission of the family that owns them to remove fish, and there is an artificial fish pond owned by the Island Council that is completely closed to fishing but is no longer operational. Finally, there was recognition that government rules to manage certain resources must be followed.

Communities in South and North Tarawa do not currently use traditional practices to manage their resources, including their fisheries. Middle-aged men from North Tarawa even insisted that traditional practices for managing fisheries did not exist in the past as resources were plentiful then and, thus, did not require management. However, some groups cited cultural practices – closely related to superstitions and beliefs (e.g. avoiding taking rocks from the sea to prevent fisheries resources [e.g. fish, *te bun*] from escaping) – that were used to manage resources in the past.

[9] Kiribati operates a CBFM approach, Nei Tengarengare. The launch of the Nanikaai CBFM Plan was supported by MFMRD, MELAD and the Tourism Authority of Kiribati, SPC and the Australian National Centre for Ocean Resources and Security (ANCORS).

Participants were asked to reflect on how current management initiatives – such as locally-managed marine areas (LMMAs), MPAs, and fisheries restrictions – impacted, rather than benefited, women and men in the community. In South Tarawa, the major of groups were positive about management initiatives; only elder women explained they had to take a longer route when using a boat to avoid the MPA and reach other fishing grounds. Similarly, in North Tarawa, most groups felt there was no negative impact; only middle-aged women noted that one of the closures of Tebikenikua made it hard for them to catch fish, and young men indicated that they could not catch silver biddy during the spawning aggregation. However, all of these groups, as well as the other groups, felt there were predominantly benefits. Those in South Tarawa said they can easily reach their gleaning habitat and benefit from a large catch in a short period of time (as prior to the creation of the MPA, the *te nouo* [strawberry conch] had been lost in the area), with a notable increase in the amount of large reef/lagoon fish in the area and less time required to fish. Elder women from Nanikaai Village also highlighted that *te bun* (ark shell) and *te nouo* (strawberry conch) had recovered and this eased the financial burden on families, supported healthier food choices, and reduced the fishing effort required. Those in North Tarawa said they noticed significantly more and bigger fish each time they went to the sea and that the recovery of local silver biddy (due to closures in spawning times) was evident.

5.1.3 Marine resource value chains

To understand the gender dimensions of fisheries and aquaculture value chains and different perspectives, the data were disaggregated by gender and by age (where differences were noted) for Tarawa Atoll.

Women from South and North Tarawa were predominantly responsible for selling fisheries resources and considered this their role, and some suggested that women could be better trusted with the money earned. Some men influenced where the fish were sold (e.g. by the roadside, Public Utilities Board facility). In some cases, husbands assisted their wives if they were not too tired from fishing, or if their children were too young to help. In South Tarawa, sales took place by the roadside or within the village, and this applied to all villages surveyed. Some went door-to-door to find customers. Post-harvest processing (or value-adding) was only done by young and middle-aged women and included cleaning, scaling, cooking, salting, smoking and drying fish under the sun. Some men from South Tarawa gutted their fish and then kept it fresh using ice while making sales, or sold it without processing it. Although some elder women dried the fish their husbands caught, most had not learned the skills to do post-harvest processing. Sometimes men helped, particularly if there were many resources to process.

Tuna being sold in South Tarawa. © Sangeeta Mangubhai

With the exception of elder women, most women had control over the money the family earned from fisheries resources (Table 7). This is largely because the money earned is being used for the household, which is considered women's responsibility. Men are sometimes given a small portion of the earnings to spend on entertainment, but there was no mention of women keeping a portion for their own personal use. The majority of women in both South and North Tarawa did not have their own bank accounts, and those who did shared an account with their husband or other family members (e.g. a sister). One community mentioned a community account ('Tebikenikua Incorporated Society') to deposit funds for the community; it is not available for individual use. Most women were unaware of microcredit loans and were not interested in applying for funding. One group of middle-aged women expressed concern with taking the risk of a loan since most of them are not employed and the women tend not to trust one another.

Most young men in South Tarawa have bank accounts and access to banks; this contrasted with young men from North Tarawa who did not have bank accounts. There were mixed responses from middle-aged and elder men when it came to bank accounts; some did not have accounts, some had their own accounts, and others shared an account with their wives. Some communities also have their own village bank account, which is accessible (largely for loans) to community members. One group of middle-aged men mentioned a joint account managed by the church and by their community. Most men had not applied for microcredit or other types of loans. The minority of men who had applied for loans had used the funds for their children, their family or religious purposes; only a few men in North Tarawa had taken out loans to buy fishing gear.

Table 7. Control and management of income earned from fisheries by women and men. The responses of each group are presented separately.

Young women	Middle-aged women	Elder women
Generally, young women from South Tarawa decided how to spend the money they earned. The exception was Kainaba Village, where couples often made joint decisions, although the women still took more control of the money since they were responsible for looking after the family needs. Sometimes, men take a quarter of the earned money as their share for their personal needs. Young women from Abaokoro Village sold fisheries resources mainly to fundraise for their church group.	Most middle-aged women stated that it was the women who made decisions on the income earned from fisheries, even if the men did the actual selling in some cases. According to this group, even if couples jointly made decisions on the use of the money, the actual spending of the money was controlled by the wife.	Elder women from both South and North Tarawa indicated that their husbands controlled the money earned from fisheries, allocating how it is spent. Those in South Tarawa further explained that the husband gives the money to the wife for food and other family needs and only a small portion is kept by the husband for entertainment (e.g. kava).
Young men	**Middle-aged men**	**Elder men**
The use of earnings from selling fisheries resources differed between South and North Tarawa. In South Tarawa, while the arrangement may vary, earnings from the sale of fish were split between the woman seller (10% of the sale), the boat owner, engine owner and fishers, after accounting for expenses. If fishers hired the boat, they tended to keep all of the income earned from selling the fish. In North Tarawa, the money earned is usually split between the husband and wife. The portion given to the wife is often for running the household, while the smaller portion held by men is for their entertainment.	Decisions on the use of money earned from fisheries differed between groups interviewed; it was either the responsibility of women, men or both together. Some of the men from North Tarawa noted that most of their income was spent on their debts and drinking kava.	There were mixed responses when asked who was responsible for making decisions. Elder men from South Tarawa said it depended on each couple's decisions, or on the family that owns the boat. Those from one village in North Tarawa said that men decide how to use their earnings, while the others said it was decided by women.

5.1.4 Key challenges and barriers

To understand the challenges or barriers to selling marine resources through a gender (and age) lens, the responses and perspectives of each group are described separately in this section.

Young women faced a number of challenges or barriers to selling marine resources, including with respect to fish quality preservation, receipt of their salary on time (for those who work for boat owners), a lack of access to market facilities for selling fish, a low number of customers, and language barriers when communicating with foreign customers. Some young women complained that drunk people sometimes threatened them or took their resources or money. To address these challenges, the group suggested support to ensure high-quality fish, the development of market facilities, increased security measures at markets, and training for value-added products.

Middle-aged women faced a range of challenges, including MFMRD rules and regulations, increased competitors and correspondingly reduced fish prices, ridicule for being fish sellers, complaints from customers, a need for transportation to South Tarawa (for those who live in North Tarawa), poor weather and correspondingly low sales, and a lack of freezers to store their fish. To address these challenges, the group suggested market stalls or market space, and options to preserve fisheries resources (e.g. access to ice, ice maker, solar drier). Those living in North Tarawa need regular and consistent transportation to South Tarawa.

Elder women faced challenges, including husbands unable to fish due to age and physical health, a lack of fishing gear (e.g. gill nets), a lack of knowledge and skills to fish, and the need to resell fish the next day if unsuccessful the first day. To address these challenges, the group suggested roadside stalls and a central market to sell their products, more business skills training, and both the maintenance of ice plants and improvement of their overall quality.

Young men faced several challenges or barriers to selling marine resources, including insufficient buyers and leftover fish, the use of credit by customers to purchase fish, pressure by customers to reduce their prices, more commercial fishers, a lack of transport (and the need to walk in poor weather conditions), and a lack of means to improve fish handling (e.g. cooler boxes, ice, etc.). To address these challenges, the group suggested that the government improve the facilities where they sell fish, teach fishers how to maintain catch quality prior to sale, and establish a fair price for fish that is acceptable to both fishers and customers.

Middle-aged men faced a range of challenges, including regular inspections by coastal fisheries officers, fuel shortages, competition with Central Pacific Producers Limited[10], rude customers, disappointment among customers with respect to the quality of fish and requests for refunds, a lack of scales to weigh fish, and a lack of storage containers (e.g. cooler box) for fish. Those from North Tarawa faced challenges of insufficient fuel on the island for the delivery of fisheries resources to South Tarawa, rough seas, boat engine failure, and boat damage. Others noted that the spouses of men do not allow them to sell in South Tarawa because they spend too much money on themselves (i.e. drinking kava and alcohol) and lack business acumen to effectively sell their products. To address these challenges, the group suggested salting fish while they are at sea (to preserve the quality), having the government set fish and invertebrate prices in line with inflation and supported by public awareness, and having the government provide training on preservation techniques to maintain fish quality. Those living in North Tarawa had other specific needs, such as the provision of ice plants that are accessible to fishers, and a market stall in South Tarawa specifically for people from the North.

Elder men faced numerous challenges, including compliance with national policies on size limits, tax fees[11], maintenance of fish quality and related Ministry of Health compliance, and knowledge of fish preservation methods to maintain the health and quality of the product. To address these challenges, the group suggested developing better budget plans to meet the tax fees, maintaining cold chain for fish quality, and not selling undersized fish. They also suggested external support, including from the Government to help fishers with fishing gear and to improve customer services, as well as from other sources to provide training programmes on fish marketing and open-water diving and to help fishers obtain inexpensive fishing gear, deep freezers and other fishing necessities (e.g. fishing gear, cooler boxes, raincoats).

The groups all highlighted impacts on fisheries and aquaculture resulting from population pressure (coupled with overfishing) and climate change (Table 8). All groups were able to list examples of the impact of climate change, highlighting people's awareness on the issue and how it impacts their lives. Interestingly, older women perceived no impact from climate change, while younger generations recognised its impacts. Only a few examples are provided on destructive fishing and overfishing, despite evidence in the literature (Mangubhai et al. 2019), in some cases dating back to the 1990s (Tebano 1998). This suggests there may be low understanding of how human activities affect fisheries resources, which can make it challenging for authorities or communities to develop sustainable management options.

[10] Central Pacific Producers Limited (CPPL) is a Tarawa-based company owned by the Government of Kiribati through the Ministry of Fisheries and Marine Development. The company was incorporated in 2001 as a commercial operation to support the national development and marketing of resources. It also ensures the selling of fisheries products (e.g. reef and deep bottom fish, sun dried organic seaweed, ice blocks and fishing gear) at an appropriate price. See: https://cppl.com.ki/.

[11] Island councils collect fees from vendors (all vendors, fish, vegetables) as part of a registration process.

Table 8. Impacts on fisheries or aquaculture highlighted by different groups in four villages in South and North Tarawa.

Group	Climate change impacts	Anthropogenic impacts
Young women	• High temperatures and extreme weather impacts fishing or gleaning activities and some species they target (e.g. sea hares, sea noodles).	• *Te ninimai* (silver biddies) are less abundant in their marine areas, but the young women do not know the reason for this.
Middle-aged women	• Areas where women collect *te koumwara* (Pacific asaphis) and *te koikoi* (clam) were covered in mud as a result of sea-level rise. • Constant heavy rainfall affects the availability of *te ibo* (peanut worm) and *te nouo* (strawberry conch).	• Coastal erosion is increasing as a result of people taking rocks from lagoons for seawalls, and this is affecting corals. • Rubbish from neighbouring villages in South and North Tarawa is affecting community fisheries resources.
Elder women	• The village does not face any major impact of climate change. • *Te bun* (ark shell) are mostly affected while other resources, such as *te nouo*, are increasing.	• Seawalls cause coastal erosion in some areas and has affected *te ibo* (peanut worm) and *te bun* (ark shell) in some areas.
Young men	• Sea-level rise is affecting marine resources as well as the Island Council milkfish pond.	• The channel that was dug out has affected the health of clams, and declines are obvious.
Middle-aged men	• Coastal erosion affects their marine resources (e.g. *te katura, te koumwara*). • Changes in fishing sites, such as the depletion of some species (e.g. *te aua, te nouo*) and migration of other species are noted. • Some do not know how their resources are affected by rising [seawater] temperatures and storms because, from their point of view, their resources are still the same and silver biddy is increasing.	• Causeways affect marine resources and fishing grounds in South and North Tarawa. • Fish kills are observed (e.g. eels, silver biddy, and other small fishes) as a result of seawater channel. • Some *te koumwara* (Pacific asaphis) are affected by the landfill close to the village.
Elder men	• Water turbidity from heavy rainfall and increased seawater temperature are killing seaweed and seagrass. • The construction of a milkfish pond for the Eutan Taraweita (i.e. North Tarawa Island Council) impacted marine resources.	• There is a dredging site at the lagoon side of the village which the elders say attracts more fish to the village. • The large local population is causing a decline in the number of fish and shrimp.

Case study: Women of Tabonibara lead fisheries management into the future

"The actions of the women of Tabonibara are very important for protecting and maintaining the marine resources that will feed and benefit the children of the future". - Tiataake, Secretary Women's Association

The Tabonibara Women's Association is a grassroots initiative, led by women, focused on the conservation and management of marine resources, including monitoring and enforcement activities. The association assumes several roles:

"supporting and enforcing the law in Tabonibara to ban the harvest of under-sized fishes, and silver biddy (*Gerres* sp.) and land crabs (*Cardisoma carnifex*) during their spawning seasons, so that these resources would continue to benefit their children and everyone in Tabonibara in the future; taking responsibility for safeguarding the marine resources in their village from over-exploitation; making sure that no one is allowed to defecate along the coastline, and especially adjacent to the mangroves; accompanying each other to report to the association people caught fishing during spawning closures, including when the offender is a man; and bringing the enforcement home."

Source: Nikiari et al. (2021)

5.1.5 Support, opportunities and aspirations

Participants were asked if they had received external help for fisheries, marketing, aquaculture or fisheries management, and about opportunities to participate in fisheries or aquaculture-related workshops.

In general, there were fewer opportunities for women to attend workshops, with trainings largely targeting men. Women from South Tarawa indicated that the Nei Tengarengare project, under MFMRD, had helped to establish the Nanikaai MPA. Other women had participated in a project through a small United Nations Development Programme (UNDP) grant to purchase a machine that turns seawater into drinking water, as well as an ocean acidification project of the Secretariat of the Pacific Regional Environment Programme (SPREP), and a German-funded project aimed at converting seaweed into compost for export. However, three women's groups (of the 11) had not attended any workshops. Men from South Tarawa indicated that MFMRD had provided valuable training on operating boat engines in their community, helped establish the Nanikaai MPA, and assisted with planting seagrass and mangroves.

Some women from North Tarawa highlighted the Nei Tengarengare project, the development of a marine closure (Tebikenikua), and a MFMRD workshop on size limitations and other regulations. Men from North Tarawa described Ministry of Environment, Lands and Agricultural Development (MELAD) support with mangrove planting and its positive impact on fisheries resources, as well as the Nei Tengarengare project. The men were appreciative of MFMRD support and trainings, including boat and engine repair, seaweed farming, MPAs and *te bun* (ark shell) translocation. One village mentioned that MFMRD had trained their village wardens on fisheries regulations. Two men's groups (of 12) had not attended any workshops.

Participants were asked if the government or other agencies have provided fisheries or aquaculture support to adapt to climate change. While many did not have an answer, others mentioned mangrove awareness or planting to address erosion (by MELAD) or improve fisheries (MFMRD). One community received a United Nations Development Programme (UNDP) small grant to build a seawall and another received training from the Red Cross on sea-level rise and safety measures.

Finally, each group was asked what they would like to improve for themselves or their families, and what type of future they hope for their children. Women from South Tarawa wanted their children to learn traditional practices, have knowledge about fishing and their marine resources, and have a good education and income opportunities as adults. Many spoke about their need for training on fisheries and aquaculture (specifically seaweed). Men from South Tarawa wanted to support their kids' education and ensure they maintain their traditional skills and ways, including with respect to fishing.

Women from North Tarawa valued their traditional knowledge and wanted more training opportunities on aquaculture activities (e.g. milkfish ponds, seaweeds, sandfish), as well as training on fishing gear, engine repair and safety at sea for youth in the village. Men from North Tarawa wanted their families to be healthy and active, spend their money wisely, and live a better life. This is why they felt it was important to support their children with education and, at the same time, teach them the essential fishing skills and traditional knowledge they would need as adults.

5.2 Maiana Atoll

Maiana Atoll in the central Gilbert Islands is 14 kilometres long and has a total land area of 16.7 square-kilometres. The atoll has a population of 2345 (SPC 2022). There are 12 villages in total and they are dependent on fisheries and/or tourism for livelihoods. The national census household survey recorded 65% of households in Maiana engaged in fishing (Kiribati National Statistics Office 2020). Very little fisheries information was publicly available on Maiana Atoll.

5.2.1 Fishing for a living and gender roles

Households in Maiana are highly gendered with women taking greater responsibility for domestic (unpaid) work (an average of 6.6 hours per day) compared to men (an average of 3.4 hours per day) (Fig. 3). Both women and men engaged in livelihoods (mainly copra and fishing) with men spending an average of 4.2 hours per day compared to women who averaged 3.1 hours per day. Elder women spent the most time on domestic activities than any other group (an average of 9.6 hours per day), while still engaging in livelihood activities. All groups drank kava in their spare time, although men (especially youth and middle-aged men) spent almost three times as many hours drinking (4.2 hours per day) compared to women (1.5 hours per day).

Each group was asked to identify the top 3–5 species they targeted for fisheries and for aquaculture, and then to answer a series of questions relating to their fishing and farming practices (Tables 9–10). There were strong gender differences between women and men in terms of the species targeted, gear types used, and habitats targeted. Female fishers from Maiana targeted invertebrate species using their hands, a spoon or scoop net, and target fish (e.g. *te ninimai, te ikari* and a range of

reef fish) with gill nets. They targeted species largely for food, but some species were also sold for income (e.g. *te waro, te ikari, te koikoi, te ibo*). Women harvested in a diversity of habitats, including lagoonal areas, mudflats, mangrove and seagrass areas, which they accessed mainly by foot, bicycle, motorbike and, in the case of one young women's group, boat. The time spent harvesting and the frequency of harvesting varied between fisheries species.

In contrast, male fishers from Maiana almost exclusively targeted fish species, although young men also targeted lobsters (Table 9). The men used a wider range of fishing gear, including gill nets, handspears, spearguns, fishing line and hook, and scoop nets. Male fishers largely travelled by foot and/or motorbike, but some used a canoe. They fished across a range of habitats, such as lagoonal areas, shallow water areas, and reef flats and back reefs (including on the ocean side of the atoll). Men fished from 1–4 hours, except when fishing for tuna when they spent up to 12 hours. While many species were targeted primarily for food, some species were also sold as a source of income (e.g. *te ninimai, te ikari, te aua, te tauman, te nnewe*, tuna species).

The aquaculture farms at Bubutei (ark shell, milkfish) and Buota (ark shell) villages were almost solely community-owned (Table 10). The pond at Bubutei is controlled and managed by a village committee (called Te Ririere II). Elder men from Bubutei noted that there were also family-owned fish ponds, but no specific details were provided. Seaweed farming was undertaken in front of Bubutei Village.

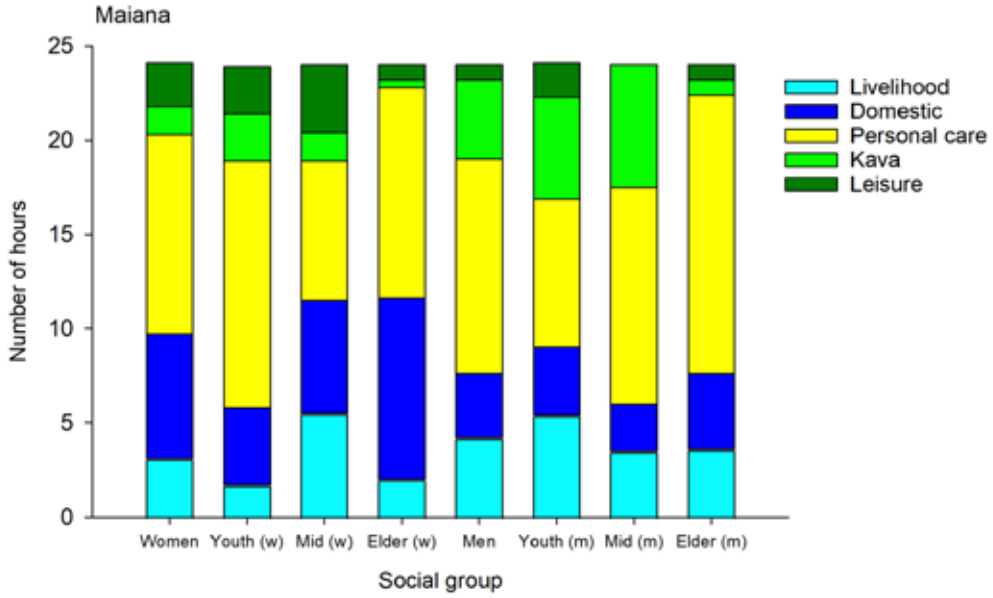


Figure 3. Comparison of time diaries across social groups on Maiana Atoll. See methods for full description of the six activity categories. The number of participants in each group is shown in Table 1. "Mid" refers to middle-aged persons, "w" refers to women and "m" to men.

> Fisheries activities and the roles that women versus men assume have changed over time. Women lamented that the loss of elders resulted in some traditional fishing practices not being passed on and used, and people not fishing as much as in the past (especially when they have other jobs). For example, women have lost the skills required to catch octopus and bonefish. Multiple women's groups raised concerns about men becoming lazy due to excessive kava consumption. As a result of men fishing less, there is increased dependence on imported foods and heavier reliance on women for fishing for food compared to the past. Men similarly highlighted that fishing had declined compared to the past, lending to greater dependence on imported foods. This decline was attributed to people working in formal work, fewer women fishing, excessive kava consumption, higher domestic duties, and declines in some resources (e.g. *te nouo*). Elder men felt generational differences and explained that "young generation[s] are obviously very lazy nowadays. If they go fishing, they won't be able to do other things to help around the home".

Women and men of all ages shared examples of cultural beliefs and superstitions regarding fishing (Table 11), as well as traditional knowledge and fishing practices. Many of the beliefs or superstitions were highly gendered, and related to actions that might impact men's fishing activities; none related to the impacts on female fishers. For example, fishing restrictions were placed on girls and women when they were menstruating, due to the belief that menstruation would affect male fishers and the success of their fishing trips; however, these restrictions are not practised as strongly as they were in the past (Table 11). Certain chants and rituals considered 'black magic' are similarly no longer practised because some consider them

Te buia - Kiribati local house on stilts, Maiana.© Margaret Fox

incompatible with, or contrary to, Christian values and beliefs.

Shifts in traditional fishing practices were documented in Maiana Atoll. There were examples of traditional fishing practices that were still followed (e.g. *te maa, te waibo*) as well ones that had been lost or were no longer practised (e.g. *te nii burae*). There are three types of *te maa* practised on Maiana: (a) *te maa ni kaun*, a fishing trap used if there is a competition between *te maa*; (b) *te maa n amwarake*, a fishing trap that belongs to the family which others cannot use; and (c) *te maa n tangira,* a fishing trap that everyone can use for *botaki* (events, ceremonies). Some fishing rituals have been lost – for example, most do not know how to slice baits to attract different fish. Some felt the old (traditional) way of fishing in the village is generally not practised anymore, having been replaced by the use of gill nets. However, many of the groups provided multiple examples of fishing practices that are still used, and traditional ecological knowledge on spawning seasons (and moon phases) of key

Te uu, traditional trap for catching eels, Maiana. © Margaret Fox

species was still evident.

Table 9. Main fisheries species and harvesting practices of young women and men (18–29 years), middle-aged women and men (>30 years), elder men (*unimwane*) and elder women (*unaine*) living in Bubutei and Buota villages on Maiana Atoll, Kiribati. Under 'Purpose', the main reason for harvesting a species or group of species is shown in bold. '*' denotes traditional fishing gear (the definitions for which are provided in the Glossary of I-Kiribati terms). Fisheries species names are listed in Annex 1. '-' indicates that no information was provided.

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Young women	*te ninimai* (silver biddy)	gill net	lagoon	foot	1–2	1–2 times/week	**food,** bait
	te ikari (bonefish)	gill net	lagoon	foot, boat	1–2	1 time/month	**food**
	te bwaua (mullet species)	gill net	lagoon	foot	1–2	1–2 times/week	**food**
	te nouo (strawberry conch)	hand, mask and snorkel	seagrass	foot	1–2	1 time/month	**food**
	te waro (mantis shrimp)	hand	seagrass, mudflats (lagoon side)	foot	3	daily	**food, income**
Middle-aged women	*te koumwara* (Pacific asaphis)	hand	seagrass	foot, motorbike	0.5–1	1 time/month 2–3 times/week	**food**
	te ikari (bonefish)	gill net	seagrass	foot	3–4	daily	**food,** income
	te ntabwena (mudcrabs)	scoop net	mangrove	foot	0.5	2–3 times/week	**food**
	te koikoi (clam)	hand	mangrove	motorbike	1	1 time/week	**food**
	ikan te rai (reef fish)	gill net	mangrove	foot	1	3 times/week	**food**
Elder women	*te koikoi* (clam)	hand, knife	mudflats	foot, bicycle	2–3	1–2 times/week	**food,** income
	te ninimai (silver biddy)	gill net	mangrove	foot	1	3 times/week	**food**
	te koumwara (Pacific asaphis)	spoon	mudflats	foot, bicycle	2–3	2 times/month	**food**
	te katura (clam)	spoon	sandflats	foot, motorbike	1	2–3 times/week	**food**
	te nouo (strawberry conch)	hand, mask and snorkel	seagrass	foot	1	2 times/month	**food**
	te ibo (peanut worm)	sticks	mudflats	foot, motorbike	1–2	1–2 times/month	**food,** income

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Young men	*te ninimai* (silver biddy)	gill net	lagoon	foot	2–3	5–6 times/week	**food,** income
	te ikari (bonefish)	gill net, fishing line and hook	lagoon, mangrove	foot, canoe	1–3	3–6 times/week	**food,** income
	te aua (mullet)	gill net, scoop net	lagoon, reef flats (ocean side)	foot, motorbike	2–3	3–6 times/week	**food,** income
	te tauman (trevallies in the lagoon)	gill net	lagoon	foot	2–3	6 times/week	**food,** income
	te ikanibong (humpback snapper)	scoop net	reef flats (ocean side)	foot, motorbike	2–3	3 times/week	**food**
	te mwake (needlefish)	scoop net	reef flats (ocean side)	foot, motorbike	2–3	3 times/week	**food**
	te mon (soldierfish)	scoop net	reef flats (ocean side)	foot, motorbike	2–3	3 times/week	**food**
	te bawe (blacktail snapper)	fishing rod, fishing line and hook	ocean side	foot, motorbike	1–2	1–2 times/week	**food**
	te rou (longface emperor)	fishing rod, fishing line and hook	ocean side	foot, motorbike	1–2	1–2 times/week	**food**
	te okaoka (thumbprint emperor)	fishing rod, fishing line and hook	ocean side	foot, motorbike	1–4	daily, 1–2 times/week	**food**
	te tauman (trevallies in the lagoon), *te rereba* (small trevallies)	fishing rod, fishing line and hook	ocean side	foot, motorbike	1–2	1–2 times/week	**food**
	te nimwanang (peacock grouper)	hand spear, speargun	ocean side	foot	1–2	rarely	**food**
	te riba (striated surgeonfish)	hand spear, speargun	ocean side	foot	1–2	rarely	**food**
	te koinawa (convict surgeonfish)	hand spear, speargun	ocean side	foot	1–2	rarely	**food**
	te nnewe (lobsters)	hand	backreef (ocean side)	foot	2–3	occasionally	**social events,** food, income

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Middle-aged men	*te ikari* (bonefish)	gill net	shallow water	foot	1–3	2 times/week	**food, income**
	te aua (mullet)	gill net	shallow water	foot	3–4	2 times/week	**food, income**
	te ninimai (silver biddy)	gill net	shallow water	foot	2–3	2 times/week	**food**
	te maebo (bar-tailed goatfish)	gill net	shallow water	foot	2–3	2 times/week	**food**
	te bunii (pufferfish)	gill net	shallow water	foot	2–3	2 times/week	**food**
Elder men	*te ikari* (bonefish)	gill net, hook and line	lagoon	foot	2 (gill net), 6 (hook and line)	2–6 times/week	**food,** income
	te ninimai (silver biddy)	gill net	lagoon	foot	2	2 times/week	**food**
	te maebo (bar-tailed goatfish)	gill net	lagoon	foot	2	2 times/week	**food**
	te tauman (trevallies)	fishing rod, fishing line and hook	outer reef (ocean side)	foot	2	daily (during last moon quarter to new moon)	**food**
	te okaoka (thumbprint emperor)	fishing rod, fishing line and hook	outer reef (ocean side)	foot	2	daily (during last moon quarter to new moon)	**food**
	te ati (skipjack tuna), *te baiura* (yellowfin tuna)	fishing line and lure	open ocean	canoe	12	2 times/week	**food,** income

Table 10. Main aquaculture species and farming practices on village-owned farms in Bubutei and Buota villages on Maiana Atoll, Kiribati. "–" means not applicable or practised.

Villages	Aquaculture species	Gear or equipment used	Aquaculture areas	Maintenance time (hours)	Frequency of maintenance	Purpose
Buota (past, not current), Bubutei	*te tiwita* (seaweed)	racks and lines	lagoon	0.5	1 time/week 2 times/month	income (export)
Bubutei, Buota	*te bun* (ark shell)	–	lagoon	–	–	restoration
Bubutei	*te baneawa* (milkfish)	pond, gill net	southern end of village	–	–	food

Table 11. Cultural beliefs or superstitions regarding fishing, held by different social groups in Maiana Atoll.

Group	Beliefs or superstitions
Young, middle-aged and elder women, Middle-aged and elder men	Women are not allowed to fish or cook, especially for male fishers, if they are menstruating. If this rule is not followed, the male fishers may become lazy and not catch enough fish or their fishing ground may become cursed (e.g. fish may leave the area). However, this belief is not as strongly enforced today as it was in the past.
Young and elder women	*Te kawai* is the traditional belief that, by letting fishers rest, go to bed early and be undisturbed, they will have good catches the next day.
Young and middle-aged women	*Tabutabu* prohibits certain families from fishing or eating specific fish species, such as sharks, stingrays, turtles or pufferfish. The consequences of eating a species that is *tabutabu* can be fatal.
Middle-aged women, elder men	*Mwiin te tia akawa* refers to the belief that no one is allowed to use or enter the *te kiakia* (local house) or sleeping place of male fishers.
Middle-aged women	*Kainan wiin te ika* is a practice used by male fishers before diving. They chant three times with the intention of deterring large, frightening fish from attacking. *Te kaonako* entails using *te non* (stick from a Noni tree) to catch octopus. It involves a female fisher chanting while breaking *te non* into pieces. Once she reaches her fishing ground, she throws the *te non,* spreads it around, and leaves it for 10–20 minutes, after which all of the octopus will appear on the sea surface.
Young men	Fish totem species cannot be eaten out of respect for their totem.
Middle-aged men	There are certain rituals practised around fishing. For example, the *matawere* ritual is practised to ensure other male fishers are not successful at catching fish.

Both women and men learned traditional knowledge and fishing methods by practising, listening and watching their parents and elders in their respective villages. Traditional knowledge is passed down orally and through practice. One elder man explained that "traditional knowledge is sacred and hard to be passed down. You can pass it to your children but if any of the children has gone astray, then [they] will not be taught the family knowledge and skill". Children join their parents on fishing trips, sometimes for entertainment and other times to assist their parents and to learn important fishing skills and the special fishing grounds the family uses. Many adults helped their parents with post-harvest activities (e.g. gutting, cleaning) when they were children.

5.2.2 Access, control and decision-making over resources

The majority of community members participating in the FGDs from Maiana Atoll stated that marine resources were generally open access and, in general, there were not any specific fishing or aquaculture activities that are not allowed for certain groups. There were, however, fisheries rules that everyone had to follow: for example, fisheries regulations that governed the use of marine resources (e.g. fishing bans during spawning seasons for bonefish and flyingfish). Access to milkfish ponds varied depending on ownership (e.g. individual, *unimwane*). *Te maa* (fish traps made of rocks) are restricted to the families (or sometimes clans) that own them, and some fishing methods – like *te kateitei* (i.e. leaving gill net overnight) or *te ororo* (i.e. use of gill nets and pipe and crowbar to splash the water or disturbing the fish ecosystem so the fish can be trapped in the gill nets they set) – are not allowed in Maiana Atoll. Fish spawning areas are also closed to fishers (*te namo*). *Te ororo* is banned under an island by-law (and by MFMRD), which is strongly enforced by the elders of Maiana.

Young women described a neighbouring islet on Maiana Atoll that was closed by the Maiana Council and where fishing for giant clams and arkshells was prohibited. Young men described the need to pay a fee of AUD10 to obtain milkfish from the village pond. Middle-aged men from Buota explained that, every month for one week, the community closed the fishing area in front of the village to allow for fish species to repopulate; however, no other group from the village mentioned this rule or this fisheries management strategy being used. Bubutei middle-aged and young men mentioned that the village has a MPA where fishing has been prohibited for the last four years.

When asked who controlled the use of marine resources, everyone responded that no one owned the resources as resources are open access. There was no mention of traditional governance of marine resources or ponds on the land portion of the atoll. Some groups mentioned cultural practices they used in the past to manage their resources that related more to superstitions and beliefs. For example, male fishers avoided targeting and catching small fish as they did not want to be mocked by other male fishers for the size of their fish. One woman explained that "restricting women who have [their] periods was also related to the management of fisheries because they don't want their resources to disappear, so they do it that way for the sustainability of marine life". In the past, the elders prohibited certain types of fishing (e.g. *te ororo*) and the catching of small sized fish.

Participants were asked to reflect on how management initiatives (e.g. LMMA, MPAs, fisheries restrictions) impacted versus benefited women and men in the community. While the majority of groups stated that there were little to no negative impacts on them, there were a few exceptions. Elder women and men both felt the ban of *te ororo* translated into a reduced catch, as *te ororo* was the best way to catch fish. Young men found the MPA very large, taking up most of the fishing ground, and the fine too high (AUD500). There were mixed responses on the benefits. Positive responses included increased stocks (e.g. arkshell, bonefish) and easier fishing than in the past.

Te waibo - traditional fishing method to catch seaworms such as *te ibo* (peanut worm) caught by this female fisher. © Pacific Community (SPC). Credit: Karianako James"

5.2.3 Marine resource value chains

To understand the gender dimensions of fisheries and aquaculture value chains and different perspectives, the data were disaggregated by gender and by age (where differences were noted) for Maiana Atoll. There are no aquaculture products currently being sold from Bubutei and Buota villages (Table 10). A couple of groups mentioned that the *unimwaane* of Te Ririere II village sometimes opened their pond to other communities, depending on the number of milkfish available in the pond. Decisions on the use of money earned and on bank accounts and loans were made for each group to examine differences in perspectives and experiences.

Almost all of the participants stated that it was women (especially the wives of fishers) who were responsible for selling fisheries resources. The exception was men from Buota Village who sold bonefish to Tarawa and guests at hotels. Young and elder women described a range of customers and markets they targeted: (a) door-to-door marketing in Bubutei Village; (b) sales to neighbouring villages; (c) officials and tourists visiting their village or the atoll; (d) Tarawa (especially dried fish); and (e) the Maiana-based Central Pacific Producers Limited (e.g. lobsters, giant clams, trevally fish, etc.). Elder women also mentioned exporting to I-Kiribati living overseas. Post-harvest processing (or value-adding) was undertaken by women and included cleaning, gutting, cooking, salting or drying fish, which took from 30 minutes to 1–2 hours depending on the volume of catch. Young and middle-aged men sometimes helped their wives: for example, the man might scale the fish while the woman cuts and salts the fish, or he might help with the drying (under the sun) or grilling of gutted fish on an open fire.

Decision-making on the use of income earned from fisheries was mixed in communities on Maiana Atoll, although many made decisions as a couple (Table 12). Interestingly, for some middle-aged women, it was their husband or parents who made the decisions. Similar to Tarawa Atoll, some men were given a portion of the earnings for their personal use, while earnings for women were largely for the household. The majority of the participants did not have bank accounts and did not have access to microcredit. The exceptions were two young women, one middle-aged woman and a few middle-aged men who had personal bank accounts. Young women had worked together to apply for a small grant to support the building of toilets or water tanks in their community. Some middle-aged women received loans to set up a kava bar. All participants had access to loans for small amounts of funding through their villages. For example, there was an option to take out a loan of AUD100–200, with 10% interest from one of the village funds. While some women indicated that there were no real barriers to applying for loans, others had an interest in receiving a loan but did not know how or where to apply. Elder women were not concerned about opening bank accounts or securing loans, as they were no longer interested in working and were more concerned with maintaining their health in their old age.

Table 12. Control and management of income earned from fisheries by women and men. The responses of each group are presented separately.

Young women	Middle-aged women	Elder women
While it varied among individual couples, young women generally made decisions on the income earned as they managed the household budget and needs.	The middle-aged woman's husband, the woman herself, or her parents made decisions on money earned from selling fisheries resources.	The elder husband and wife jointly made decisions on the use of money from fisheries.
Young men	**Middle-aged men**	**Elder men**
Young couples or young women made decisions on the spending of money earned from fisheries. Some explained that women gave 20% of the earnings to men for their entertainment needs.	Middle-aged couples jointly made decisions on the spending of money earned from fisheries, or middle-aged women made the decision.	Women are given the money for household needs while a small portion is used by the husband for his entertainment or own needs.

5.2.4 Key challenges and barriers

To understand the challenges and barriers to selling fisheries resources through a gender lens, the responses and perspectives of each group are described separately in this section.

Young women faced challenges or barriers to selling marine resources, including a lack of purchases in and from the Central Pacific Producers Limited, a shortage of salt on the atoll, few customers as everyone on the atoll can fish for their own food, customers not repaying their loans,[12] and non-payment by their agent or trusted family member tasked with selling their catch in South Tarawa. To address these challenges, the group suggested ordering more salt to dry fish, increasing fish catch, discontinuing all loans to customers, and stopping sales to South Tarawa until they identify a reliable seller.

[12] This refers to customers who buy fish on credit but then do not pay the fishers back.

Middle-aged women faced the challenge of reduced purchases of catch by Central Pacific Producers Limited during power outages and a shortage of salt. To address this, the group suggested building a market to sell their catch and participating in training led by the MFMRD Coastal Fisheries Division on value-added seafood products, fish aggregation devices and aquaculture (specifically seaweed, sandfish and giant clam) for food security and income generation. The women wished for support from MFMRD for *'Te Waa n Oo'* – meaning free boats and engines to support the village with fishing and other business. This is important given the constant shortage of fuel on the atoll and the importance of fish for food and income.

Elder women faced challenges, including rude customers who complained about the quality of the fish, a lack of transport to be able to sell to other villages, and fisheries regulations that prevented them from fishing for bonefish. To address these challenges, the group suggested installing a market in the village to sell all local products to guests, investing in seaweed farming for trade, establishing a storage area for local products in South Tarawa, partnering with trusted traders to whom they could sell on a reliable basis, and identifying opportunities to sell their local products overseas.

Young men faced challenges or barriers to selling marine resources, including a shortage of fuel on the island for fishing, a salt shortage on the island, cashflow issues with Central Pacific Producers Limited on Maiana (resulting in reduced sales to the company), rough seas and bad weather preventing them from travelling to South Tarawa, and miscommunication with their agent in Tarawa which may affect the quality of fish sent to Tarawa by speedboat. To address these challenges, the group suggested that the Government improve cargo and fuel from Tarawa to Maiana, families consume all unsold fish, and the men establish connections to different markets on South Tarawa and increase customers from Tarawa to connect to fishers on Maiana Atoll.

Middle-aged men faced challenges, including salt and ice shortages, customers buying fish on credit, and high costs to transport their catch to Tarawa by plane. To address these challenges, the group suggested increasing the price of the fisheries resources they sell and the Government building a shelter or marketplace where fishers can sell their catch.

Elder men faced the challenges of a lack of fishing canoes and the distance to the ice plant on the atoll (as there were none available in or near Buota Village). In addition, they found that the female workers at the Central Pacific Producers Limited did not fully understand the needs of male fishers (their customers). To address these challenges, the group suggested purchasing more fishing canoes, building an ice plant in the village, and recruiting men in the Central Pacific Producers Limited. They also suggested diversifying into copra farming, since fisheries are not as profitable.

All groups cited examples of the impacts of climate change (Table 13). However, it was not clear from the FGDs whether participants from Maiana Atoll were aware of their own role in, or contribution to, declines in fisheries or fish habitats. Elder men noted that fishers from South Tarawa who fish near Maiana have made it difficult for them to catch pelagic fish nearshore, and the loss of seagrass has led to the extinction of arkshells.

Table 13. Impacts on fisheries or aquaculture highlighted by different groups in Bubutei and Buota villages, Maiana Atoll.

Group	Climate change impacts
Young women	• No impacts of climate change on fisheries resources were cited.
Middle-aged women	• Stocks of Pacific asaphis (*te koumwara*) have decreased.
Elder women	• Stocks of arkshells (*te bun*) and some fish species have decreased.
Young men	• There were more seagrass, arkshells (*te bun*) and strawberry conch (*te nouo*) when they were young; many of these species have now disappeared due to climate change impacts. • High temperatures make it difficult for the fishers to stay long under the sun.
Middle-aged men	• Some fish found inshore are dead already or migrated to other areas, due to rising seawater temperatures.
Elder men	• Coastal erosion and the loss of seagrass have led to the disappearance of arkshells (*te bun*).

5.2.5 Support, opportunities and aspirations

Participants were asked if they had received external help for fisheries, marketing, aquaculture or fisheries management, and about opportunities to participate in fisheries or aquaculture-related workshops. Two thirds of the women's groups interviewed could not answer this question. The remaining one third explained that there was no training on aquaculture but there were other trainings where mostly men participated (although no specifics were provided on these trainings). Young men mentioned trainings on fisheries regulations and seaweed farming where they were able to join but women were not; the reason provided for women not attending was because it encompassed freediving, which "women could not do". This type of discriminatory gender stereotype has also been documented in other parts of the Pacific, with safety or menstrual cycles being reasons provided for why women are not considered suited to diving (Mangubhai and Lawless 2021).

Elder men mentioned workshops on community-based fisheries management to help develop fisheries rules and devise an island-wide management plan. These included representatives from different groups in the community, including women, youth, middle-aged individuals and elders. However, in general, it was highlighted that workshops often involved men, unless there was a specific request for including women and youth.

Participants were asked if the government or other agencies have provided fisheries or aquaculture support to adapt to climate change. The participants described several types of support they had received, including: funding to improve water catchment in the village for their gardens and farms; mangrove planting, the construction of traditional and modern (concrete) seawalls, solar lights (for fishing and post-harvesting at night), and education and awareness-raising on climate change (by MELAD).

Finally, each group was asked what they would like to improve for themselves or their families, and what type of future they hope for their children. The women mentioned supporting their children's education and teaching them traditional fishing skills so they can feed themselves and have an alternative source of livelihood in the future, if needed. The maintenance and passing on of traditional skills was important to them. The women requested that MFMRD provide them with trainings and help set up milkfish, seaweed, sandfish and giant clam farming, and restore mantis shrimp, arkshell and other shellfish populations. Women from Bubutei and Buota also expressed interest in establishing a MPA to ensure the sustainability of their resources for their family's future.

The men similarly wanted to ensure their children develop the traditional fishing knowledge and skills that they will need as adults. Some wanted the younger generation to know how to build and sail a traditional fishing canoe as these skills are dying out. For themselves, men wanted food security and income, fishing canoes to access fishing grounds, fish aggregation devices, fishing gear, a market centre (sponsored by the government or international aid), an ice plant and training on aquaculture species and value-added activities (e.g. ice cream, jelly). They wanted assistance to establish their fisheries management plan, to ensure their fisheries resources were sustainable for many generations. Some suggested there was a great need to enforce laws and be stricter.

5.3 Nonouti Atoll

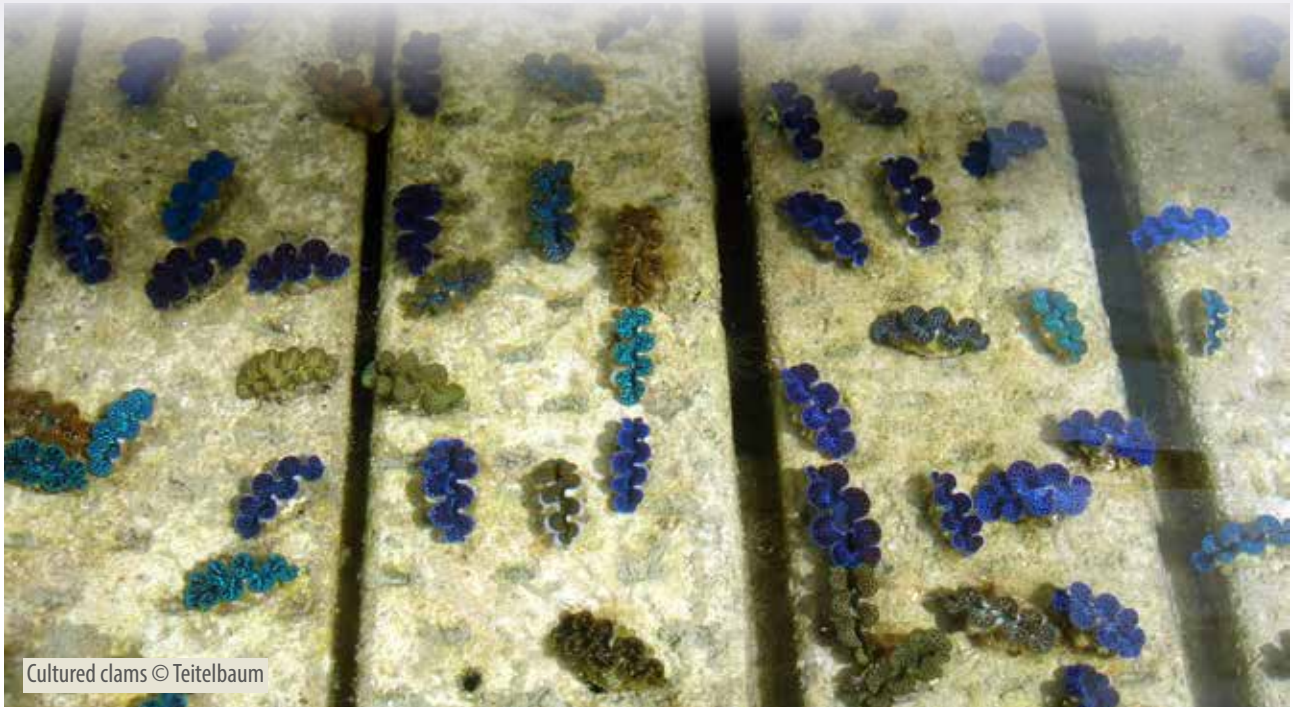
Nonouti Atoll in the southern Gilbert Islands is 36.7 kilometres long and has a total land area of 20 square-kilometres. The atoll has a population of 2749 across nine villages (SPC 2022). The main livelihoods or sources of income are fishing and agriculture, and salaried employment fishing is the second largest source of income (14% households) after salaried jobs (i.e. opportunities are provided through the Island Council as well as government schools and small businesses) (MFMRD 2020b). Autukia, Temotu, Teuaabu and Abamakoro villages have developed marine resource management plans in collaboration with MFMRD.

The national census recorded 77% of households in Nonouti engaged in fishing activities (Kiribati National Statistics Office 2020). In 2020, 133 households on Nonouti Atoll were surveyed by MFMRD in partnership with SPC on: (a) household demographics and the consumption of finfish and invertebrates; (b) finfish fisheries; and (c) invertebrate fisheries (MFMRD 2020a). The study found fishing is largely for consumption (7 kilogrammes/year per capita consumption), with only 3% of the surveyed households reporting having sold marine resources for income. Men harvested finfish mainly for consumption (78%), with some selling a portion of their catch for sale (22%); in contrast women's catches were almost solely for household consumption. Only 1% of women targeted finfish, compared to 38% who targeted invertebrates. Catch per unit effort differed between men (8.6 kilogrammes/hour) and women (1.0 kilogrammes/hour). Women fished only during the day in lagoonal and soft bottom habitats, while men fished in the day or night or both across all habitat types (MFMRD 2020a).

Under the "Enhancing Food Security in the context of Global Climate Change – Least Developed Countries Fund Project", MFMRD has been translocating arkshell (*te bun*) from Abemama to Nonouti and trialling the use of cages to reduce predation (MFMRD 2020c). There is also a small hatchery where arkshell is produced for food and income generation, and giant clams are produced to restock depleted reefs. One of the sites for the translocation of arkshell was the Autukia community MPA. Seaweed monitoring is also supported and targeted in the villages of Rotima (two households) and Temwanoku (the whole village) (MFMRD 2020c).

5.3.1 Fishing for a living and gender roles

Households in Nonouti are highly gendered with women taking greater responsibility for domestic (unpaid) work (averaged 8.2 hours per day) compared to men (averaged 4.1 hours per day), and men investing more heavily in livelihoods (paid work, averaging 4.4 hours per day) compared to women (paid work, averaging 1.3 hours per day) (Fig. 4). With the exception of elder women not spending much time on leisure activities, there were only a few differences between women of different ages, suggesting that how they spend their time does not change significantly at different stages in their life. However, this was not the case for men where there were notable trends as they aged. Men decreased the hours spent on livelihoods and kava drinking as they age, while increasing the hours spent on domestic duties and personal care (Fig. 4).



Cultured clams © Teitelbaum

Each group was asked to identify the top 3–5 species they targeted for fisheries and for aquaculture, and then to answer a series of questions relating to their fishing and farming practices on Nonouti Atoll (Tables 14–15). There were strong gender differences between women and men in terms of the species targeted, gear types used, and habitats targeted. Female fishers largely targeted invertebrate species using their hands and low technology gear, such as a spoon, knife or the midrib of coconut leaves. Women travelled to mudflats, rocky shores, lagoons and, in a few cases, coral reefs, by foot, bicycle or motorbike. Middle-aged women also targeted lagoon fish using gill nets. The time spent harvesting and the frequency of harvesting varied between fisheries species. Female fishers fished for food, with three species also sold for income (i.e. *te koumwara, te ibo, te mwanai*).

In contrast, male fishers from Nonouti Atoll targeted a wide range of fish species and only a small select number of invertebrates (e.g. *te koikoi, te nnewe, te kiika*) (Table 14). The men used a wider range of fishing gear, including gill nets, spearguns, fishing line and hook, snorkel and mask, crowbar and scoop nets. Male fishers largely travelled by foot to access lagoonal areas and coral reefs (including the outer reef). The range in hours men fished was generally 1–4 hours, although 8 hours was sometimes spent targeting lagoonal fish.

Both Autukia and Benuaroa farmed *te tiwita* (seaweed) for income and *te baneawa* (milkfish) for food and special village events (Table 15). The villages, in partnership with MFMRD, also put in measures (e.g. MPAs) to restore their local *te bun* (ark shell) populations through the translocation of individuals from Abemama Atoll (Table 15). None of these efforts required much time investment from communities once the initial infrastructure was installed. For example, only 30 minutes, two times per week was needed for seaweed farming.

Nonouti © Margaret Fox

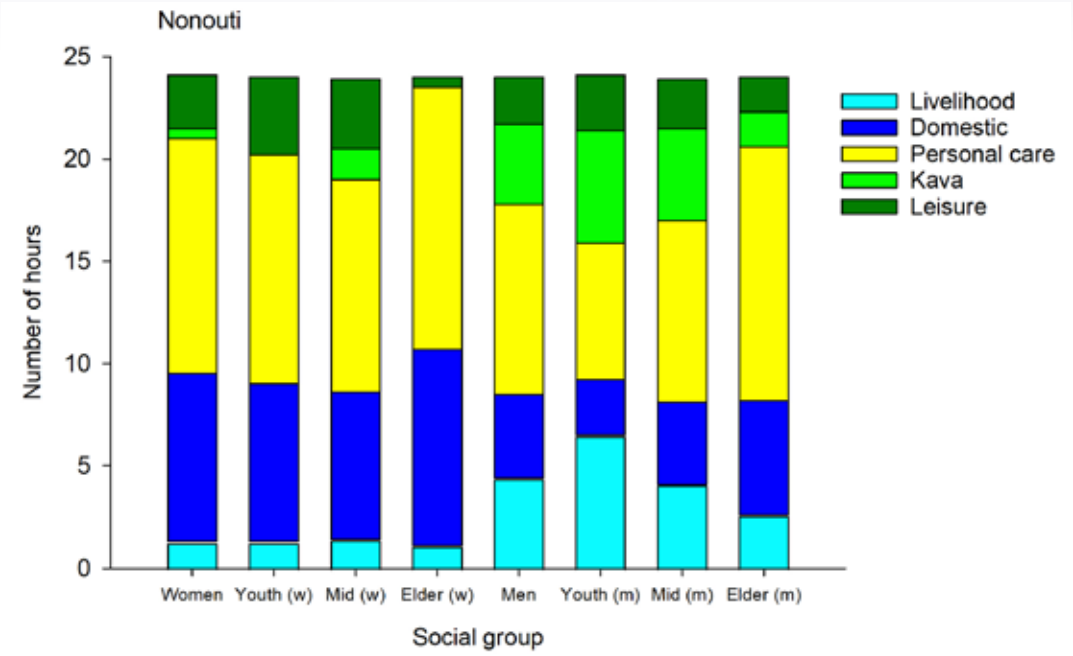


Figure 4. Comparison of time diaries across social groups on Nonouti Atoll. See methods for full description of the six activity categories. The number of participants in each group is shown in Table 1. "Mid" refers to middle-aged persons, "w" refers to women and "m" to men.

Fisheries activities and the roles that women versus men play have changed over time. Women explained that several beliefs or superstitions pertaining to male fishers (e.g. not sleeping with your wife before fishing, sleeping early to calm the fish) are no longer followed. Elder women explained how, in the past, the village of Benuaroa practised *te boonamo* (i.e. all of the villagers went fishing in a particular area) and used more traditional fishing methods (e.g. *te kaneati, te rai*), compared to today. There was more fishing in the past to meet their food needs compared to today, where they are more reliant on imported goods (e.g. tin fish, crackers). All women's groups mentioned that women today tend to cook tin fish for dinner and invest more hours fishing to put food on the table, as their husbands are spending too much time drinking kava. The women also suggested that kava makes men lazy and too tired to go fishing. The time diaries show that men drink an average of 3.9 hours per day, with young men drinking up to 5.5 hours per day. Interestingly, young men recognised their time spent drinking kava but felt they still managed to complete their tasks for their family, such as fishing and cutting toddy, which are


Nonouti © Margaret Fox

the responsibilities given to men.

Table 14. Main fisheries species and harvesting practices of young women and men (18-29 years), middle-aged women and men (>30 years), elder men (unimwane) and elder women (unaine) living in Autukia and Benuaroa villages on Nonouti Atoll, Kiribati. Under "Purpose(s)", the main reason for harvesting a species or group of species is shown in bold. * denotes traditional fishing gear (the definitions for which are provided in the Glossary of I-Kiribati terms). Fisheries species names are listed in Annex 1. '-' indicates that no information was provided.

Group	Fisheries species	Gear types	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Young women	*te koumwara* (Pacific asaphis)	hand, knife	mangroves	foot	0.5	1–4 times/week	food, income
	te ibo (peanut worm)	sticks	mudflats	foot, motorbike	2–3	8 times/week	food, income
	te koikoi (clam)	knife, spoon	mangrove, rocky shore	foot, bicycle	0.5–1	1–4 times/week	food
	te mwanai (crabs)	hand	bwabwai pit	foot	1–2	1–2 times/week	food, income
	te katura (clam)	hand, spoon	rocky shore	foot, bicycle	0.5	1 time/week	food
	te *kamakama* (crab)	hand, coconut stem	rocky shore	foot, bicycle	0.5	1 time/week	food
Middle-aged women	*te koumwara* (Pacific asaphis)	hand, spoon	mudflats, spoon	foot	1	2–3 times/week	food, income
	te ibo (peanut worm)	spoons, sticks	mudflats	foot, motorbike	5	1 time/week	food, income
	te koikoi (clam)	knife, spoon	reef and mudflats, rocky shore, mangroves	foot, motorbike	1	2–3 times/week	food
	ikan te nama (lagoon fish)	gill net	lagoon, outer reef	foot, motorbike	2–3	2–3 times/week	food
	te nuonuo (brown triggerfish)	hand	lagoon, outer reef	foot	2	2 times/week	food
	te mwanai (crabs)	hand	mangrove	foot, motorbike	1	1–2 times/week	food
Elder women	*te ibo* (peanut worm)	midrib of coconut	mudflats	foot	3–4	2–3 times/week	food, income
	te *koikoi* (clam)	spoon	mangroves	foot, motorbike	0.5	1 time/week	food
	te koumwara (Pacific asaphis)	spoon	mangroves	foot	0.5–0.75	1 time/week	food
Young men	*te ikari* (bonefish)	gill net	lagoon	foot	1	3–4 times/week	food
	te *ika n aonora* (lagoon fish)	gill net, fishing line and hook	lagoon	foot	1–2, 8	4 times/week 1–2 times/month	food
	te ikan te rakai (reef fish)	hand spear, mask and snorkel, scoop net	coral reefs	foot	1–5	daily	food

Group	Fisheries species	Gear types	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose
Middle-aged men	*te ikari* (bonefish)	gill net	lagoon	foot	1–2	6 times/week	food
	te ninimai (silver biddy)	gill net	lagoon	foot	1–2	6 times/week	food
	te maebo (bar-tailed goatfish)	gill net	lagoon	foot	1–2	6 times/week	food
	te amori (long-tail silver biddy)	gill net	lagoon	foot	1–3	3–4, 6 times/week	food, income
	te urua (giant trevally)	gill net	lagoon	foot	2–4	1–2 times/week	food
	te rereba (trevallies)	gill net	lagoon	foot	2–4	1–2 times/week	food
	te baiku (stingrays)	gill net	lagoon	foot	2–4	1–2 times/week	food
	te ikanibong (humpback red snapper)	mask and snorkel, speargun	outer reef (lagoon side)	foot	1–3	1–2 times/week	food
	te bawe (blacktail snapper)	mask and snorkel, speargun	outer reef (lagoon side)	foot	1–3	1–2 times/week	food
	te riba (striated surgeonfish)	mask and snorkel, speargun	outer reef (lagoon side)	foot	1–3	1–2 times/week	food
	te koikoi (clam)	spoon	lagoon, mudflat	foot	1–2	1–2 times/week	food, village social events
	te nnewe (lobster)	mask and snorkel	ocean side	foot	2–3	Special occasions	food, income, village social events
	te mwanai (crabs)	hand	mangroves, forest (ocean side)	foot	1–2	1–2 times/week	**food**
Elder men	*te ikari* (bonefish)	gill net	lagoon, mangrove	foot	1–2	2–3 times/week	**food,** income
	te amori (long-tail silver biddy)	gill net	lagoon	foot	1–2	2–3 times/week	**food,** income
	te ikanibong (humpback red snapper)	gill net	lagoon	foot	2	irregularly	**food**
	te kiika (octopus)	crowbar, rod designed to catch octopus *(kai ni kiika or kai ni kareke)*	outer reef (ocean side)	foot	1–2	daily (during octopus season)	**food,** income
	te okaoka (thumbprint emperor)	*kibee*	coral reefs (ocean side)	foot	2–3	1–2 times/week	**food**
	te kuau (grouper)	*kibee*	coral reefs (ocean side)	foot	2–3	1–2 times/week	**food**
	te ingo (two-spotted snapper)	*kibee*	coral reefs (ocean side)	foot	2–3	1–2 times/week	**food**
	te rereba (trevallies)	*kibee,* gill net	lagoon (near mangroves)	foot	1–2	1–2 times/week	**food**

Table 15. Main aquaculture species and farming practices on village-owned farms in Autukia and Benuaroa villages on Nonouti Atoll, Kiribati. '–' means not applicable or practised.

Villages	Aquaculture species	Gear type	Aquaculture areas	Maintenance time (hours)	Frequency of maintenance	Purpose
Autukia, Benuaroa	*te tiwita* (seaweed)	racks and lines	In the MPA: *te namo* (Autukia), in front of the village (Benuaroa)	0.5	2 times/week	**income**
Autukia, Benuaroa	*te bun* (ark shell)	–	In the MPA: *te namo* (Autukia), in front of the village (Benuaroa)	–	–	**restoration** (no harvesting in MPA), **food** (Benuaroa)
Autukia, Benuaroa	*te baneawa* (milkfish)	pond	In the village, ocean side (Autukia), at the end of the village (Benuaroa)	just before filling the pond with fingerlings	2 times/year	**food, special village events**

Men described resources that were abundant in the past and have now vanished, which they attributed to the building of causeways. They also explained that the roles of women and men in fisheries are changing. Men are collecting species that were previously collected by women because of the high demand, and/or helping women with the post-harvest processing (e.g. peanut worm). Other gender norms have changed. In the past, household chores were undertaken by women and "men were not obligated to help". However, today, men help women with household chores more regularly than in the past.

Women and men shared different examples of cultural beliefs and superstitions regarding fishing (Table 16), as well as traditional knowledge and fishing practices. Beliefs and superstitions were highly gendered and related to avoiding activities that might impact men fishing; none related to women fishing. Similar to other atolls, beliefs and superstitions around women focused on negative taboos related to menstruation. Many beliefs and superstitions are not currently practised. For example, following the construction of a *mwaneaba*, an elderly woman previously would sit in one corner and chant for approximately an hour. The chant was meant to summon the whale to the coastline. The woman then signalled to the men that they could go and capture the whale to feed the entire village as a celebration of their *mwaneaba*. Male fishers also previously performed a wide variety of rituals before and while fishing to catch more fish. The current generation no longer knows these rituals and Christianity is believed to have wiped them out.

Causeway, Nonouti © Margaret Fox

Communities on Nonouti Atoll still use traditional knowledge and practices for fishing that are passed on to children and youth (e.g. *te kamata, katei bwaenaata, te waibo, te uu*), although some have been lost or are no longer practised (e.g. *te uaakeang, te rai*). It was noted that men have lost the skills to sail traditional canoes for fishing. In some cases, the traditional fishing knowledge and skills still exist, and only rituals that are considered black magic are left out, for fear that it might contradict Christian beliefs. The knowledge and traditions are passed to children by their parents, as well as through other family members, friends and elders orally and while accompanying them on fishing trips. Children join to help families meet their food needs as well as for 'entertainment'. One group explained that, in in the past, knowledge that was associated with 'black magic' (e.g. superstitions, unseen and powerful spirits) was always passed down to the eldest son in the family because it was the eldest son's responsibility to know his ancestors' knowledge and skills and, later, to pass it down to his eldest son so it is not lost.

Table 16. Cultural beliefs or superstitions regarding fishing, held by different social groups in Nonouti Atoll.

Group	Beliefs or superstitions
Young, middle-aged and elder women	Women who are menstruating are not allowed to go fishing or, in some cases, to go onto mud flats as it brings bad luck and can affect the catch of other fishers (e.g. worms, *te koumwara* [Pacific asaphis], *te koikoi* [clam]).
Young women	The wife of a male fisher should not sleep with her husband before he goes fishing, as doing so would hinder his success at fishing.
Middle-aged women	*Te binekua* is a well-known traditional fishing method whereby fishers sleep for three days with the belief that, as soon as they wake up, dolphins will be prevalent on the shore of their village.
Middle-aged women and young men	*Mwiin te tia akawa* is the cultural belief that the place where male fishers usually sleep – *te kiakia* (local house) – cannot be used or disturbed, and children cannot play or make noise there, as it can cause fish to escape when they are fishing.
Elder men	*Karaoi kawai* refers to letting male fishers rest and sleep early and peacefully so that they can have a good catch the next day.

5.3.2 Access, control and decision-making over resources

The majority of community members participating in FGDs stated that marine resources were open access and that, in general, there were not any fishing or aquaculture activities that are not allowed for certain groups. There were three areas that were not open access: the milkfish pond, which is village owned and requires the permission of the village committee (*kain te taibora*) to fish there; and Namaroto Islet and the MPAs, where fishing is prohibited.

Some traditional management systems were used to manage resources. Some groups referred to the practice of *tabutabu*, among some families, whereby specific people are not allowed to eat or catch certain fish species (e.g. *te on*, *te baiku*, *te rereba*). If people did not adhere to this practice, it was believed that it would bring bad luck to the family or they might die. The traditional practice of *katei bwaenaata* is practised by some in Nonouti Atoll. This practice entails building a rock pile to provide fish a place to live while also giving people the opportunity to fish there for roughly three days. After a month or two, the rocks are no longer usable and people pile up more stones elsewhere. Abandoned rock piles often continue to create a home for a variety of small fish species.

Participants were asked if they knew of any LMMAs, MPAs, or fishing restrictions in this community. Participants from Autukia Village listed Namo MPA, which was established under MFMRD's Nei Tengarengare project and entails a penalty of AUD500 for anyone who fishes there. Certain areas (MPAs) in front of the village are closed for *te koikoi* (clam) and *te koumwara* (Pacific asaphis). There is also a mangrove site protecting crabs and a lagoon site protecting finfish from all forms of harvesting. The village manages the MPAs and has banned the traditional practice of *katanrake* (a type of fishing that targets crabs near the coastline). Elder men mentioned that, under the Fisheries Regulations, no one is allowed to catch undersized fish or target bonefish or flying fish during their spawning season (new/full moon phase). Participants from Benuaroa Village mentioned a former closure for *te koikoi* and *te koumwara* in front of Tabontebike Village. Fishing was banned in Namaroto islet many years ago by the community. MFMRD has supported the community's efforts to manage their resources by developing a regulation for Namaroto to protect this important spawning site for multiple species. The village also bans the harvesting of rock materials.

Participants were asked to reflect on how management initiatives (e.g. LMMA, MPAs, fisheries restrictions) impacted versus benefited women and men in the community. Women felt the impact on them was negative because they could not access certain areas for *te koikoi*. However, they also saw benefits of increases in fish and crabs in the *te namo* MPA. This suggests that women were not well consulted when determining the closure area for *te koikoi* and a more in-depth discussion may be

required to better understand the negative impacts on them and if any changes are needed. In contrast, men felt there were no negative impacts resulting from the management initiatives, and they benefited from the increase in abundance of fish and crabs within the MPAs and overspill into adjacent fishing areas. Participants from Benuaroa Village largely felt there were no impacts (positive or negative) or benefits from the management initiatives. Some noticed there were only a few *te koikoi*, despite being closed to fishing, and only young men felt there was an increase in marine resources resulting from the closure.

5.3.3 Marine resource value chains

To understand the gender dimensions of fisheries and aquaculture value chains and different perspectives, each group is described separately in this section. Autukia Village has a milkfish pond and only sells fish when there is an abundance. It is usually sold to people outside the village at AUD30 per bucket and the money is kept in a village fund. Otherwise, the village largely uses the milkfish for *mwaneaba* events. In Benuaroa Village, there is only a newly established milkfish pond owned by one family, and there have not been any sales to date.

Young women and men shared the responsibility of selling fisheries resources; however, for the middle-aged and elders, it was mainly the women who were responsible for selling. Young men emphasised that the income from their catch was used to support church functions. Sales were held in the village, along the roadside, in neighbouring villages or at the Nonouti Island Council accommodation. Sometimes, customers came directly to specific fishers to buy, for example, *te ibo* (peanut worm), and some fishers only sold when there were specific orders (e.g. elder men from Autukia Village). Elder men in Benuaroa Village stated that they did not sell resources and only gifted them to neighbours when they had a high catch. The main post-harvesting (or value-adding) that is done is cooking, salting, drying or smoking fish and selected invertebrates (e.g. *te ibo, te koikoi*). Women also made *te ibunroro*, which is a traditional and popular method for cooking *te koikoi* (clam).

With the exception of one middle-aged man, none of the participants had bank accounts and most lacked knowledge of microcredit schemes. However, the women in Autukia Village were able to apply for AUD100–200 loans through money lenders in the village. Middle-aged men explained that they all had access to microcredit through their communities. For example, in Autukia Village, men were able to obtain a loan of AUD300 with 10% interest. Some men explained that they had used loans to purchase fishing gear, such as gill nets, fishing lines, torches, snorkels, and fins.

Nonouti © Margaret Fox

Table 17. Control and management of income earned from fisheries by women and men. The responses of each group are presented separately.

Young women	Middle-aged women	Elder women
Young women in Autukia Village mentioned that the elders from the church control the money earned as sales are only for the church. This response could be attributed to the women's limited engagement in fisheries livelihood activities which may be intended for church fundraisers only. In Benuaroa Village, most women make decisions about the use of earnings from the sale of fisheries resources, with some saying that their husbands spend their earnings on kava, so they prefer to keep it than to give it to them.	Some make decisions on their own, while others make decisions jointly with their husbands. However, most women in Autukia Village said their husbands make decisions on how the money earned from fisheries resources is spent.	Some elder women decide how to use the earnings, while the husbands decide for others.
Young men	**Middle-aged men**	**Elder men**
In the villages of Autukia and Benuaroa, the money earned by men is given to the elders at the church to support religious functions. Similar to the young women of Autukia, young men's engagement in any fisheries livelihoods activities is limited and, thus, their response suggests that their involvement in fisheries-related economic activities is likely for church fundraisers only.	Some men indicated that they make decisions on the earnings from fisheries resources and give a set amount to the women to buy household items and keep the rest for themselves; others were more specific and said the man retains approximately 40% for his own use and gives the rest to his wife for household needs.	The woman is given 70% of the earnings for household needs while the husband retains the remainder for entertainment and other personal needs.

5.3.4 Key challenges and barriers

To understand the barriers and challenges through a gender lens, the responses and perspectives of each group are described separately in this section.

Young women faced only the challenge of improving the quality of the seafood they sold. They were not able to provide any suggestions for improvement. **Middle-aged women** face challenges or barriers to selling marine resources, including a lack of places to sell products (i.e. most have to travel to other villages to sell), a lack of transport, a lack of knowledge on value-adding, and customers buying on credit and taking a long time to pay fishers. Suggestions for addressing the barriers were to build a market facility (e.g. stalls) in the village, provide sellers with transport to other villages, request MFMRD to provide training on seafood value-adding (seaweed jelly or ice cream), and construct a facility, like Central Pacific Producers Limited, close to their village. **Elder women** face challenges or barriers to selling marine resources, including finding customers because the island is scattered, requiring transport to reach the other village.

Young men indicated that they do not face any challenges or barriers to selling marine resources and, since they are young, it was not their place to offer suggestions and they followed and obeyed any decisions made by their leader or elders.

Middle-aged men face several challenges or barriers to selling marine resources, including the lack of a fishing centre, the lack of solar freezers to keep fish fresh, the breakdown of the ice plant (preventing people from preserving their fish), a lack of gill nets, and a large sandflat with no channel to bring canoes and boats closer inshore. They suggested that, if they could acquire canoes, this would enable them to bring their fishing gear and catch closer to shore. Given the existing fish centre on the island is far from the village, they also suggested a fish market in the village or the provision of solar freezers to preserve their catch and help increase their capacity to sell fish.

Elder men face some challenges or barriers to selling marine resources, including isolation from the main fishing centre and a lack of ice plant or solar freezer nearby. They suggested a fish centre to enable them to freeze their catch (e.g. finfish, peanut worm). However, most of them did not have any plans to sell or market their catch but would like to preserve their food for future use in case of natural disasters or bad weather.

Most groups (except elder women and young men) were able to provide examples of the impacts of climate change on fisheries or aquaculture (Table 18). Almost all groups (except middle-aged women) highlighted the negative impact that the building of causeways had on marine resources. For example, young women explained that 10+ years ago when the causeway was constructed, villagers noticed that *te ibo* (peanut worms) went into decline and became harder to catch. Elder women noticed a loss of habitat and of associated species (e.g. snappers, orange-lined triggerfish, star spotted grouper, *te koikoi* and *te ibo*) after the causeway was constructed. Middle-aged men noticed increased coastal erosion, saltwater intrusion, loss or declines in marine species (e.g. peanut worms), and changes in the spawning patterns (e.g. *te inonikai*, the mullet is no longer spawning) resulting from the causeway, while elder men noticed algal blooms in the channel and in the lagoon, coastal erosion, loss of fish spawning areas for *te aua* (mullet), and loss of specific species (e.g. *te tewe, te ibo*).

Table 18. Impacts to fisheries or aquaculture highlighted by different groups in Autukia and Benuaroa villages, Nonouti Atoll.

Group	Climate change impacts
Young women	• *Te koikoi* (clam) populations have decreased due to the increasing seawater temperature • Bad weather affects their ability to fish or glean • Heavy rainfall impacts the processing of resources for selling • Hot weather increases sickness while out fishing or gleaning
Middle-aged women	• Sea-level rise is causing changes in the habitat of some species (e.g. *te koikoi*, *te koumwara*) • Constant rainfall can prevent or affect gleaning for some species (e.g. *te ibo*) • Bad weather and sea-level rise prevent male fishers from going out to fish, as they are concerned about their safety • High temperatures are causing an increase in skin burns and fish kills
Middle-aged men	• Heavy rain has caused the natural salt found in ponds to disappear • Small octopus are no longer found or have become extinct in the lagoon
Elder men	• Bad weather and sea-level rise makes male fishers feel unsafe at sea • High temperatures result in skin burn and fish kills

5.3.5 Support, opportunities and aspirations

Participants were asked if they had received external help for fisheries, marketing, aquaculture or fisheries management, and about opportunities to participate in fisheries or aquaculture-related workshops. Half of the respondents were not able to answer this question. For those who did respond, MFMRD frequently came to the village to help with community-based fisheries management, established MPAs and provided seaweed training, with both women and men invited to workshops.

Participants were asked if the government or other agencies have provided fisheries or aquaculture support to help the communities adapt to climate change. The participants described several types of support they had received including: awareness and training on mangrove replanting to reduce erosion (conducted by MELAD), the construction of local (called *katei bwibwi*, supported by MELAD) and modern seawalls (supported by the Ministry of Infrastructure and Sustainable Energy [MISE]), a Government-funded solar pump that supplies a well, and improvements to gardens to support food security.

Finally, each group was asked what they would like improved for themselves or their families, and the future they hope for their children. The women mentioned supporting their children's education and teaching them traditional fishing skills so they can feed themselves and have an alternative source of livelihood if needed. The women also wanted more information on credit loan procedures and small grants so they could invest in their own businesses. They requested more MFMRD training to improve their knowledge of fishing and/or the management of marine resources and aquaculture (e.g. seaweed farming), and they sought broader government support to build causeways and roads and improve school transport.

Men wanted to improve their family well-being and become resilient to critical issues, such as access to safe drinking water, and ensure transport to school for their children. They hoped for more support for livelihoods, including access to milkfish ponds (which can be used when it is unsafe to fish at sea), the re-establishment of seaweed farming in their village to support women with income generation, and trainings on engine repair and maintenance, fishing canoes, fishing gear, and access to an ice plant. Some wanted support to improve the village's capacity for eco-tourism and to promote its assets (e.g. MPAs, unique cultural practices), and some were interested in establishing a MPA and in developing a management plan for their resources.

Fishing from a canoe © Kinanoua

5.4 Kiritimati Atoll

Kiritimati Atoll in the northern Line Islands has the greatest land area of any coral atoll in the world, about 388 square-kilometres; its lagoon is roughly the same size. In 2020, Kiritimati had a population of 7369 (6.2% of the national population) (SPC 2022) spread across four villages – London, Tabwakea, Banana and Poland (SPC 2022). The village of Paris is now abandoned. Of the 7917 air arrivals to Kiribati in 2019, 30% arrived in Kiritimati Atoll (Pacific Private Sector Development Initiative [PSDI] 2021). According to the Tourism Authority of Kiribati 2020, 69% of visitors came to Kiritimati for fishing purposes and 61% took part in sports fishing; fly fishing for bonefish is popular among anglers.

There are more than 100 natural lakes and ponds on land, many of which are used for the culture of milkfish (Awira et al. 2008). Milkfish farming is undertaken in government-controlled ponds and produces an average of 15 tonnes per year worth around AUD40,000 (MFMRD 2014). Kiritimati is blessed with abundant natural ponds; however, many of these ponds are underutilised in terms of milkfish production. People are highly dependent on reef fisheries as their main source of nutrition as there is almost no agricultural produce, few pigs and chickens, and any alternatives are imported at a high cost (Ibid.). The national census recorded 66% of households in Kiritimati engaged in fishing (Kiribati National Statistics Office 2020). This contrasts with previous studies that found 95% of households engaged in fishing, largely for subsistence (Watson et al. 2016), with annual fish consumption on the atoll estimated at 110 kilogrammes per capita (Awira et al. 2008). Fishers sold 20–100% of their catch for income, with 18% of fishers relying on fishing (i.e. selling fish, aquarium fish harvesting, and working on fishing vessels) as a primary source of household income (Watson et al. 2016). Previous research found that two thirds of the annual reported finfish catch is consumed locally, while 21% is exported to Tarawa (Awira et al. 2008).

5.4.1 Fishing for a living and gender roles

Households in Kiritimati are highly gendered with women assuming more responsibility for domestic (unpaid) work (an average of 8.5 hours per day) than men (an average of 4 hours per day) (Fig. 5), while men undertake more livelihood/paid work (an average of 7.3 hours per day) than women (an average of 0.9 hours per day). Women at different stages in their lives spend their time similarly, although elder women do not invest time in livelihoods. On the contrary, for men, there were notable differences based on age. Youth seemed to spend more time helping with domestic work, and middle-aged men were more invested in livelihoods. Elder men continue to invest in livelihoods. Women tended to use their leisure time to play bingo and cards, and men to drink kava. While only elder men reported drinking kava, in their time diaries (see Fig 5), young and middle-aged men also consume kava (MFMRD, pers. comm.). Only elder men from Banana Village spent time on 'church or community gatherings' (listed under culture/religion). The Kiribati National Statistics Office (2020) documented fewer than 1% of households fishing, primarily for customary practice.

Copra dryring, Banana Village Kiritimati© Margaret Fox

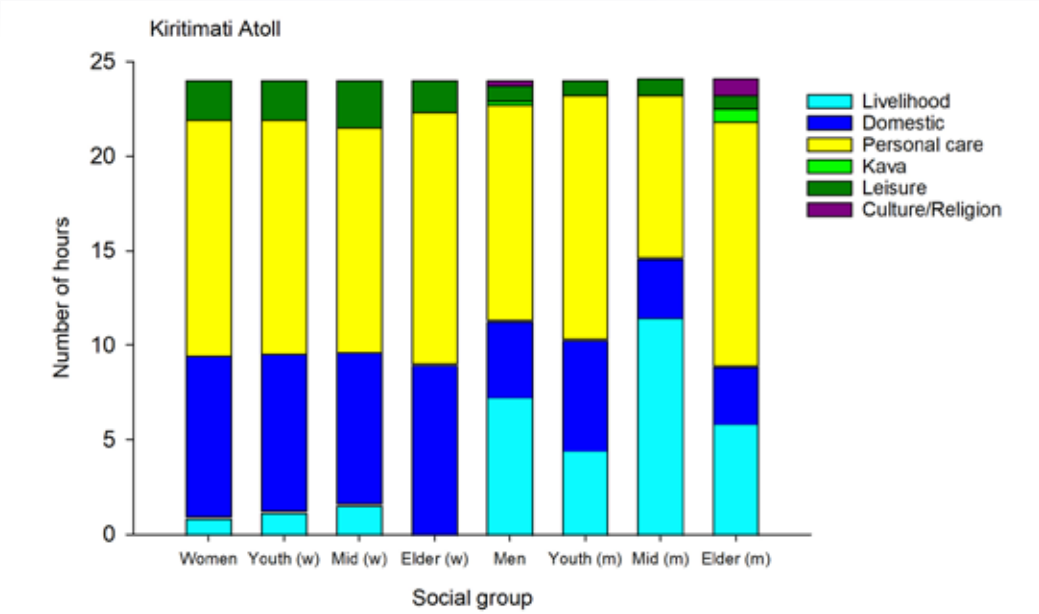


Figure 5. Comparison of time diaries across social groups on Kiritimati Atoll. See methods for a full description of the six activity categories. The number of participants in each group is shown in Table 1. "Mid" refers to middle-aged persons, "w" refers to women and "m" to men.

Each group was asked to identify the top 3–5 species they targeted for fisheries and for aquaculture, and then to answer a series of questions on their fishing and farming practices on Kiritimati Atoll (Table 19). Two groups did not fish. Elder women from Poland no longer fished due to their age and health, and the women's youth group from Tabwakea (aged 18–19 years) focused on their education.

Unlike the other three atolls (i.e. Tarawa, Maiana, Nonouti), there were not as many gender differences between women and men in terms of the species targeted and gear types used (Table 19). Both male and female fishers largely targeted lagoon or reef fish using gill nets, scoop nets, fishing rods, and fishing line and hook. Only men targeted jacks, tuna and sharks, using cast nets, snorkel and mask. There were differences in the habitats targeted, with women largely fishing in lagoonal areas and ponds, while men targeted a wider range of habitats including lagoons, coral reefs, ponds and habitats on the ocean side of the atoll. Transport used by both women and men were motorbike, foot or car. In addition, men used trucks, boats and canoes. The time spent harvesting and the frequency of harvesting varied between fisheries species. The largest investment of time was men spending 10–12 hours fishing for coral reef fish and tuna from boats using a fishing line and hook. Most catch was for food, and only a few species were sold (e.g. *te baneawa*, landcrabs, *te rereba, te kiika*).

Fisheries activities and the roles that women and men play have changed over time. Women mentioned that, in the past, they did not fish or were more restricted when fishing. Today, it is more culturally acceptable for women in Kiritimati to fish on their own or to accompany their husbands and to use types of gear (e.g. fishing rod) previously only used by men. Leisure activities have also changed. Women now spend more time playing bingo and cards, especially at the end of the day. All women's groups noted that men fished more before the arrival of kava to Kiribati. Today, men often spend the whole night drinking kava, resulting in no fishing (or other work) the next day. This is causing a higher dependence on imported and canned goods than in the past. Others noted that both women and men are more involved in copra than in the past. Men similarly highlighted that women (as well as children) now fish more than in the past, while men do more post-harvest activities (e.g. scaling, cleaning and cooking fish). Some men also noted that women now work more outside the home, in offices, resulting in men having to clean the fish when they return from fishing trips.

Women and men of all ages shared different examples of cultural beliefs and superstitions regarding fishing (Table 20), and traditional knowledge and fishing practices. Similar to the other three atolls, many of the beliefs or superstitions were highly gendered and centred around activities or actions that might impact men fishing; none related to women fishing. There were fishing restrictions placed on girls and women when they were menstruating but, similar to elsewhere, these were framed around how menstruation affected male fishers and the success of their fishing trip.

Table 19. Main fisheries species and harvesting practices of young women and men (18–29 years), middle-aged women and men (>30 years), elder men (*unimwane*) and elder women (*unaine*) living in Banana, Poland and Tabwakea villages on Kiritimati Atoll, Kiribati. Under 'Purpose(s)', the main reason for harvesting a species or group of species is shown in bold. '*' denotes traditional fishing gear (the definitions for which are provided in the Glossary of I-Kiribati terms). '–' indicates that no information was provided.

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose(s)
Young women	*te baneawa* (milkfish)	gill net	lagoon, ponds	motorbike	1	2 times/week	**food**
	te bawe (blacktail snapper)	fishing rod	coral reefs	motorbike	2	1 time/week	**food**
Middle-aged women	*te baneawa* (milkfish)	gill net	lagoon, ponds	motorbike, car	3–5	1–4 times/week	food, **income**
	te kiika (octopus)	*te kai-ni-kiika**	coral reefs	foot	1–2	2 times/week	**food**
	te aua (mullet species)	gill net	lagoon	motorbike	3	2–3 times/month	**food**
	te bawe (blacktail snapper)	gill net	lagoon	motorbike	3	2–3 times/month	**food**
	te ikanibong (humpback red snapper)	gill net	lagoon	motorbike	3	2–3 times/month	**food**
	te bunii (pufferfish)	hand spear	lagoon	motorbike	2–3	1 time/week	**food**
	te ika n aonora (lagoon fish)	fishing line and hook	lagoon	motorbike, car	>3	2–3 times per month	**food**
	te ika n aonora (coral reef fish)	gill net, scoopnet	coral reef	foot	1–2	–	**food**
	landcrab	hand	inland	foot	–	daily	food, **income**
Elder women	*te baneawa* (juvenile milkfish)	fishing rod, gill net	lagoon	foot	1–2	2 times/week	**food**
Young men	*te ika n aonora* (reef or lagoonal fish)	spear, torch	lagoon, inner and outer reef	foot	2–4	1–3 times/week	**food**
	te baneawa (juvenile milkfish)	gill net	lagoon, ponds	truck, motorbike	1–4	2–3 times/week	**food**
	te ikari (bonefish)[13]	gill net	lagoon	motorbike	2–3	2 times/week	**food**
	te tewe (goatfish)	gill net	lagoon	motorbike	2–3	2 times/week	**food**
	te nnewe (lobster)	scoop net, torch	coral reefs	motorbike	3	2–3 times/week	**food**
	te *aua* (mullet species)	gill net	lagoon	motorbike	1–2	3 times/week	**food**
	te ikanibong (humpback red snapper)	fishing line and hook	lagoon	motorbike	2	1 time/week	**food**
	te rereba (small trevallies)	gill net	lagoon	motorbike	1–2	3 times/week	**food**, income

[13] The harvesting of bonefish was banned on Kiritimati Atoll (at the time of this study).

Group	Fisheries species	Gear type	Fishing areas	Transport	Harvesting time (hours)	Frequency of harvesting	Purpose(s)
Middle-aged men	*te ikari* (bonefish), *te baneawa* (milkfish), *te aua* (mullet species)	gill net	lagoon, ponds	foot, motorbike	2–3	3–4 times/week	**food**, income
	te baneawa (milkfish)	castnet, gill net	coral reefs, lagoon	bicycle, foot, motorbike	0.5	2 times/week	**food**, special occasions
	ikan te nama (lagoon fish), *te ika n aonora (reef fish)*	gill net, spear, mask and snorkel	coral reefs, lagoon, ponds	boat, foot, motorbike, truck	2–3	2 times/week	**food**
	te koikoi (clam)	hand	lagoon	motorbike	2–3	1 time/week	**food**
	te ikan te rakai (reef fish)	castnet	lagoon	motorbike	0.5–1	1 time/week	**food**
	te nari (double-spotted queenfish)	*te burae** (fishing with feather lures as bait)	lagoon	boat	2	monthly	**food**
	te rereba (small trevallies)	*te burae* (fishing with feather lures as bait)	lagoon	boat	2	monthly	**food**
	te were (giant clam)	mask and snorkel	coral reef	motorbike	1	1 time/week	**food**
	te *kiika* (octopus)	*te kai-ni-kiika**	coral reef, lagoon	motorbike	0.5–2	1 time/month	**food,** income
	te ika uraura (red grouper species)	speargun	lagoon	motorbike	1	1 time/week	**food**
	te ika n marawa (deep sea fish)	fishing line and hook	open water	boat, canoe	5–6	daily	**food,** income
Elder men	*te baneawa* (milkfish)	gill net	lagoon, ponds	bicycle, motorbike	2–4	1–2 times per week	**food**
	te koinawa (convict surgeonfish)	castnet	reef flat, ocean side	foot	1–2	2 times per week	**food**
	reef fish	speargun	coral reefs, lagoon	foot	>10	daily	**food, income**
		fishing rod	reef flat, ocean side	foot	0.5–1	2 times per week	**food**
	te baneawa (milkfish), *te aua* (mullet), *te ikari* (bonefish)	gill net	lagoon, ponds	motorbike	3–4	1 time per week	**food**
	jacks	fishing rod	ocean side	bicycle	1	1–2 times/week	**food**
	jacks and sharks	fishing line and hook, gill net	coral reef, ocean side	bicycle, motorbike	4–7	1–2 times per month	**food**
	tuna and mixed reef fish	fishing line and hook	coral reefs, ocean side	boat	10–12	1–2 times per month	**food, income**

Key informant interviews, Banana Village, Kiritimati. © Margaret Fox

Communities on Kiritimati Atoll still use traditional knowledge and practices for fishing that are passed on to children and youth. This includes knowledge on the harvesting of *te ibo* (peanut worms), *te waro* (mantis shrimp) and triggerfish, and the use of specific gear types (e.g. spears, pole and line). However, some traditional methods have been lost or have changed. For example, in the past, women wore local skirts made from coconut leaves and entered the sea to form a circle, holding each other's hands. This trapped the fish inside their circle like a human gill net. Skills in making scoop nets (for *te kibee*) have also been lost. In the past, people using *te maa* selected specific bait to catch the species they were targeting; this has been replaced by the current practice which is not to use bait and to target any fish.

The majority of women learned traditional fishing methods by watching their parents fish, although middle-aged women from Tabwakea also learned through the village elders. The elder women from Tabwakea Village said their parents kept records of fishing methods that were passed on to their children when they were mature. Men, on the other hand, learned traditional fishing from their fathers and by following the practices of elder men (or others in their community). There were examples of traditional practices that are not used anymore as they have been replaced by modern gear (e.g. use of coconut leaves woven to form gill net).

Table 20. Cultural beliefs or superstitions regarding fishing, held by different social groups in Kiritimati Atoll.

Group	Beliefs or superstitions
All groups	The sleeping place of a male fisher cannot be disturbed while he is out fishing, especially in the outer reefs and offshore waters. This includes children playing in or near the room, entering the room, tidying up the room or using the fisher's belongings.
Middle-aged and elder women, young men	Male fishers should sleep separately from their wives before fishing.
Young and middle-aged men	Some families continue to practise *Tabutabu*, a traditional practice that was well known in the past and is still practised by some families, which involves restrictions on the consumption of certain foods. If fishers do not comply, they can contract diseases (e.g. skin issues) or become cursed and possibly die.
Young women	A male fisher cannot eat fish, especially sharks, before he goes fishing. If he eats shark meat, it is believed that he will have a shark-related accident during the fishing trip.
Elder women	It is believed that you gain strength and become healthy from eating the fillet of the fish, excluding its belly.
	Using traditional bait methods will ensure a fisher has a good catch every time s/he goes fishing.
	The male fisher's wife (or if she is busy, the fisher's children) must stand on the shore and welcome him every time he returns from fishing.
Young men	When a woman is menstruating, she cannot touch the fishing gear used by men as it will bring them bad luck when fishing.
	In order to have a high catch, male fishers must take their first catch (while out fishing) and put it in the bucket of water. The water is then poured over their whole body.
Middle-aged men	*Kabweari* is the practice of putting perfume over the smoke of odoriferous plants to fumigate persons or traditional rituals for the purpose of making male fishers strong and likeable by fish.
	Ariari is the practice of burning coconut husks and inhaling the smoke to make male fishers strong and likeable by fish.
Elder men	Women are not allowed to fish during menstruation, and girls who are menstruating are not allowed to serve food to male fishers.
	Kareke n taninga are good luck chants that are sung before fishers go out to sea. They also pick up a particular flower and whisper something, before placing the flower behind their ears, as this is believed to bring the fishers more catch.

5.4.2 Access, control and decision-making over resources

The majority of community members participating in FGDs stated that marine resources were open access and that, in general, there were not any specific fishing or aquaculture activities that are not allowed for certain groups. The only restrictions were areas that MFMRD or MELAD's Wildlife Conservation Unit[14] had designated as 'closed to fishing' or required a licence to access, and this applied to everyone in the village. Middle-aged women from Banana Village stated that there were some community sites (e.g. Mataroa 6) where fishing was restricted but they were unable to point to the exact location on the map. Middle-aged men were aware of some of the species and gear bans or restrictions under fisheries laws and regulations: for example, the requirement that gill net mesh size must exceed two inches, and bans on harvesting bonefish, undersized fish, and sea turtles. There are natural ponds on Kiritimati Atoll, some of which are used for milkfish, which can only be accessed by those with a fishing licence.

When asked who controlled the use of marine resources, all participants listed the government, and specifically MFMRD and MELAD. Kiritimati Atoll is a state-owned island and, thus, were no traditional management systems used by communities to manage their resources. However, many of the groups referred to *tabutabu*, which was largely practised in the past (with only some still practising it today) whereby certain families or individuals are not allowed to do or eat certain things (Table 20). If they do not follow this, they risk contracting a severe disease (e.g. skin problem), becoming cursed, or dying. For example, there are some families in Banana Village that are not allowed to eat *te kuau* (groupers), *te baiku* (stingrays), *te on* (turtles) and *te bwaweina* (blackspot snapper), while some in Tabwakea are not allowed to eat turtles, *te urua* (giant trevally), *te raku* (billfish) and *te kuau* (groupers). In Poland Village, some families are not able to eat turtles, stingrays, and giant trevally due to *tabutabu*. Sharks are forbidden for those who believe that eating shark meat increases their risk of having a shark-related incident in the water (Table 20).

Participants were asked if they knew of any LMMAs, MPAs, or fishing restrictions in their community. Young and middle-aged women were less able to provide specific examples but were aware of some natural ponds with restrictions; one youth group mentioned restrictions on fishing near Bwaareti Village,[15] and a middle-aged group mentioned Half Dam, but neither knew specifics. Of all of the women's groups, elder women from Banana Village were the most knowledgeable and listed: (a) Motu Tapu, Motu Upua, and Cook islets that were closed by the Wildlife Conservation Unit to protect birds and other animals that use the area for reproduction; (b) Mataroa Onoua and Half Dam which have milkfish and were closed by MFMRD, while others required a licence to fish. In contrast, elder men were unable to provide specific examples of LMMAs, MPAs or fishing restrictions compared to young and middle-aged men. Young men listed areas in the lagoon (e.g. 9-Mile), islets (e.g. Cat Island), as well as some milkfish ponds and Bwaareti Village, although they did not provide details on the type of management being undertaken. Young men from Tabwakea mentioned MPAs around their village but did not provide specifics. Middle-aged men mentioned areas where fishing was prohibited or restricted under regulations set by MFMRD or MELAD, and there were restrictions on locals bonefishing to ensure sufficient bonefish numbers for tourists visiting for recreational 'catch and release'.

Participants were finally asked to reflect on how management initiatives (e.g. LMMA, MPAs, fisheries restrictions) impacted versus benefited women and men in the community. In general, groups stated there were little to no negative impacts on them but found it hard to explain the benefits from management initiatives (which, in the case of Kiritimati Atoll, were established by MFMRD or MELAD). Where a group provided specific examples of impacts or benefits, these are described below.

[14] The Wildlife Conservation Unit, which is based on Kiritimati Atoll, is responsible for safeguarding all native wildlife in the Line and Phoenix Groups (Kiribati Wildlife Ordinance, Cap 100).
[15] This is a village at the far end of Poland Village, which is also known as Paris.

Family outing supplies, Kiritimati. ©Margaret Fox


Woman on bike, Nonouti. ©Margaret Fox

Benefits from management initiatives for women included more milkfish, tourism and individual income. The closing of the main fishing ground of one community near Bwaareti (Paris) Village (youth), and the banning of bonefishing throughout the island (elders), were the only impacts described by women. Men from all three groups (i.e. youth, middle-aged, elders) recognised that there were benefits they received from management initiatives, and these included support for the tourism industry, increased fish abundance, improved livelihoods, the protection of spawning and breeding areas for marine species, and more sustainable fisheries. Only two impacts of management initiatives were highlighted: one young men's group explained that they had to look for other fishing grounds far from their village due to the closure of the fishing ground near their village, and one middle-aged men's group described how pond closures (established by MELAD) affected their food security. Two groups of men (youth, middle-aged) from two separate villages felt management initiatives mainly benefited the government, while elder men from one village explicitly stated they were in agreement with government rules and regulations.

5.4.3 Marine resource value chains

To understand the gender dimensions of fisheries and aquaculture value chains and different perspectives, each group is described separately in this section. In some cases, it was not possible to discern who caught the marine resources that were collected (Q3.1), so responses were cross-tabulated against the responses presented in Table 19, where the main purpose of fishing is highlighted. The responses to questions Q3.1–3.5 suggest under-reporting on the sales of marine resources for income. No aquaculture was documented on Kiritimati Atoll within the three villages surveyed.

Similar to the other three atolls, it was largely women who were responsible for selling marine resources, although their husbands or family members (e.g. parents) may help sometimes. For example, in Poland Village, people sell their marine resources from their homes, which means that everyone in the family may have helped (or could help). All middle-aged women interviewed said they sold marine resources exclusively from their homes, while others (elder women) also sold by the roadside.

The main post-harvesting (or value-adding) includes gutting, cleaning, freezing, smoking and drying fish in the sun. The preparation and drying of fish can take about 0.5–2 hours depending on the volume of catch; although one woman said she sometimes spends the whole night cleaning, filleting, salting, and drying the fish. Some may ice their fish to keep it fresh longer.

There were mixed responses on whether the different groups had bank accounts. Most young and elder women did not have a bank account, while middle-aged women had differing responses (i.e. some had their own bank accounts, some shared an account with their husbands, and some did not have an account). Most women had not applied for microcredit; the ones who had applied had received loans for their copra business. Some women expressed their reluctance to apply for loans as they were uncomfortable with the responsibility of the repayment. The main barriers elder women described in accessing loans was a lack of knowledge about loan procedures and geographic isolation, and some were still waiting for their loans to be processed.

Some young men had bank accounts while others did not, especially those in their early twenties. Most had not applied for microcredit loans, and the few who had applied did so to meet family or cultural obligations. The main barriers young men faced were a lack of knowledge on microcredit procedures or no means to repay the loan. In contrast, in two of the villages, the majority of middle-aged men had bank accounts, while in the third the majority did not. Several middle-aged men had successfully obtained microcredit loans which they used to purchase fishing gear; they felt there were no barriers to applying for microcredit loans. Some elder men had bank accounts, while others did not. Similarly, access to microcredit varied in the group, and those who had been successful (in the past) used loans to support their fishing activities. The main barriers for elder men were the lack of paid jobs to repay the loans or challenges to meet the requirements of loan agencies.

Table 21. Control and management of income earned from fisheries by women and men.

Young women	Middle-aged women	Elder women
Men made the decisions about the income earned from fishing.	There were mixed responses from middle-aged women in terms of who made decisions on the income from selling marine resources: mostly women, the husband and wife, or a parent (father) made the decision.	There were mixed responses from elder women in terms of who made decisions on income from selling marine resources; sometimes, it was by women, sometimes men, and other times the husband and wife made the decisions together.
Young men	**Middle-aged men**	**Elder men**
Women were largely responsible for deciding how the money was spent. One group also highlighted that men could not be trusted with the money as some men spend it on drinking kava rather than using it for the benefit of the household.	The majority stated that the husbands and wives made joint decisions on how the income from marine resources was spent, and only one mentioned that the male fishers sometimes made the decisions.	Similarly, there were mixed responses on who made the decisions on income earned from selling marine resources: (a) women (as they made decisions relating to household spending); (b) husbands and wives together; and (c) the decision is made prior to spend it on church obligations.

5.4.4 Key challenges and barriers

To understand the barriers and challenges through a gender lens, the responses and perspectives of each group are described separately in this section.

Young women face several challenges or barriers to selling marine resources, including a lack of transportation to the main village and urban centre of Kiritimati (Ronton), the process for obtaining licences for marketing, and the lack of local market to sell their fish. There are periods when milkfish die in ponds due to extreme weather temperatures and salt concentration increases due to excessive evaporation. There have been numerous cases of food poisoning in the community, which they attributed to pollution. To address these challenges, the group suggested that a council office be established in their village to support their needs, and that transport be provided to those who want to sell their marine resources in other villages. Further, training on the safe handling of fish would help them improve their hygienic practices.

Middle-aged women face some challenges or barriers to selling marine resources, including increased prices, an inability to buy on credit, difficulty obtaining business licences, challenges maintaining the hygiene and quality of products, and spoilage during the wet season. To address these challenges, the group suggested a marketing centre, ice plant (and affordable ice), storage equipment, and fair pricing.

Elder women did not feel that they face challenges or barriers to selling marine resources as they currently sell from their homes. However, the group noted that an ice plant would be useful to keep their products fresh for longer and to improve hygiene standards, as well as a market facility to sell their products.

Young men face some challenges or barriers to selling marine resources, including taxes, the process for obtaining market licences, and the requirements of the Island Council.

Middle-aged men face several challenges or barriers to selling marine resources, including the process for obtaining market licences, compliance with Government rules and regulations, and the process for obtaining licences from the Island Council. Suggestions to address the barriers were to develop a market facility and ice plant in the village, help the community maintain or improve product quality, and reduce the cost of fishing gear. Some also suggested connecting the milkfish ponds to the lagoon to help improve the flushing of the ponds with seawater.

Elder men face several challenges or barriers to selling marine resources, including a lack of ice, poor fish quality and hygiene issues (e.g. exposure to dust and flies), a shortage of fishing gear and mending tools, a shortage of salt, and no cold storage. Suggestions to address the barriers included the provision of a market centre, availability of an ice plant, reduction in catch to reduce spoilage and wastage, provision of fishing gear to fishers, and sufficient salt.

The groups all highlighted impacts on fisheries from overfishing and climate change (Table 22). All groups were able to list examples of the impacts of climate change, highlighting people's awareness of the issue and how it impacts their lives. There was also some awareness of how human activities (e.g. pollution, overfishing) are also impacting marine resources.

Table 22. Impacts on fisheries or aquaculture highlighted by different groups in Banana, Poland and Tabwakea villages, Kiritimati Atoll.

Group	Climate change impacts	Anthropogenic impacts
Young women	• Extreme weather temperatures kill milkfish in ponds	• Pollution may be related to food poisoning cases from fish
Middle-aged women	• Excessive rain kills milkfish in ponds • Extreme dry or hot weather affects the general health of milkfish	• Ciguatera fish poisoning
Elder women	• Extreme weather temperatures kill milkfish in ponds	• Overpopulation is leading to the depletion of marine resources • Ciguatera fish poisoning
Young men	• Extreme weather temperatures kill milkfish in ponds • Heavy rainfall and sea-level rise flood milkfish ponds	• Overpopulation is leading to the depletion of marine resources
Middle-aged men	• Extreme weather temperatures kill milkfish in ponds • Fuel scarcity prevents or limits fishers from going fishing • An increase in certain species (e.g. fire corals, jellyfish) in the ocean affects fishers	• Overpopulation is leading to the depletion of marine resources • Ciguatera fish poisoning • The anchoring of vessels and ships is affecting marine habitats
Elder men	• Increased seawater temperatures or prolonged drought impact milkfish in ponds and lagoons	• An increase in the population is thought to be causing the depletion of marine resources • Fishing pressure is increasing due to the use of small mesh nets

5.4.5 Support, opportunities and aspirations

Participants were asked if they had received external help for fisheries, marketing, aquaculture or fisheries management, and about opportunities to participate in fisheries or aquaculture-related workshops. One third of the women's groups interviewed could not answer this question. Those who could stated that MFMRD was the main organisation that visited the village to work on fisheries or aquaculture, but that their visits were not frequent and only men attended their meetings. Young men had little awareness of external organisations visiting the village and thought it might be because they were not invited. These responses contrasted with middle-aged and elderly men who had attended workshops largely around the awareness of fisheries laws and regulations (where some women also attended), or specific trainings on boat and engine maintenance and safety at sea. Men highlighted a training that specifically targeted women on gutting yellowfin tuna. There were mixed responses from men on whether women were invited or not to workshops held in the village.

Participants were asked if the government or other agencies have provided fisheries or aquaculture support to adapt to climate change. While many did not have an answer, those who did indicated that the government replaced milkfish following major pond kills, and provided advice on sites with ciguatera. Some fishers target different species (e.g. octopus, landcrabs, coconut crabs) or fishing spots (including on the ocean side) during periods when there is mortality of milkfish in ponds.

Finally, each group was asked what they would like to improve for themselves or their families, and what type of future they hope for their children. Women mentioned better education for themselves or their children, and livelihood opportunities, such as aquaculture, to improve their food security. In addition to many items summarised in section 5.4.4, women wanted more opportunities to participate in workshops or consultations that came to their village. Some women also wanted a boat from the government so they could use it for fishing.

Men want better education for their children, and more livelihood, business and grant opportunities. In addition to many items summarised in section 5.4.4, men needed support from their family members to sell and market their catches, access to aquaculture and ponds, and financial assistance (regardless of their financial situation). Men expressed the hope of more sustainable management of marine resources as it is important to their (and their children's) food and income, to have a high standard of living for their families, and to live in a happy and respectful community.

6. Conclusion and recommendations

Focus group discussions held in 11 communities across four atolls revealed a highly gendered structure within fisheries, and therefore gender efforts are relevant to the sector. In contrast, as communities were implementing few aquaculture projects, a detailed gender analysis of aquaculture was less relevant. The study found differences between women and men in the fisheries they targeted, some traditional practices they employed, the gear used, and the roles and responsibilities they assumed along fisheries value chains. Women played a strong role in fishing in all communities and are often responsible for the post-harvest processing and selling of fish. In general, most fishers (regardless of gender and age) did not have bank accounts and did not access microcredit loans for fisheries or aquaculture. The roles of women and men in fisheries have changed, compared to the past, with women playing more prominent roles to support their families and, in some cases, to compensate for men fishing less. These findings and others documented by this study reinforce the gender aspects of fisheries that are important considerations for MFMRD, and provide further evidence of the need for gender mainstreaming in fisheries and aquaculture.

MFMRD is considered by its staff as an equal opportunity workplace. Non-discriminatory recruitment processes have enabled women to shift to leadership positions on their own merit. Even in positions that are heavily male-dominated, such as fisheries observers, Kiribati appears to be making more efforts in favour of gender equality than most Pacific Island countries. However, despite considerable interest and willingness, especially among senior staff, to integrate gender considerations throughout Kiribati's fisheries and aquaculture, the MFMRD faces challenges due to its limited technical capacity to effectively mainstream gender throughout the sector. Several opportunities and suggestions emerged during interviews with MFMRD and MWYSSA staff for the institutional analysis, and during FGDs with fishers across four atolls in Kiribati, lending to the recommendations below.

MFMRD boat © Sangeeta Mangubhai

Ensure institutional policies and plans support gender mainstreaming

1. **Ensure political commitment.** The current high commitment to gender mainstreaming in MFMRD needs to be maintained through the highest levels of political leadership. Without a consistent long-term commitment from political leaders, it is difficult to maintain gender mainstreaming investments within MFMRD. By aligning with Kiribati's international and regional commitments, MFMRD can demonstrate its dedication to uphold gender equality principles on both national and international fronts.

2. **Improve policies.** Both MFMRD and MYWSSA identified opportunities to integrate gender equity and broader social inclusion into policies.

   Ministry Strategic Plan. Current efforts to update the Ministry Strategic Plan for the period 2024–2027 present an opportunity to meaningfully integrate gender equity and social inclusion (GESI) considerations into the strategic priorities and actions of MFMRD. By embedding gender in a substantive and practical manner within the Ministry Strategic Plan, MFMRD can ensure that gender equality is prioritised as a core component of its mandate and activities. This entails incorporating gender-responsive objectives, targets, and strategies across all key areas of the Strategic Plan, including but not limited to, fisheries management, aquaculture development, conservation efforts, and community engagement initiatives. Furthermore, integrating gender into the Ministry Strategic Plan increases the likelihood of securing dedicated resources and support for gender mainstreaming efforts, while meeting global fisheries commitments and requirements towards gender equality in the sector.[16,17]

   National Gender Policy. The expiration of the National Gender Policy presents a unique opportunity for MFMRD to actively engage in its review and revision led by MWYSSA. Currently, the policy lacks specific sectoral engagement or guidance pertaining to the fisheries and aquaculture sector. By actively participating in the process, the MFMRD can ensure that the revised policy incorporates the gender needs and aspirations specific to fisheries and aquaculture. This involves advocating for the integration of gender-responsive approaches, strategies, and targets within the policy framework to address the unique challenges faced by women and men in the fisheries and aquaculture sector.

Improve GESI in community-based fisheries and aquaculture projects

3. **Undertake gender analyses.** Where data are lacking, MFMRD staff should be supported to undertake gender analyses of the communities with which they work, to help gain insights and a better understanding of the roles, contributions, and constraints of women and men in fisheries and aquaculture. By understanding the gender dynamics at play, interventions can be better designed and tailored to address the specific needs and priorities of different community members, thereby maximising their impact and sustainability. For example, a gender analysis could be undertaken prior to new aquaculture projects, investments in post-harvest methods or value-adding, or as part of the development of a community plan for managing their fisheries resources. The data collected with communities will likely be valuable for multiple projects.

4. **Disaggregate data.** The collection of relevant disaggregated data (e.g. by sex, gender, age, (dis)ability, other factors of diversity, etc.) across its divisions and units is essential for MFMRD as it strives to enhance its understanding of gender dynamics within the fisheries and aquaculture sector. By investing in the systematic collection, analysis, and reporting of, for example, sex-disaggregated data across its projects, in socioeconomic studies and monitoring programmes, the MFMRD can gain comprehensive insights into the diverse roles, contributions, and challenges faced by women and men in fisheries and aquaculture. The data not only supports targeted interventions to address gender disparities but also to enable the formulation of evidence-based policies and programmes that promote gender equality, enhance women's empowerment, optimise the overall productivity and sustainability of fisheries and aquaculture activities, and contribute to monitoring and evaluation (recommendation 14).

5. **Learn from traditional knowledge and practices.** The MFMRD should further invest in the documentation of traditional knowledge and practices in fisheries held by women and men. Doing so would help preserve valuable cultural heritage and ensure its transmission to future generations, and may be valuable for the sustainable management of marine resources. In Kiribati, several agencies could support or undertake the task of documenting traditional knowledge and practices in fisheries, including the Kiribati National Library and Archives and Language Editorial Committee under the Ministry of Education and the Kiribati Culture Unit under the Ministry of Culture

[16] For example, the Food and Agriculture Organization (FAO) of the United Nations' Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication, has specific commitments on gender equality.

[17] To export fisheries products to the European Union (EU), Kiribati must comply with EU requirements for a gender policy. The EU requires Kiribati to have a gender policy in place as part of its commitment to promote gender equality and sustainable development.

and Internal Affairs. The National Library and Archives could help document traditional knowledge by collecting and preserving oral histories, traditional stories, and other cultural materials related to fishing practices. The Kiribati Culture Unit could help document traditional knowledge as part of its responsibility for promoting and preserving Kiribati's cultural heritage.

6. **Support inclusive extension services.** Inclusive extension services play a pivotal role in fostering equitable and sustainable development in Kiribati's fisheries and aquaculture sector. It is essential to establish GESI-responsive extension services, which could be provided by trained MFMRD staff, cater to the specific needs and circumstances of both women and men in coastal communities, and address gender-specific barriers. By doing so, tailored assistance and knowledge-sharing opportunities can be provided, empowering women and other marginalised groups to actively participate in all stages of fisheries and aquaculture activities. These services should encompass a wide range of topics, including but not limited to, fisheries laws and policies, fishing techniques, aquaculture practices, post-harvest processing, marketing strategies, and business management. By ensuring the inclusion of women and other marginalised groups in extension services, Kiribati can harness the full potential of its human capital, thereby fostering social inclusion, economic growth, and environmental sustainability.

7. **Support women and youth.** Women and youth must be supported to foster an inclusive fisheries and aquaculture sector in Kiribati. Acknowledging the crucial contributions of marginalised groups, particularly women and youth, initiatives must be strategically crafted to amplify their participation and leadership roles. This entails designing GESI-sensitive interventions that cater to the specific needs and aspirations of these groups, thereby unlocking their full potential. Such initiatives encompass tailored training programmes and resource provisions, ensuring equitable access to financial technology, fishing gear and market opportunities, and fostering inclusive decision-making processes. These efforts can build upon and replicate MFMRD's current investments by, for example, engaging women and youth in aquaculture, providing training on value-adding specifically for women, and engaging marginalised groups to participate in fisheries management.

8. **Develop gender-sensitive value chains.** Encourage the development of gender-responsive value chains and market systems that recognise and reward the contributions of women along the entire production and distribution process. This includes gender-equitable access to productive assets, such as land, water, fishing gear, and technology, to help address traditional barriers and inequalities that limit women's participation and productivity. These efforts can build upon and replicate MFMRD's current investments by, for example, diversifying tuna and seaweed value chains (through externally funded projects). Investing in gender-sensitive value chains is essential for fostering inclusive economic growth and empowerment in Kiribati's fisheries sector. By promoting fair and inclusive value chains, the MFMRD can unlock the full potential of Kiribati's fisheries sector while simultaneously advancing gender equality and women's empowerment. Moreover, gender-responsive value chains not only enhance economic opportunities for women but also contribute to the resilience and sustainability of fisheries resources and communities.

9. **Foster inclusion in community-based fisheries management and decision-making.** The inclusion of women, youth, and persons with disabilities in community-based fisheries management and decision-making processes in culturally-sensitive ways is paramount to achieve sustainable and equitable fisheries governance in Kiribati. It is imperative to foster GESI-sensitive decision-making by guaranteeing the representation and active participation of these marginalised groups in relevant committees, councils, and management bodies across all levels of governance. By integrating diverse perspectives and experiences into decision-making processes, the resulting policies and management strategies can better reflect the needs and priorities of all community members. However, to achieve true inclusivity, existing barriers that hinder the participation of women, youth, and persons with disabilities must be sensitively addressed.

10. **Document gender in aquaculture.** Given the lack of public or internal information on the gendered aspects of aquaculture, MFMRD would benefit significantly from investing in better documentation of the gendered aspects of its aquaculture investments and support to local communities. This information can inform the design of more inclusive policies, programmes, and livelihoods that address gender disparities, empower women, youth and other marginalised groups in aquaculture, and enhance the overall productivity and resilience of the sector.

Improve MFMRD's technical capacity for GESI mainstreaming

11. **Invest in training.** Investing in strengthening the knowledge and capacity of MFMRD staff is essential to advance GESI within the fisheries and aquaculture sector. MFMRD staff need to understand GESI principles and develop practical skills to integrate these principles into their daily work. This can be achieved through comprehensive training programmes and ongoing technical support tailored to the specific needs and challenges faced by those in the fisheries and aquaculture sector. In the short term, establishing an agreement with MWYSSA to provide training on GESI could be a viable solution. However, there should also be a longer-term plan to fully institutionalise GESI training within MFMRD, ensuring the sustainability and continuity of efforts. Additionally, collaboration with the Public Service Office in Kiribati to develop performance incentives linked to training can further incentivise staff engagement and commitment to GESI integration. By investing in knowledge- and capacity-building, the MFMRD can empower its staff to effectively address gender disparities, promote social inclusion, and enhance the overall sustainability and resilience of the fisheries and aquaculture sectors in Kiribati.

12. **Design gender and socially inclusive fisheries and aquaculture projects.** All new projects should have specific objectives, activities and deliverables that contribute towards gender equality and broader social inclusion in fisheries and aquaculture in Kiribati. This requires investing in improving the capacity of staff in the Planning Division, which reviews all major proposals from external organisations. Capacity is needed, for example, in gender analysis and gender responsive-planning and programme management. In the interim, MWYSSA may be able to play an initial role by helping to identify specific activities or approaches that should be included in future projects being designed and developed by the MFMRD Planning Division.

Strengthen institutional conditions for gender mainstreaming

13. **Dedicate resources to gender mainstreaming.** Allocating both financial and human resources to gender mainstreaming is crucial to create an enabling environment for inclusive policies and programmes that can help address the specific needs and challenges encountered by women in the fisheries and aquaculture sector. The appointment of a Senior Gender Officer within the MFMRD is essential to mainstream gender across all divisions and areas of work. This role entails ensuring GESI is considered when implementing key policies, such as the Ministry Strategic Plan and the Coastal Fisheries Roadmap. Although external funding secured through projects prioritising gender integration may offer a short-term solution to budget gaps, gender-specific budgetary support is required within MFMRD. Enhancing gender budgeting and planning mechanisms will further ensure financial resources are effectively allocated to initiatives that promote gender equality and women's empowerment.

14. **Support monitoring and evaluation.** Monitoring and evaluation are indispensable components of effective gender mainstreaming efforts within MFMRD. Robust monitoring and evaluation mechanisms need to be established to systematically track progress towards gender mainstreaming goals. By regularly monitoring and evaluating gender mainstreaming efforts, the MFMRD can identify areas of strength and areas needing improvement, thereby ensuring greater accountability and transparency in its initiatives. Ultimately, investing in monitoring and evaluation not only demonstrates the MFMRD's commitment to gender equality, it also fosters a culture of continuous learning and improvement, leading to more sustainable and equitable outcomes in the fisheries and aquaculture sector.

Invest in partnerships and collaborations

15. **Strengthen MFMRD's relationship with MWYSSA.** MFMRD should further invest, strengthen and expand its current relationship with MWYSSA to support mainstreaming efforts in the fisheries and aquaculture sector. The partnership could prioritise developing and improving policies (recommendation 2), improving the design of future projects (recommendation 12) and addressing training and capacity needs (recommendation 11).

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Annex 1: Fisheries species

I-Kiribati name	Common name	Scientific name
te amori	longtail silver biddy	*Gerres longirostris*
te ati	skipjack tuna	*Katsuwonus pelamis*
te aua	mullet	Multiple species (Muglidae)
te baiku	stingrays	Multiple species
bai tabaa	squaretail mullet (juvenile)	*Liza vaigiensis*
te baiura	yellowfin tuna	*Thunnus albacares*
te baneawa	milkfish	*Chanos chanos*
te bawe	blacktail snapper	*Lutjanus fulvus*
te bun	ark shell	*Anadara uropigmelana*
te bunii	pufferfish	Multiple species
te buuroo	cowrie shells	Multiple species (Cypraeidae)
te bwaitari	jellyfish	Multiple species
te bwaua	mullet	Multiple species (Muglidae)
te bwaweina	blackspot snapper	Lutjanus fulviflamma
te bwere/katati	penshell	*Pinnidae*
te iaia	egg mass of seahares	-
te ibo	peanut worm	*Sipunculus indicus*
te ikanibong	humpback red snapper	*Lutjanus gibbus*
te ika n aonora	reef or lagoonal fish	Multiple species
te ika n marawa	pelagic fish (e.g. tuna, billfish)	Multiple species (pelagics)
ikan te nama	lagoon fish	Multiple species
te ikan te rakai	reef fish	Multiple species
te ikari	bonefish	*Albula glossondonta*
te ika uraura	red grouper species	*Plectropomus* species
te ingo	two spot red snapper	*Lutjanus bohar*
te kamakama	crab	Multiple species
te karon	humphead wrasse	Cheilinus undulatus
te kataawa	striped surgeonfish	*Acanthurus lineatus*
te nikatona	clam	*Quidnipagus palatam*
te katura	clam	*Mesodesma striata*
te kiika	octopus	*Octopus cyanea*
te koikoi	clam	*Asaphis violascens*
te koinawa	convict surgeonfish	*Acanthurus triostegus*
te koumwara	Pacific asaphis	*Gafrarium pectinatum*
te kuau	groupers	Multiple species

I-Kiribati name	Common name	Scientific name
te maebo (maabo)	bar-tailed goatfish	*Upeneus taeniopterus*
te mon	soldierfish	Holocentridae
te mwake	needlefish	Belonidae
te mwanai	crab (general name)	
te nari	double-spotted queenfish	*Scomberoides lysan*
te nimnai (mnnai)	rabbitfish	*Siganus* spp.
te nimwanang	peacock grouper	*Cephalopholis argus*
te ninimai	silver biddy	*Gerres oyena*
te nnewe	lobster	*Palinuridae* spp.
te nouo	strawberry conch	*Conomurex luhuanus*
te ntabwena	mud crab	*Scylla serata*
te nuonuo	brown triggerfish	Balistidae
te okaoka	thumbprint emperor	*Lutjanus harak*
te on	turtle	Turtle species
te onauti	flying fish	*Cypselurus naresii*
te raku	billfish	Istiophoridae, Xiphiidae
te rereba	small trevallies	*Caranx* spp.
te riba	striated surgeonfish	*Ctenochaetus striatus*
te rou	longface emperor	*Lethrinus olivaceus*
te tauman	trevallies in the lagoon	Multiple species
te tauri	snake mackerel	*Gempylus serpens*
te tewe	goatfish	Mullidae
te tiwita	seaweed	Multiple species
te urua	giant trevally	*Caranx ignobilis*
te waro	mantis shrimp	Multiple species
te were	giant clam	*Tridacna gigas, Hippopus hippopus, Tridacna squamosa, Tridacna maxima*

Survey team in Kainaba, North Tarawa. © Sangeeta Mangubhai

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