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From mangroves to womangroves to feminist foodscapes: (en) gendering research on indigenous food livelihoods in the Solomon Islands

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Abstract
Pacific Island communities are facing rapid changes to their food systems in the context of globalization, environmental degradation and climate change. While in urban areas residents face a rapid nutrition transition, in rural environments, concerns are being raised about how to best maintain traditional food systems that are nutritious and sustainable. Mangrove forests are part of biodiverse food environments that support rural communities in the Pacific, but they are often overlooked in food system research because they occur between sea and land, and because gleaning mollusks and invertebrates from mangroves are considered mere subsistence practices carried out by women. In this paper, we draw from a feminist foodscape approach in feminist political ecology to discuss qualitative fieldwork from mangrove-adjacent communities in the Solomon Islands. We highlight the socio-ecological importance of mangrove foodscapes, along with the gendered and generational aspects of how environmental and food system change are experienced differently by community members in Marovo Lagoon. While conservationists are increasingly interested in the potential of mangroves for carbon sequestration, this research addresses the critical need to engage with mangroves' social, cultural and gendered aspects– towards intertwined goals of gender equity, biodiversity and indigenous food sovereignty in the Pacific.

Keywords Gender · Women · Mangroves · Political ecology · Fisheries · Pacific

Introduction

Pacific Island communities are facing rapid changes to their food systems in the context of globalization, environmental degradation and climate change. However, food system change is experienced unevenly geographically, and along gendered lines. Women are key actors in Pacific food systems as sellers, growers, fishers, gleaners, and as those primarily responsible for household subsistence. Even as they play a critical role in food systems, they face constraints and limitations related to resource rights and decision-making, gender-based violence, and increased vulnerability to food insecurity, as well as unequal burdens providing food for the family (FAO and University of Wollongong 2023). Research shows that gender inequalities are both a cause and outcome of unjust food systems, and improving gender equality should be a key goal towards sustainable food systems (Njuki et al. 2022). At the same time, policy and scholarship on the role of traditional food systems for Pacific food system change exhibits gender-blindness and gender bias (FAO and University of Wollongong 2023), particularly related to small-scale and low-value fisheries (Mangubhai and Lawless 2021). This is evident both in how women's roles within food provisioning on land and sea are under-examined, as well as the bias in food system research which sidelines indigenous subsistence practices in the global South (Belton and Bush 2014; Barclay et al. 2021; Lemke and Delormier 2017; Turner et al. 2022).

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In the Pacific Island country of the Solomon Islands, most residents are rural farmers and fishers who procure their food primarily from adjacent land and sea resources, including wild food gleaning of mollusks, crabs, and mangrove bean from mangrove forests. Considered belittlingly as womangroves, due to the gendered nature of harvesting practices (Teioli et al. 2018), mangroves are absent from much food system research, and receive marginal attention in fisheries research and policy (Belton and Bush 2014). While in urban environments, the Solomon Islands are undergoing a rapid "nutrition transition", with growing reliance on low-quality, imported food, in rural areas, a nutrition transition is occurring to a much lesser extent due to the availability and cost of local foods (Pitman 2016). Nurturing rural, biodiverse food systems will be central for positive ecological, dietary and indigenous food sovereignty outcomes (Eriksson et al. 2023; Grey and Patel 2015; Shrimpton et al. 2016). Yet, even as rural food systems are key for staving off a nutrition transition, research on wild food harvesting, and gendered dimensions of diverse food practices in the Solomons, is lacking (Bogard et al. 2021; Vogliano et al. 2021).

In mangrove-adjacent communities of Marovo Lagoon, Solomon Islands, mangrove-derived foods are increasingly important for community food security and livelihoods. Fisheries research addresses mangroves as ecosystems whose resources are to be managed (Manson et al. 2005) and in past decades, conservationists have highlighted the role mangroves play in mitigating climate change impacts, as well as sequestering atmospheric carbon (Friess et al. 2021; Warren-Rhodes et al. 2011). We argue that these framings are inadequate to capture the socio-ecological, material and affective values mangroves have for the communities that rely on them, a critical oversight for indigenous Pacific societies where food systems fundamentally arise from, and contribute to, spiritual, biocultural connections between people and their environments (McCarter et al. 2023; Panelli and Tipa 2009). Without a gendered analysis of mangrove values and practices at the local scale, conservation projects risk framing women either as mangrove caretakers and exacerbating their responsibilities (Aswani and Weiant 2004), or excluding women from mangrove decisions altogether (Konia et al. 2019). Both of these approaches to mangrove conservation perpetuate climate injustice (Srivastava and Mehta 2021; Sultana 2022).

To address this gap, we situate mangroves within a feminist political ecology framework as a feminist foodscape (Hovorka 2013; Rocheleau 1995) to argue for a closer examination of the intertwined cultural, material and environmental values that mangrove foodscapes have for the communities that rely on them. Grounded in qualitative research in Marovo Lagoon, we ask the following questions: how do mangrove food practices, values, and environmental knowledges vary between women and men, and why? How does mangrove degradation, due to logging and climate change, differently impact men and women's food practices? And what does positioning mangroves as feminist foodscapes illuminate about how gender operates in symbolic and material ways to (re)produce uneven nature-society relations? Through this work, we build on feminist scholarship which understands food systems as power-laden, exposing how gendered assumptions, experiences and knowledges become material across scales and result in inequitable food systems (Counihan 1999; Hovorka 2012; Slocum 2007).

To make our case, we first discuss gendered dimensions of food system change in the Pacific, and how and why mangroves have been excluded from scholarship. We then argue that reframing mangroves as feminist foodscapes exposes gender beyond local-scale, women-only mangrove food practices and values, but also how gender inequality and colonial legacies permeate the types of food knowledges and practices positioned as worth safeguarding. After presenting our qualitative data, we contextualize these results within broader implications for mangrove research and food system policy in the Pacific.

Food system change in the Pacific and gendered impacts

Over past century, food systems in the Pacific have become increasingly embedded in the global industrialized agro-food regime (Plahe et al. 2013), with the trend towards less healthy food environments for Pacific Islanders. While pre-European societies in the Pacific were considered to practice "subsistence abundance" (Thaman 1982), colonial plantation agriculture and export-oriented commodity production set the stage for current food system change (Andrew et al. 2022). Since decolonization, this change has been accelerated through trade liberalization since the 1980s, when Pacific Island nations joined the World Trade Organization and other inter-regional economic alliances (Plahe et al. 2013). The consequence of the increasing dependence on imports has been a shift from predominantly locally-grown and harvested food (for ex., root vegetables, tubers and fresh seafood) to greater consumption of imported foods of lower nutritional quality (for ex., canned fish, instant noodles and rice) (Charlton et al. 2016). As a result, Pacific Islands countries have among the highest prevalence of diabetes and obesity in the world (Tin et al. 2015). While this nutrition transition is rooted in many factors (Andrew et al. 2022), integration into global food supply chains since decolonization has increased vulnerability of Pacific Island

communities to external economic shocks (Farrell et al. 2020) and decreased food sovereignty (Weiler et al. 2015).

At the same time, Pacific Island countries are heterogeneous and food system change occurs unevenly between and within countries, a complexity ignored in narratives of nutrition transition (Andrew et al. 2022). In cities in the Solomon Islands, nutrition change is rapid, yet 80% of residents continue to farm and fish in the rural land and seascapes in which they maintain customary tenure (FAO and Wallolong 2023). Farming and fishing are practiced on a small-scale, with yields distributed to the household, sold locally at informal markets, or shared with kin and community; up to 85% of food in rural environments is sourced solely from adjacent environments (Bogard et al. 2021). Rural communities are in no way immune from imported food and changes in dietary preferences; yet, changes in rural food environments appear to be occurring more slowly due to the continued availability, low-cost, and often preference for local foods in the Solomon Islands (Pitman 2016).

Furthermore, uneven experiences of food system change relate directly to gender, as rural women in the Solomon Islands conduct much of the household food provisioning, harvesting and cooking labor (Rabbitt et al. 2023). Postcolonial feminists highlight that gendered power relations are embedded within a wider context of (past and ongoing) colonialism (Mohanty 2003; Narayan and Harding 2000) with impacts on not only who conducts diverse food work, but how this work is recognized and valued (Hayes-Conroy and Hayes-Conroy 2013). Since colonialism, men in the Pacific have been recruited into the cash economy through plantation agriculture, shifting increasing power to men (Hermkens 2013; McKinnon et al. 2016). Simultaneously, indigenous food livelihoods were reconfigured through the influence of the cash economy and the Christian church, resulting in women's work and their traditional sources of power becoming devalued (Scheyvens 1998). These processes of de-valuation of subsistence food work are evident both through national policy and trade decisions, as well as through "internal colonization" in which indigenous Pacific Islanders may un-see or de-value their own ways of knowing, doing and maintaining their traditional food systems (Fanon 1965). For example, income-generating food production for domestic sale or international export, so-called "productive food work", receives priority funding and investment as the Solomon Islands expands export-oriented commodity production and commercial fishing (FAO and University of Wollongong 2023; Reeve et al. 2022). This occurs even as national Solomon Island food system policy documents mention traditional indigenous food systems as key for promoting healthy environments and staving off a nutrition transition (Eriksson et al. 2023; Reeve et al. 2022). But the "reproductive food work", the often-feminized procuring, harvesting, and food preparation that is directed towards feeding the family (DeVault 1994), is sidelined in funding and policy decisions, often absent from Pacific food system research (Andrews et al. 2022). Marginalization of reproductive food work is especially worrisome as women's key roles in household food provisioning (Lawless et al. 2019) relate directly to household diet quality (Amugsi et al. 2015).

What's more, increasingly discussions of food sovereignty—the rights of people to healthy and culturally appropriate food, including the right to make decisions about their own ecological, economic and dietary needs (Nyéléni 2007)—emphasize feminist dimensions to food sovereignty (Calvário and Desmarais 2023). This includes not only "adding women" as objects of analysis, but also expanding food sovereignty scholarship to understand how everyday, situated food provisioning activities sustain local food systems (Turner et al. 2022). For indigenous peoples, this means not only food activities conducted by women, but also the role that reproductive food work plays in fostering collective identity and deep relationships with place (Grey and Patel 2015; Whyte 2017). Without romanticizing indigenous practices or pre-colonial gender relations, there is evidence that everyday dependence on both wild and cultivated foods in Pacific food systems supports the passing along of intergenerational environmental knowledge (Lyver et al. 2019), fosters resilience to climate change (Bell and Taylor, 2015), and improves nutrition outcomes (Albert et al. 2020; Vogliano et al. 2021). Yet attention to these grounded experiences with food sovereignty, including how indigenous food knowledge, values and traditions may be shifting for rural Pacific Islanders along gendered lines, has been missing.

Finally, it is important to iterate that Solomon Island women rarely play key roles in community decision-making about adjacent food environments. While in some regions, land titles are passed through matrilineal lines, customary systems tend to be patriarchal with women excluded from leadership roles (Corrin Care 2006), with implications for food access. Even as women are involved in in-shore harvesting from mangroves and shallow estuarine areas, as well as off-shore fishing, women's access to fishing areas is seldom considered in resource management (Aswani and Weiant 2004; Rabbitt et al. 2023). The negative fallout from neo-colonial extractive industries, like logging, degrade resources upon which communities depend, increasing burden on women for household food provisioning (Minter and van der Ploeg 2021). Furthermore, overfishing and climate change threaten marine resources that women rely on to feed the family (MacNeil et al. 2015). In times of food insecurity, interfamilial stress results in higher rates of domestic

violence against rural women in the Solomons (McCarter et al. 2023).

Thus, scholarship points to the multiple benefits that subsistence food production can have for everyday health, environmental sustainability and indigenous food sovereignty in the face of nutrition transition, environmental change, and colonial legacies. At the same time, we see that the national food system and trade policy tends to privilege commodities and export-oriented food realms, and research often overlooks everyday subsistence work. This research and policy tilt towards scalable production marginalizes diverse subsistence food work conducted by women, who are already excluded from decision-making processes, and may be particularly vulnerable when provisioning practices are negatively impacted by globalization and environmental change (Turner et al. 2022). What is urgently need, then, is research on subsistence food work gendered "feminine", how it is changing in the context of market economy and shifting environmental conditions, and with what impacts for food sovereignty in the Pacific (Curry et al. 2019; Georgeou et al. 2022; Underhill-Sem et al. 2014). Such research can shed light on food domains like mangroves, ignored due to gender-bias (Lau et al. 2023), and help illuminate dimensions of indigenous food practice that are often devalued within (ongoing) colonial processes. In the following section, we illustrate how feminist political ecology and feminist foodscape analysis can be productively engaged to engender research on food system change in the context of subsistence harvesting in mangroves.

Mangroves/womangroves: a case for feminist foodscape analysis

Mangroves refer to a diversity of forest species which occur along the world's tropical and subtropical coastlines in muddy, saline conditions. While accounting for a small percentage of forest cover globally, mangrove forests play a vital role in maintaining plant and animal biodiversity in marine and terrestrial environments (UNEP 2023). In recent decades, mangroves have become a priority ecosystem in conversations about climate change because they are extremely efficient in sequestering and storing atmospheric carbon, as well reducing impacts of coastal storms and floods made more frequent by climate change (Friess et al. 2021; NOAA 2023). In the Pacific, the Solomon Islands house the second largest stands of mangroves of the region, with over 47,100 hectares of mangrove forests covering 2% of total land area (Bhattari and Giri 2011). At the same time, rates of mangrove deforestation in the Pacific are rapid and concerning (Mangrove Watch 2022). Globally, the leading causes of mangrove destruction have been aquaculture for fish and shellfish production, or clearing mangroves for coconut and rice production (Friess et al. 2019). In the Solomon Islands, however, mangrove destruction results primarily from demand for firewood and building materials, village expansion and land clearance for gardens, degradation linked to export-oriented logging, and erosion from sea level rise (Albert and Schwarz 2013; Warren-Rhodes et al. 2011).

While much scholarship on mangroves focuses on biodiversity, mangroves are more than biodiverse landscapes: they are critical for food security and livelihoods of coastal communities. Mangroves are sources for firewood, nurseries for fish, and the habitat of important food species like mollusks and invertebrates (Albert and Schwarz 2013), especially for women who conduct the majority of mangrove gleaning. Yet, research rarely engages with the site-specific and socio-environmental dimensions of gendered mangrove livelihoods (Aswani and Weiant 2004). Conservation scientists and affected communities have been concerned with mangrove degradation for decades, but research bias has tended towards technical environmental assessments of degradation or restoration potential (Foale 2021; James et al. 2023; UNEP 2023). Scholars and practitioners insist that in-depth, context-specific scholarship on the social and cultural dimensions of mangrove values is required to better support livelihoods, gender equality, and conservation aims in situ (Turner et al. 2022; UNEP 2023).

Feminist political ecology is well-suited to examine the relational and everyday practices through which gendered spaces, subjects, and environments are produced and mutually constituted. Expanding on political ecology's focus on the role of political economy in struggles over nature (Robbins 2019), feminist political ecology starts from a curiosity about the gendered conditions of human-environment relations in a particular place. It investigates the material aspects of women and men's relationship to the environment, along with unequal distributions of power, divisions of labor, and socio-economic structures which shape resource access and control (Agarwal 1995; Resurreccion and Elmhirst 2008; Rocheleau 1995). Rocheleau argues that on its most practical level, feminist political ecology must interrogate the multiple uses or values at stake with a given landscape, the actions, relations and structures which mediate peoples' relationship to the resources, and the knowledge systems that are ignored or legitimized in the process (1995).

Situating mangroves as a "feminist foodscape" (Hovorka 2013) within feminist political ecology can productively move beyond representations of mangroves as landscapes for conservation, while offering an analytic to examine the gendered dimensions of mangrove food systems. The term "foodscape" emerges from landscape studies and geography literature to contextualize how food is understood in

particular places, drawing attention to the social, economic, and political factors that shape how we provision food, and how people differently experience food environments (Jossart-Marcelli and Bosco 2018; Vonrthon et al. 2020). The foodscape concept can be especially insightful when considering indigenous food systems in the Pacific (McCarter et al. 2023), as "indigenous food practices engage people and their worlds in a complex web that weaves together people and their foods within a broader set of relationships, cultural expressions and responsibilities" (Panelli and Tipa, 2009, p. 458). Coined by Hovorka, *feminist* foodscape "connotes a holistic conceptual frame that pushes us beyond simplistic ideas of gender as a women-only, local-scale variable, but also one that alerts us to the inherent gender inequality embedded within ideological, institutional and individual realms of society" and its food systems (2013, p. 125). More than addressing how women experience inequality, the lens of feminist foodscape asks us to interrogate how gender manifests in both material aspects of food production, distribution and consumption, as well as the symbolic construction of masculine and feminine food realms related to hierarchies privileging productive over reproductive food work (Hovorka 2013).

Applying a feminist foodscape approach to mangroves, we argue, allows for deep analysis into the local-scale aspects of mangrove livelihoods, but also sheds light on the gendered biases in scholarship on Pacific food systems. To this point, we posit that the dearth of social and cultural research on mangroves, specifically related to its role in food systems, lies in mangroves as gendered womangroves (Teioli et al. 2018), denigrated and socio-economically positioned as female and minor (Simon 2023). On one hand, scholars may use the term womangroves to describe that it is primarily women who conduct much of the food harvest of shellfish, crustaceans, and other invertebrates in a near-shore littoral zone (Grantham et al. 2021). Symbolically the gendering of food gleaning work (as women's work) means it is overlooked in food policy and research or aggregated into larger data sets about fishing (Kleiber et al. 2015; Lau et al. 2023), making it difficult to assess its contributions to food livelihoods (Grantham et al. 2020). Furthermore, gleaning practices are often not recognized as "fishing" because they do not require tools or boats (Lau et al. 2023). These gendered biases in fisheries policy and research discount not only women's contributions (Barclay et al. 2021; Kleiber et al. 2015), but also has led to mangroves falling between the policy cracks in environmental management. In the Solomons, mangrove user rights are managed under customary tenure, which can be strengthened through national approaches to marine resource management, for instance in cases of disputes. Mangroves are classified as a "type of forest" by the Ministry of Forestry, as well as an important ecosystem for the Ministry of Fisheries and Marine Resources, but there is currently no mangrove-specific legislation related either to its conservation, or to its role for food systems; thus, the regulation of mangrove-destructive activities, such as logging and mining, tends to fall out of purview (Albert and Schwarz 2013), with women disproportionately burdened by mangrove degradation (Minter and van der Ploeg 2021).

Thus, while acknowledging the role that traditional food systems in the Pacific can play for social and ecological resilience, the type of food systems prioritized in research and policy tend to focus on those scalable for import substitution and export commodity production (FAO and Wallalong 2023)–not those gendered "mere" subsistence womangroves. In a recent Solomons Islands policy analysis, Reeve et al. point to the mismatch between stated food system goals, and desirable outcomes for socio-environmental health, and gender equity: "while providing for the nutrition requirements of the population, and promoting environmentally resilient food systems, are given as core aims of food systems sectors, food is predominately considered by the government as an 'economic good'" (2022, p. 19), with gender as an add-on variable (Lawless et al. 2017).

Finally, we advocate for closer attention to gendered inequalities and contextual understandings of which feminist goals are desirable for indigenous women themselves (Lemke and Delormier 2017). In line with place-based approaches to feminisms in the Pacific, McKinnon et al. found that in focus group discussions, rural Solomon Islander women articulated the following feminist goals: greater equality in food livelihood burdens, recognition of the collective ways in which their activities provide for the community, and political foundations for equitable decision-making and change, conceptualized as both women and men's responsibilities (2016). A limitation of the present study is that we did not ask community members about their definitions of feminism, nor their vision towards (more) equitable gender relations. At the same time, our results bring to light important empirical material on gendered food provisioning practices, participants' self-perceptions about the value of their indigenous knowledge and food practices, and the impact of mangrove degradation along gender lines. In this way, this study demonstrates how participants' experiences of mangrove foodscapes fall short of the above-articulated Pacific feminist visions for greater recognition and equitable participation in mangrove management.

Methods

This research was conducted in Marovo Lagoon, a large salt water lagoon known for its biodiversity, located in the New Georgia Islands between Vangunu and Nggatokae islands,

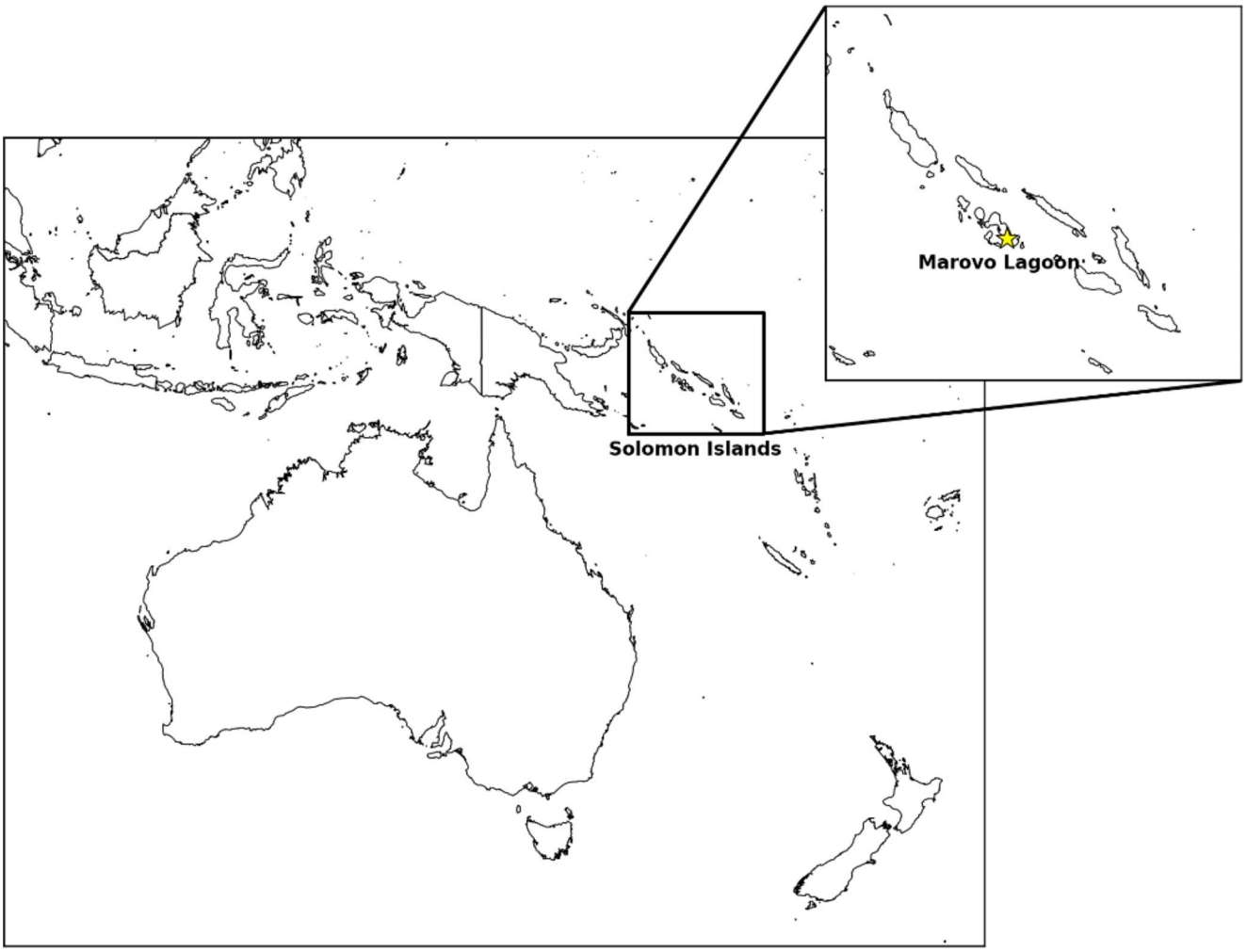

Fig. 1 Map of Field Site. Source: Map created by authors with open-source data from Natural Earth

Western Province, Solomon Islands (Fig. 1). The site was selected because of one of the author's personal ties to the region, as well as due to the communities' reliance on mangrove forests, primarily from the genera *Bruguiera*, *Rhizophora* and *Ceriops.*

Approximately 12,000 people live in Marovo Lagoon, distributed in more than 50 small coastal villages (Hviding 2005). The administrative center, Seghe, serves as a transportation hub to the capital (Honiara) as well as to the provincial capital (Gizo) via passenger ferry. Seghe also hosts a weekly farmer's market, in which people from different villages sell products from their gardens, wild-caught fish and mangrove-gleaned items. Main sources of income for residents include the sale of fish and produce in Seghe and to nearby tourist resorts, as well as some residents work in small shops selling imported foods like canned tuna, rice, instant noodles or sugar (Rabbitt et al. 2023). Few residents work in waged labor from resorts and timber logging, as opportunities for paid employment are scarce. [1] Finally, a partial nutrition transition is apparent in the prevalence of rice and instant noodles in local diets (Pitman 2016). Nonetheless, our observations mirror recent ethnographic research indicating that Marovo peoples' food practices and preferences center on locally-grown or wild-caught food (Pitman 2016; Rabbitt et al. 2023).

The data for this paper relies on 51 semi-structured interviews conducted with women and men in 5 villages surrounding Seghe in May and June 2023. Four of the villages selected for the research are predominately United Methodist, whereas one is predominately Seventh Day Adventist. [2]

[1] Commercial logging in Marovo has a long history, but the export-oriented logging boom since the 1990s, dominated by Asian companies, has led to much controversy in Marovo related to tenure disputes, environmental degradation, as well as (for some), economic opportunity (Hviding and Bayliss-Smith 2000).

[2] Religion plays a large role not only in structuring community dynamics and practices, but in restrictions on food consumption. Because Seventh Day Adventist (SDA) members are prohibited from consuming mollusks and shellfish from mangroves, in our analysis,

Table 1 Interview demographics

	Men	Women
Youth (aged 18–29)	4	8
Adult (aged 30–50)	8	25
Elder (aged 51–70)	2	4

We collected data independently and in two phases, as differently situated researchers interested in varying aspects of mangrove ecosystems. With Mary researching carbon and mangrove health, and Heide interested in gender and food system change, we coordinated overlapping thematic questions on mangrove foodscapes as to better compare results. Semi-structured interviews were conducted at the Seghe market, in community meeting spaces, and in households, and ranged from 45 to 60 minutes. In interviews, we asked participants about the role of mangrove foods for their livelihoods, the values they see in mangroves, including their own mangrove knowledge, and perceptions of mangrove change.

Participants who self-identify as mangrove gleaners were recruited via word of mouth and snowball sampling. While this led to primarily female participants, we found it insightful that so many male participants also participated. Gender was our primary identity category, but during data collection it being apparent that to better understand mangrove trends and change, age was an important variable, as well. Below, we group interview participants by age and gender into "youth", "adult" and "elder" populations (see Table1).

Heide was aided in fieldwork by a local research assistant, who interpreted from Marovo language to English, and Mary conducted her interviews in the Marovo language. All interviews were audio-recorded and transcribed into English for analysis. The research assistant for Heide's interviews was compensated monetarily for his time, and interview participants received a small stipend in line with research practice that understand compensation as an element of feminist research ethics of care (Warnock et al. 2022).

Complementary to interviews, we draw on ethnographic fieldwork and go-along interviews during mangrove harvesting and market sales. By observing community members during everyday mangrove activities, we sought to better understand their embodied food practices and interpretations in situ (Kusenbach 2003). Ethnographic and interview data was coded with NVIVO qualitative analysis software using abductive analysis (Tavory and Timmermans 2014). The research adheres to the ethical guidelines from the University of Graz and Solomons Islands National University, including obtaining permission from village leaders, and the free, voluntary, informed consent of interview participants.

As two researchers interested in feminist research praxis, we understand that our data collection and analysis emerge from our situated knowledges (Haraway 1988) and positionality. Mary is an ecologist, female and native Solomon Islander from Marovo Lagoon who recently finished her PhD work on carbon, mangroves and traditional ecological knowledge. For this research, her relationships with the communities, her firsthand experiences harvesting from mangroves, and her deep roots in Marovo were invaluable in grounding the research in a culturally-relevant context. In the Solomon Islands, kinship and clan identities are paramount, and because Mary and her family are well-known in the region, she was able to draw on those connections for interview recruitment and in assisting Heide with the fieldwork. Furthermore, the study builds on Mary's ongoing research and policy advocacy for mangrove management and gender equality in the Solomon Islands Climate Action Network, in line with praxis-oriented commitments in political ecology (Sultana 2023).

Heide is a white, female American social scientist, who brings her outsider lens into ethnographic fieldwork. This outsider status provided her with the opportunity to engage curiously, ask "easy" questions and participate in community life, though her inability to communicate in Marovo language nor in Pijin English hindered her, especially in casual interactions. Reflecting on our positionality, we found the complementarity of our insider/outsider status enriched our ability to notice different gendered dynamics, as well as compelled us to continually explore, and re-interpret, our data during our joint analysis.

Finally, many feminist political ecologists underscore the importance of intersectionality, a theory and methodology which studies how people's identities are constituted through overlapping axis of social difference related to gender, race, class, sexuality, as well as through ecological relations (Sundberg 2017). While intersectional approaches are increasingly adopted in feminist research (Valentine 2007), a limitation of this study is our reliance on binary categories of man/woman when discussing our participants, as well as our primary focus on gender, and when relevant, the age of participants. It is important to note that transgender and nonbinary individuals were common in many pre-colonial societies across the Pacific (Jolly 2008, as cited in Rohe et al. 2018), even as current law in the Solomon Islands does not recognize nonbinary genders and same-sex acts are criminalized (UN Women: Gender Equality Brief 2022). Thus, our binary framing of man/woman reflects how Marovo participants identify under current social norms, even as we advocate moving beyond essentialist understanding of gender. Future research should more precisely analyze how

we rely primarily on data from communities where United Methodist is the dominant religion, while recognizing that future research should more specifically center religion as an important variable in mangrove food practices.

intersectional identities, including nonbinary understandings of gender, alongside social status, religion, and age are (re)produced and shape socio-ecological outcomes in mangrove environments.

Results

Gendered food provisioning work in the mangrove: beyond symbolic dimensions of the womangrove

To better understand how mangrove food practices vary for men and women, we first asked participants to discuss how mangrove foodscapes relate more broadly to local (gendered) food practices. All answered that gardening on land, fishing from the sea, and gleaning foods from mangroves were central, complementary components of their local foodscape. This has implications for daily practice, in which locally a "proper meal" is conceptualized as inclusive of fruits of both land and sea (Hviding 1996, p. 169). In Marovo, mangroves are part of the "puava" (literally "soil" or "ground") of the ancestral tribe. The puava concept encompasses both land-based areas like forests and gardens, as well as mangrove and sea, understood as contiguous ecological zones (Hviding 1996, p. 139). While there is no strong dichotomy between marine and terrestrial areas in the puava concept, different types of productive activities are often referred to as being the domain of women or men. This sentiment was expressed in interviews, as gardening was named as a mix of men and women's roles, depending on if the task was clearing the fields, preparing for planting (''men's role", understood as a physically-intensive task/work expenditure) versus maintenance, weeding, upkeep and harvesting ("women's role", expressed as continuous subsistence and care). Reef and off-shore fishing was gendered as primarily a male activity (though Rabbit et al. 2019 indicate women's increasingly important role in off-shore fishing). When asked if mangroves were gendered womangroves, overwhelmingly both men and women indicated affirmatively: "women spend a lot of time in the mangroves with other women, collecting shells and mangrove bean, so yes, they are like womangroves. Women feel comfortable there".

However, when we moved beyond symbolic associations to practical aspects of mangrove food harvesting activities, it became clear that the gendered domain of mangroves as womangroves was more complex. Based on observation and interview data, women on average visited mangroves three times a week for food harvesting, and spent between three and four hours in the mangroves per visit. Men averaged two mangrove visits a week and their visits were shorter, around two hours per visit. Thus, while symbolically mangroves were identified with women, observational and interview data indicate that men also visit mangroves regularly for food harvest and fishing activities.

Gendered disparities in time spent harvesting in mangroves were linked, in part, to transportation. Mangrove forests are accessed by women via paddling by dugout canoes, as opposed to through the use of a motorized boat. As women generally do not have access to boats with engines, mangroves were seen as accessible nearshore environments. Women's mangrove harvesting tasks are thus constructed as feminine for a few reasons: when harvesting in mangroves closer to the household, women consolidate gleaning with other childcare and domestic duties, women's mangrove activities are viewed as less physically demanding, and women's gleaning does not require motorized transport. While men also paddle to mangroves, for many men, mangrove visits are combined with fishing visits to off-shore reefs that are further away, with the use of a motorized boat. In this way, men's travel time is significantly reduced to/from mangroves than for women.

Men and women both harvested mangrove species for sale, though women's harvest also centered on ensuring household food needs were met. Women overwhelmingly gather mangrove shells (*Polymedosa* spp), mangrove bean (which is a propagule of *Bruguiera gymnorrhiza*), mangrove oyster (*Saccostrea cucullata*), and to a lesser extent, the mud whelk (*Terebralia palustris*). Whereas only the mud whelk was solely for household consumption, mangrove shells, mangrove oyster and mangrove bean are harvested for the household consumption, gifting and sharing, and for sale at the weekly Seghe market (see Figs.2and3).

Men were observed to be increasingly harvesting mangrove shells, though a handful of the men focused on the more financially lucrative species of mud crab (*Scylla serrata*) and mangrove oyster. The reasons male respondents offered for this specialization was its higher price per unit at market, and for the opportunity to directly sell mangrove oysters and crabs to local dive and tourist resorts. While past research in Marovo indicated that mud crabs were seen as part of women's roles, due to assumptions that women had more nimble hands to catch the crab (Hviding 1996, p. 214), this appears to be changing– perhaps due to opportunities for financial gain and/or loosening of gendered norms. At the weekly market in Seghe, for example, while vendors are primarily women, the few male vendors observed at market were selling crabs and skewered oysters.

Particularly noteworthy is the increasing trend towards men harvesting in the mangroves, and both male and female youth expressed strong interest in harvesting because "mangrove foods always sell out at market." Respondents offered a few reasons for the growing interest of men in mangrove harvesting related to the necessity to take advantage of food

Fig. 2 Woman selling mangrove shells at the Seghe market. Source: Photo by authors, 2023

Fig. 3 The edible mangrove bean, propagule of *Bruguiera gymnorrhiza*. Source: Photo by authors, 2023

resources in the mangroves–as declining fish populations in the off-shore reef make fishing trips riskier in terms of securing catch, and financially precarious due to the rising cost of fuel for motorized boats. This data highlights an interesting distinction between the symbolic and practical realms, as well as the changing gendered norms. While mangroves are often conceptualized in scholarship and by some participants as a "women's domain" symbolically, the reality points to the significant and increasing role of men's gleaning activities in mangroves due to broader food livelihood and financial concerns. It also points to the gendering of certain species related to value at market (see Hovorka

2012 for a discussion of interspecies intersectionality), and the differential time burden women face in harvest due to lack of motorized boat access.

More-than-nutritional values of mangrove foodscapes

In response to our research question about the multiple values mangrove foods hold for community members, we found that all respondents said food harvested from mangroves was either very important or somewhat important for meeting their household and livelihood needs. At the same time, why mangrove foods were so valuable varied along lines of age and gender. Whereas older women and men emphasized more complex values related to intertwined social-ecological, financial and nutritional roles of mangrove foods, younger women and men emphasized the financial aspect and contribution to household food security.

The value of mangrove foods for household nutrition related directly to how mangrove shells, oysters, and snails keep longer than other sources of protein like fresh fish. Households in Marovo do not have refrigeration, and in one home visit, a woman prepared a snail over the fire to illustrate how mud snails stored in the shade can stay fresh for up to a week. Mangrove shells and crabs are harvested, brought back to households, and then tossed in the sea adjacent to the household for later consumption in "nature's refrigerator", as one woman explained. Furthermore, both men and women acknowledged that mangrove foods were reliably available, as protein from fish was dependent on weather and not every fishing trip resulted in a successful catch. Thus, while mangrove harvests were consumed only a few times each week, mollusks and invertebrates from mangroves are understood as a critical and consistent source of protein in light of variability with fish catches and food insecurity (see also Grantham et al. 2021).

It is important to emphasize that the sharing or gifting of subsistence food has traditionally played a vital role in in Pacific Island cultures for expressing and facilitating social-ecological connections. Aside from demonstrating trust or care for others in the tribe, "those whose food you consume are those whose labor, land and essence constitute your being" (Knauft 1999, p. 46). As such, in several interviews with elders, mangrove shells and oysters were associated as central for healing, conferring social, spiritual and metabolic sustenance to bodies at vulnerable times, like during sickness or pregnancy. They were also positioned as important for their role in gifting, shared with family members, as well as those living in urban Honiara via the weekly ferry boat, and frequently shared as *kastom* (local word for "traditional") foods during community events.

Furthermore, the more-than-metabolic aspect of mangroves as social spaces were mentioned repeatedly by several adult and elder women (see Grantham et al. 2020). Groups of women often paddle out to harvest together, and experience intertwined emotional and material satisfaction that mangrove gleaning supports their family's financial and nutritional needs, as described below:

> Going out to the mangrove, I love it. It's not a stressful job, it's more like fun. Usually when we go in a group, we start laughing and sharing jokes on the shoreline. Even beforehand, on the paddle there. But going actually into the mangrove to fetch food, you have to go into muddy places, scratch the ground… It's funny! Some women fall in, we get in the water. It's a place we enjoy. We like interacting with each other, playing, having fun. It's not like we feel it is work when we are doing it. And also, when we go in a group, other women come and follow because they like spending time with us, and we feel like it helps the family (Monica[3], age 46)

At the same time, adult and elder women expressed that these dynamics are changing due to pressure for food and financial gain, with the risk of losing social wellbeing benefits. This sentiment was confirmed through younger interview participants who did not discuss social aspects of harvesting, but instead valued mangrove foods for their financial contribution to support school fees or for family nutrition. This generational distinction points to changing food systems values for young people, with implications for how, or if, these non-instrumental aspects of indigenous food sovereignty can be maintained into the future. The generational distinction was also apparent in interviews with male participants; while men in all age groups emphasized that mangrove foods sustain their nutritional and financial needs, elder men stressed the value of mangroves for passing on traditional environmental knowledge, described in detail below.

Mangrove knowledge and (denigrated) self-perceptions of what is "valuable" knowledge

Positioning mangroves as feminist foodscapes led us to analyze not only how mangrove knowledge varied by gender and age, but focus on participants' own perceptions of their skill. The way participants understood their practices as valuable, or skilled, overlapped with multi-scalar processes, including the (symbolic and material) denigration of women's work and internal colonization in which some forms

[3] Pseudonyms are used here and throughout the paper to protect participant anonymity.

of indigenous knowledge are un-seen and/or positioned as inferior. Gendered differences in mangrove knowledge related to the species men and women harvest and harvesting practices, apparent both during interviews and during mangrove harvesting trips. For instance, men spoke in-depth about where and how to catch crabs, and about the cues they pay attention to in terms of fish reproduction. What is simultaneously noteworthy, however, is that many participants had internalized the (inaccurate and outdated) notion that women's fisheries' work is unskilled, resonating with the perspective skeptically summarized decades ago by the Secretariat:

> The concept of "women in fisheries" continues to baffle and amuse those who believe that fisheries are the exclusive domain of men. The view is that men use an array of gear and employ techniques requiring dexterity to catch fish. Women, on the other hand, do not catch fish but merely walk along the reef picking up shellfish by hand. (Secretariat of the Pacific Community 1996)

The internalization and persistence of this belief, belittling (female) gendered gleaning work as unskilled, casual and without technique, surfaced in several interviews with women. When Heide asked female participants which skills you need for harvesting in the mangrove, particularly related to mangrove shells, many echoed the above sentiment that there are no skills needed. As one woman exclaimed: "the shells just lie there and you have to pick them up!"

However, after an initial round of interviews, Heide had her first experience of unsuccessfully, mangrove clam gleaning, and came to the obvious conclusion that indeed women utilized many types of skills and environmental knowledge to efficiently collect mangrove shells. While a thorough discussion of the complexity of indigenous knowledge is beyond the scope of this paper, in Marovo, as for many indigenous societies, place-based environmental knowledge is generated through the immediate context of people's livelihoods, and thus emerges in/through practice (Agrawal 1995; Berkes and Berkes 2009; Gegeo and Watson-Gegeo 2002). Thus, rather than a static body of (objective) knowledge 'of' or 'about' a phenomenon, indigenous knowledge is a process of knowing 'how', knowing in and through doing, as engaged practice (Berkes and Berkes 2009). Yet notably, in interviews many women did not talk about indigenous ways of harvesting as a skillset, or even as a practice worth safeguarding. However, through harvesting with women, Heide gained insight into the depth of the environmental knowledge they rely on. For instance, she observed that many women closely follow place-based environmental cues, including attention to the tidal cycles and water level in a particular forest, or species-specific traces like looking for cuts in the sand where the mangrove shell is hiding. Another woman described how the white excrement of shells in the water helps her track their location.

Most women had learned gleaning while they were young, and a few recollected fondly harvesting as a child, playing in mangrove forests and sucking on mangrove tree seedlings which "tasted like coconut. Sweet, like a lollipop". For the handful of women interviewed who had not learned mangrove harvesting skills as children, it was because they had only moved to Marovo as adults for marriage, and the villages where they were raised were not adjacent to mangroves. Thus, while they had not grown-up harvesting foods from mangroves, other women and elders ushered them into mangrove foodscapes during communal harvesting visits.

Similarly, men attributed their knowledge of mangrove food systems to frequent visits as a child, but the skills they learned during these visits differed than those demonstrated by women. Related to catching mud crabs, for example, a few male respondents illustrated the types of thin reeds they use to coax a mud crab out of hiding, or the dexterity required to quickly secure the pinchers of the mud crab. Men further emphasized the importance of mangroves for developing their skills in spearfishing and bait selection at an early age. In these intergenerational knowledge practices, boys accompany fathers and grandfathers to creeks flowing to mangroves, and learn to identify ideal sites to bait, spear and catch fish. Mangroves are breeding grounds for several species of juvenile fish, which then swim out to reef when they reach maturity. Men described how they learned how to use mangrove shellfish as fish bait, and mangrove leaves to preserve fish when they were caught. Furthermore, men described their knowledge on the seasonality of when to catch, and when to avoid catching fish, including how specific timing of fish releasing their eggs can be an indicator of the presence of other important commercial fish, like the sardine, which populate creeks of mangroves.

In over fifty interviews, only two male elders discussed the importance of kastom stories about mangroves, in which community members story the significance of respectful, reciprocal relations to sacred mangrove animals like the eel or mud crab. Interestingly, while youth were unfamiliar with these stories, youth respondents repeatedly articulated a broader fear that the loss of indigenous stories would have negative impacts on mangrove sustainability. Whereas previous generations learned kastom stories from parents and elders through songs, or stories recalled in the evening, changing lifestyles including school calendars, further travel for educational or work opportunities, and 'busy'ness of community commitments contribute to the changes in food-environmental storytelling. These concerns echo arguments that the reconstruction of time according to colonial

values, education and capitalist political economy can negatively impact indigenous food sovereignty (Ferguson et al. 2022). Furthermore, while indigenous storytelling and environmental knowledge should be part of formal education systems, it is rarely the case (Bishop 2020). The apparent loss of many kastom stories is concerning both for food sovereignty and biodiversity; when traditional names, management and cultural values of biodiverse food systems are lost, the impetus for community conservation of these resources is also in danger (Pollard et al. 2015; Whyte 2017).

Environmental change in mangroves foodscapes: logging, dumping and sea level rise

Finally, our research was interested in gendered experiences of mangrove foodscape change related to logging, sea level rise and localized mangrove degradation. Most women expressed concerns about the declining health of mangrove forests and its implication for their food livelihoods. In particular, the negative impact of logging, both by commercial companies and clearing for coastal settlements by other community members, was emphasized:

> The main activity that happens with logging is clearing the mangroves, like people when they cut down mangroves for coastal settlements or to clear space for a garden. We need to stop cutting down mangroves. The other factor is foreign logging companies, they clear mangroves to make the log pond, the place where they transport logs. Even though I think there are rules, logging companies don't care about environmental regulations, all they care about is getting logs (Julia, age 51).

Aside from the mangrove forests physically being removed by logging companies, women mentioned secondary impacts including oil spills and sedimentation: "logging makes the sea dirty so the sunlight can't reach the bottom of the sea– the shells die out".

Like elsewhere in the Solomons, benefits from logging companies accrue narrowly through/to chiefs and nepotism; women seldom are recipients of royalties (Minter and van der Ploeg 2021). The lack of men reporting logging as a cause of ecosystem damage in our interviews may be precisely for this reason, as men generally control access to, negotiations with, and royalties from, logging companies. When men did discuss commercial logging, they voiced pragmatic concerns that there were little economic alternatives. Paul, age 40, stated:

> The mangrove forests are just part of the everyday here and aren't always seen as so special, which is why they are cut for other development and industries. But banning logging won't work because the reality is that today people need fast cash.

That mangroves are considered accessible, ubiquitous and thus perceived as disposable to some community members, was frustrating for women interviewed. Visibly angered by the "bad habit" of other community members, one woman complained:

> I've observed that people use mangroves as a littering dump site, this is a bad habit that needs to be stopped. Mangroves become a place where people throw all their rubbish, tins, cans, plastics. I think some people don't see the importance of mangroves, they see it as a site where they can put their waste and they act like it doesn't affect anything else! (Josephine, age 37)

Other men and women noted that within Marovo villages, many do not have toilets and latrines, so mangroves are marked as marginal spaces where people relieve themselves. These insights, both in terms of how mangroves are utilized in the absence of sanitation and waste disposal systems, point to the practical concerns and challenges that Marovo villagers face when making decisions about which environments to protect and sustain, in light of daily needs.

In response to the negative impacts of logging and declining mangrove forest health, women reported their access to adjacent mangroves has decreased, so they change mangrove forest locations and paddle longer to healthier mangroves stands farther away. This increases the time they spend harvesting foods from mangroves and thus their food time/work burden. Compounding the decreasing access to healthy mangrove forests is the perception of many women that productivity of mangrove forests is declining because of growing interest in, and pressure on, mangrove foodscapes.

> Interest for mangroves foods is increasing. Any week you bring mangrove foods to market, you will sell out. People love it, even more than they used to. These foods are making a comeback. But the other side means that in terms of supply, compared to the past, there is less food in mangroves. In the past, you could quickly fill your bags with harvest in one or two hours. But now it takes three hours before that bag is full, so you have to spend more time searching. Sometimes it feels like a race to get there and quickly fill your bags. (Rose, age 65)

Other women noted that the number of women and men going to harvest is increasing, and not everyone harvests appropriate-sized shells, oysters or crabs. While some

discussed that they harvest in groups and rotate mangrove areas, as an informal manner to allow mangrove shells and mollusks to grow up to size, other women indicated that they see undersized or juvenile mangrove shells being sold at market because not everyone either knows, or follows, the proper size guidelines for an appropriate harvest.

Finally, in terms of environmental changes to mangrove food systems, female elders explicitly discussed sea level rise (see Fig.4):

> In terms of climate, now it's the sea level rise which determines when we go to the mangrove and how we harvest. In the past, the sea level was by my calves (*points to legs*), and now the level is up here to the hips (*gestures to hips*) and we have to swim sometimes. Which doesn't make it so easy to find the mangrove shells! (Christina, age 69)

Thus, the burdens of environmental change and mangrove degradation directly impact women's harvesting time and food access more directly than their male counterparts. Furthermore, women were dismayed by the sense that they both were disadvantaged by logging (in comparison to men) and that the mangrove ecosystem on a community-level was considered disposable in face of other more pressing needs, like sanitation or economic opportunity. When asked if mangrove conservation or closures could be proposed to mitigate some of these negative impacts, women mentioned that the church had imposed a short-term closure before an anniversary festival, but there was no ongoing community resource management plan for mangroves. "How would such a management plan be created?", prompted Mary. A woman named Janet responded: "It would happen in/through "asking permission of the (male) community leaders, if there was enough interest and people were serious about it. Which is not the case yet."

Conclusion and implications

As evidenced in our results, mangroves play critical roles in nutrition, social wellbeing, financial income, place-based environmental knowledges, and intergenerational learning in/about food. The multiplicity of uses and meanings, through a foodscapes approach, sheds light on the values, practices, and knowledges that emerge through the context of everyday food livelihoods with mangroves. Instead of conceptualizing mangroves as a passive landscape or ecosystem with resources to manage, positioning mangroves as a foodscape brings to the forefront this diversity of spatial patterns, and grounded stories of how food systems are experienced in a dynamic context. The explicit focus on feminist foodscapes within a broader feminist political ecology lens sharpens our analysis of the pervasiveness of gendered relations of power, how they discursively and materially operate, and the inequitable outcomes experienced in/through changing mangrove environments.

Related to the previously articulated Pacific feminist goals of more equitable livelihoods (McKinnon et al. 2016), women in Marovo report frustration that mangrove degradation and food system change linked to commercial logging, sea level rise and the growing popularity of mangrove foods results in greater time/work burdens for harvest. While men have access to motorized transport, women rely on dugout canoes and thus are more vulnerable to these variations in distance to healthy mangrove forests. There are gendered differences between species harvested and market value, as well, corresponding to men's access to negotiate with tourist resorts and aspects of gender-species intersectionality (Hovorka 2012). Beyond differentiated experiences of mangrove change, a feminist political ecology approach also helps us understand perceptions of what is seen as valuable, or legitimate environmental knowledge. Our analysis contextualizes participants' response within a colonial legacy which increasingly assigns higher value to productive fishing activities while denigrating reproductive food work in "womangroves". Thus, female participants un-see their expertise, for example in mollusk gleaning. Relatedly, as women's knowledge and skillset are understood as unskilled through gendered denigration and processes of internal colonization, they become positioned as peripheral to mangrove decision-making and negotiations with logging companies, negatively impacting their mangrove food access (Amos 2014; Rohe et al. 2018). Furthermore, on a national scale, mangroves continue to fall through regulatory gaps in protected areas management. Future research should directly engage with how male and female community members interpret these uneven gender dynamics of mangrove livelihoods, as well investigate which roles women themselves want to hold related to mangrove management.

Moreover, postcolonial feminist approaches to foodscapes can help us understand which types of food system values, beyond food-as-nutrition or food-as-income, mangroves hold for both men and women, situating these values as critical pieces of indigenous food sovereignty (Grey and Patel 2015; Hayes-Conroy and Hayes-Conroy 2013). Interestingly, the affective, and cultural dimensions of mangroves were mentioned by both male and female interview participants, particularly the older generations. Mangroves were understood as joyful spaces for women to gather, or the source of nourishing and healing foods. These more-than-nutritional values include men's description of kastom stories and intergenerational knowledge that is passed on

Fig. 4 Woman harvesting for mangrove shells in high water. Source: Photo by authors, 2023

in/through mangroves. In our study, these values were centered as important by male elders, who, along with youth, express concern that the continued loss of kastom stories will negatively impact mangrove conservation and indigenous food sovereignty. Future research should engage more specifically with youth's experience of, and desires for food system change in the Solomon Islands.

Considering mangrove foodscapes within food and environmental change in the Solomons, the complexity emerges in how to, on the one hand, promote the nutritional, cultural and ecological values of food harvested from wild environments and on the other hand, recognize the social, economic and ecological pressures that make these biodiverse foodscapes precarious. As opposed to a desire for imported, processed food, community members in Marovo described the popularity of mangrove foods, and acknowledged the important financial and nutritional roles that mangrove foods play for households. However, mangrove foods' popularity also stems from necessity, as fish catch declines and villagers have few opportunities apart from mangrove and garden produce to sell at market. This leads to a tension in which nutritional and financial components of mangrove foods are understood as important, but particularly women are impacted at the crossroads of pressures to overharvest mangrove food resources, and increasing challenges due to sea level rise. Furthermore, our interviewees voice concern that the pressure on mangrove food livelihoods may compromise other social-cultural roles of mangroves: its value for social wellbeing during mangrove harvesting, the transmission of kastom stories, and opportunities to share environmental knowledge in/of mangroves. Because these socio-environmental values fundamentally shape how and which food environments are deemed worthy of safeguarding, the apparent trend in mangroves' declining social-cultural importance is worrisome from both food sovereignty and conservation perspectives.

At the national level, Solomons Islands food systems depend on, and are strengthened by wild food environments; better understanding, and safeguarding, these food livelihood contributions will play a key role in meeting environmental and nutritional aims (Bogard et al. 2021). We recommend that national policy should be developed for mangrove management, as a mechanism that works in tandem with community-level socialization of mangroves' diverse values, including promotion of their cultural elements through kastom stories. Policy which safeguards specifically mangrove forests from logging and environmental degradation, along with promotion of more gender equitable decision-making processes on a community-level, would work towards these aims (Albert and Schwarz 2013). In addition, mangrove management should be considered in the context of broader development goals, including attention to sanitation and water infrastructure, fuel-efficient stoves, and promotion of sustainable economies which can decrease pressure on mangrove forest resources.

Our results indicate multi-scalar challenges for mangrove conservation, as well as the need to consider mangroves more holistically not only within environmental frameworks, but within a feminist approach to indigenous food system research in the Pacific. When mangroves are framed as ecosystems for conservation, we sideline the intertwined social-ecological aspects of everyday subsistence. Understanding mangroves as womangroves can fall into the trap of assuming essentialist or static positions of women, as well as marginalizing or reducing mangrove livelihoods importance due to gender-bias in fisheries research (Kleiber et al. 2015). Mangroves as feminist foodscapes, on the other hands, offers a lens to understand how and which aspects of traditional food systems receive attention, and the important role that subsistence practices, often carried out by women, play for food sovereignty (Turner et al. 2022).

For the purpose of this study, we have focused on mangroves as an element of the foodscape which has since received little attention with food system research; importantly, mangroves are intimately connected to other aspects of food environments, from fisheries to broader trends in food availability and retail. Thus, for food systems transformation in the Solomons to seriously support gender equity within traditional food systems, place-based research is required to understand diverse food livelihood practices and knowledge (Eriksson et al. 2023), in addition to the ways that differently-situated community members experience food system change along intersectional lines. Such research could support everyday dimensions of indigenous food sovereignty, and how to promote increasingly threatened dimensions of intergenerational knowledge and environmental stewardship a context of economic, ecological and social change. As evidenced in this exploratory study on mangroves, villagers in Marovo Lagoon are interested in nourishing, culturally-meaningful food systems that sustain the biodiverse landscapes in which they live. But they navigate tradeoffs between sufficient food and income, and environmental care, with socio-ecological and environmental change beyond the community scale. Thus, food system transformation to support feminist indigenous food sovereignty relates to provincial and national-scales, creating sustainable economies, domestic food supply and/or regulation which support community management frameworks and the value of mangroves. Looking forward, this requires further research on diverse place-based socio-environmental values that mangroves hold for the specific communities that rely on them, including attention to community members' own understanding of, and vision towards, gender-equitable and climate-just food systems.

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References

Agrawal, Arun. 1995. Dismantling the divide between indigenous and scientific knowledge. *Development and Change* 26(3): 413–439. https://doi.org/10.1111/j.1467-7660.1995.tb00560.x

Albert, Joelle, Anne-Maree Schwarz, and CGIAR Research Program on Aquatic Agricultural Systems. 2013. Mangrove management in Solomon Islands: Case studies from Malaita Province. Policy Brief: AAS-2013-14. https://library.sprep.org/sites/default/files/mangrove-management-malaita.pdf. Accessed 04 May 2024.

Albert, Joelle, Jessica Bogard, Faye Siota, Joe McCarter, Salome Diatalau, Josephine Maelaua, Tom Brewer, and Neil Andrew. 2020. Malnutrition in rural Solomon Islands: An analysis of the problem and its drivers. *Maternal & Child Nutrition* 16(2): e12921. https://doi.org/10.1111/mcn.12921

Amos, Moses. 2014. Growing and empowering women in fisheries work in the Pacific region. *SPC Women in Fisheries Information Bulletin* 25: 3–5.

Amugsi, Dickson A., Maurice B. Mittelmark, and Abraham Oduro. 2015. Association between maternal and child Dietary Diversity: An analysis of the Ghana Demographic and Health Survey. *PLoS One* 10(8): e0136748. PMID: 26305458; PMCID: PMC4549150. https://doi.org/10.1371/journal.pone.0136748

Andrew, Neil L., H. Edward, Tom Allison, John Brewer, Hampus Connell, Jacob G. Eriksson, Anna Eurich, Jessica A. Farmery, Christopher D. Gephart, Mario Golden, Karen Herrero, Katherine L. Mapusua, Michael K. Seto, and Sharp. Phillip Thornton, Anne Marie Thow, and Jillian Tutuo. 2022. Continuity and change in the contemporary Pacific food system. *Global Food Security* 32: 100608. https://doi.org/10.1016/j.gfs.2021.100608

Aswani, Shankar. 2004. Scientific evaluation in women's participatory management: monitoring marine invertebrate Refugia in the Solomon Islands. *Human Organization* 63 (3): 301–319. https://doi.org/10.17730/humo.63.3.r7kgd4thktmyf7k1.

Barclay, Kate, Sangeeta Mangubhai, Brigitte Leduc, Connie Donato-Hunt, Natalie Makhoul, Jeff Kinch, and and Josy Kalsuak. 2021. *itysocial inclusion in coastal fisheriesaquaculture.* Second edition. Noumea, New Caledonia: Pacific Community.

Bell, Johann, and Taylor Mary. 2015. Building climate-resilient food systems for Pacific Islands. Penang, Malaysia: WorldFish. Program Report: 2015-15. https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/214/3842_2015-15.pdf?sequence=1ampisAllowed=y. Accessed 04 May 2024.

Belton, Ben, and Simon R. Bush. 2014. Beyond net deficits: New priorities for an aquacultural geography. *The Geographical Journal* 180(1): 3–14. https//. https://doi.org/10.1111/geoj.12035

Berkes, Fikret, and Berkes Mina Kislalioglu. 2009. Ecological complexity, fuzzy logic, and holism in indigenous knowledge. *Futures* 41(1): 6–12. https://doi.org/10.1016/j.futures.2008.07.003

Bhattarai, Bibek, Giri Chandra. 2011. Assessment of mangrove forests in the Pacific region using landsat imagery. *Journal of Applied Remote Sensing* 5: 053509. https://doi.org/10.1117/1.3563584. 1-053509-11.

Bishop, Michelle. 2020. Indigenous education sovereignty: Another way of 'doing' education. *Critical Studies in Education*. https://doi.org/10.1080/17508487.2020.1848895

Bogard, Jessica R., L. Neil, Penny Andrew, Mario Farrell, Michael K. Herrero, and Sharp. 2021. and Jillian Tutuo. A typology of food environments in the pacific region and their relationship to diet quality in Solomon Islands. *Foods* 10(11). 1–17. https://doi.org/10.3390/foods10112592

Calvário, Rita, and Desmarais Annette. 2023. The feminist dimensions of food sovereignty: insights from La Via Campesina's politics, *The Journal of Peasant Studies*, 50(2):640–664, https://doi.org/10.1080/03066150.2022.2153042

Charlton, Karen E., Joanna Russell, Emma Gorman, Quentin Hanich, Aurélie Delisle, and Brooke Campbell, Johann Bell. 2016. Fish, food security and health in Pacific Island countries and territories: A systematic literature review. *BMC Public Health* 16: 285. https://doi.org/10.1186/s12889-016-2953-9

Corrin Care, Jennifer. 2006. Negotiating the constitutional conundrum: Balancing cultural identity with principles of gender equality in post-colonial South Pacific Societies. *Indigenous Law Journal* 5: 51–117. https://hdl.handle.net/1807/17126. Accessed 04 May 2024.

Counihan, Carole. 1999. *The Anthropology of Food and body; gender, meaning and Power*. London: Routledge.

Curry, George, and Gina Koczberski, Susan Inu. 2019. Women's and men's work: The production and marketing of fresh food and export crops in Papua New Guinea. *Oceania* 89: 237–254. https://doi.org/10.1002/ocea.5222

DeVault, Marjorie. 1994. *Feeding the family: The Social Organization of Caring as Gendered Work*. University of Chicago Press.

Eriksson, Hampus, M. Tikai, Pitakia, and Pelomo. 2023. Gomese, Chelcia, Ride, Anouk, Hunnam, Kimberly, Bonis-Profumo, Gianna, Siota, Faye Aborina, Notere Boso, Delvene, Wate, Jillian Tutuo. Island food systems in transition: Strengthening Indigenous food systems in Solomon Islands. Penang, Malaysia: WorldFish. Program Brief. https://cgspace.cgiar.org/server/api/core/bitstreams/d8ebee3e-1c5e-45e1-a5e1-20a17350c89d/content. Accessed 04 May 2024.

Fanon, Frantz. 1965. *The Wretched of the Earth.* Grove Press, Inc. New York.

FAO and University of Wollongong. 2023. *National assessment of the Solomon Islands food system*. Honiara. https://doi.org/10.4060/cc4175en

Farrell, Penny, Anne Marie Thow, Jillian Tutuo Wate, Nichol Nonga, Penina Vatucawaqa, Tom Brewer, Michael K. Sharp, Anna Farmery, Helen Trevena, Erica Reeve, Hampus Eriksson, Itziar Gonzalez, Georgina Mulcahy, Jacob G. Eurich, and Neil L. Andrew. 2020. COVID-19 and Pacific food system resilience: Opportunities to build a robust response. *Food Security* 12(4): 783–791. https://doi.org/10.1007/s12571-020-01087-y

Ferguson, Caroline E., Kristen Marie Green, and Swanson Shannon Switzer. 2022. Indigenous food sovereignty is constrained by time imperialism. *Geoforum* 133: 20–31. https://doi.org/10.1016/j.geoforum.2022.05.003

Foale, Simon. 2021. The unequal place of anthropology in cross-disciplinary research on environmental management in the Pacific and

what to do about it. In *Unequal lives: Gender, race and class in the Western Pacific*, ed. K. Alexeyeff, N. A. Bainton, J. Cox, and D. McDougall. ANU.

Friess, Daniel A., Kerrylee Rogers, Catherine E. Lovelock, W. Ken, E. Krauss, Stuart, Shing Yip Hamilton, Ruchard Lee, Jurgene Lucas, Primavera, and Anusha Rajkaran and Suhua Shi. 2019. The state of the World's Mangrove forests: Past, Present and Future. *Annual Review of Environment and Resources* 44: 89–115. https://doi.org/10.1146/annurev-environ-101718-033302

Friess, Daniel A., Erik S. Yando, B. Jahson, I. Alemu, Lynn-Wei Wong, D. Sasha, Soto, and Natasha Bhatia. 2021. Ecosystem Services and Disservices of Mangrove Forests and Salt Marshes. In *Oceanography and Marine Biology: An Annual Review*, Vol 58, edited by S. J. Hawkins, A. L. Allcock, A. E. Bates, A. J. Evans, L. B. Firth, C. D. McQuaid, B. D. Russell, I. P. Smith, S. E. Swearer, P. A. Todd.

Gegeo, David, and Welchman, Karen Ann Watson-Gegeo. 2002. Whose knowledge? Epistemological collisions in Solomon Islands Community Development. *The Contemporary Pacific* 14(2): 377–409. https://doi.org/10.1353/cp.2002.0046

Georgeou, Nichole, Charles Hawksley, Nidhi Wali, Sophie Lountain, Ella Rowe, and Caleb West, Liesje Barratt. 2022. Food security and small holder farming in Pacific Island countries and territories: A scoping review. *PLOS Sustainability and Transformation* 1(4): e0000009. https://doi.org/10.1371/journal.pstr.0000009

Grantham, Ruby, and Jacqueline Lau, Danika Kleiber. 2020. Gleaning: Beyond the subsistence narrative. *Maritime Studies* 19(4): 509–524. https://doi.org/10.1007/s40152-020-00200-3

Grantham, Ruby, Jorge G. Álvarez-Romero, David J. Mills, Cristian Rojas, and Graeme S. Cumming. 2021. Spatiotemporal determinants of seasonal gleaning. *People and Nature* 3(2): 376–390. https://doi.org/10.1002/pan3.10179

Grey, Sam, and Raj Patel. 2015. Food sovereignty as decolonization: Some contributions from indigenous movements to food system and development politics. *Agriculture and Human Values* 32: 431–444.

Haraway, Donna. 1988. Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies* 14(3): 575–599. https://doi.org/10.2307/3178066

Hayes-Conroy, Allison, and Jessica Hayes-Conroy. 2013. Feminist nutrition: Difference, decolonization, and dietary change. In *Doing Nutrition Differently: Critical Approaches to Diet and Dietary Intervention*, ed. Allison Hayes-Conroy and Jessica Hayes-Conroy, 173–188. London: Routledge.

Hermkens, Anna-Karina. 2013. 'Raits Blong Mere'? Framing Human Rights and Gender Relations in Solomon Islands. *Intersections: Gender and Sexuality in Asia and the Pacific* 33. http://intersections.anu.edu.au/issue33/hermkens.htm. Accessed 04 May 2024.

Hovorka, Alice J. 2012. Women/chickens vs. men/cattle: Insights on gender–species intersectionality. *Geoforum* 43(4): 875–884. https://doi.org/10.1016/j.geoforum.2012.02.005

Hovorka, Alice J. 2013. The case for a Feminist Foodscapes Framework: Lessons from research in urban Botswana. *Development* 56(1): 123–128. https://doi.org/10.1057/dev.2013.9

Hviding, Edvard. 1996. *Guardians of Marovo Lagoon. Practice, Place, and politics in Maritime Melanesia*. Honolulu: University of Hawaii.

Hviding, Edvard. 2005. *Kiladi oro vivineidi ria tingitonga pa idere oro pa goana pa Marovo. Reef and rainforest: An environmental encyclopedia of Marovo Lagoon, Solomon Islands*. Paris: United Nations Educational, Scientific, and Cultural Organization (UNESCO).

Hviding, Edvard and Tim Bayliss-Smith. 2000. *Islands of Rainforest: Agroforestry, logging and eco-tourism in Solomon Islands*. Aldershot: Ashgate Publishing.

James, Robyn, Kristen Lyons, Philippa McKay, Ruth Konia, Hilda Lionata, and Nathalie Butt. 2023. When solutions to the climate and biodiversity crises ignore gender, they harm society and the planet. *Biological Conservation* 287: 110308. https://doi.org/10.1016/j.biocon.2023.110308

Joassart-Marcelli, Pascale, and Fernando J. Bosco. 2018. A Place Perspective on Food: Key Concepts and Theoretical Foundations. In *Food and Place: A Critical Exploration*, edited by Pascale Joassart-Marcelli and Fernando J. Bosco, 13–29. Lanham, MD: Rowman and Littlefield.

Kleiber, Danika, Leila M. Harris, and Amanda C. J. Vincent. 2015. Gender and small-scale fisheries: A case for counting women and beyond. *Fish and Fisheries* 16(4): 547–562. https://doi.org/10.1111/faf.12075

Knauft, Bruce M. 1999. *From primitive to postcolonial in Melanesia and anthropology*. Ann Arbor, Michigan.: University of Michigan Press. https://doi.org/10.3998/mpub.10934

Konia, Ruth., and Barbara Masike, Robyn James. 2019. Mangoro Market Meri: Women working together to protect their mangroves and build secure futures for their communities. *SPC Women in Fisheries Information Bulletin* 30: 30–34.

Kusenbach, Margarethe. 2003. Street phenomenology: The go-along as ethnographic research tool. *Ethnography* 4(3): 455–485.

Lau, Jacqueline, Gianna Bonis-Profumo, Chelcia Gomese, Salanieta Kitolelei, Ana Tarryn O'Leary, and Silva. Noviana Simões, and Burgos Ariadna. 2023. Gleaning fisheries in the Asia-Pacific. *SPC Women in Fisheries Information Bulletin* 38: 23–26.

Lawless, Sarah. Kate Doyle; Philippa Cohen; Hampus Eriksson; Anne-Maree Schwarz; Helen Teioli; Agnetha Vavekaramui; Elsie Wickham; Rosalie Masu; Ronnelle Panda; Cynthia Mcdougall. 2017. *Considering gender: practical guidance for rural development initiatives in Solomon Islands*. Penang, Malaysia: WorldFish. Program Brief: 2017-22. https://doi.org/10.13140/RG.2.2.10564.58241

Lawless, Sarah, Philippa Cohen, Cynthia McDougall, Grace Orirana, and Faye Siota, Kate Doyle. 2019. Gender norms and relations: Implications for agency in coastal livelihoods. *Maritime Studies* 18(3): 347–358. https://doi.org/10.1007/s40152-019-00147-0

Lemke, Stefanie, Treena Delormier. 2017. Indigenous peoples' food systems, nutrition, and gender: Conceptual and methodological considerations. *Maternal & Child Nutrition* 13: e12499. https://doi.org/10.1111/mcn.12499

Lyver, Phil O'Brian., Puke Timoti, T. Davis, and J.M. Tylianakis. 2019. Biocultural hysteresis inhibits adaptation to environmental change. *Trends in Ecology & Evolution* 34 (9): 771–780. https://doi.org/10.1016/j.tree.2019.04.002.

MacNeil, M., Nicholas A. J. Aaron, Joshua E. Graham, K. Cinner, Shaun, Ivor D. Wilson, Joseph Williams, Steven Maina, Alan M. Newman, Stacy Friedlander, V. C. Jupiter, Nicholas, Polunin, and Tim R. McClanahan. 2015. Recovery potential of the world's coral reef fishes. *Nature* 520(7547): 341–344. https://doi.org/10.1038/nature14358

Mangrove Watch 2022. webpage: Global Mangrove Alliance, https://www.mangrovealliance.org/news/.Accessed 01 November 2023.

Mangubhai, Sangeeta, and Sarah Lawless. 2021. Exploring gender inclusion in small-scale fisheries management and development in Melanesia. *Marine Policy* 123: 104287. https://doi.org/10.1016/j.marpol.2020.104287

Manson, F. J., N. R. Loneragan, G. A. Skilleter, and S. R. Phinn. 2005. An evaluation of the evidence for linkages between mangroves and fisheries: A synthesis of the literature and identification of research directions. *Oceanography and Marine Biology - An Annual Review* 43: 483–513.

McCarter, Joe, Georgina Cullman, Erin Betley, Simon Albert, Joelle Albert, Piokera Holland, Ned Horning, and Stacy D. Jupiter. Miri Taqu, Hara Woltz, and Eleanor J. Sterling. 2023. Exploring

changes in Foodscapes in Western Province, Solomon Islands. *Human Ecology* 51(3): 483–496. https://doi.org/10.1007/s10745-023-00419-8

McKinnon, Katharine, Michelle Carnegie, Katherine Gibson, Claire Rowland, and Gender. 2016. *Place & Culture* 23(10): 1376–1391. https://doi.org/10.1080/0966369X.2016.1160036.

Minter, Tessa., Jan van der, and Ploeg. 2021. Our happy hour became a hungry hour': Logging, subsistence and social relations in Solomon Islands. *International Forestry Review* 23(4): 1–19.

Mohanty, Chandra. 2003. *Feminism without borders: Decolonizing theory, practicing solidarity*. Dule University.

Narayan, and Uma and Sandra Harding. 2000. *Decentering the center: Philosophy for a multicultural, postcolonial and feminist world*. Bloomington: Indiana University Press.

National Oceanic and Atmospheric Administration (NOAA). USA. 2023. What is Coastal Blue Carbon? https://oceanservice.noaa.gov/ecosystems/coastal-blue-carbon. Accessed 1 November 2023.

Njuki, Jemimah, Sarah Eissler, Hazel Malapit, Ruth Meinzen-Dick, Elizabeth Bryan, and Agnes Quisumbing. 2022. A review of evidence on gender equality, women's empowerment, and food systems. *Global Food Security* 33: 100622. https://doi.org/10.1016/j.gfs.2022.100622

Nyéléni Forum. 2007. "Nyéléni Declaration." Presented at the world Forum on food sovereignty. Reorienting Local and Global Food Systems Marcia Ishii-Eiteman, Sélingué, Mali.

Panelli, Ruth, Gail Tipa. 2009. Beyond foodscapes: Considering geographies of Indigenous well-being. *Health & Place* 15(2): 455–465. https://doi.org/10.1016/j.healthplace.2008.08.005

Pitman, Heidi T. 2016. What's Cooking in Paradise? An ethnobotanical investigation of a transitioning food system in Marovo Lagoon, Solomon Islands. PhD Thesis submitted to The University of Queensland, Australia.

Plahe, Jagjit, Shona Kaur, Hawkes, and Sunil Ponnamperuma. 2013. The corporate food regime and food sovereignty in the Pacific Islands. *The Contemporary Pacific* 25 (2): 309–338. https://doi.org/10.1353/cp.2013.0034.

Pollard, Edgar, Randy Thaman, Gilianne Brodie, and Clare Morrison. 2015. Threatened biodiversity and traditional ecological knowledge: Associated beliefs, customs, and uses of herpetofauna among the 'Are'Are on Malaita Island, Solomon Islands. *Ethnobiology Letters* 6 (1): 99–110. https://doi.org/10.14237/ebl.6.1.2015.389

Rabbitt, Sheridan, Ian Lilley, Simon Albert, and Ian R. Tibbetts. 2019. What's the catch in who fishes? Fisherwomen's contributions to fisheries and food security in Marovo Lagoon, Solomon Islands. *Marine Policy* 108: 103667. https://doi.org/10.1016/j.marpol.2019.103667

Rabbitt, Sheridan, Ian Lilley, Simon Albert, Joelle Albert, and Ian Tibbetts. 2023. The importance of nutrition-sensitive fisheries management: Women's dietary diversity in Marovo Lagoon, Solomon Islands. *Journal of Agriculture Food Systems and Community Development* 13(1): 197–213. https://doi.org/10.5304/jafscd.2023.131.004

Reeve, Erica, Amerita Ravuvu, Anna Farmery, Senoveva Mauli, Dorah Wilson, Ellen Johnson, and Thow Anne-Marie. 2022. Strengthening food systems governance to achieve multiple objectives: a comparative instrumentation analysis of food systems policies in Vanuatu and the Solomon Islands. *Sustainability* 14 (10): 6139. https://doi.org/10.3390/su14106139.

Resurreccion, Babette P., Rebecca Elmhirst. 2008. *Gender and natural resource management. Livelihoods, mobility and interventions*. London, Sterling, Va.: Earthscan.

Robbins, Paul. 2019. *Political ecology. A critical introduction. Critical introductions to geography*. Hoboken, NJ, Chichester: Wiley-Blackwell.

Rocheleau, Dianne E. 1995. Gender and biodiversity: A feminist political ecology perspective. *IDS Bulletin* 26(1): 9–16. https://doi.org/10.1111/j.1759-5436.1995.mp26001002.x

Rohe, Janne, Achim Schlüter, and Sebastian C. A. Ferse. 2018. A gender lens on women's harvesting activities and interactions with local marine governance in a South Pacific fishing community. *Maritime Studies* 17(2): 155–162. https://doi.org/10.1007/s40152-018-0106-8

Scheyvens, Regina Aurelia. 1998. Subtle strategies for women's empowerment: Planning for effective grassroots development. *Third World Planning Review* 20(3): 235. https://doi.org/10.3828/twpr.20.3.g802r410341605g2

Secretariat of the Pacific Community. 1996. Information Paper 11, presented at the South Pacific Commission Twenty-sixth Regional Technical Meeting on Fisheries (Noumea, New Caledonia, 5–9 August 1996). Paper presented by Women's Fisheries Development Section.

Shrimpton, Roger, Nkosinathi Vusizihlobo Mbuya, and Anne Marie Provo. 2016. *The double burden of Malnutrition in East Asia and the Pacific: Evidence and lessons for a Multisectoral response*. Washington, DC: World Bank. https://doi.org/10.13140/RG.2.2.10564.58241

Simon, Sandro. 2023. The Art of Gleaning and Not Becoming Domesticated in Mollusc Waterworlds. *Ethnos*: 1–20. https://doi.org/10.1080/00141844.2023.2213855

Slocum, Rachel. 2007. Whiteness, space and alternative food practice. *Geoforum* 38: 520–533.

Srivastava, Shilpi, and Lyla Mehta. 2021. The social life of mangroves: Neoliberal development and mangrove conservation in the changing landscape of Kutch. *Environment and Planning E: Nature and Space* 6(4): 2229–2248. https://doi.org/10.1177/25148486211045360

Sultana, Farhana. 2022. Critical climate justice. *The Geographical Journal* 188(1): 118–124. https://doi.org/10.1111/geoj.12417

Sultana, Farhana. 2023. Political ecology III: Praxis—doing, undoing and being in radical political ecology research. *Progress in Human Geography* 47(5): 728–737.

Sundberg, Juanita. 2017. Feminist political ecology. In *International Encyclopedia of Geography: People, the Earth, Environment and Technology*, 1–12. Hoboken, NJ: Wiley. https://doi.org/10.1002/9781118786352.wbieg0804.

Tavory, Iddo, Stefan Timmermans. 2014. *Abductive analysis. Theorizing qualitative research*. London: The University of Chicago Press. https://doi.org/10.7208/chicago/978-0-226-18031-1.001.0001. Chicago, Ill.

Teioli, Helen Maefasia., Jan van der Ploeg, Anne-Maree Schwarz, Meshach Sukulu, and Hampus Eriksson. 2018. Conserving womangroves: Assessing the impacts of improved cooking stoves on resource management in Langalanga Lagoon, Solomon Islands. *SPC Women in Fisheries Information Bulletin* 28: 8–14.

Thaman, Randolph R. 1982. Deterioration of traditional food systems, increasing malnutrition and food dependency in the Pacific islands. *Journal of Food and Nutrition* 39(3): 109–121.

Tin, Si Thu, Crystal Man Ying Win, Lee, and Ruth Colagiuri. 2015. A profile of diabetes in Pacific Island Countries and territories. *Diabetes Research and Clinical Practice* 107(2): 233–246. https://doi.org/10.1016/j.diabres.2014.10.010

Turner, Katherine L., C. Julián, and Idrobo. Annette Aurélie Desmarais, and Ana Maria Peredo. 2022. Food sovereignty, gender and everyday practice: The role of afro-colombian women in sustaining localised food systems. *The Journal of Peasant Studies* 49(2): 402–428. https://doi.org/10.1080/03066150.2020.1786812

UN Women: Gender Equality Brief for Solomon Islands. 2022. file:///C:/Users/brucknhe/Downloads/UN_WOMEN_SOLOMON_ISLANDS.pdf. Accessed 01 Aug 2024.

Underhill-Sem, Yvonne, Elizabeth Cox, Anita Lacey, and Margot Szamier. 2014. Changing market culture in the Pacific: Assembling a conceptual framework from diverse knowledge and experiences. *Asia Pacific Viewpoint* 55(3): 306–318. https://doi.org/10.1111/apv.12063

United Nations Environment Programme UNEP. 2023. Decades of mangrove forest change: what does it mean for nature, people and the climate? UNEP, Nairobi. https://www.unep.org/resources/report/decades-mangrove-forest-change-what-does-it-mean-nature-people-and-climate. Accessed 04 May 2024.

Valentine, Gill. 2007. Theorizing and researching intersectionality: A challenge for Feminist Geography. *The Professional Geographer* 59(1): 10–21. https://doi.org/10.1111/j.1467-9272.2007.00587.x

Vogliano, Chris, Jessica E. Raneri, Jane Coad, Shane Tutua, Carol Wham, Carl Lachat, and Barbara Burlingame. 2021. Dietary agrobiodiversity for improved nutrition and health outcomes within a transitioning indigenous Solomon Island food system. *Food Security* 13(4): 819–847. https://doi.org/10.1007/s12571-021-01167-7

Vonthron, Simon, Coline Perrin, and Soulard Christophe-Toussaint. 2020. Foodscape: A scoping review and a research agenda for food security-related studies. *PloS One* 15(5): e0233218. https://doi.org/10.1371/journal.pone.0233218

Warnock, Rosalie, Faith MacNeil, and Taylor, Amy Horton. 2022. Should we pay research participants? Feminist political economy for ethical practices in precarious times. *Area* 54(2): 195–202. https://doi.org/10.1111/area.12790

Warren-Rhodes, Kimberly, Anne-Maree Schwarz, N. G. Linda, Joelle Boyle, Stephen Suti Albert, Regon Agalo, Andrew Warren, Chris Bana, Ringo Paul, and Kodosiku. Wilko Bosma, Douglas Yee, Patrik Rönnebäck, Beatrice Crona, and Norm Duke. 2011. Mangrove ecosystem services and the potential for carbon revenue programmes in Solomon Islands. *Environmental Conservation* 38(4): 485–496. https://doi.org/10.1017/S0376892911000373

Weiler, Anelyse M., Chris Hergesheimer, Ben Brisbois, Hannah Wittman, Annalee Yassi, and Jerry M. Spiegel. 2015. Food sovereignty, food security and health equity: A meta-narrative mapping exercise. *Health Policy and Planning* 30(8): 1078–1092. https://doi.org/10.1093/heapol/czu109

Whyte, Kyle. 2017. Food Sovereignty, Justice and indigenous peoples: An essay on settler colonialism and collective continuance. *Oxford Handbook on Food Ethics*. Edited by A. Barnhill, T. Doggett, and A. Egan. Oxford University Press.

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