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Australian Water Partnership
UC Innovation Centre (Bldg 22), University Drive South
Canberra ACT 2617 AUSTRALIA
T: +61 2 6206 8320
E: contact@waterpartnership.org.au



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Report 3

Briefing paper: Gender and social inclusion in the Pacific water–food nexus

1 Introduction

In the Melanesian countries of PNG, Fiji, Vanuatu and The Solomon Islands, women (in all their diversity¹) continuously play a range of important roles in shaping water management, food security and society as a whole. Despite often being framed as vulnerable and victims of inequality, Pacific women are hardworking, creative and resourceful, and they are change-makers and agents of resilience in their own families, communities and the region (Jolly et al., 2015). Women are leading agents of development in the region, and they balance meeting family and community needs parallel to cultural and religious obligations. Women support rural and urban economies; they are involved in home gardens and small-scale livestock, manage household finances and support market distribution of household produce. Among this diversity of roles, there is an extensive network of national and regional civil society and community groups that works with donors, businesses and governments for greater gender and social inclusion outcomes. Women's groups, church groups, and community-based organisations are a vast network that connects regions, provinces and countries, often with global development agendas (A. McLeod, 2015). The hugely diverse Melanesian region means that each country has specific systems of decision-making, land ownership, natural resource governance, agricultural systems, water resources management and livelihood strategies. This important role of women as agents of change, as individuals and through their families and networks, places them in important positions as leaders and custodians of knowledge in the region and with respect to water and food security.

Social structures, such as relationships, norms and values, all play a crucial role in society, including in Pacific Island Countries and Territories (PICTs) and Melanesian societies. These social norms are deeply connected to land and water and influence natural resource management and human development outcomes. These social structures influence the extent to which people, including those living with a disability, access public services, safety, education, financial resources and basic human rights (Kleiber et al., 2019).

Issues of gender and social inclusion in the Pacific region have gained much attention in a number of sectors, including climate change, water and sanitation, finance, fisheries and agriculture (Jolly et al., 2015; Singh-Peterson & Carnegie, 2020; Singh-Peterson & Iranacolaivalu, 2018; Thomas et al., 2021; Willetts et al., 2010). People living with a disability in the Pacific face stigma and exclusion, and they are over-represented among the poor in the Pacific region (Mactaggart et al., 2021; Pacific Disability Forum, 2018). Women with disabilities are more likely to experience violence, and children with disabilities are less likely to benefit from education (Pacific Disability Forum, 2018). Given this context, the intersection of gender norms and social inclusion of different populations remains a significant, core factor in sustainable development throughout the region.

In the PICTs region, national governments have committed to multiple regional instruments and frameworks since the early 1990s to advance gender equality (Singh-Peterson & Carnegie, 2020). The 2012 Pacific Leaders' Gender Equality Declaration provides a regional framework to enable national action towards improving the development of women (along with children and other marginalised groups) through gender policies, ways of working and economic empowerment programs (Pacific Leaders Forum, 2012). In 2018, the comprehensive Pacific Platform for Action for Gender Equality and Women's Human Rights 2018–2030 (Pacific Community, 2018) was adopted to accelerate gender outcomes in the region. International donors have also accelerated the focus on gender equality programs in the Pacific, and in 2021, the 14th Triennial Conference of Pacific Women catalysed further financial commitments from donors to support leadership and development programs for Pacific women across a range of sectors. Gender equality has been recognised by government and non-government organisations as an important component of achieving inclusive and

¹ The term 'women in all their diversity' refers to all individuals who identify as women, including sexual and gender minorities. It is intended to signal that this guidance document addresses issues of diverse identity and intersectionality in relation to characteristics such as social class, disability, neurodiversity, age, race, and religion.

equitable development outcomes in the PICTs region. Embedding Gender Equality, Disability and Social Inclusion (GEDSI) into aid investments is a growing focus and priority for international organisations (Singh-Peterson & Carnegie, 2019), and large regional donors such as Australia continue to prioritise and commit funding to women’s leadership and gender equality (Tabualevu et al., 2020). The Australian Water Partnership (AWP) currently has extensive guidance on embedding gender into programming and water security initiatives (M. Grant et al., 2019).

Within the above AWP GEDSI context, Box 1 summarises the overview and structure of this briefing paper.

Box 1. Structure of this briefing paper

The aim of this briefing paper is to provide a GEDSI context in the water–food nexus in Melanesia and illustrate the issues and opportunities through examples from Vanuatu. The briefing paper draws from interviews with five GEDSI experts and women leaders from Vanuatu’s non-government organisation (NGO) sector and from the research literature on gender, agriculture and water resource management in Vanuatu and Melanesia. This brief provides a set of sources for further reading and ideas to complement the design of GEDSI thinking and practice in future AWP activities.

This background brief is organised along the following four major sections:

1. Section 1: Introduction.
2. Section 2: GEDSI and Melanesia. This section is based on secondary information (research literature and reports) and covers issues raised by participants that cut across the Melanesian socio-cultural context. It is more general in nature and presents material from Melanesia-focused resources.
3. Section 3: Vanuatu’s water–food–gender overview. This section draws examples from the interviews on the nature of gender, as a component of GEDSI, and how it intersects with water and food in Vanuatu. The section draws links to the public policy context of Vanuatu as a platform to enable future gender equality actions in future activities.
4. Section 4: Summary of recommendations based on a combination of interviews and desktop research material.

1.1 Process for developing the briefing paper

This briefing paper developed through the reading of literature on gender, agriculture and water in Melanesia and through distilling insights from five key informant interviews with women leaders in Vanuatu. The five participants were all professional women working in non-government organisations (NGOs) linked to development projects or programs. Three women are Vanuatu-based and run NGOs, one is an independent consultant, and one works for an international NGO. These NGOs focused on issues related to social development in largely rural areas of Vanuatu. The small sample of five was due to the budget limitations and the fact that we wanted to interview them remotely but also engage with them throughout the review process of the brief. While the sample is small, the participants interviewed provided a range of issues that allowed us to explore core topics in the water–food–gender nexus in more detail and synthesise them in this brief.

1.2 Summary of recommendations

The following recommendations have been compiled from a combination of interviews and reviews by ni-Vanuatu women leaders and experts, a desktop literature review and discussions within the review team. The recommendations vary in specificity; some focus on specific examples of how programs could be improved for integrated outcomes, and others focus on 'ways of working' and approaches to creating enabling environments for gender equality and development. The recommendations have been clustered around the three 'sectorial' topics covered in this brief: gender and social inclusion, water resource management and agriculture and food security. We note that this clustering need not perpetuate siloed thinking but rather offer detail on each sector and how it relates to the other sectors covered in this brief.

Gender equality, disability and social inclusion

1. **Coordinate and map in very early concept designs of the disability, gender equality and social inclusion profiles in the context of projects.** This includes conducting a well-resourced early GEDSI and inclusive design process with adequate participation of local experts.
2. **Take a whole-of-family lens to activity design and rollout.** This is important when working at the community level to support the family unit and associated social norms and roles that influence development outcomes at that scale.
3. **Explicitly build intergenerational thinking and engagement in projects.** This includes working with youth groups and education departments to target issues of GEDSI and resource management at very early ages.
4. **Support the comprehensive documentation of the evidence of building the role of women in climate adaptation and resilience.** This is a research-and-monitoring-related activity to capture data and tell stories of how women support resilience during the multiple climate events the Pacific continues to face.

Water resource management

5. **Take a mountain-to-sea catchment approach to projects and policy support.** This includes educating different groups on the interconnected system between upstream and downstream water and food systems and how integrated management can help support whole-of-catchment management.
6. **Support the expansion of water literacy programs that combine traditional knowledge with scientific evidence.** Cross-cutting approaches to water literacy (e.g., community-led and talanoa-based approaches of deliberation) can be developed to support water resource knowledge sharing. Partnering between science agencies and community groups can catalyse innovative water literacy systems.
7. **Understand the community and policy environment for water technologies.** The baseline of communities benefiting from existing technologies is needed. Functioning and sustainable technological interventions (such as water meters, monitoring technologies, small-scale irrigation or solar pumping) need to be understood in relation to the relevant geography, local culture and wider institutional environment. Mapping and understanding the impact of existing water tools is necessary.

Sustainable agriculture and broader food security

8. **Leverage community experience and knowledge to plan future food security planning.** Working with local community experiences of how crops recover from shocks and

understanding how food production can be protected from future shocks can support long-term livelihoods.

9. **Promote organics and low-input agriculture.** This is already very prevalent in community groups, but continued support for organic production that is water-smart and reduces water pollution would align with policy visions of improving water quality.
10. **Support community-based market access systems that leverage women's capacities.** Work is needed to support community-level market skills development and coordination for emerging high-value commodities.

2 Overview of gender, equality and social inclusion in the Pacific

Gender and social inclusion, found in many development policy contexts, are heavily intertwined in the Pacific region. The region has approximately 1.5 million people living with a disability (15% of the total Pacific population) and are among the poorest and most marginalised members of Pacific society. A complex combination of structural factors and societal norms influence the extent to which people living with a disability can access education and basic services, including food and water, throughout the region. While this briefing paper is focused on gender equality and the role of women in Pacific water and agriculture, we explicitly frame gender equality as including people with disabilities, which is in line with the AWP's GEDSI strategy and guidance.

2.1 Women's contribution to food and water in Melanesia

Women play fundamental roles in formal and informal sectors in the Melanesian economy and in natural resources management, yet often remain overlooked and undercounted (Samuwai & Fihake, 2019). A synthesis of GEDSI challenges and capacity-building guidelines developed by the SPC indicates that there is abundant knowledge and experience held by women in the Pacific region (Barclay et al., 2018). In these SPC guidelines, they note the common 'misconception' that gender issues relate only to women (Barclay et al., 2018, p1), and unconscious biases lead to not fully capturing women's contributions to development. For example, in the Solomon Islands, women act as important distributors of household harvests and market products and contribute up to 90% of the Honiara market activity, which has an annual turnover of over AU\$10 million and in PNG, women are largely responsible for food production, valued at AU\$55 million per year (Samuwai & Fihake, 2019). In the small-scale fisheries sector in the Pacific, women make up an estimated 47% of workers (56 million women) and contribute to around half of the annual coastal fisheries catch in the Pacific (Mangubhai & Lawless, 2021). In water management, sanitation and hygiene (WASH), women play major roles in providing water to households and also managing the distribution and uses of this water for cooking, consumption and sanitation needs (Mactaggart et al., 2021; Pouramin et al., 2020).

Despite the well-documented contributions Pacific women make to resource management and society, previous studies have shown that women are at a disadvantage with respect to household income share, decision-making influence and responsibility for housework and caregiving (Carnegie et al., 2012). Women also have fewer opportunities to participate in community and decision-making activities. A study into water committee members in Vanuatu found that only 16% of members are women, and they rarely hold a position of leadership or power (Mommen et al., 2017). Limited decision-making opportunities influence how men and women relate to each other and the extent to which community decisions adequately capture issues relevant to both genders (Carnegie et al., 2015). A complex interaction of cultural and customary contexts, socially constructed gender roles and assumptions about men's and women's capacities all contribute to gender inequality in the

region, as is the case worldwide. Furthermore, women are often 'clustered' as homogenous groups, yet there is tremendous richness and diversity in religious, cultural, age and social contexts in which women are a part of in different Pacific societies, which requires nuanced, intersectional and placed-based understandings of gender (Jolly et al., 2015).

Women's ability to recognise economic potential is hampered by ongoing challenges related to violence, access to resources and opportunity, and representation. Leading scholars and Pacific development institutions have focused on these structural challenges in multiple sectors, including fisheries and agriculture (Barclay et al., 2018; Jolly et al., 2015; Kleiber et al., 2019; Singh-Peterson & Carnegie, 2020; SPC, 2021). Among the structural challenges is the statistic that up to 68% of women will face physical or sexual violence from a partner in their lifetime. While comprehensive gender violence data is very limited, the prevalence of different types of violence against women is higher than the global average of 35%; in some countries, this is as high as 79% (ADB, 2016). This exposure to violence has overall implications for women's ability to contribute to employment, cultural activities, household roles and the water- and food-related roles they hold in society. Education completion for girls and young women is also a challenge and is often exacerbated by a combination of factors such as cost, safety, family and cultural expectations, early pregnancy and inclusive infrastructure (PLAN International, 2020). Political representation of women is also lagging; it increased from 5.7% to 6% between 2016 and 2021 in nine PICTs compared to the average of 26% globally. Addressing these structural challenges would bring substantial economic benefits to Pacific countries. A World Bank study has shown increases of 10–35% in GDP per capita throughout the region (Pennings, 2022).

Beyond economic contributions, Melanesian women also play fundamental roles in supporting recovery after natural disasters and other physical and socio-economic shocks. Multiple studies of recent shocks provide evidence of this. For example, in Vanuatu, women have helped adapt and respond to shocks by repairing houses and gardens and by accessing water after Cyclone Pam (Samuwai & Fihake, 2019), as contributors to market access and selling produce in Vanuatu after extreme cyclones (Clissold et al., 2020), and during the COVID-19 lockdowns and movement restrictions in 2020, by self-organising in Fiji to deliver household produce to local markets (Davila et al., 2021). Studies based on interviews with men and women in the Pacific have found that they each play distinct roles in preparing for disasters. While women are more likely to be responsible for practicalities such as storing and managing water sources, the decision-making relating to financial resource allocation during a disaster often rests with men (Lane & McNaught, 2009). Adaptation to disasters is often driven by women who foster resilience through practical and effective actions in their community (Samuwai & Fihake, 2019). However, women are often left physically vulnerable to the impacts of disasters. For example, in Fiji, women confined to the village are faced with protecting homes from the impact of flooding while caring for children, often without basic safety skills such as knowing how to swim (Lane & McNaught, 2009). Experts we spoke to also spoke of these roles. One interviewee explained that women often have strong networks and can easily disseminate information after a disaster, and they have the entrepreneurial capacity to organise and manage fundraising efforts.

Pacific women in their families, work and networks provide ongoing and long-term contributions to livelihoods, resilience and overall strategies to manage climate change (E. McLeod et al., 2018) and hold important and unique knowledge about climate-related risks and adaptation strategies. Beyond instrumental uses of water, women also use water resources for cultural uses, for example, the Etétung (Vanuatu Women's Water Music), which offers a space for social connection and broader awareness and traditional knowledge exchange of water and climate (C. Grant, 2019).

2.2 Traditional knowledge and governance systems

Pacific countries have been governed for thousands of years through traditional institutions and value systems, but colonialism and globalisation in the past two centuries have led to the establishment of Westernised governance systems (Hassall & Tipu, 2008). These Westernised systems (such as formal laws, legislation and monitoring mechanisms) are embedded in national policies and strategies (see, for example, the complementary *Report 1: Policy Review*). Modern-day governance of PICTs is facilitated through a blend of nation-statehood (or dependent territories of a nation-state) and 'traditional' systems that have varying levels of power and legal recognition across the region (Hassall & Tipu, 2008). These policy frameworks, however, operate parallel to traditional community governance systems that blend Indigenous and traditional knowledge (Hassall & Tipu, 2008). The reality is that state institutions and legislation provide national guidance and direction, yet the geographic spread of populations means formal policies have little impact on people's lives (A. McLeod, 2015). Land tenure and resource stewardship, particularly in rural areas and islands beyond main capitals and towns, are often customarily held by traditional owners (Hassall, 2020; Hassall & Tipu, 2008). For non-Pacific professionals (such as researchers and consultants) seeking to support Pacific sustainable development, a basic understanding of the traditional social structures and how they shift with globalisation and socio-ecological change is required (A. McLeod, 2015).

Throughout the research activity, participants emphasised the importance of traditional governance systems that influence natural resource use in the region and help to manage the impacts of climate change. They emphasised that rural livelihoods are closely tied to land, forests, mineral resources and fishing. These resources are negotiated through informal (bartering, non-monetary trade) and formal (cash commodity) economies, both of which are important for the future development of communities (Jolly et al., 2015; Leon et al., 2015). One participant provided an example of how they use their experiences of climate impacts (in this case, salinity intrusion) to adapt their water use practices, as per the example summarised in Box 2.

Box 2. Communities' understanding of water adaptation

Communities understand the changing biophysical water context, saying that they plan their days to collect water when the tide is low to maximise freshwater, and when the tide comes in, they use the saline water for other purposes, such as washing. (Women Leader 2, Vanuatu)

Customary management is core to Melanesian identity and governance and is even embedded in development plans (e.g., Vanuatu's Sustainable Development Plan). Working within this traditional context, also presented as recommendations in the *Report 2: Nexus briefing paper*, is a fundamental strategy to ensure the relevance and legitimacy of activities.

2.3 Gender and water resource management

Gender and social inclusion are increasingly recognised as core determinants of equitable water management outcomes. Gender inequalities have been identified as important factors in managing water resources for some time in international development forums and agendas (United Nations, 1992), though measures to address inequalities have rarely been fully implemented (Fauconnier et al., 2018; M. Grant, 2017; M. Grant et al., 2019). It is well established that women and girls globally play a disproportionately larger role as water collectors for households (World Health Organization & United Nations Children's Fund [UNICEF], 2017) and face the burden of travelling long distances to retrieve water (Fauconnier et al., 2018). This travel can expose women and girls to potential violence and intimidation, environmental risk, and takes time away from other activities such as education and employment (see Section 2.1 above). Social norms perpetuate these expectations of women in water management, which amplifies the inequalities that exist for women and girls (Pouramin et al., 2020).

Embedding gender inclusion into Pacific regional water resources management has gained some momentum through regional frameworks and development policies such as the Pacific Wastewater Policy and Pacific Framework for Action 2001, the Pacific Regional Action Plan 2002 and the Strategic Framework for Action on Drinking Water Quality and Health, 2005. While these frameworks are important developments, our participants for this report indicated substantial efforts must still be made to genuinely embed gender thinking and practice across scales. Summarising the issues, one participant noted that Western-traditional knowledge's co-existence in some countries continues to create challenges for communities as they try to straddle customs with the international development that agencies strive for. Another participant noted that this is an ongoing tension, and that amplifying the ownership and role of local professionals with a deep understanding of the culture and context is a core strategy for adequately designing future gender work.

Approaches to water resource management

Community water resource management (CWRM) is particularly important in the Melanesian region. Two recent comprehensive studies in the Solomon Islands (Love, Beal, et al., 2020a) and Fiji (Love, Souter, et al., 2020b) document the importance of CWRM as a crucial way of governing water resources given the inabilities of public-sector or private-sector businesses servicing remote areas (Love, Souter, et al., 2020b). In the analysis of Fiji CWRM, Love, Souter, et al. (2020b) found that they enabled strong land agreements with neighbouring communities where water sources are available. They also found generally positive perceptions of water management committees and satisfaction with their access to water services. In both the Solomon Islands and Fiji case studies referenced, CWRM groups find that the maintenance of water infrastructure and adequate inclusion of men and youth in water management remains a challenge. Issues of inter-household cooperation and financial resources to maintain the infrastructure continue to create barriers for CWRM. Issues of GEDSI and youth inclusion remain challenges for CWRM. For example, in Fiji, (Love, Souter, et al., 2020b) found that women were rarely directly consulted in management decisions and were not adequately included in water committees. Despite these challenges, as explained in Section 3.2, community-based approaches to water management in the Pacific are crucial for increasing the ownership and legitimacy of water governance in the region.

Another governance tool for water management in the region is the Pacific Water and Wastewater Association (PWWA). It is primarily focused on urban water management; its membership is an association of 31 water utility members across 21 countries in the Pacific region. Its goal is to serve as the principal water and wastewater voice of and for the Pacific Island nations and develop expertise in the Pacific for the sustainable management of water and wastewater services by shaping a cohesive, proficient and robust water and wastewater sector. The PWWA supports utilities to conduct benchmarking reports, which include the number of women who work in Pacific water utilities. In the latest benchmarking report, it was found that 19% of PWWA staff are women (as reported by 18 Pacific utilities). A recent analysis of data shows where women are working in Pacific water utilities: 11% of women staff work as engineers and 70% in administrative positions. While this shows discrepancies between technical and administrative roles, there is a large potential for PWWA to support future women's employment, given the increasing need to manage urban water systems in the region.

2.4 Gender in Pacific agriculture

The ways in which gender intersects and influences agriculture (including fisheries) have been well documented in the Pacific, both in research and development policy. For example, UN Women (2012) provide a country-by-country overview of gender roles and issues in the region, and more recently, there have been extensive gender assessments of agriculture by the FAO (FAO, 2019a, b, c, 2020a)

and by researchers and non-government groups working in the Pacific (Carnegie et al., 2012; Singh-Peterson & Carnegie, 2020; Singh-Peterson & Iranacolaivalu, 2018; Thomas et al., 2021). Similar to other parts of the world, traditional norms and framings of gender roles mean that men and women typically do different things in farm systems (FAO, 2019a). In Melanesia, subsistence and domestic agricultural labour and selling harvests are largely provided by women who sell garden produce domestically as well as commercial products such as dried fish, molluscs and garden foods (Thomas et al., 2021). Men tend to do what is considered 'heavy labour', such as land clearing, lifting heavy bags for markets or transporting products. Women are entrepreneurs in selling foodstuffs in the Pacific—market trading is driven by women in Fiji, the Solomon Islands and Vanuatu and is a key source of their income. However, workplaces (urban and rural marketplaces) present risky employment conditions, and there are a few opportunities to negotiate workplace rights (Singh-Peterson & Carnegie, 2020). Women's contributions are also frequently overlooked and undervalued by families and national governments (Singh-Peterson & Carnegie 2019). It is common to not 'count' women's contributions to food production, which means formal investments, extension services, social protection and financial opportunities miss women (Lawless et al., 2021; Thomas et al., 2021).

Women also contribute to food and water security in PICTs through their unique skills and knowledge. For example, in Fiji, after coastal flooding and erosion, women's intimate knowledge of the production of local nutritious food and traditional food preservation ensured food security for the community (UN Women, 2014). In the Pacific, while men are involved in deep sea fishing, women are primarily responsible for gleaning and harvesting fish and sea life from coastal and in-shores areas, which become critical sources of protein in responding to the impacts of climate change (Barclay et al., 2018; Kleiber et al., 2019; Mangubhai & Lawless, 2021). Despite these contributions, women often do not have a voice in decision-making in a post-disaster context (Lane & McNaught, 2009). Well-meaning agricultural development projects can often increase income for women but sometimes have the perverse effect of men lessening or stopping their contribution to the household and increasing responsibility for the women (Singh-Peterson & Carnegie 2020). One participant noted that, despite women's rural knowledge, a simple strategy to support food security in disaster recovery was to extend training to improving agriculture skills and stated that before a disaster, we have to 'take the women to the capital cities, train them in basic agriculture protection and production and have that at the time of a disaster'. This point is particularly salient in instances where men have historically received much of the agricultural extension support. The projected impacts of climate change throughout the region point towards the ongoing need to anticipate disasters and shocks and leverage whole-of-community knowledge and expertise in coping with a disaster. This offers an opportunity for future funding and capacity development.

2.5 Land ownership and gender equality issues

The gendered issues of land ownership and rights were identified as structural barriers to gender equality and inclusion by participants and in the literature. Land ownership is context specific and differentiated throughout the region and within countries, and it has been the subject of discussion and analysis (Pickering, 2017). Three major land systems exist in the Pacific: customary, public and freehold. Most land in the region is under customary authority, and it represents more than 80% of the total land area (McDonnell et al., 2017). While public and freehold land represents only a small proportion of a country's land area, it is often located in the most productive and accessible places and is usually supplied with the infrastructure for economic and social development (AusAID, 2008). Customary land enables most of the population to continue to pursue semi-subsistence livelihoods but additionally contributes to a sense of place and a sense of identity (Anderson, 2011). Land in many parts of the South Pacific is not considered purely in terms of its physical productive ability but encompasses the natural and spiritual world associated with it. Custom is central to determining

access to key economic resources such as land, water, forests and sea (Singh-Peterson & Carnegie, 2020). Land can be accessed and used by the prevailing family groups, tribes or clans in Melanesian countries through different means, including:

- inheritance or marriage defined by patrilineal (male leaders) and matrilineal (female leaders) inheritance systems;
- lineage or clan;
- allowing non-landholders access to rent-free land; and
- formal land leasing agreements under state administrative systems (AusAID, 2008).

In Fiji, Indigenous iTaukei Fijians, male customary landowners, decide and pass land from father to eldest son in patrilineal inheritance systems, and women have secondary rights through a father or husband. However, in this customary process, approval of requests and land access is largely dependent upon the gender of the person putting forward the request. In PNG, clans can form an incorporated land group and lease land from the state Native Land Trust Board, which facilitates the leasing of customary land on behalf of customary owners (Singh-Peterson & Carnegie, 2019). In Vanuatu, women's rights to land and participation in decision-making are not clearly defined in land legislation, which results in low participation of women in decision-making (FAO, 2020a). An FAO gender assessment of agriculture in Vanuatu states:

the legislation related to land in Vanuatu is gender neutral. The Customary Land Tribunal Act of 2001 reaffirms customary laws in its founding principles, but women's right to land and their participation in the tribunals are not defined. In 2008, there were 18 women out of 197 adjudicators in the Customary Land Tribunals. (FAO, 2020a, p.38)

In general, men hold authority, knowledge and privilege when it comes to land negotiations, leasing arrangements and the access to and transfer of rights, and women are often subordinated and excluded. In patrilineal land systems, women's rights to land are not independent of male relatives and are an extension of socially constructed gendered roles as daughters, sisters, wives or mothers (AusAID, 2008). This erodes the agency of women to manage land as an asset and has implications for how they form part of resource management in rural areas (United Nations Economic and Social Commission for Asia and the Pacific, 2007).

Throughout our interviews, participants discussed the various implications of land systems for resource management in the Pacific. One respondent indicated that working with 'the realities of land tenure' can enable external donors to maximise their reach. They proceeded to explain that this meant acknowledging that land and household decisions are deeply gendered, and working with those dynamics is a crucial starting point for enabling conversations about gender. Working with place-based gender realities was acknowledged as a time-consuming process and one that required long-term, on-the-ground planning and design. Another participant discussed land tenure in the context of food security and immediate incomes for women, as illustrated in Box 3.

Box 3. Land as a driver of women's role in agriculture

'Land is the biggest thing that influences women's role in agriculture... they actively plant, but they are guided by the husband, brother or uncle who holds the land'. (Women Leader 3, Vanuatu)

While patrilineal systems exist only in some parts of the region, they present a barrier to women's decision-making in farming systems. Contrastingly, matrilineal systems act as avenues for women to have a greater say in participation. One respondent noted that it would be worthwhile exploring how

matrilineal systems support gender equality and whether different food and water security outcomes are greater in matrilineal systems. A Pacific-led study of land tenure in the Marshall Islands, the Solomon Islands and Vanuatu pointed to the nuances of matrilineality in Pacific islands' land tenure, whereby traditional customary land intersects with gender roles (Naupa & Simon, 2008). For example, in Vanuatu, the authors point towards cases in Raga, North Pentecost and Mele, South Efate that, despite matrilineal land tenure, gender roles mean that land administration and decision-making remains vested in husbands, brothers and uncles (Naupa & Simon, 2008). While land tenure and ownership remain contested and a complex area of work, it can offer a potential avenue for informing how access to and ownership of natural resources, including land and water, influence gendered dynamics and vice versa.

3 Vanuatu's water–food–gender opportunities

The previous section provided a general overview of gender in the context of water and agriculture in the Pacific and the associated links with land ownership. To explore these interrelated issues in some more depth, we provide a contextual analysis of reports, literature and insights from five participants who are working on issues related to Vanuatu's water-food-gender nexus.

Vanuatu context

Vanuatu is an archipelagic nation of 83 islands extending over 1000 kilometres with a population of 307,150 in 2020 (FAO, 2020a). The population is relatively young (median age of 19 years in rural areas), and 99% of the population is Indigenous ni-Vanuatu, speaking over 100 languages (FAO, 2020a) and is dispersed in low densities across 65 islands. Around 24% of people living in rural areas are aged 15–29. Of the 17% of Vanuatu households that women head, more than 70% are located in rural areas (FAO, 2020a). About 74% of rural households are engaged in cash-cropping food products for local markets, such as taro, rice, banana, yam, cassava and sweet potato and export crops such as coconut, coffee, cocoa and kava. Communities depend largely on subsistence agriculture and fishing for daily sustenance and livelihoods. Only 40% of the total area of Vanuatu consists of agricultural land with suitable soil conditions for productive agriculture, and only one-third of the cultivable customary land area is presently being farmed (FAO, 2020a). Tourism makes a substantial contribution (45%) to the gross domestic product (GDP), with agriculture, fisheries and industries making up the rest (FAO, 2020a; Robins et al., 2020).

The national policy guiding development is the Vanuatu 2030 National Sustainable Development Plan, for which cultural heritage is the foundation of the country's development. Throughout the plan, the three sectors of economy, society and environment are presented as specific pillars of development priorities for the country. Agriculture is embedded across the three major sectors and focuses on rural development and blue-green economic development opportunities in the country. Gender forms part of the social inclusion pillar of the strategy, and protecting watersheds and associated natural resource assets is part of the policy. The Vanuatu 2030 vision seeks to be the overall policy framework for guiding the establishment of future industry and public development activities in the country (Government of Vanuatu, 2016).

Climate change risks in Vanuatu

Climate change is already posing major development challenges to Vanuatu's people, infrastructure and natural resources. The increased severity of cyclones continues to affect the country. For example, Tropical Cyclone Pam in 2015 led to a decrease in the value of the agricultural sector output by 16% and a decrease in the constant price value of animal production by 58%. In 2020, the effects of Tropical Cyclone Harold in Vanuatu were severe: 95% of homes were destroyed in Pentecost, crop

damage ranged from 50% to 100%, and 27% of the population is estimated to have been displaced (Ober & Bakumenko, 2020). The World Bank's Vanuatu climate country profile portrays an overall need to support adaptation strategies in major economic sectors, given the climate impacts on rainfall variability and agricultural systems (The World Bank Group, 2021). While much more granular data is needed to understand rainfall pattern predictions, sea level rise and agricultural changes due to climate, the overall trends from global climate data point towards fundamental changes to Vanuatu's overall climate (World Bank, 2021).

The UN World Risk Index, which measures exposure to natural hazards and the capacity to cope with and adapt to these events, ranked Vanuatu as the world's most at-risk country for natural disasters in 2020 due to high exposure to extreme natural events and sea level rise caused by global warming (Behlert et al., 2020). Despite its high vulnerability to disasters, Vanuatu progressed out of the Least Developed Country list in 2020, with economic growth centred on agricultural improvements and international services (United Nations Conference on Trade and Development, 2020). The social and economic costs of natural disasters are significant; for example, the cost of cyclone Uma (1987) was US\$25M and the earthquake in 2002 cost US\$2.5M (SOPAC, 2007). The worst disaster to hit Vanuatu, Tropical Cyclone Pam (2015), cost US\$449.4M, equivalent to 64.1% of GDP (Esler, 2015) and Tropical Cyclone Harold: US\$200M.

Aid to Vanuatu for agriculture and WASH

International aid investments in agriculture, water and sanitation services are varied in Vanuatu, with agricultural investments receiving substantially higher funds than the water sector. In 2018 alone, 7.9% of aid was in the agriculture, forestry and fishing sectors, and 0.4% was in the water and sanitation sectors (Lowy Institute, 2020). Figure 1 below shows a large aid funding increase spent in Vanuatu's agriculture, forestry and fishing sectors in 2018; however, only a portion was spent, similar to previous years. Figure 2 illustrates variable aid funding spent in the water and sanitation sectors in Vanuatu from 2010 to 2018, with a decrease in funding and less being spent over time. The WASH sector has continued to receive attention in the country, with close coordination between NGOs and national government institutions. This is partly because 43% of the population remains unserved by improved sanitation facilities. There are ongoing efforts to support technical capacity and education among the three major national agencies responsible for WASH: the Ministry of Health, the Ministry of Education and Training and the Department of Water Resources (International Water Centre, 2019).

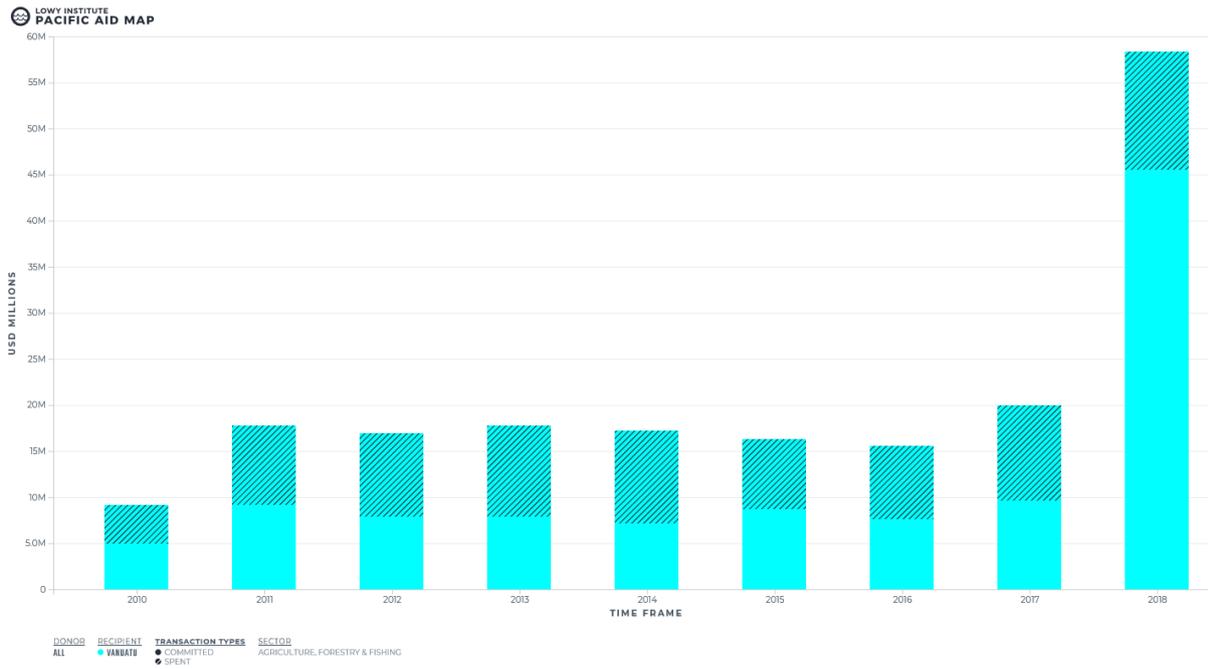


Figure 1. Aid spending in Vanuatu agriculture, forestry and fishing sectors 2010–2018 (Source: Lowy Institute, 2020)

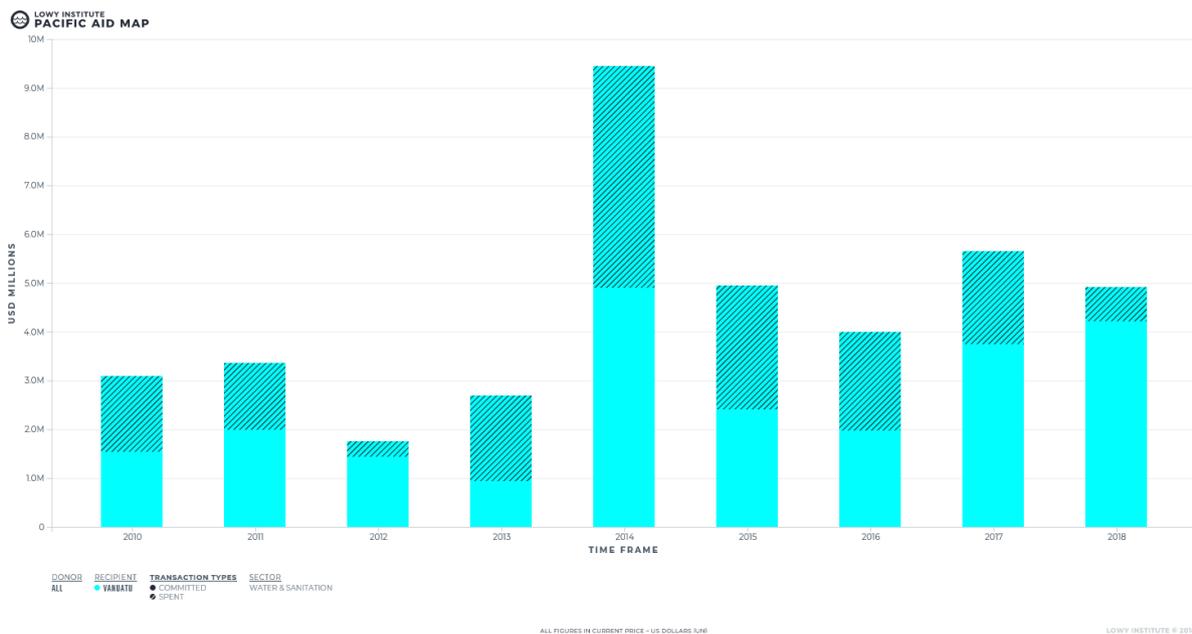


Figure 2. Aid spending in Vanuatu water and sanitation sectors in 2010–2018 (Source: Lowy Institute, 2020)

3.1 Vanuatu’s water resources context

The geology and terrain of the 83 predominately small and steep volcanic rock islands of Vanuatu mean that water resources are predominantly from groundwater in coastal aquifers, rivers on the large islands and crater lakes (Falkland, 2002). Agriculture is exclusively rain-fed (Carpenter & Jones,

2004), with the first irrigation system for vegetable production established in 2016². Water is mostly collected in rainwater tanks, and groundwater is collected at the point of abstraction through hand pumps or hand-dug wells. Where pipes exist to collect and transport surface water, the systems are often gravity-fed and given limited energy to power pumping (FAO, 2020a). Rural areas and communities on smaller islands of Vanuatu are particularly vulnerable to changes in water resources, which are affected by increasingly unpredictable weather patterns and instances of natural disasters such as cyclones and droughts. Low-lying coastal areas are susceptible to erosion, flooding and inundation during storm surges, high seas, sea level rise and periods of intense rainfall (SOPAC, 2007). In addition, many stream courses are short, and the flows are not perennial, which makes water availability highly variable (Falkland, 2002).

The majority of rural households have access to basic drinking water (88%), with 56% of those with safely managed water. This basic and safely managed access is relatively similar for urban and rural areas. Urban-rural differences are more prevalent in sanitation and hygiene. Rural areas have 48% basic, 11% limited and 39% unimproved sanitation. In urban areas, these are 64% basic, 26% limited and 8% unimproved. Hygiene is the most starkly different. Rural areas have 17% basic sanitation, 46% limited sanitation and 36% with no facilities. Contrastingly, urban areas have 48% basic sanitation, 33% limited sanitation and 18% no facilities. These figures are all summarised in Figure 3.

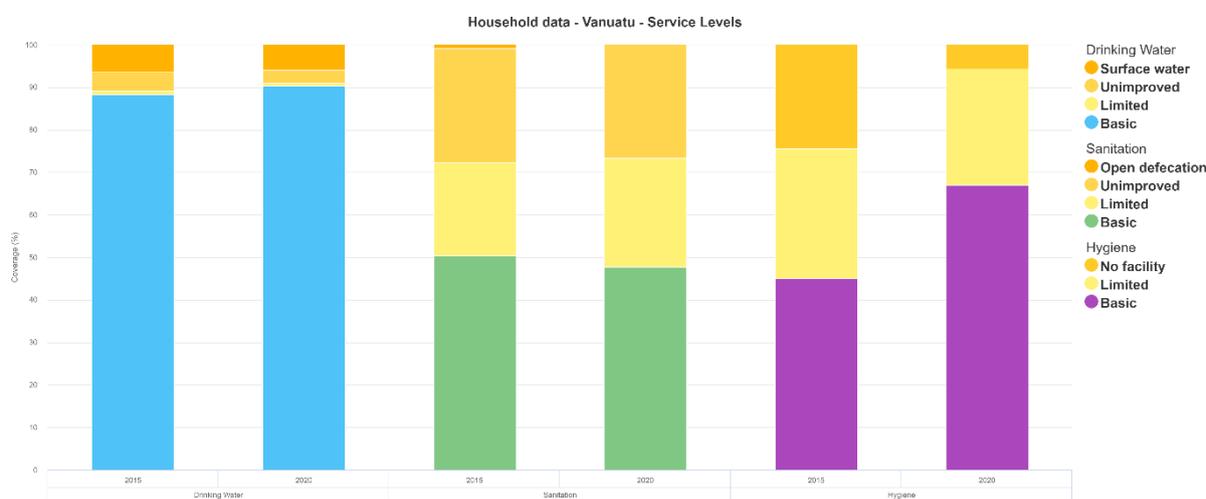


Figure 3. Rural and urban service levels, 2015 and 2020 (sourced from JMP Dataset 2022)³

The water context of Vanuatu was discussed at length by participants, notably on how water intersects with management. One participant spoke of the variability of water resources, saying that ‘in some places, there is a surplus of water, and impacts crops and diets. On other areas, people use underground wells for freshwater’. The participant proceeded to explain that in water-scarce areas, people find ways of working with limited water, saying that she ‘was sure there are ways for people to innovate to have access to water—but they need support to know what to do. People are quite resilient, and challenges have been there since the beginning of time.’ Sourcing and managing water was linked to gender roles. One participant explained that women were informal custodians of water management, saying that ‘in areas without water, [women] use water drums to collect water, they use money to buy containers and bring them to the house. They also use funds to transport water to households.’ However, another participant warned that the perceived abundance of water led to unclear water management. She stated that ‘water is often taken for granted, as most islands have access to plentiful rain and fresh water is accessed from springs and the hills’. The perceived

² See news item in the Vanuatu Post here: https://www.dailypost.vu/news/history-through-irrigation/article_4ebd66ea-9757-5272-99ae-757ca4ef1938.html

³ Dataset available at: <https://washdata.org/data/household#!/vut>

'abundance' creates a perception of a resource that is available to use as needed. One way of overcoming this was through water literacy, which was identified as an area of need. Two participants explained the importance of water literacy and how it can create permanent understandings of water, as per Box 4.

Box 4. The importance of water literacy

'One important thing is the use of water—some people just don't know the right uses'.

Sooner or later, water projects will come to a halt, and people turn back to the existing water sources and water practices...Using what [water literacy] is already there for water resource management is important because in setting up water projects, communities need to know how to maintain them.' (Women Leader 3, Vanuatu)

Despite improvements to water services over the last decade in Vanuatu, droughts associated with El Niño have led to water-related emergencies in rural communities, growing tensions over water access and reliance on transporting water long distances (FAO, 2020a). Access to water supply systems is a key problem, especially for rural communities. Following extreme events such as droughts and floods, remote communities experience water scarcity, contamination of water sources and groundwater salinisation, and transporting water can take up to five hours per day (FAO, 2020a). The devastating impact of Tropical Cyclone Pam in 2015 included damage to water and sanitation infrastructure from strong winds and intense rain, which affected rural and peri-urban water supply networks (Government of Vanuatu, 2015). While historical rainfall data shows that there is abundant fresh water in Vanuatu (4000 mm per year), increased intensity of rainfall and potential damage to water infrastructure continue to create risks for urban and rural communities.

3.2 Agricultural systems context

We asked local experts about the strengths and challenges of agricultural systems in Vanuatu. Participants indicated that food production was a common livelihood activity and was core to ni-Vanuatu's rural identity and traditional social and livelihood systems. One participant stated that Vanuatu has the advantage of being 'well placed by being south enough of the equator to receive good rain, and north enough of the south pole to have diverse climate'. This has allowed the country to have very rich production systems, with root vegetables and horticulture produce making up the vast majority of the country's production. One participant offered that 'everyone knows and enjoys how to plant a garden' and that there is 'a desire to continue traditional-scale farming methods'. While this is an asset to food production systems, there is also increasing interest in intensifying and commercialising agriculture and 'value-adding' products that can be sold at local and international markets. One participant spoke of their organisation supporting value-added commodities, such as coconut oil, as a way of improving rural livelihoods. With respect to strategies to support traditional farming systems in light of climate projections, one participant strongly advocated for conservation- and biodiversity-conscious food production systems. She said that 'having a conservation focus can help communities use the water and the land to start conservation areas'. She expressed that a catchment and conservation-focused approach (from the mountains to the sea) was needed to ensure that the underlying resource base with communities was not eroded and would continue to have impacts on them in the future.

Subsistence agriculture and fishing are how the majority (70%) of the population support their households and livelihoods in Vanuatu (SOPAC, 2007). Agricultural food production accounts for 15–20% of GDP in Vanuatu, with only 1% of this accredited to fisheries (Gillett, 2016). Exports are

dominated by a small number of products vulnerable to world commodity prices, and economic growth is constrained by access to markets, high transport costs due to Vanuatu's geography and natural disasters (such as Tropical Cyclone Pam in 2015). About one-third of agricultural production is in commercial crops: cocoa, coconut, kava and coffee (FAO, 2020a). The highest-value export commodities are copra, kava, coconut oil, sawn timber, beef and cocoa (FAO, 2020a). The contribution of agriculture, fishing and forestry to GDP is 18% (Vanuatu National Statistics Office, 2020). Table 13 illustrates the high employment in the agricultural sector compared to the industry and services sector in Vanuatu. Table 13 points towards a decline in people working in agriculture, which is likely due to a complex combination of factors such as diversifying rural livelihoods, urban migration and the increased dependence on imported foods.

Table 1. Employment in different industries in Vanuatu

Agriculture				Industry				Services			
Male		Female		Male		Female		Male		Female	
% of male employment		% of female employment		% of male employment		% of female employment		% of male employment		% of female employment	
2000	2019	2000	2019	2000	2019	2000	2019	2000	2019	2000	2019
65.5	56.8	72.9	56.8	0.6	15.3	0.2	12.5	33.9	28	27	30.7

The type of farming done is heavily influenced by land ownership systems discussed earlier (Section 2.5). These land tenure systems influence what is grown, who harvests and how food is distributed and sold among households and markets. In rural areas, 97% of households are engaged in crop production, 85.6% in livestock, and over 70% grow some type of cash crop (such as kava, copra or coffee). The majority of farming is done in labour-intensive ways and with minimal machinery and artificial agri-inputs. Forests, which occupy 74% of the country’s total land area, are often weaved into mixed-farming systems and provide valuable resources for households, such as cooking materials, medicines and materials for weaving and house building. Despite largely traditional and agroecological farming systems that embed forests into food production (Addinsall et al., 2017), 50% of total deforestation in Vanuatu is due to land use for subsistence agriculture (FAO, 2020a). This relationship between land use and farm sustainability creates an imperative to support integrative land management systems that support both communities and ecosystems.

3.3 Gender and its intersection with food security, water management and climate change

As discussed earlier, women hold knowledge and skills, and they provide innumerable contributions to resilience in the Pacific, including in Vanuatu. One expert participant summarised these contributions, saying that: ‘women are traditionally responsible for meals for the family, which remain largely dependent on the home garden. Home gardens [rain-fed] are both valuable for food consumption as for income generation.’ Another participant said that ‘In Vanuatu, the women do all the work... the men clear the land, but [it] is the women that do the planting, weeding, harvesting. The women spend more time in the garden than men.’ These observations are supported by literature that shows that women’s extensive obligations to care for families are very time-consuming, leaving limited time and resources for work beyond subsistence agriculture and household tasks (Bowman et al., 2009).

Water management roles and gender equality

Women have substantial roles in sourcing water in Vanuatu for their families and communities. Data for Vanuatu from WASH databases⁴ reveals that in the Torba and Sanma provinces, which have limited water on premises, women undertook 4 to 5 times more of the water collection duties than men. Participants also noted the role of women in water management. Water collection has traditionally been a task for women and children, particularly when sources are far from villages (Department of Geology, Mines & Water Resources, 2008). Data from a 2007 multiple indicator cluster survey found that women do 65% of water fetching (Vanuatu Ministry of Health, 2007); however, this feminisation of water collection is hugely varied throughout the country, as in some places, men and women share the collection more evenly than others. In terms of national policy, the

⁴ See JMP Dataset: <https://washdata.org/data/household#!/vut>

water strategy promotes the involvement of women in local water committees, including planning for and managing the resource (Mommen et al., 2017). The national policy acknowledges the geographic diversity of the country and emphasises the need for Provinces and Municipalities, as well as relevant utility and private agencies, to contribute to the management of the resource. One major rural water governance system, the Water User Committees (WUCs), is explained below as an example provided by interviewees.

Water management committees and gender equality

Water management in Vanuatu is largely overseen by WUCs. One study (Mommen et al., 2017) into WUCs studied the composition of the committees and roles held by women and the associated impacts of this on water management. The study, which looked at over 300 WUCs, found that the involvement of women in key roles in the water committees may be associated with more regular meetings and revenue collection. They also found a reported perceived improvement in water system performance when women held key active roles and that the type of roles influenced this performance (Mommen et al., 2017).

The participants we spoke to emphasised the importance of WUCs as a key element of governing water resources in community settings in Vanuatu. One benefit of WUCs mentioned was that the committees are part of formal national policy infrastructure, which indicates that there is an existing policy system to enable community water management in a way that sits within formal governance systems. Another benefit is the fact that they offer a *potential* avenue to elevate women's participation in resource management. However, this may not always be clear—one participant noted that 'women use soft power' in meetings, and only 'certain types of women' end up participating in management committees. This may create unintended inequitable outcomes, where 'elite' women with social standing are continuously given priority access to decision-making, while others continue to be marginalised. One participant summarised the role of women in WUCs, shown in Box 5.

Box 5. Women's role in Water User Committees

'There is a national mandate for about 50% representation, but that [was] dropped because it was almost impossible to find women to participate in these committee. It has been hard to find women to be actively involved in committee—there is no enabling environment to enable the national policy to be implemented beyond tokenistic ways'. (Women Leader 4, Vanuatu)

WUCs present an opportunity to enable women's water leadership in existing governance structures. Given that WUCs often involve traditional landowners, they offer an opportunity to work within formal policy systems with the traditional knowledge and resource management systems of communities. Yet it is important to note how these governance systems may perpetuate inequalities and continue to silence women if they do not create an enabling environment for participation. One participant spoke of taking a 'family approach' to development, where the men, children, leaders and women are all part of navigating the realities of social norms and roles. Involving women in leadership opportunities is time-consuming, thus, cutting into their time for expected household and family duties. Navigating the assumptions of these roles and amplifying the support from different family members is a useful strategy for creating an enabling environment for future women's leadership in existing governance systems.

Land, food, water and gender equality nexus

The links between land and water mean that in a country where men have greater customary access to land decisions, water decisions also end up being made by men. Managing water is seen as a land

issue; therefore, a men's issue, as expressed by one participant. This is supported by previous analysis of land tenure in Vanuatu, where despite matriliney being the main ownership system, decisions continue to be made by male members of families (Naupa & Simon, 2008). These connections between land and water are tied to the ownership system in that land triggers the management of both resources. Infrastructure or regulatory interventions are likely to fail without adequate consideration of the land ownership contexts in ni-Vanuatu communities. One participant expressed the changing nature of development projects and the necessity to invest time in project design, as presented in Box 6.

Box 6. Reflections on the changing nature of donor projects

'Donors have moved away from very large projects...[the] first few years [need] to be in community and land mediation, and then the next years are about developing the system. There needs to be a lot of time spent upfront to support customary arrangements to ensure that water from one person's land and pipes that pass through Indigenous lands don't get cut or are managed correctly.'
(Women Leader 1, Vanuatu)

This has implications for any activity focused on improving any water management practices at the community level that cross customary land ownership boundaries. Furthermore, Vanuatu's 2030 vision for its sustainable development policy has at its core, traditional heritage and culture as the driver of development in the country (Government of Vanuatu, 2016). Customary water and land uses are core to sectorial national development policies, such as Vanuatu's National Water Policy (2017–2030). The WUCs discussed in this section present models in which traditional and customary knowledge and practices can form part of formal institutional mechanisms. The continuation of these water governance systems will continuously be influenced by the realities of land ownership and household roles and norms. This has implications for investments in the water–food nexus, as activities will need to carefully define the ownership and decision-making structures that exist in a specific area to work towards greater gender equality. Women play instrumental roles in ni-Vanuatu society, and funding partners can leverage the differentiated contexts throughout the country to create spaces for working within the land and socio-political conditions to enable inclusive and equitable development and resource management.

4 Recommendations for water–food GEDSI initiatives

The following recommendations have been compiled from a combination of interviews and reviews by ni-Vanuatu women leaders and experts, a desktop literature review and discussions within the review team. The recommendations vary in specificity; some focus on specific examples of how programs could be improved for integrated outcomes, and others focus on 'ways of working' and approaches to creating enabling environments for gender equality and development. The recommendations have been clustered around the three 'sectorial' topics covered in this brief: gender and social inclusion, water resource management, and agriculture and food security. We note that this clustering need not perpetuate siloed thinking but rather offer detail on each sector and how it relates to the other sectors covered in this brief.

Gender equality, disability and social inclusion

1. **Coordinate and map in very early concept design disability, gender equality and social inclusion profiles of the context of projects.** This includes conducting a well-resourced early GEDSI and inclusive design process with adequate participation of local experts. Plan out how technical projects will be informed by and benefit women, people with disabilities and

non-elite people in society. This very early engagement should not be done only by international experts but rather by locally based groups with established trust and relationships with focus communities.

2. **Take a whole-of-family lens to activity design and rollout.** Taking a family-focused approach (men, women, children and relatives involved) helps embed activities within the community-based ways of governing their land and resources. Developing methodologies for including families in design and implementation helps normalise GEDSI as an issue that is not just about women and vulnerable communities.
3. **Explicitly build intergenerational thinking and engagement in projects.** An intergenerational approach, targeting youth and future generations, can contribute to creating an enabling environment from an early age. Working with education departments, schools and family groups focusing on gender education helps target future leaders.
4. **Support the comprehensive documentation of the evidence of building the role of women in climate adaptation and resilience.** Evidence from throughout the Pacific region shows the importance of women as agents of resilience and adaptation to multiple shocks. Given their roles in agriculture and water management, it is crucial to link this ability to support resilience with broader water and food interventions. A combination of research, capacity building and governance support can augment the voice of women leaders in this space.

Water resource management

5. **Take a mountain-to-sea catchment approach to projects and policy support.** This includes educating different groups on the interconnected system between upstream and downstream water and food systems and how integrated management can help support the whole catchment management. Combining support for sustainable land management to reduce erosion and water use monitoring and conservation can support the long-term resource of communities. Explicit catchment management design for water and food activities helps draw from local knowledge of natural resources that may already exist in Vanuatu and other countries.
6. **Support the expansion of water literacy programs that combine traditional knowledge with scientific evidence.** Cross-cutting approaches to water literacy (e.g., community-led and talanoa-based approaches of deliberation) can be developed to support water resource knowledge sharing. Partnering between science agencies and community groups can catalyse innovative water literacy systems.
7. **Understand the community and policy environment for water technologies.** The baseline of the communities benefiting from these technologies is needed. Functioning and sustainable technological interventions (such as water meters, monitoring technologies, small-scale irrigation and solar pumping) need to be understood in relation to the relevant geography, local culture and wider institutional environment. Relatively small populations spread across islands may have different experiences with and familiarity with technologies and will also vary in terms of their requirements from supporting systems for monitoring, operation and maintenance. Decision-making will also vary throughout communities, so it will be important to embed technologies within these decision-making systems and operation and maintenance capabilities and regimes.

Sustainable agriculture and broader food security

8. **Leverage community experience and knowledge to plan future food security planning.** The increasing frequency and severity of climate shocks to Pacific agriculture have created an understanding among Pacific communities of the impacts of climate change on their livelihoods. Working with local experiences of how crops recover from shocks and

understanding how food production can be protected from future shocks can support long-term livelihoods.

9. **Promote organics and low-input agriculture.** The rich soils of Melanesia (in volcanic islands) provide an opportunity to support traditional farm systems that are organic and do not use external inputs. Increasing the market recognition of organic production in export crops can support both land management and long-term incomes for communities.
10. **Support community-based market access systems that leverage women's capacities.** Women continue to be major drivers of food security for households and are responsible for the marketing of food. Work is needed to support community-level market skills development and coordination for emerging high-value commodities.

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