Women as recovery enablers in the face of disasters in Vanuatu

Rachel Clissold[a,*], Ross Westoby[b], Karen E. McNamara[a]

[a] School of Earth and Environmental Sciences, The University of Queensland, Brisbane, Australia
[b] Griffith Institute for Tourism, Griffith University, Gold Coast, Australia

ABSTRACT

Women have been framed as both passive victims and resourceful, dynamic actors in the face of acute and gradual disasters. Researchers and practitioners have highlighted the importance of resourcing and strengthening the diverse capacities and roles of women and women's groups to avoid undermining disaster recovery prospects. Despite this, women's voices, experiences and skills in disaster recovery, reconstruction and resilience often remain poorly acknowledged, underutilised and largely undocumented in regions like the Pacific. This paper provides insights into the situated and nuanced post-disaster experiences and strategies of ni-Vanuatu women, who are geographically in the most at-risk location globally. Drawing on ten focus groups, we found that, while recovering from the impacts of Cyclone Pam and the severe drought that followed, women demonstrated their critical roles as capital mobilisers, collectivising and leading forces, innovators and entrepreneurs. Despite being central recovery enablers, women continue to operate in, and be burdened by, a gendered and inequitable system. We, therefore, warn that disaster recovery praxis that resources and utilises women's strengths must include efforts to improve women's wellbeing, agency, livelihoods and prospects. This must be done through challenging underlying vulnerabilities and gender norms, and avoiding further burdens on women's workloads.

1. Introduction and background

Disasters[1] are being exacerbated in number and scale due to climate change and concomitant extreme weather events (ISDR, 2008). It is widely understood that disasters are experienced and responded to differently by different groups, with gender being recognised as a key differentiating factor (Dankelman, 2002, 2010). In what Resurreccion (2011) refers to as the 'chief victim-and-caretaker' role, women have been depicted as both passive victims with the lowest abilities to cope with disasters (Neumayer and Plümper, 2007; Sultana, 2010; Bradshaw and Fordham, 2013; Alam and Rahman, 2014) as well as resourceful and dynamic actors with unique capabilities in disaster response and recovery (Enarson and Morrow, 1998; Enarson, 1999; de Branco, 2009; Yonder et al., 2009).

Overlooking women's roles and contributions results in the under-utilisation of their capacities and sidelining of their specific needs and vulnerabilities (Scanlon, 1998), which can then undermine disaster recovery prospects (Soares and Mullings, 2009; Yonder et al., 2009). Transnational groups such as the Gender and Disaster Network have,

therefore, made calls for engendered relief and reconstruction actions that build on the capacities and knowledges of women in grassroots organisations (Gender and Disaster Network, 2009). In light of this, it is problematic that women's diverse skills, experiences and knowledges in disaster recovery, reconstruction and resilience are still poorly acknowledged, underutilised (Raj et al., 2019) and largely undocumented in highly vulnerable regions like the Pacific. Despite sweeping comments around the important roles of Pacific Islander women and the need for more gender-responsive programming (see e.g. Lane and McNaught, 2009; Anderson, 2009), detailed case studies on women's skills, capacities and strategies remain lacking. This is an oversight, as we need 'place-based' analyses on the active roles of women to understand how gendered diversity in knowledge, institutions and everyday practices matters in producing barriers and options for achieving resilience (Ravera et al., 2016: S241). Such analyses are also critical for bridging globally developed tools and guidelines (e.g. Gender and Disaster Network, 2009) with local realities and scenarios. This paper showcases some response and recovery strategies among women in Vanuatu to provide nuanced examples of their critical roles

---

in the most at-risk country to natural hazards (Day et al., 2019).

We focus on women because women's voices and needs related to disasters are largely ignored within families and communities (Alam and Rahman, 2014), and in formal decision-making processes and bodies (Khondker, 1996; Fulu, 2007; Bradshaw and Fordham, 2013; Nadiruzzaman and Wrathall, 2015). We focus more specifically on disaster experiences of women marketplace vendors in Vanuatu for two key reasons. The first is that, as a result of hegemonic gendered norms and expectations in the Pacific, marketplaces[2] are sites where women are central (Barnett-Naghshineh, 2019; Busse and Sharp, 2019). Seventy-five to ninety percent of marketplace vendors in the Pacific are women (Pacific Islands Forum Secretariat, 2013), making the marketplace an appropriate space to explore their everyday lives. The case is similar in Vanuatu where the main income activity of women is marketplace trading (DFAT, 2019). The second reason is that this kind of dependency on marketplaces and the sale of climate-sensitive products can lock households into a system that is disproportionately sensitive to shocks (Bolwig et al., 2010). We argue that women market vendors in Vanuatu have significant capacities and roles that we need to resource and strengthen, although more needs to be done to address root causes of inequality and vulnerability as women still operate in a gendered system that imposes unequal cultural expectations, pressures, hardships and burdens (see also Ariyabandu, 2003; Enarson et al., 2007; Gender and Disaster Network, 2009).

2. Women in disaster response and recovery

Although studies focused on understanding gender, and in particular women's experiences, in post-disaster recovery, reconstruction and resilience are growing, more detailed case studies are still needed (Islam et al., 2014; Alam and Rahman, 2018). This is especially the case for the Pacific, although exceptions include Charan et al. (2016) who touched on the roles of Indigenous Fijian women, and Anderson (2005) who explored women's roles in formal and informal disaster risk management organisations in US-affiliated Pacific Island countries. Charan et al. (2016) conducted a literature review and noted that the literature they had to draw on was scarce.

Studies on gender and women's experiences in post-disaster recovery are largely focused on other regions including Asia (e.g. Fulu, 2007; Fisher, 2009; Islam et al., 2014; Drolet et al., 2015; Kusumasari, 2015; Alam and Rahman, 2019), Central or South America (Viñas, 1998; Cupples, 2007; de Branco, 2009; Moreno and Shaw, 2018), and developed contexts such as the United States (Enarson and Morrow, 1998; Enarson, 1999; David, 2010; Drolet et al., 2015) or Australia (Cox, 1998; Whittenbury, 2013; Whittaker et al., 2016). This is not to say that the Pacific is not already designing and implementing gender-responsive policy and practice for disaster risk-reduction (DRR) and climate change adaptation (see Lane and McNaught, 2009; Raj et al., 2019), but there are still gaps and opportunities for improvement (Anderson, 2009). This study provides critical insights that can inform these gender-sensitive efforts (Cupples, 2007; Ajibade et al., 2013).

Studies exploring gender in disaster response and recovery have focused on a range of climatic, non-climatic, sudden-onset and slow-onset disasters including cyclones (Alam and Rahman, 2019) and hurricanes (Enarson and Morrow, 1998; Cupples, 2007; David, 2010; Drolet et al., 2015), flooding (Islam et al., 2014; Drolet et al., 2015), tsunamis (Fulu, 2007; Fisher, 2009; Moreno and Shaw, 2018), earthquakes (Ganapati, 2012; Kusumasari, 2015; Moreno and Shaw, 2018; Viñas, 1998; Yonder et al., 2009), bushfires (Cox, 1998; Whittaker et al., 2016), volcano eruptions (Soares and Mullings, 2009;

Kusumasari, 2015) and droughts (de Branco, 2009). This study is focused on Cyclone Pam, which caused widespread damage and destruction in Vanuatu in March 2015, as well as the drought that followed. Cyclone Pam is the worst cyclone recorded to make landfall in Vanuatu (Fritz et al., 2016), displacing approximately 65,000 people, compromising 80% of rural livelihoods (Esler, 2015), decimating 96% of food stocks and affecting the water supply of 110,000 people (Oxfam, 2016). The adequacy of the response and recovery efforts by external agencies and governments have also been questioned (see Wentworth, 2019; McDonnell, 2019). While Vanuatu remained in the process of recovering from this cyclone, the worst drought in 20 years followed as a result of El Niño and further exacerbated impacts (Oxfam, 2016).

In disaster contexts, the dominant narrative around women in the 'Global South' has been that of disproportionate vulnerability or responsible caregiving (MacGregor, 2009; Arora-Jonsson, 2011; Tschakert and Machado, 2012). Women have been portrayed as more likely to be hurt or killed (Neumayer and Plümper, 2007), have their privacy, health and safety compromised (Fulu, 2007; Bradshaw and Fordham, 2013), experience post-disaster psychological problems (Başoğlu et al., 2004; Galea et al., 2008) or violence (Fulu, 2007; Whittenbury, 2013), and have low coping capacities due to socially embedded inequities that restrict mobility and access to relief (Scanlon, 1998; Sultana, 2010; Ayeb-Karlsson et al., 2019). These secondary impacts constitute a 'double disaster' and it is "these impacts [that] may be the real disaster for women and girls" (Bradshaw and Fordham, 2013: 13).

This vulnerabilisation, however, obscures women's agency, situated knowledge and resilience (Arora-Jonsson, 2011). In disaster relief and recovery for instance, where formal or governmental response measures are insufficient, women have been observed to mobilise their own responses, adapt to post-disaster conditions or acquire the needed skills to ensure their families' survival and wellbeing, thereby becoming critical agents of change (Enarson and Morrow, 1998; de Branco, 2009; Yonder et al., 2009; Kusumasari, 2015). Women are also often proactive in their communities as they are the first to call grassroots meetings, organise disaster-response collectives (Enarson and Morrow, 1998; Viñas, 1998; Gaillard et al., 2015) and, more generally, outnumber men in leadership and membership of grassroots groups working on disaster issues (Fothergill, 1998; Viñas, 1998). Women, therefore, should not be typecast as hapless victims but be recognised for their forefront roles in managing a crisis, rehabilitation, and the survival of family, community and country (Enarson and Morrow, 1998; Soares and Mullings, 2009; Kusumasari, 2015).

There are several specific avenues through which women have been observed to contribute to relief and recovery. Women's social capital has emerged as a key point of discussion, particularly in terms of social networks or women's collectives within which social capital is created, held and accessed (Ganapati, 2012; Islam et al., 2014; Kusumasari, 2015; Viñas, 1998). Critical aspects of women's social networks that contribute to recovery include: informal humanitarian distribution of critical resources (Drolet et al., 2015); creating inclusive approaches to recovery by involving those usually marginalised (Yonder et al., 2009; Enarson, 2012); providing psychological support (Ganapati, 2012; Soares and Mullings, 2009; de Branco, 2009); mitigating the impacts of gender-based violence (Enarson, 1999; Fisher, 2009); and supporting income generation to complement family incomes (de Branco, 2009). Social networks and collectives have also created the opportunities for women to 'gain a seat at the table', assert their needs and remedy issues overlooked in formal disaster relief processes (Drolet et al., 2015; Enarson, 2012; Fisher, 2009).

Groups of women have been critical for post-disaster political mobilisation and local activism (de Branco, 2009; Yonder et al., 2009; Enarson, 2012). This can involve lobbying against local institutions that are acting in conflict with women's needs, priorities and sentiments (Enarson, 2012). Increased involvement in local governance and engagement with decision-makers in this way can be an empowering

---

[2] We refer to marketplaces as the specific geographical spaces where gatherings focused on trade take place and where a set of localised institutions, actors, products and transactions, and cultural meanings exist (Busse & Sharp, 2019).

experience that offers opportunities to transform gendered inequalities and power relations (Viñas, 1998; Fisher, 2009; Yonder et al., 2009). Women have also been observed to promote the rights and needs of other vulnerable groups or serve as subject experts and communication conduits for reaching marginalised populations with critical information (Enarson, 2012). This demonstrates how women can collectively address their own post-disaster vulnerabilities but also strengthen the broader community's ability to respond and recover from disasters.

Although women's collective work is critical, women's individual efforts and leadership in post-disaster contexts should not be underestimated. Individual women have demonstrated active roles in political lobbying (Moreno and Shaw, 2018), in using traditional knowledge to maintain food and water security (Charan et al., 2016) and in caring for families and communities by, for example, setting up communal kitchens or re-establishing educational facilities (Fulu, 2007). Further, women have played a critical role in mitigating shocks to household incomes by taking the lead in establishing businesses and diversifying economic resources (Soares and Mullings, 2009; Islam et al., 2014; Kusumasari, 2015). They have overcome barriers through creative avenues such as developing new markets (e.g. online) or forming business groups to gain access to government and private assistance (Kusumasari, 2015). Disasters can also result in women taking on roles and responsibilities usually held by men (e.g. in agriculture) (Drolet et al., 2015), which can generate struggles over identities and change how gender norms and roles are negotiated or socially produced (Elmhirst, 2015). These opportunities emerge as cultural restrictions on women loosen and household survival becomes a priority in the face of environmental stress (Rao et al., 2019). This can lead to women's empowerment and transformative changes in household power relations and status (Ganapati, 2012; Kusumasari, 2015).

Despite the documentation of these critical roles, women are often left outside the "old boys network" (Scanlon, 1998: 46). Their voices and needs are often overlooked within communities and families as well as in formal decision-making processes and bodies related to post-disaster relief, response and recovery (Khondker, 1996; Fulu, 2007; Bradshaw and Fordham, 2013; Alam and Rahman, 2014; Kusumasari, 2015; Nadiruzzaman and Wrathall, 2015; Sovacool et al., 2018). Organisational structures of disaster recovery can, for example, be shaped by male culture and workforce (Enarson, 2002; Fulu, 2007; Neumayer and Plümper, 2007) while post-disaster rebuilding efforts are also often male-centred (Beck, 2005). Neglecting and excluding women in these ways risks foregoing any opportunity to challenge gender and social inequalities (Fulu, 2007; Drolet et al., 2015), and can result in what Sovacool et al. (2018) refer to as 'entrenchment' (i.e. aggravating disempowerment and reinforcing existing inequalities). Integrating the needs and voices of all genders in recovery and reconstruction is critical (Mulyasari and Shaw, 2013; Drolet et al., 2015; Whittaker et al., 2016).

Another important note is that women's critical roles in risk management, relief and recovery can emanate from the diverse pressures, obligations and burdens associated with gendered power configurations and women's expected roles as caregivers in some cultures and contexts (Ariyabandu, 2003; Enarson et al., 2007). By being the central axis of family care in these contexts, disasters can magnify women's responsibilities and burden them with the urgent need to locate resources and secure assistance in post-disaster situations (Wiest et al., 1994; Khondker, 1996; Viñas, 1998; Drolet et al., 2015). When these kinds of gendered cultural expectations are not met, shame can follow (Kusumasari, 2015). Studies that perpetuate the narrative of women as crucial agents must, therefore, be wary to not sideline the necessary redress of power structures that create these kinds of burdens (Arora-Jonsson, 2011; Resurreccion, 2011; Tschakert and Machado, 2012). Women, girls, boys, intersex and transgender often sacrifice their adaptive preference in the face of global environmental change so we should not overlook the deprivation and structural forces that are always at play and shaping the trade-offs in freedom and wellbeing (Béné et al., 2014).

It is also critical to be aware that exploring gendered dynamics of disasters are not straightforward (Cupples, 2007). Taking heed of Rothe's (2017) fear of generalisations – cherry picking from locally specific contexts to make generalised statements about the woman in the so-called 'Global South' – we acknowledge that women's vulnerabilities and capabilities can be shared but are not the same. This implies that there is internal heterogeneity and complexity among women, emanating from varying contexts, power dynamics and intersecting identities (e.g. gender with class, age, ethnicity and disability, among others) (Hancock, 2007; Islam et al., 2014). Gender is also constantly in the process of being re-constructed, and we should be mindful of this dynamism (Resurreccion, 2011). These differences and complexities will shape and influence the different and changing experiences, roles and capacities of individual women in disaster recovery. Further, despite the importance of focusing on women, we acknowledge that engaging men and other genders in research and practice are critical for holistic understandings and for effectively addressing gender dynamics in disasters (Lane and McNaught, 2009; Raj et al., 2019; Resurreccion, 2011).

3. Study site and methods

Seventy-six percent of Vanuatu's population and eighty-one percent of its landmass is vulnerable to a range of hazards including droughts, flooding, cyclones, earthquakes, volcanic eruptions, tsunamis and landslides (Richmond and Sovacool, 2012). Other extreme events such as storm surges, coastal inundation and hailstorms have been observed (NACCC, 2007). Indicative of Vanuatu's high level of vulnerability, the World Risk Report classified it as the country most at-risk globally to natural hazards (Day et al., 2019). Women and girls in Vanuatu experience persistent gender inequality, illustrated by their lower socioeconomic statuses, lower access to paid employment, lower access to early warnings and information, and less control of and access to economic resources (Lane and McNaught, 2009). Only five women have held a position in parliament since independence in 1980 (Howard, 2020). Gender-based violence is also rife with 60% of women experiencing lifetime physical and/or sexual violence, and 68% experiencing lifetime emotional violence by an intimate partner (Gardner et al., 2016).

This paper arose from a larger research project that intended to evaluate the role of women and marketplaces in adapting to, and recovering from, disasters and climate change impacts. Ten focus groups, with a total of 55 participants (53 women and 2 men), were conducted by one of the authors on Efate Island in December 2018. As a study focused on women, the perspectives of two male participants were not relied on in analysis, although we do acknowledge that future studies should explore gender relations through the inclusion of more men and other genders. All participants had livelihoods that were tied to marketplaces and were religiously affiliated with various Christian denominations (e.g. Presbyterian, Seventh Day Adventist and Pentecostal, among others). Pariticpants varied in age (between 26 and 76 with most in their 40s and 50s) and number of children (between one and seven).

Each focus group represented a group of participants who either sold at the same marketplace or were executive members of a specific marketplace association. The marketplaces of focus were those in Port Vila (such as Port Vila central [n = 11 participants], Port Vila handicraft [n = 3] and Marobe [n = 6]), and the ringroad marketplaces around Efate (Epau [n = 6], Epule [n = 5], Paunangisu [n = 4] and Emua [n = 8]). Some participants were also associated with the Luganville marketplace in Santo (n = 2) or were vendors from islands to the north of Efate (e.g. Nguna [n = 2]) but were selling at the Port Vila central marketplace (see Fig. 1). Women from the executive team of the Silae Vanua Market Vendor Association (SVMVA) were also involved (n = 7).

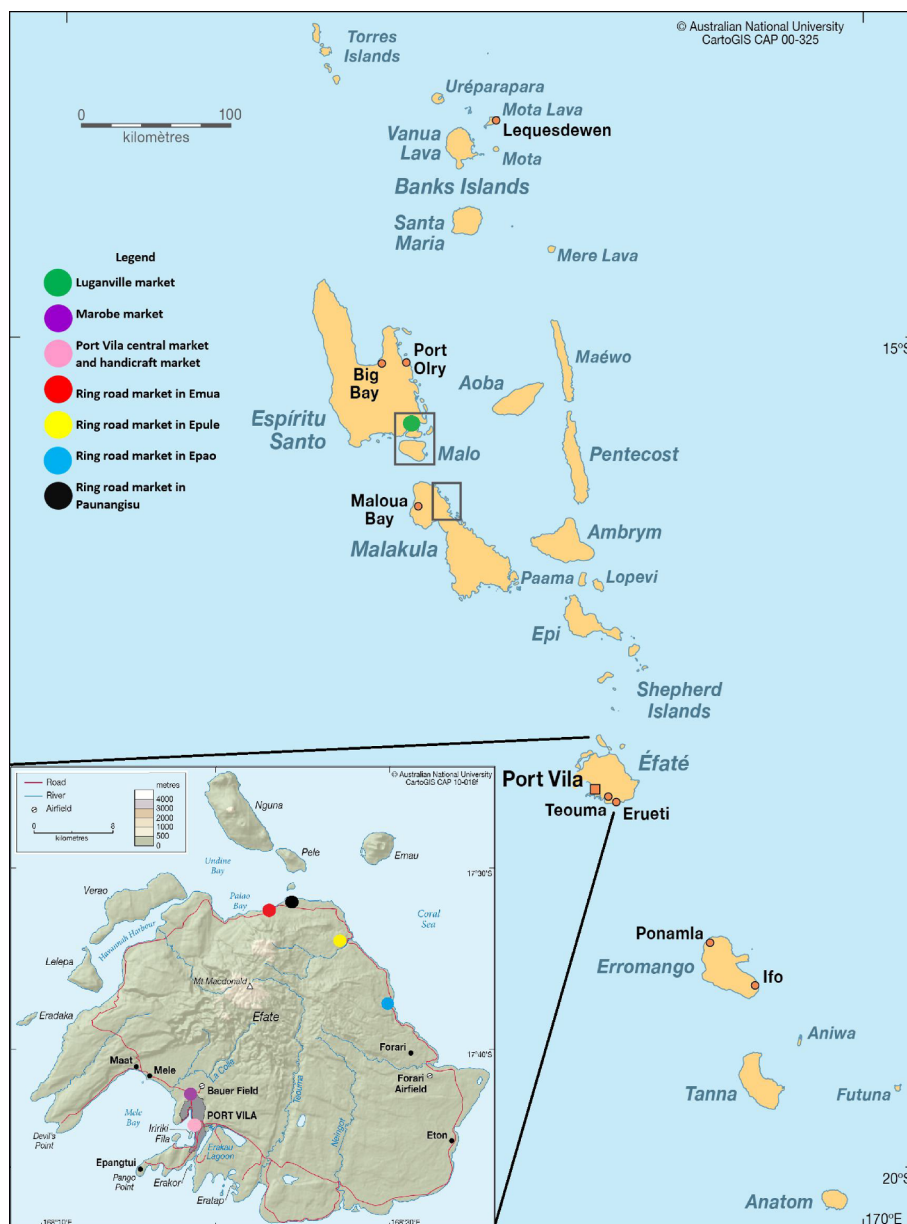Half of the focus groups met the generally accepted number of

Fig. 1. A map showing Vanuatu and the approximate locations of marketplaces. **Source:** Adapted from ANU (2018a) and ANU (2018b).

participants considered 'optimal' (between six and twelve) (Lasch et al., 2010), although focus groups with a minimum of four participants have also been considered sufficient (Kitzinger, 1995; Breen, 2006). We recognise that three group discussions with less than four participants may not have generated enough active conversation, although we found the discussions to still be insightful. A minimum of three to four group meetings has also been recommended for the identification of prevalent themes in the data (Burrows and Kendall, 1997; Guest et al., 2016) and, as such, 10 focus groups were considered sufficient. We acknowledge that this is not a representative study of all women's experiences or perspectives, and future research will be able to extend on the recovery roles and experiences presented here.

Marketplaces of focus were selected during a bi-annual workshop in Port Vila for the UN Women's Markets for Change (M4C) program in December 2018. The M4C is a multi-country initiative that aims to achieve non-discriminatory, inclusive and safe marketplaces that promotes women's economic empowerment (UN Women, 2015). Attending the workshop meant that one of the authors was able to meet with executive members of various marketplace organisations (also vendors

themselves) who then set up a suitable day/time to visit marketplaces and hold discussions with vendors. Although the selection of marketplaces and participants was largely based on expediency and accessibility, executive members were asked to take into account several variables when recruiting participants. These included the need to represent diverse age groups, vendors who sold different products and crops, and vendors who live in, and therefore travel from, different locations to sell products (particularly so for the larger marketplaces where vendors travel from far afield). The sample of marketplaces included larger, central marketplaces as well as smaller, ringroad marketplaces to capture a wider range of experiences and perspectives.

Focus groups were selected for their ability to uncover the complex layers which shape everyday individual and/or collective experiences, especially of women (Madriz, 2003; Liamputtong, 2011). They also have the potential to promote richer, complex and deeper understandings through enabling participants to 'own' discussion spaces (Kamberelis and Dimitriadis, 2013; Leavy, 2014). The process of 'collective talk' and shared dialogue that characterises focus groups also renders it a culturally sensitive method for communitarian indigenous

cultures (Madriz, 2003) like those in the Pacific. More specifically, this enquiry approach resembles the particularities and everyday experiences of women in non-Western cultural groups such as those in the Pacific, where forming groups and conversating with other women can be a means to resist oppression, discuss issues important to them and become involved in political activities (Madriz, 2003; Liamputtong, 2011) (as seen in Section 4). Through foregoing quantitative or individualistic research methods, we avoid alienating research participants and imposing artificial, unfamiliar and sometimes 'unsafe' environments (Madriz, 2003). We hoped to elicit collective stories that allow women to, as individuals and a group, explore and construct their own unique and powerful voices (Kamberelis and Dimitriadis, 2013) while validating their experiences and views (Ivanoff and Hultberg, 2006).

Although the flow and structure of discussion spaces were flexible and dependent on participants themselves, a focus group guide which outlined key discussion points and themes was also used. This helped maintain a certain standard across focus groups. Open, communal areas were used to enable informal and comfortable environments to share knowledge (Cameron, 2005). All focus groups were digitally recorded, and translations were provided by a female ni-Vanuatu research assistant who had an established level of trust and rapport with the participants from previous engagements. Although the absence of back translations was a limitation to this research, findings were validated by seeking constant clarification throughout focus groups and asking participants to provide examples for any key points made.

Latent content analysis was used for data analysis as it allowed us to identify themes that were not limited to the exact words spoken by participants, but also not too far in meaning from the original text (Bengtsson, 2016). The underlying meanings and key patterns of discussions were derived using NVivo. A research permit was granted from the Vanuatu Cultural Centre and ethics approval was granted through the University of Queensland (approval number 2018001985).

4. Seeds of hope: women's stories of recovery

Analysis of the data provided situated and nuanced understandings of women's everyday activities and experiences of Cyclone Pam and the drought that followed, as well as the four core strategies that women market vendors employed during recovery. We found that these four strategies are not mutually exclusive (i.e. groups of women can embody several roles simultaneously and there can be overlap between them). These aspects are discussed below to provide place-based insights into the kinds of experiences, unique capacities and dynamic roles of ni-Vanuatu women that must be acknowledged, built on and utilised.

4.1. Women's livelihoods and experiences of Cyclone Pam and drought on Efate

All women involved in this study had livelihoods tied to the marketplace. Key responsibilities include gardening, preparing products (i.e. cleaning, cutting or husking to make products presentable), packaging, transporting and then selling. Women claimed to spend most of their time participating in these activities. For those that travel longer distances, selling products can involve sleeping for days or weeks at a time at marketplaces. A range of products are sold by the women: fruits, vegetables, nuts and jam as well as handicraft products such as painted clothing, baskets, fans and hats. Most vendors selling at the central marketplaces of Efate have also become members of a local marketplace-related association (SVMVA). Some study participants were executives of this association and were responsible for facilitating skill training, implementing strategies for empowerment and enhancing collaboration with government and non-government organisations (NGOs).

On top of marketplace-related activities, women are responsible for a range of household duties such as cooking, cleaning and taking care of children. Religious or community duties are also allocated by the local council and/or chief and can involve preparing food once a week for the village 'chief day' or helping a family prepare for a wedding. This exemplifies women's high workloads and labour burdens: "Mothers have a lot of work to do" (Epule market vendor, personal communication, 2018)[3]. For some women (e.g. whose husbands are not seasonal workers), husbands or housemaids are helping with gardening, marketplace preparations and/or looking after gardens and children. In some cases, children or grandchildren are also helping in the gardens.

Although cyclones wreak havoc every few years in the months of January, February and March, the particularly devastating impacts and widespread evacuation from Cyclone Pam were highlighted. Due to poor housing infrastructure, many women and their families were forced to evacuate to local schools, locally-made safe houses, family or friends' homes or nearby caves for days to months at a time. Others with corrugated roofs and brick houses or locally-made homes designed to withstand strong winds were able to remain in their homes with their families. Livelihoods were critically affected with homes, tools, gardens and crops destroyed. The cyclone "breaks all the branches of our fruit trees" (Emua market vendor, personal communication, 2018) and "all the things from the garden went down… house also gone away" (Epule market vendor, personal communication, 2018).

In many cases, access to gardens, as the foundation of livelihoods, became more difficult as a result of fallen trees: "we found it very difficult to enter the garden because all the woods are blocking the entrance…we had to climb over all big trees" (Emua market vendor, personal communication, 2018). Garden productivity is critical as "it's the only form of income and only form of way to get back food to the kitchen… the first thought after every cyclone is the garden" (Epau market vendor, personal communication, 2018). Some women expressed that sudden destruction of gardens can cause them to be "very down" (Epule market vendor, personal communication, 2018): "she cried because… no crops. It's the only income they get to buy salt, sugar and soap" (Port Vila central market vendor, personal communication, 2018). This reflects the emotional and psychological consequences of disasters. It can take a significant amount of time, sometimes a year, to build back livelihoods and income sources, illustrating how household food security and income are highly subject to the vagaries of climate and disasters.

Alongside crops, trees used for weaving baskets, fans and hats were also destroyed, disrupting the income sources related to these products. A large group of women whose livelihoods are dependent on selling handicrafts were affected when the handicraft marketplace infrastructure was destroyed by the cyclone. These women faced significant difficulty recovering as governments did not prioritise the reconstruction of this market infrastructure on which they depend: "[they] forget all about us" (Port Vila handicraft market vendor, personal communication, 2018).

Drought is also significantly affecting livelihoods, particularly in terms of gardens and crops. The women highlighted a particularly dry phase after Cyclone Pam in September 2015. All crops, excluding some root crops which are advantaged by being "much lower in the soil" (Marobe market vendor, personal communication, 2018), are increasingly deteriorating in quality and quantity due to drought: "it wasn't getting green, it was all getting dry… it didn't look fresh enough to eat" (Emua market vendor, personal communication, 2018). With poor soil quality and crop growth, dry seasons pose intensive labour burdens on women as they must work harder in gardens to secure food.

Official recovery processes in response to Cyclone Pam were widespread with NGOs and government departments distributing a range of critical resources such as seeds, crops, tools, tarpaulins and clothing. Critical resources such as crop stems or seeds (for reviving destroyed

---

[3] Information provided in brackets includes description of focus group participant, type of communication and year the focus group took place.

gardens), however, were distributed weeks or months after the cyclone, leaving households to recover independently in the immediate aftermath. The distribution of relief was also inequitable: "some of her [group] members received the seeds, some never" (vendor from Nguna selling at central market, personal communication, 2018). To enhance recovery from the livelihood impacts of cyclones and drought, a series of strategies emerged among women and these are discussed below.

4.2. Women as social capital mobilisers: using informal social networks to support an inclusive response and recovery process

Women's roles as recovery enablers are facilitated by the high social capital emanating from informal social networks (within and between islands and communities) which are fostered and strengthened by the interactive nature of marketplaces: "… we don't know each other because we are in different villages, but then we come over to the marketplace and then we started to talk together and then we start sharing" (Marobe market vendor, personal communication, 2018). These informal networks ensure inclusive response and recovery processes primarily through the sharing of critical resources (such as crops, seeds, tools and food). As one woman stated, "if you don't have any of these tools… you ask your other friend or other sister to give you her tool to use… you have the opportunity to ask another mother to help" (Paungunisu market vendor, personal communication, 2018).

Informal networks also provide opportunities for women to access desired resources and meet urgent needs during response and recovery. For example, a food exchange system that emerged after Cyclone Pam allowed women on different islands to trade for desired materials (e.g. sugar and soap) and, through this, meet their needs:

> They have a relationship with the other women in Epi, Ambrym and Palma [other islands]. So they would meet each other and say… 'can I give you this so you can give me some nangai?' [type of nut] … she would call her husband back at the island and [he] sends whatever she needs and then she would take the carton of food back (vendor from Nguna selling at central market, personal communication, 2018).

Informal social networks also support inclusive financial recovery processes in several ways. The food exchange system, for example, supported women's post-disaster income streams as those who are waiting for their crops/trees to recover after the cyclone were able to sell products obtained through these exchanges: "She makes orders to other islands, to other women…that have nuts… they send it over to her and then she resells it and gets her money, but she pays them [through] exchange with food" (vendor from Nguna selling at central market, personal communication, 2018). Some women also undertook financial risk-sharing whereby "they get together and do a little saving kind of scheme with each other" (Epule market vendor, personal communication, 2018). In these systems, women contribute a small percentage of their incomes which are combined to act as grassroots insurance for speedier recovery and reconstruction processes (e.g. communal rebuilding efforts). Five days after Cyclone Pam, for example, one village was able to use accumulated funding to rebuild the destroyed roof of a marketplace with corrugated iron, rendering it more resilient against future hazards. Through this system, women can also "help each other for death ceremonies, marriage, wedding… emergency money" (Epule market vendor, personal communication, 2018).

These networks also promote inclusive financial recovery processes through mitigating potential exclusions to income opportunity stemming from inequality or high workloads. Social networks among women market vendors allows those who are less abled or burdened by heavy workloads (as a result of disasters) to rely on other, more-abled women to sell products for them, thereby maintaining post-disaster income flow and supporting recovery: "After the cyclone, all the widows and those that are weak, that can't go to the market[place], prepare their food and give it to someone who is stronger to go and sell"

(Epau market vendor, personal communication, 2018). Some women receive a commission while others, who are cognisant of their own vulnerabilities, partake in this system voluntarily in hopes that others may sell for them in the future.

These factors demonstrate how women and their informal networks have significant influence on the equity and inclusiveness of response and recovery processes, especially in relation to safeguarding financial security and meeting needs. Social capital, therefore, constitutes a unique resource that women mobilise to support recovery processes of themselves and their households as well as others.

4.3. Women as collectivising and leading forces: lobbying for needs and rights during response and recovery

Another critical role of women was demonstrated through their ability to collectivise (through formal associations and networks) and exercise voice, which became critical in response and recovery processes. This is especially evident at times when assistance from governments and NGOs were perceived as inadequate after Cyclone Pam. Women in the Efate marketplace association (SVMVA), for example, independently explored avenues for securing sources of support in the face of barriers: "If we are having difficulties [in securing formal help] …we take initiative first to find somebody who can work with us" (member of SVMVA executive team, personal communication, 2018).

In the post-cyclone period, strong female leadership was also exemplified by one woman who established a group, from the existing marketplace association, to collectively lobby against organisations that she perceived as excluding them from formal response and recovery activities:

> The distribution [of seeds] after Cyclone Pam was an improvement because most organisations, they just take maybe young people and men… I just went there to force that they take some ladies there… That's when I find out that we empower women so that we will never face another disaster… We know where we can use our women… Not just stand there and let other people do it. We can do it (member of SVMVA executive team, personal communication, 2018).

Despite these abilities to take initiative, women's voices are sometimes filtered through one main manager (usually male) before reaching higher levels of government.

When the handicraft marketplace on Efate was destroyed by Cyclone Pam, women also collectivised as a leading force against the government's response which directly conflicted with women's priorities and would be damaging to their livelihoods. The government's strategy involved sidelining the rebuilding of the marketplace and, instead, asking women to relocate to an area with little prospective customers. Women involved in a Vanuatu arts and crafts association collectively lobbied against this and successfully negotiated with local government agencies for approval to share space and sell at other marketplaces usually reserved for produce. Although some issues with overcrowding in marketplaces emerged, this group of women were able to counter potentially detrimental government strategies and better secure their post-disaster incomes, thereby supporting recovery. This was a critical outcome as the women perceived there to be hundreds of people (including the women themselves, their husbands and children) who were reliant on this income stream: "that would be a social problem if we were not served" (Port Vila handicraft market vendor, personal communication, 2018). The importance of integrating women's voice to drive conversations, projects and initiatives around response and recovery is evident.

4.4. Women as innovators: reducing potential losses through adaptive farming behaviours and collecting seeds

Enduring crop destruction from droughts and cyclones has

prompted women to utilise local knowledge and adapt behaviours in an effort to prepare for future disasters: "from everything [droughts and cyclones], their lessons learned was to prepare… we've changed the way we're planting now" (Paungunisu market vendor, personal communication, 2018). More specifically, through experimentation and innovation, women have devised a series of adaptive farming behaviours that will support future recovery through lessening initial damage from future hazards. This includes regularly trimming crops such as yam sticks to reduce the extent of damage when cyclones hit, planting different crops depending on rainfall (e.g. taro and manioc in drier seasons) and cyclone season (e.g. only plant taro because manioc is likely to be damaged by cyclones), as well as changing the location of certain crops based on susceptibility to damage (e.g. resilient crops placed higher up the hills while sensitive crops planted closer to homes so they can be attended to quickly after cyclones hit). Similarly, some women have started implementing rotational cropping to tackle poor soil quality from drought, while others have generated a system of redundancy among garden plots that acts as insurance in the face of cyclones:

> They're planting more little gardens everywhere within their own land, so if water [from the cyclone] comes down the hill one time and destroys one, they will [have] reserve garden left…she has another three more to survive (Emua market vendor, personal communication, 2018).

Further, in response to the extensive damage to gardens from Cyclone Pam, several women have also created seed banks. Every year, they keep a collection of seeds from important crops (e.g. watermelon, corn, cabbage and cucumber) which act as reserves that can be used to replant gardens and immediately mitigate losses after disasters. This is critical for recovery as external assistance is often delayed by weeks or months: "I know that if one disaster comes now, I've saved some seeds… Don't wait [for external assistance]" (Epau market vendor, personal communication, 2018). Similarly, to revive gardens, some women were travelling to local marketplaces in the disaster aftermath to collect damaged or inedible produce for access to seeds: "She collected waste tomatoes; brought them back; dried them up; got the seeds; planted… Improvise" (vendor from Nguna selling at central market, personal communication, 2018). Some women sometimes share or sell their collected seeds with others "if someone is in need" (Paungunisu market vendor, personal communication, 2018) or if seed distributions from government and NGOs are insufficient.

These adaptive behaviours and strategies minimise levels of initial damage from future hazards, allow for contingency plans and provide quick access to seeds, demonstrating that women have innovative and creative ways of supporting disaster preparedness, risk reduction and speedier future recovery from cyclones and drought.

4.5. Women as entrepreneurs: independently maintaining post-disaster income flows

Women are also supporting recovery processes through their lead role in sourcing and maintaining post-disaster income flows for their households, especially through entrepreneurialism and income diversification. After Cyclone Pam, for example, several women were taking advantage of the arrival of international aid workers by selling them locally-made handicrafts: "as they arrived at the airport, instead of seeing sad faces, they see smiling faces… so they [volunteers] would like to bring something back home as a souvenir" (Port Vila Handicraft market vendor, personal communication, 2018).

Women are also increasingly recognising the risk of depending on climate-sensitive income streams. In response, with the support of training from external agencies, many women are diversifying their livelihoods by selling a wider range of products at marketplaces (e.g. firewood, dry coconuts and fish) or using savings to springboard into other livelihood activities (e.g. guesthouses, canteens, handicrafts, t-shirt printing, poultry, jam-making, sewing and weaving). This is summarised by one participant who stated, "I see that women, they grow in business. There are a lot of women in business now… they are doing all this stuff for money" (member of SVMVA executive team, personal communication, 2018).

The importance of women's informal social networks re-emerge here as they support the sharing of ideas and knowledge related to income diversification: "having other information from other women, how they're actually earning money, she's doing [it] now [too]… she's doing other things to gain money" (Emua market vendor, personal communication, 2018). This means that after disasters, women teach and expose each other to different income streams. Increased income stream diversity promotes speedier recovery processes by ensuring that there are other stable sources of income if one source is destroyed in a disaster.

Women's increasing roles as primary income earners has led to a flourishing 'business-woman' identity. This has nurtured a growth in self-esteem and generated some changes in household roles and responsibilities, the latter of which has the potential to transform gender relations. Due to the developing financial independence among women, some men are becoming increasingly involved in household work and some women are acquiring more financial control in how to spend earnings: "The husbands give the support. They help… they look after the homes. To me, there are changes… Before, maybe the fathers take the money… [but now] we work together as a team at home" (Port Vila Central market vendor, personal communication, 2018). In some cases, women are giving money to husbands as payment for helping in gardens.

Despite this potential for transforming gender relations, this change is not ubiquitous or automatic as some women still "have to show the Papa the money" (Paungunisu market vendor, personal communication, 2018) and transfer earnings to husbands for determining spending. This illustrates how, despite women's critical roles in economic recovery, restrictions to financial decision-making can still exist in the home.

5. Discussion: implications for practice and policy

This paper, in alignment with previous studies, demonstrates how women have critical contributions to response and recovery processes (but also risk reduction and preparedness) in the face of acute and gradual disasters. Overlooking these roles and contributions locally and nationally results in the underutilisation of women's capacities and the neglect of their specific needs and vulnerabilities (Scanlon, 1998), which then undermines prospects for recovery (Soares and Mullings, 2009; Yonder et al., 2009). Women should be, alongside men, central to disaster response and recovery conversations, policy and practice, and not at the margins (Soares and Mullings, 2009; Charan et al., 2016; Ganapati, 2012). The findings highlight the need for disaster policy and practice that is conducive to social capital (i.e. formal as well as informal women's groups or networks), women's unique traditional agricultural knowledge and innovations as well as women's leading role in economic recovery and mitigating losses.

Women's informal social capital and networks emerged as critical for mitigating losses and speeding up recovery as they support the sharing and trading of critical resources after disasters, enable financial risk-sharing as well as encourage equal opportunity among women in terms of post-disaster income flows (see also Ganapati, 2012; Islam et al., 2014; Viñas, 1998). Other studies have similarly recognised that customary kinship networks (Wentworth, 2019), trust and reciprocity (Warrick et al., 2017) are critical for adaptive capacity and mitigating the effects of disasters in Vanuatu and the Pacific. Women's capacities should be utilised through generating disaster recovery policy and practice that is conducive to building as well as mobilising women's social capital in disaster-stricken communities (see also Drolet et al., 2015; Ganapati, 2012; Yonder et al., 2009). This may involve

mobilising women through local leadership as well as creating spaces that enable social capital formation (e.g. through face-to-face interactions) (Drolet et al., 2015; Fisher, 2009; Ganapati, 2012; Yonder et al., 2009). With study participants largely being marketplace vendors, the criticality of local marketplaces as an interactive environment for building and accessing social capital among women in Vanuatu should not be underestimated.

Women's groups also support civic consciousness and the capacity to collectively lobby for needs and rights, as well as remedy issues overlooked in formal relief efforts (see also Fisher, 2009; Ganapati, 2012; Yonder et al., 2009; de Branco, 2009). This is critical as, in Vanuatu, it is not new for external agencies to gloss over cultural values and community priorities when administering aid (see Wentworth, 2019), or for the government to distribute material aid through community committees without consideration for unequal power relations or local politics (McDonnell, 2019). The capacity of these women to secure sources of political support and negotiate with local agencies despite structural barriers and difficulties demonstrates that they are not passive victims. For these reasons, women's groups have previously been considered natural allies of emergency planners seeking meaningful community movement towards disaster resilience (Enarson, 2012). Supporting and resourcing female leaders, women's collective action efforts and their involvement in local governance can contribute to the post-disaster conditions needed for women's empowerment and long-term redress of gendered inequalities and power relations (Viñas, 1998; Fisher, 2009; Yonder et al., 2009; Moreno and Shaw, 2018).

Studies have shown that although policy and practice conducive to women's groups act positively for women's agency, it does not necessarily translate into decision-making authority in other institutional sites and within homes (Rao et al., 2019). It may, therefore, also be critical to support women's economic capabilities as this has led to some (potentially transformative but not automatic) change in household power relations, albeit this is highly contingent on local context. This reminds us that gendered aspects of disasters can be temporary and shifting, and that women's roles in disasters can destabilise the reproduction of gendered roles and expectations (Resurreccion, 2011). It is also important to note that the women in this context were largely diversifying into stereotypical income-generating activities which can perpetuate problematic perceptions of female identities and existing inequalities (Angeles and Hill, 2009). This demonstrates how women can both subvert and reinforce gender roles in responding to, and recovering from, disasters (Robbins, 2020).

As previously emphasised (e.g. Ariyabandu, 2003; Enarson et al., 2007), the findings in this paper remind us that, despite critical roles in recovery and some preliminary changes in household power and gender relations, women are still operating in an inequitable and gendered system. This was exemplified through the tendency of women to have significantly high workloads, experience post-disaster emotional distress, have their voices sometimes filtered through a male manager, have their finances controlled by husbands and/or diversify into stereotypical income-generating activities. It is, therefore, damaging to perpetuate the narrative that women are critical recovery enablers without recognising the hidden costs and necessary re-dress of power structures more generally (see also Arora-Jonsson, 2011; Tschakert and Machado, 2012). Overlooking these aspects may further entrench pre-existing gendered cultural expectations of women as 'caregivers' (Ariyabandu, 2003; Drolet et al., 2015). We must be wary of the kinds of implications that centring women may have on household tensions (Robbins, 2020) and existing workloads (Angeles and Hill, 2009; Feeny et al., 2013). Given these concerns, we make a warning: do not make women central or instrumental to disaster response and recovery processes *without* efforts to also improve women's wellbeing, agency, livelihoods and prospects.

More needs to be done to address the root causes of these inequities and vulnerabilities that can hinder women's wellbeing and roles as resourceful agents (Arora-Jonsson, 2011; Tschakert and Machado, 2012). Challenging traditional gendered patterns of labour and

responsibility (Ganapati, 2012; Jost et al., 2016), establishing necessary support services (e.g. child care or transport) and providing material compensation for involvement with disaster organisations (Gender and Disaster Network, 2009) may be critical to avoid burdening women with higher workloads. Addressing underlying gendered divisions of responsibility may also be critical for ameliorating disproportionate psychological problems (Ganapati, 2012). This is because women's emotional distress related to resource and family loss is usually inter-subjective and produced through the imposed expectations from men and larger society (Sultana, 2011). Efforts, however, should extend beyond creating favourable household norms and workloads as the wider issues of household poverty and poor material conditions must also be addressed to enhance women's agency and capability (Rao et al., 2019). In sum, we need to find ways to both utilise, build on and support women's resourcefulness while also addressing broader underlying vulnerabilities and embedded gendered social inequalities (see also Ajibade et al., 2013; Drolet et al., 2015).

6. Conclusion

It has long been understood that disasters are experienced and responded to differently by different populations and groups, with gender being considered a key differentiating factor. In response to limited scholarship on gender in post-disaster recovery, reconstruction and resilience in the Pacific, we showcased nuanced stories of response and recovery among women in Vanuatu.

This placed-based research explored the post-disaster perspectives, experiences and strategies of ni-Vanuatu women whose livelihoods are dependent on marketplaces. We found that these women had four critical strategies and roles as recovery enablers: social mobilisers, collectivising and leading forces, innovators, and entrepreneurs. Women supported inclusive recovery processes through sharing resources and helping each other across informal social networks, demonstrating how social capital is a unique resource that supports the recovery of women and their households. Formal networks also acted as a social capital resource from which women could collectivise and lobby for their needs and rights during response and recovery. Women also demonstrated how they have taken a lead role in maintaining post-disaster income flows through diversification and entrepreneurialism. This is further complemented by women's efforts to reduce the potential losses from future disasters and support speedier future recovery through adapting farming behaviours in creative ways and collecting seeds. These four roles are genuine seeds of hope for future recovery prospects, like the literal seeds of hope these women collected, shared and replanted following Cyclone Pam.

With these critical contributions, we reiterate that women should no longer be sidelined but rather be driving conversations, projects and initiatives related to disaster recovery and resilience alongside men. We identify several contextually specific ways that disaster policy and practice should build on women's capacities: through being conducive to women's social capital, leadership, agricultural knowledge and innovations as well as leading roles in economic recovery.

We recognise, however, that women continue to operate in an inequitable and gendered system where, in this specific context, they are not only burdened with high workloads but also tend to endure emotional distress after disasters, have their voices filtered, have finances controlled by husbands and diversify into stereotypical income-generating activities. We emphasise the warnings made by other researchers and practitioners that it can be damaging to push for women to be centred in disaster response and recovery without re-dressing the larger power structures and inequalities that create these issues. We need policy and practice that not only resources women's leadership as well as their preventative or mitigative efforts, but also focuses on mainstreaming gender and occasioning fundamental social change to improve women's wellbeing. This may involve challenging existing gender roles and responsibilities and/or relieving aspects of women's workloads. This would help to mitigate gendered disaster

vulnerabilities, anticipate and reduce avoidable harm to women, heighten overall community resilience and avoid new burdens.

Through exploring a nuanced understanding of a group of women as recovery enablers, we provide critical insights for future gender-sensitive policy and practice in Vanuatu and beyond. We acknowledge, however, that exploring gender dynamics of disasters are not straightforward. Future studies should further refine, unpack and enrich these findings in two core ways. First, studies should employ intersectionality as an interdisciplinary paradigm and analysis tool (Crenshaw, 1991; Hancock, 2007), to allow for multi-level analyses of categories of difference. This may provide further insight into how different women with varying intersecting identities experience disadvantage, privilege and stratification in certain contexts, and how these shape or influence their roles and capacities in disaster recovery. Second, although some preliminary insights relating to potentially transformative changes in household decision-making power and agency emerged, future studies should explore shifting gender relations in more detail, particularly by including the perspectives and experiences of men and other genders.

CRediT authorship contribution statement

Rachel Clissold: Writing - original draft, Writing - review & editing, Methodology, Formal analysis, Data curation, Visualization, Project administration. **Ross Westoby:** Writing - review & editing, Methodology, Validation. **Karen E. McNamara:** Writing - review & editing, Methodology, Validation, Investigation, Resources, Supervision, Project administration, Funding acquisition.

References

Ajibade, I., McBean, G., Bezner-Kerr, R., 2013. Urban flooding in Lagos, Nigeria: patterns of vulnerability and resilience among women. Global Environ. Change 23 (6), 1714–1725. https://doi.org/10.1016/j.gloenvcha.2013.08.009.

Alam, K., Rahman, Md., 2019. Post-disaster recovery in the cyclone Aila affected coastline of Bangladesh: Women's role, challenges and opportunities. J. Int. Soc. the Prevent. Mitigat. Nat. Hazards 96 (3), 1067–1090. https://doi.org/10.1007/s11069-019-03591-7.

Alam, K., Rahman, Md.H., 2014. Women in natural disasters: a case study from southern coastal region of Bangladesh. Int. J. Disaster Risk Reduct. 8, 68–82. https://doi.org/10.1016/j.ijdrr.2014.01.003.

Alam, K., Rahman, Md.H., 2018. The Role of Women in Disaster Resilience. In: Madu, C.N., Kuei, C. (Eds.), Handbook of Disaster Risk Reduction & Management. World Scientific Publishing Co., Pte. Ltd, Singapore, pp. 697–719.

Anderson, C.L., 2005. Decolonizing Disaster: A Gender Perspective of Disaster Risk Management in the US-Affiliated Pacific Islands (Doctoral dissertation, University of Hawai'i). Available from ProQuest Dissertations & Theses Global database. (UMI No. 3198343).

Anderson, C.L., 2009. Gendered dimensions of disaster risk management, natural resource management, and climate change adaptation in the Pacific. SPC Women in Fisheries Information Bulletin #20. Noumea, New Caledonia: Secretariat of the Pacific Community, pp. 3-9.

Angeles, L.C., Hill, K., 2009. The gender dimension of the agrarian transition: women, men and livelihood diversification in two peri-urban farming communities in the Philippines. Gender, Place Culture 16 (5), 609–628. https://doi.org/10.1080/09663690903148465.

Ariyabandu, M., 2003. Women: the risk managers in natural disasters. Voice Women 6 (1), 1–8.

Arora-Jonsson, S., 2011. Virtue and vulnerability: discourses on women, gender and climate change. Global Environ. Change 21 (2), 744–751. https://doi.org/10.1016/j.gloenvcha.2011.01.005.

Australian National University (ANU), 2018a. Vanuatu. Retrieved from http://asiapacific.anu.edu.au/mapsonline/base-maps/vanuatu-0.

Australian National University (ANU), 2018b. Efate, Vanuatu. Retrieved from https://asiapacific.anu.edu.au/mapsonline/base-maps/efate-vanuatu-0.

Ayeb-Karlsson, S., Kniveton, D., Cannon, T., Van Der Geest, K., Ahmed, I., Derrington, E.M., Florano, E., Opondo, D.O., 2019. I will not go, I cannot go: Cultural and social limitations of disaster preparedness in Asia, Africa, and Oceania. Disasters 43 (4), 752–770. https://doi.org/10.1111/disa.12404.

Barnett-Naghshineh, O., 2019. Shame and Care: masculinities in the Goroka Marketplace. Oceania 89 (2), 220–236. https://doi.org/10.1002/ocea.5219.

Başoğlu, M., Kiliç, C., Şalcioğlu, E., Livanou, M., 2004. Prevalence of posttraumatic stress disorder and comorbid depression in earthquake survivors in Turkey: an epidemiological study. J. Trauma. Stress 17 (2), 133–141. https://doi.org/10.1023/B:JOTS.0000022619.31615.e8.

Beck, T., 2005. Learning Lessons from Disaster Recovery: The Case of Bangladesh. The World Bank, Washington, DC.

Béné, C., Newsham, A., Davies, M., Ulrichs, M., Godfrey-Wood, R., 2014. Review article: resilience, poverty and development. J. Int. Dev. 26 (5), 598–623. https://doi.org/10.1002/jid.2992.

Bengtsson, M., 2016. How to plan and perform a qualitative study using content analysis. NursingPlus Open 2, 8–14.

Bolwig, S., Ponte, S., Du Toit, A., Riisgaard, L., Halberg, N., 2010. Integrating poverty and environmental concerns into value-chain analysis: a conceptual framework. Develop. Policy Rev. 28 (2), 173–194. https://doi.org/10.1111/j.1467-7679.2010.00480.x.

Bradshaw, S., Fordham, M., 2013. Gender, girls and disasters: a review for DFID. Report produced for the Department for International Development, UK.

Branco, A. de M., 2009. Women responding to drought in Brazil. In: Elaine Enarson, Chakrabarti, P.G.D. (Eds.), Women, Gender and Disaster: Global Issues and Initiatives. SAGE Publications, New Delhi, Thousand Oaks, London and Singapore, pp. 261–272.

Breen, R.L., 2006. A practical guide to focus-group research. J. Geogr. Higher Educ. 30 (3), 463–475. https://doi.org/10.1080/03098260600927575.

Burrows, D., Kendall, S., 1997. Focus groups: what are they and how can they be used in nursing and health care research? Soc. Sci. Health 3, 244–253.

Busse, M., Sharp, T.L.M., 2019. Marketplaces and morality in Papua New Guinea: Place, personhood and exchange. Oceania 89 (2), 126–153. https://doi.org/10.1002/ocea.5218.

Cameron, J., 2005. Focussing on the focus group. In: Hay, J. (Ed.), Qualitative Research methods in human geography. Oxford University Press, Melbourne, pp. 116–132.

Charan, D., Kaur, M., Singh, P., 2016. Indigenous Fijian women's role in disaster risk management and climate change adaptation. Pacific Asia Inquiry 7 (1), 106–122.

Cox, H., 1998. Women in bushfire coutnry. In: Enarson, E., Morrow, B.H. (Eds.), The Gendered Terrain of Disaster: Through Women's Eyes. Greenwood, Westport, CT, pp. 133–142.

Crenshaw, K., 1991. Mapping the margins: intersectionality, identity politics, and violence against women of color. Stanford Law Rev. 43 (6), 1241–1299. https://doi.org/10.2307/1229039.

Cupples, J., 2007. Gender and Hurricane Mitch: reconstructing subjectivities after disaster. Disasters 31 (2), 155–175. https://doi.org/10.1111/j.1467-7717.2007.01002.x.

Dankelman, I., 2002. Climate change: learning from gender analysis and women's experiences of organising for sustainable development. Gender Develop. 10 (2), 21–29. https://doi.org/10.1080/13552070215899.

Dankelman, I., 2010. London and Gender and Climate Change: An Introduction. Earthscan, Washington.

David, E., 2010. "Studying up" on women and disaster: an elite sustained women's group following hurricane Katrina. Int. J. Mass Emerg. Disasters 28 (2), 246–269.

Day, S., Forster, T., Himmelsbach, J., Korte, L., Mucke, P., Radtke, K., Thielbörger, P., Weller, D., 2019. World Risk Report 2019. Retrieved from Bundnis Entwicklung Hilft and Ruhr University Bochum - Institute for International Law of Peace and Armed Conflict website: https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2019_Online_english.pdf.

DFAT (Department of Foreign Affairs and Trade), 2019. Pacific women shaping pacific development: vanuatu country plan summary. Retrieved from: https://pacificwomen.org/wp-content/uploads/2019/01/Vanuatu-Pacific-Women-country-plan-summary-Jan-2019.pdf.

Drolet, J., Dominelli, L., Alston, M., Ersing, R., Mathbor, G., Wu, H., 2015. Women rebuilding lives post-disaster: Innovative community practices for building resilience and promoting sustainable development. Gender Develop. 23 (3), 433–448. https://doi.org/10.1080/13552074.2015.1096040.

Elmhirst, R., 2015. Feminist political ecology. In: Perreault, T., Bridge, G., McCarthy, J. (Eds.), The Routledge Handbook of Political Ecology. Routledge, Oxon and New York, pp. 519–530.

Enarson, E., 2012. Women Confronting Natural Disaster: From Vulnerability to Resilience. Lynne Rienner Publishers, Colorado, USA.

Enarson, E., 2002. Gender equality, work, and disaster reduction: Making the connections. Revised version of Gender and Natural Disasters, Working Paper #1, pp. 1–30.

Enarson, E., 1999. Women and housing issues in two U.S. Disasters: case studies from hurricane andrew and the red river valley flood. Int. J. Mass Emerg. Disasters 17 (1), 39–63.

Enarson, Elaine, Fothergill, A., Peek, L., 2007. Gender and disaster: foundations and directions. In: Rodríguez, H., Quarantelli, E.L., Dynes, R.R. (Eds.), Handbook of Disaster Research. Springer, New York, pp. 130–146.

Enarson, E., Morrow, B.H., 1998. Women will rebuild Miami: a case study of feminist response to disaster. In: Enarson, E., Morrow, B.H. (Eds.), The Gendered Terrain of Disaster: Through Women's Eyes. Laboratory for Social and Behavioral Research, Florida International University, Miami, FL, pp. 185–199.

Esler, S., 2015. Post-Disaster Needs Assessment – Tropical Cyclone Pam, March 2015. Port Vila: Government of Vanuatu. Retrieved from: https://reliefweb.int/sites/reliefweb.int/files/resources/vanuatu_pdna_cyclone_pam_2015.pdf.

Feeny, S., McDonald, L., Miller-Dawkins, M., Donahue, J., Possi, A., 2013. Household Vulnerability and Resilience to Shocks: Findings from Solomon Islands and Vanuatu. Australian National University, Canberra.

Fisher, S., 2009. Sri Lankan women's organisations responding to post-tsunami violence. In: Enarson, E., Chakrabarti, P.G.D. (Eds.), Women, Gender and Disaster: Global Issues and Initiatives. SAGE Publications, New Delhi, Thousand Oaks, London, Singapore, pp. 233–249.

Flint, C.G., Luloff, A.E., 2005. Natural resource-based communities, risk, and disaster: an intersection of theories. Soc. Nat. Resour. 18, 399–1312. https://doi.org/10.1080/08941920590924747.

Fothergill, A., 1998. From sandbagging to childcare: Women's traditional and non-traditional work in a crisis [Paper presented to the American Sociological Association].

San Francisco.

Fritz, H.M., Pilarczyk, J.E., Kosciuch, T., Hong, I., Rarai, A., Harrison, M.J., Jockley, F.R., Horton, B.P., 2016. Tropical cyclone pam field survey in Vanuatu. Geophys. Res. Abstr. EGU2016 18, 11105.

Fulu, E., 2007. Gender, vulnerability, and the experts: responding to the Maldives Tsunami. Develop. Change 38 (5), 843–864. https://doi.org/10.1111/j.1467-7660.2007.00436.x.

Gaillard, J., Fordham, M., Sanz, K., 2015. Culture, gender and disaster: from vulnerability to capacities. In: Krüger, F., Bankoff, G., Cannon, T., Orlowski, B., Schipper, E.L.F. (Eds.), Cultures and Disasters: Understanding Cultural Framings in Disaster Risk Reduction. Routledge, Oxon and New York, pp. 222–234.

Galea, S., Tracy, M., Norris, F., Coffey, S.F., 2008. Financial and social circumstances and the incidence and course of PTSD in Mississippi during the first two years after Hurricane Katrina. J. Trauma. Stress 21 (4), 357–368. https://doi.org/10.1002/jts.20355.

Gender and Disaster Network, 2009. Gender Equality in Disasters: Six Principles for Engendered Relief and Reconstruction. Retrieved from: https://www.gdnonline.org/resources/GDN_GENDER_EQUALITY_IN_DISASTERS.pdf.

Ganapati, N.E., 2012. In good company: why social capital matters for women during disaster recovery. Public Admin. Rev. 72 (3), 419–427. https://doi.org/10.1111/j.1540-6210.2011.02526.x.

Gardner, J., Robertson, K., Lee, S., 2016. Gender Statistics: The Pacific and Timor-Leste. Manila, Philippines: Asian Development Bank. Retrieved from https://www.adb.org/sites/default/files/publication/181270/gender-statistics-pacific-tim.pdf.

Guest, G., Namey, E., McKenna, K., 2016. How many focus groups are enough? Building an evidence base for nonprobability sample sizes. Field Methods 29 (1), 3–22. https://doi.org/10.1177/1525822X16639015.

Hancock, A., 2007. When multiplication doesn't equal quick addition: examining intersectionality as a research paradigm. Perspectives on Politics 5 (1), 63–79. https://doi.org/10.1017/S1537592707070065.

Howard, E., 2020. The 2020 Vanuatu Elections: How Did Women Fare? Canberra, Australia: Department of Pacific Affairs. Retrieved from https://www.pacwip.org/wp-content/uploads/2020/04/dpa_in_brief_2020_11_howard_vanuatu_election_0.pdf.

ISDR (United Nations International Strategy for Disaster Reduction), 2008. Climate Change and Disaster Risk Reduction: Weather, climate and climate change. Geneva, Switzerland: ISDR. Retrieved from: https://www.wmo.int/pages/prog/dra/vcp/documents/7607_Climate-Change-DRR.pdf.

Islam, M.R., Ingham, V., Hicks, J., Manock, I., 2014. The changing role of women in resilience, recovery and economic development at the intersection of recurrent disaster: a case study from Sirajgang, Bangladesh. J. Asian African Stud. 52 (1), 50–67. https://doi.org/10.1177/0021909614560244.

Ivanoff, S.D., Hultberg, J., 2006. Understanding the multiple realities of everyday life: basic assumptions in focus-group methodology. Scand. J. Occup. Therapy 13 (2), 125–132. https://doi.org/10.1080/11038120600691082.

Jost, C., Kyazze, F., Naab, J., Neelormi, S., Kinyangi, J., Zougmore, R., Agarwal, L.P., Bhatta, G., Chaudury, M., Tapio-bistrom, M.L., Nelson, S., Kristjanson, P., 2016. Understanding gender dimensions of agriculture and climate change in smallholder farming communities. Climate and Development 8 (2), 1–12. https://doi.org/10.1080/17565529.2015.1050878.

Kamberelis, G., Dimitriadis, G., 2013. Focus Groups: From Structured Interviews to Collective Conversations. Routledge, Oxon and New York.

Khondker, H.H., 1996. Women and floods in Bangladesh. Int. J. Mass Emerg. Disasters 14 (3), 281–292.

Kitzinger, J., 1995. Qualitative research: introducing focus groups. Br. Med. J. 311 (7000), 299–302. https://doi.org/10.1136/bmj.311.7000.299.

Kusumasari, B., 2015. Women adaptive capacity in post disaster recovery in Indonesia. Asian Social Science 11 (12), 281–289. https://doi.org/10.5539/ass.v11n12p281.

Lane, R., McNaught, R., 2009. Building gendered approaches to adaptation in the Pacific. Gender Develop. 17 (1), 67–80. https://doi.org/10.1080/13552070802696920.

Lasch, K.E., Maquis, P., Vigneux, M., Abetz, L., Arnould, B., Bayliss, M., 2010. PRO development: rigorous qualitative research as the crucial foundation. Qual. Life Res. 19 (8), 1087–1096. https://doi.org/10.1007/s11136-010-9677-6.

Leavy, P., 2014. The Oxford Handbook of Qualitative Research, first ed. Oxford University Press, New York.

Liamputtong, P., 2011. Focus Group Methodology: Principles and Practice. SAGE Publications, London, Thousand Oaks, New Dehli and Singapore.

Macgregor, S., 2009. A stranger silence still: The need for feminist social research on climate change. Sociol. Rev. 57 (2_suppl), 124–140. https://doi.org/10.1111/j.1467-954X.2010.01889.x.

Madriz, E., 2003. Focus groups in feminist research. In: Denzin, N.K., Lincoln, Y.S. (Eds.), Collecting and interpreting qualitative materials, third ed. Sage, Thousand Oaks, CA, pp. 375–402.

McDonnell, S., 2019. Other dark sides of resilience: politics and power in community-based efforts to strengthen resilience. J. Soc. Anthropol. Comp. Sociol.

Moreno, J., Shaw, D., 2018. Women's empowerment following disaster: a longitudinal study for social change. Nat. Hazards 92, 205–224. https://doi.org/10.1007/s11069-018-3204-4.

Mulyasari, F., Shaw, R., 2013. Role of women as risk communicators to enhance disaster resilience of Bandung, Indonesia. Nat. Hazards 69 (3), 2137–2160. https://doi.org/10.1007/s11069-013-0798-4.

Nadiruzzaman, M., Wrathall, D., 2015. Participatory exclusion – Cyclone Sidr and its aftermath. Geoforum 64, 196–204. https://doi.org/10.1016/j.geoforum.2015.06.026.

National Advisory Committee on Climate Change (NACCC), 2007. National Adaptation

Programme for Action (NAPA). Retrieved from: unfccc.int/resource/docs/napa/vut01.pdf.

Neumayer, E., Plümper, T., 2007. The gendered nature of natural disasters: the impact of catastrophic events on the gender gap in life expectancy, 1981–2002. Ann. Assoc. Am. Geogr. 97 (3), 551–566. https://doi.org/10.1111/j.1467-8306.2007.00563.x.

Oxfam, 2016. Oxfam in Vanuatu: Cyclone Pam Response. Oxfam, Port Vila. Retrieved from: https://www.oxfam.org.au/wp-content/uploads/2016/03/2016-IP-001-Cyclone-Pam-one-year-report_PUBLIC_FA2.pdf.

Pacific Islands Forum Secretariat, 2013. Pacific Regional MDGs Tracking Report. Retrieved from: https://www.spc.int/nmdi/nmdi_documents/2013_Pac_Regional_MDGs_Tracking_Report.pdf.

Pelling, M., 2003. The Vulnerability of Cities: Natural Disasters and Social Resilience. Earthscan Publications Ltd, London, UK.

Raj, S., Laboukly, B., Moli, S., 2019. Disaster, response and relationships: a gendered approach to localising disaster risk reduction in the Pacific. In: Fenton, W., Deliver, W., Foley, M. (Eds.), Making humanitarian action work for women and girls, Humanitarian Exchange special feature no. 75. Overseas Development Institute, London, UK, pp. 30–32.

Rao, N., Mishra, A., Prakash, A., Singh, C., Qaisrani, A., Poonacha, P., Vincent, K., Bedelian, C., 2019. A qualitative comparative analysis of women's agency and adaptive capacity in climate change hotspots in Asia and Africa. Nat. Clim. Change 9 (12), 964–971. https://doi.org/10.1038/s41558-019-0638-y.

Ravera, F., Iniesta-Arandia, I., Martín-López, B., Pascual, U., Bose, P., 2016. Gender perspectives in resilience, vulnerability and adaptation to global environmental change. Ambio 45 (Suppl. 3), S235–S247. https://doi.org/10.1007/s13280=016-0842-1.

Resurreccion, B.P., 2011. The Gender and Climate Debate: More of the Same or New Pathways of Thinking and Doing? Asia Security Initiative Policy Series No. RSIS Centre for Non-Traditional Security Studies, Singapore, pp. 10.

Richmond, N., Sovacool, B.K., 2012. Bolstering resilience in the coconut kingdom: Improving adaptive capacity to climate change in Vanuatu. Energy Policy 50, 843–848. https://doi.org/10.1016/j.enpol.2012.08.018.

Robbins, P., 2020. Political Ecology: A Critical Introduction, third ed. John Wiley & Sons Ltd., Oxford, UK.

Rothe, D., 2017. Gendering resilience: myths and stereotypes in the discourse on climate-induced migration. Global Policy 8 (1), 40–47. https://doi.org/10.1111/1758-5899.12400.

Scanlon, J., 1998. The perspective of gender: a mising element in disaster response. In: Enarson, Elaine, Morrow, B.H. (Eds.), The Gendered Terrain of Disaster: Through Women's Eyes. Greenwood, Westport, CT, pp. 45–54.

Soares, J., Mullings, A.Y., 2009. 'A We Run Tings': Women Rebuilding Montserrat. In: Enarson, Elaine, Chakrabarti, P.G.D. (Eds.), Women, Gender and Disaster: Global Issues and Initiatives. SAGE Publications, New Delhi, Thousand Oaks, London and Singapore, pp. 250–260.

Sovacool, B.K., Tan-Mullins, M., Abrahamse, W., 2018. Bloated bodies and broken bricks: power, ecology, and inequality in the political economy of natural disaster recovery. World Dev. 110, 243–255. https://doi.org/10.1016/j.worlddev.2018.05.028.

Sultana, F., 2010. Living in hazardous waterscapes: gendered vulnerabilities and experiences of floods and disasters. Environ. Hazards 9 (1), 43–53. https://doi.org/10.3763/ehaz.2010.SI02.

Sultana, F., 2011. Suffering for water, suffering from water: emotional geographies of resource access, control and conflict. Geoforum 42 (2), 163–172. https://doi.org/10.1016/j.geoforum.2010.12.002.

Tschakert, P., Machado, M., 2012. Gender justice and rights in climate change adaptation: opportunities and pitfalls. Ethics Soc. Welfare 6 (3), 275–289. https://doi.org/10.1080/17496535.2012.704929.

UN Women, 2015. Markets for Change. Retrieved from: https://unwomen.org.au/wp-content/uploads/2018/11/M4C_regionalbrief_17Feb16_email.pdf.

Viñas, S., 1998. Women's disaster vulnerability and response to the Colima earthquake. In: Enarson, Elaine, Morrow, B.H. (Eds.), The Gendered Terrain of Disaster: Through Women's Eyes. Greenwood, Westport, CT, pp. 161–172.

Warrick, O., Aalbersberg, W., Dumaru, P., McNaught, R., Teperman, K., 2017. The 'Pacific Adaptive Capacity Analysis Framework': guiding the assessment of adaptive capacity in Pacific island communities. Reg. Environ. Change 17 (4), 1039–1051. https://doi.org/10.1007/s10113-016-1036-x.

Wentworth, C., 2019. Unhealthy aid: food security programming and disaster responses to cyclone pam in Vanuatu. J. Soc. Anthropol. Comp. Sociol. https://doi.org/10.1080/00664677.2019.1647830.

Whittaker, J., Eriksen, C., Haynes, K., 2016. Gendered responses to the 2009 Black Saturday bushfires in Victoria, Australia. Geogr. Res. 54 (2), 203–215. https://doi.org/10.1111/1745-5871.12162.

Whittenbury, K., 2013. Climate change, women's health, wellbeing and experiences of gender based violence in Australia. In: Alston, M., Whittenbury, K. (Eds.), Research, Action and Policy: Addressing the Gendered Impacts of Climate Change. Springer, USA, pp. 207–221.

Wiest, R.E., Mocellin, J.S.P., Motsisi, D.T., 1994. The Needs of Women in Disasters and Emergencies [Report prepared for the Disaster Management Training Programme of the United Nations Development Programme and the Office of the United Nations Disaster Relief Coordinator.]. Retrieved from Disaster. Research Institute, University of Manitoba website:.

Yonder, A., Akçar, S., Gopalan, P., 2009. Women's participation in disaster relief and recovery. In: Enarson, Elaine, Chakrabarti, P.G.D. (Eds.), Women, Gender and Disaster: Global Issues and Initiatives, pp. 189–211. https://doi.org/10.4135/9788132108078.n15.