Stories of loss and healing: connecting non-economic loss and damage, gender-based violence and wellbeing erosion in the Asia–Pacific region

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Abstract

It is well-known that women, children, and other intersectional and marginalised social groups are disproportionately impacted by 'non-economic wellbeing loss' in the context of climatic changes. However, few empirical studies investigate its interrelation with violence against women and children (VAWC). We urgently need to widen our perceptions of what falls under the umbrella term 'Non-Economic Loss (and Damage)', NEL(D)s, for societies to appropriately be able to avert, minimise, and address losses and damages among vulnerable people. Through stories of loss and healing, we step into the realities of women and children who illustrate how they experience non-economic wellbeing loss within a climate-violence nexus in Bangladesh, Fiji, and Vanuatu. A storytelling and systems approach guided the analysis of personal narratives gathered through a secondary data review and empirical field work. The research findings identified different pathways through which women's and children's mental health was compromised in the context of structural violence and climatic risks. In Bangladesh, the narratives described wellbeing erosion in the context of gendered (im)mobility; in Fiji, the findings captured women's and children's experiences of sexual violence, domestic abuse, exploitation, and trafficking in the context of natural hazards, while in Vanuatu, hardship, gendered dependence, and healing were narrated by women in their stories surrounding disaster recovery. This article comprehensively lays out the longer-term societal wellbeing consequences of climatic changes and gender-based violence. It also identifies research gaps in need of further attention and proposes policy recommendations as well as methodological and disaster health service solutions to address wellbeing loss in a climate changed future.

Keywords Child abuse · Climate change · Coercive control · Disasters · Mental health · Non-economic loss and damage · Storytelling methodology · VAWC

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1 Introduction

Climate change affects the health and wellbeing[1] of women and men differently (Rashid and Michaud 2000; Binu et al. 2008; Cutter 2017). This is because women, children, and other marginalised groups face greater societal risks and inequalities prior to, during, and following natural hazards (Jordan 2018; Hayward and Ayeb-Karlsson 2021). This article will use a post-constructivist theoretical lens of social gender roles and intersectionality to analyse vulnerability, structural violence, and wellbeing loss in the context of climatic changes to further our understanding of 'non-economic losses and damages'. The literature indicates that depression, anxiety, post-traumatic stress, and death by suicide in the context of natural hazards are more often reported among women and youth than middle-aged men (Clayton et al. 2015; Ayeb-Karlsson 2020a; Florido Ngu et al. 2021). Understanding the root causes of such wellbeing loss can help illustrate the ways in which women and children are made more vulnerable to climatic stress (Wisner et al. 2004; Juran and Trivedi 2015).

The existing literature on climate-induced mental health impacts is still relatively scarce (Watts et al. 2018, 2021; Kelman et al. 2021), but includes the study of *solastalgia* or distress as people's environment changes (Adger 2003; Albrecht et al. 2007; Tschakert et al. 2013; Butler et al. 2014), 'eco-anxiety, eco-depression, and eco-anger', or 'ecological grief and despair' (Willox 2012; Cunsolo and Ellis 2018; Du Bray et al. 2019; Stanley et al. 2021). Furthermore, lived experiences from female and youth represent a research gap as studies continue to be narrated around men. However, a small group of feminist scholars have prioritised the voices of women and girls in their research (e.g. Rivers 1982; Fothergill 1996; Enarson 1998; Sultana 2010; Ajibade et al. 2013; Alam and Rahman 2014; Bradshaw and Ford 2015; Jordan 2018; Ayeb-Karlsson 2020a; Arora 2022).

The Loss and Damage[2] term was born out of a UNFCCC research policy discourse, where Article 8 of the Paris Agreement explicitly highlighted the urgent need to address Non-Economic Losses (and Damages), NELs or NELDs, which often disproportionately impacts vulnerable groups (UNFCCC 2015; McNamara et al. 2021). Empirical NEL(D) cases from marginalised populations illustrate the increased severity of climatic impacts and limits to adaption (Huggel et al. 2015; Barnett et al. 2015; Mechler and Schinko 2016). In this article, we use NEL(D) to conceptualise non-financial wellbeing losses that money cannot buy back. This will further the body of work already describing people's experiences of loss (Barnett et al. 2016; Tschakert et al. 2017; Tschakert et al. 2019). NEL(D) s refer to the climate-related losses that cannot be traded easily in the market, are inclusive of both material and non-material losses, and experienced by those most affected by climate change (UNFCCC 2013; Morrissey and Oliver-Smith 2013). NEL(D)s cannot be easily monetised such as in the case of loss of culture, health and life, knowledge, or displacement and mobility-related losses (Barnett et al. 2016; McNamara et al. 2021; Preston 2017).

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[1] In this article, *wellbeing* refers to 'a subjective and dynamic state of feeling healthy and happy that ties into life satisfaction and influences a person's (or a collective's) psychological and social function' (Ayeb-Karlsson 2020b:2).

[2] In this article, *Loss and Damage*, and *Non-Economic Loss and Damage* refer to the two concepts (noun), while loss and damage and non-economic losses are used to refer to when something is lost or damaged (adjective) as well as the action of something being lost or damaged (verb).

Empirical NEL(D) accounts are important as scholars have raised concerns regarding the extensive NEL(D) focus on theory and conceptualisation, given its contested normative, technical, and political issues (Boyd et al. 2017; McNamara and Jackson 2019). The lack of representation related to gendered (and other intersectional) wellbeing losses is of particular concern. Societal and gendered power and control systems channel through these wellbeing experiences (that often involve patterns of slow and sudden violence to control and maintain marginalised people in positions of dependence) and entrench vulnerability or support people's decisions and desires (Chavis and Hill 2008; Creek and Dunn 2011; van Daalen et al 2022).

The literature suggests that climatic changes particularly impact women's and children's wellbeing negatively. However, empirical case evidence illustrating experiences of non-economic wellbeing losses among vulnerable countries, societies, and populations is scarce and to our knowledge even fewer incorporate experiences of gender-based violence (GBV). This article therefore applies a theoretical lens of the gender system, intersectionality, and power and control to analyse empirical narratives surrounding how natural hazards and impacts of violence interrelate with women's and children's mental health and wellbeing loss, or healing[3] processes, in three case study countries namely Bangladesh, Fiji, and Vanuatu.

2 A theoretical approach to understand climate- and GBV-induced wellbeing loss

Climate-induced wellbeing loss, and its link to NEL(D), has already been investigated in the context of people on the move, or those left behind, trapped, and immobile, both in relation to longer migration and shorter evacuation movements (Schwerdtle et al. 2018; Ayeb-Karlsson 2020a, 2021; McNamara et al. 2021; Kelman et al. 2021; McMichael et al. 2023). People migrating away from climatic stress may, for example, settle down in informal settlements (Hunter et al. 2015b; Etzold 2016; Adri and Simon 2018; Ayeb-Karlsson and Uy 2022). Life and work in urban slums, often overcrowded with poor access to clean water, sanitation, or health services, place people at risk of developing health issues (Unger and Riley 2007; Butala et al. 2010; Wekesa et al. 2011; Ezeh et al. 2017). The challenging living environment may result in mental and physical health risks, such as depression, anxiety, trauma, and exposure to violent or abusive behaviours (Cattaneo et al. 2009; Gruebner et al. 2011, 2012; Mberu et al. 2015).

Over the past decade, climatic impacts are reported to become more frequent and intense which primarily influence the health and wellbeing of those already vulnerable (Watts et al. 2018, 2021; NRC 2019; IPCC 2014, 2018, 2022). Specific geographies, disasters, and health impacts are however overrepresented, and few studies investigate the connections between climatic changes and mental health (Hunter et al. 2015a; Rataj et al. 2016; Berry et al. 2018; Piguet et al. 2018). More direct health impacts, such as respiratory diseases, injuries, and death, in the context of 'extreme' weather events, such as heat waves, may be easier to associate to changes in climate, but indirect health effects,

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[3] In this article, we understand *healing* as a wider social and psychological process of making and becoming healthy, happy, and well again. This process includes elements such as collectively rebuilding of what was damaged, grief, and recovery of what was lost, or putting words on and working through traumatic experiences.

and particularly mental health and wellbeing loss, must be understood as deeply embedded in ecological changes, societal responses, human behaviours, and pre-existing health risks, such as food and water insecurity and inequality, displacement and (im)mobility, or access to health services. This is because wellbeing loss tends to occur as part of longer-term and causal socio-cultural patterns (Watts et al. 2018; Berry et al. 2018; Kelman et al. 2021).

We therefore place this climate-violence-health nexus study within a *systems analysis* that investigates these correlations as a network of factors whereof some are immediately tied to the environment while others are seemingly non-environmental or social, political, legal, financial, and psychological factors (see Berry et al. 2018; Hayward and Ayeb-Karlsson 2021; Orievulu et al. 2022; Zickgraf et al. 2022). Our systems narrative analysis will pay attention to the wider societal and human-made relations that increase the risk of climate- and violence-induced non-economic wellbeing loss. We refer to the narrated experiences of wellbeing loss as climate- *and* violence-induced to avoid any potential misrepresentation that climate change *causes* violence. This study rather understands natural hazards as additional contexts of stress that may worsen, increase, and prolong the perpetration of violence and control (Anastario et al. 2009; Bradshaw and Ford 2015; Ayeb-Karlsson 2020a; van Daalen et al. 2022).

This article understands *gender* as a socially constructed system of power and control that regulates people's roles, behaviours, decisions, and opportunities based on the idea of a female and male division and hierarchy. It influences all human beings but due to the established power relations some individuals will find themselves systematically marginalised. It is the very foundation of all patriarchal societies, and women's and children's marginalisation and increased vulnerability to violence must be understood as inherently reproduced within its structure (see empirical and conceptual work in Ayeb-Karlsson 2020a, 2020b and 2021, the theoretical conceptualisation in Butler 1996, 2002, 2004, Hirdman 1990 and Foucault 1978, 1991).

We combine this theoretical framework of an oppressive gender system with an *intersectionality* lens that furthers our understanding of the way that social roles and representations (such as class, race, gender, age, poverty, and disability) intersects and locks people into positions where they are at the receiving end of discrimination, marginalisation, and violence (Chavis and Hill 2008; Creek and Dunn 2011; Walby et al. 2012; Schuller 2015).

We understand the perpetration of violence as acts beyond physical violence and assault by incorporating a framework of *coercive control* where longer patterns of *coercive and controlling behaviour* (CCB) by an individual perpetrator, or a collective group, or system, must be understood as acts of violence. We choose this framework to position violence beyond Foucault's idea of 'acts' of violence that 'forces', 'destroys', or 'closes the door on all possibilities' as Foucault argued that the opposite behaviour to violence 'can only be passivity' (Foucalt 1983; Hearnet al. 2022). Instead, we acknowledge that acts of violence can be passive such as through neglect, collusion, and complicity which are all key components in understanding CCB as strategically targeted patterns of violence and control (Stark 2009; Libal and Parekh 2009; Callaghan 2015; Katz 2019). Women, children, and other marginalised groups are therefore more likely to end up as victim-survivors of violence due to its incorporation in a system of 'power and control' (Foucault 1991; Butler 2004; Stark and Hester 2019). Children are often targeted as part of the violent act aimed to harm women as mothers in their maternal roles (Katz 2019; Stark and Hester 2019). CCB therefore enables a theoretical lens that acknowledges children, girls and boys, as exposed to GBV. The use, threat, and harm of children serve as a weapon from a position

of male privilege to further control mothers and children (Heward-Belle 2017; Callaghan et al. 2018).[4]

The UNFCCC is one climate policy body among others that aims to understand how mental health through climate-induced 'non-economic losses' can lock vulnerable populations in positions of continuous wellbeing erosion.[5] The literature around NEL(D) has rapidly increased in the context of wider marginalised populations or geographies such as the Small Island Developing States (SIDS) who have become a leading voice within the non-economic Loss and Damage (L&D) discourse (Roberts and Huq 2015; Kelman 2015; Thomas and Benjamin 2020; McNamra et al. 2021). However, the representation and voices from marginalised societal groups, such as women and children, as well as the inter-relation between Violence Against Women and Children (VAWC) and wellbeing loss are still lacking in the NEL(D) literature. The NEL(D) discourse also questions the normalisation of experiencing climate-induced losses (which is very similar to the normalisation of structural violence) since it may work against mitigation and adaptation efforts (Farbotko and Lazrus 2012; Methmann and Oels 2015; Barnett 2017). We argue that by coupling climate-induced loss with the continuous experience of structural violence and marginalisation, we will extend our understanding of how societies can better live in harmony despite climatic changes and natural resource constrains. This article also aims to match wellbeing loss with a more inclusive and intersectional human face, voice, and storyline, to work against the generalisation of experienced loss.

3 Methods and material

This narrative analysis examines the lived experiences and storylines related to wellbeing loss and healing in the context of climatic changes and VAWC. Rather than analysing the experiences thematically, we approach the lived experiences and local perceptions contextually in our three case study locations Bangladesh, Fiji, and Vanuatu (see Fig. 1).[6] The empirical and qualitative storytelling sessions were carried out by the authors between 2010 and 2018 and included ethnography and unstructured individual and collective research sessions, while a secondary literature narrative review was conducted by the lead author in 2022. The literature narrative review complemented the empirical first-hand descriptions of gender-based and sexual violence (GBSV) in Fiji as the field work here involved fewer research participants.

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[4] Many domestic abuse (DA) legislations these days also recognise children as victims in their own (from witnessing to experiencing DA) by 'seeing, hearing, or experiencing the effects of abuse' (see, for example, UK GOV 2021).

[5] Health and wellbeing are key areas of interest within most climate and sustainability policy frameworks. For example, the Millennium Development Goals have gone from tracking child mortality and maternal health to good health and wellbeing (SDG3). Meanwhile, the Sendai Framework for Disaster Risk Reduction and Resilience aims to reduce 'losses in lives, livelihoods, and health'. Article 8.1 in the Paris Agreement 'recognize the importance of adverting, minimizing, and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events, slow onset events, and the role of sustainable development in reducing the risk of loss and damage' (Le Blanc 2015; UNFCCC 2015; UNDRR 2015: 6).

[6] For other case study narrative articles structured in a similar way, see, for example, McMichael et al. (2023) and Ayeb-Karlsson et al. (2019).

Map of Bangladesh indicating the seven locations of the field sites included in the research study. This narrative analysis particularly draws conclusions from the gendered findings coming out of the coastal study sites (numbered as 1–3) and the urban informal settlement (number 7) in Dhaka (adapted from Ayeb-Karlsson et al. 2016: 682). The map of Vanuatu shows the study sites and the approximate locations of marketplaces (adopted from ANU 2018b) and the final map shows locations of case study location Nadi in Fiji marked out in bold text (adopted from ANU 2018a). Cartography by C. Jayasuriya 2023

Fig. 1 Overview of study locations

In Bangladesh, the analysis focused on three coastal study sites facing cyclones, floods, and erosion, as well as the informal settlement of Dhaka. The urban settlement, Bhola Slum, hosts settlers from Bhola Island who first migrated after the devastating 1970 Bhola cyclone

and thereafter due to riverbank erosion (McNamara et al. 2016; Ayeb-Karlsson et al. 2016, 2020a, b). The lived experiences explored opportunities and constraints for women and girls, as perceived by both women and men, in the context of environmental stress. The interviews, conducted between 2014 and 2016 in Bengali and audio recorded, were later transcribed and translated into English. Further field observations and participatory observations were noted down, and visual contexts were recorded through photographs and videos. The participants were recruited through snowball sampling while ensuring that the overall informant balance was representative of the study site in terms of gender, age, socio-economic and livelihood backgrounds, religion, and the geographical climate vulnerability of the households.

In Fiji, drawing on to the cultural practice of 'Talanoa' Dialogues, semi-structured interviews and focus group discussions were conducted in 2010. Random sampling, combined with snowball technique (based on participant referrals), was used to draw informants from different climate change, DRR, and humanitarian response stakeholder groups (religious organisations, NGOs, government and municipal councils, private sector, and donors). The interviews were conducted in English, recorded, and manually transcribed. Photographs and notes were taken as complimentary field observations covering the study area Nadi River and Township to capture historic flood impacts, evacuation sites, and existing coping mechanisms. In Fiji, storylines emerged around experiences and perceptions of VAWC in the aftermath of cyclones and floods. Next to the empirical data, a secondary data narrative review and scoping search were conducted by the lead author in June and July of 2022. Web of Science, Google Scholar, Search, and News were searched for books, peer-reviewed journal articles, media articles, research projects, and grey literature and reports, investigating flood and cyclone-related GBSV in Fiji since 2000. The reference lists in the selected publications were also reviewed to identify further relevant material. A combined narrative analysis of the primary and secondary storylines[7] was carried out in the case of Fiji. All secondary data narratives are referenced back to their openly available sources. Most of the interviewed participants were living in (or referring to) our empirical study site Nadi.

The 2018 Vanuatu study involved ten focus groups associated with UN Women's Markets for Change programme. The three-month-long field work in 2018 was undertaken with women working at various marketplaces around Efate (the main island and home to the capital of Port Vila) and explored women's responses, including the role of traditional development-oriented marketplaces in building hope and resilience (Clissold et al. 2020; McNamara et al. 2020). Most women had livelihoods tied to the marketplaces on Efate Island in Vanuatu. Some participants were from outer islands but sold at marketplaces on Efate or were vendors who sold at a central marketplace in Espiritu Santo. A few participants were executive members of the locally run Silae Vanua Market Vendor Association.

The research sessions were conducted in open, communal areas and were digitally recorded and later transcribed and translated into English by a female local ni-Vanuatu researcher trusted by the participants. The sessions were largely unstructured and flexible to allow participant narratives to guide the research. A checklist of key themes was used across the group sessions.

The authors conducted the field work and the narrative analysis using NVivo, thematic narrative and discourse analysis. The case study countries differ socially, culturally, and contextually, but the storytelling methodology and research focus bring the studies together (see Table 1). Storytelling methods build on qualitative and unstructured narrative

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[7] Secondary data quotes are clearly marked out in the analysis as personal narratives (either with the use of ' ' or " " or (s)he said and italic).

Table 1 Overview of research participants across study sites in Bangladesh, Fiji, and Vanuatu

	In-depth qualitative and storytelling interviews	Group and collective storytelling sessions
Bangladesh	36 participants (approx. 50/50 gender balance)	86 group sessions (approx. 700–1000 participants)
Fiji	40 stakeholders (19 females and 21 men)	Three group sessions (approx. 40 participants)
Vanuatu	48 participants (53 women and 2 men)	Ten group sessions with 55 participants
Total	124 participants, 90 women and 41 men	99 group sessions total involving over a thousand participants

interviewing techniques. This methodological approach of using personal life stories is well established within many other research areas but new (although rapidly growing) within climate change research (Ayeb-Karlsson et al. 2016, 2019; Conway et al. 2019; Singh 2018, 2019).

The unstructured open-ended questions allow space for the participants to fully communicate their perceptions, values, and life experiences in a way that the empirical insights guide the narratives. The researcher's understandings, viewpoints, and biases are therefore reduced, while social and cultural values can be registered in between sentences or throughout the storylines (Overcash 2003; Pfahl and Wiessner 2007; Ayeb-Karlsson 2020a, 2021). The approach has been widely celebrated for its empowering abilities within research involving vulnerable groups as it let marginalised people speak their truth, in their own words, allowing their voices to be heard (Hodge et al. 2002; Rodriguez 2010; Ali 2013; ICGBV 2022). The method effectively gathers rich data on sensitive topics, values, and behaviours where direct questions would be inappropriate, offensive, or give limited insights.

Mental health research often uses surveys or health assessments aiming to quantify and diagnose so-called disorders (Adeola 2009; Davis et al. 2010; Paul et al. 2011). These research designs are not necessarily effective in capturing longer-term, non-linear, and complex casual wellbeing losses (Kelman et al. 2021; Harasym et al. 2022). After Katrina, for example, researchers found that many women first reported wellbeing impacts, such as depression, anxiety, or post-traumatic stress, years after the hurricane (Binu et al. 2008; Rhodes et al. 2010).

This article will pay attention to how the storylines describe disproportionate impacts upon women and children's mental wellbeing in the context of climatic changes and VAWC. The storytelling approach helps capture wellbeing loss that is difficult to identify, register, and quantify. Similar research designs can in the future more comprehensively inform global policy around non-economic losses and damages and beyond.

4 The case of Bangladesh: gendered (im)mobility and wellbeing erosion

Bangladesh's geographical position in the world's largest delta supports its dense population while also exposing people to environmental risks. One of the oldest adaptation strategies around these risks is to move away through sudden evacuation or longer-term, temporary, seasonal, and permanent rural–urban migration (Penning-Rowsell et al. 2013; Ayeb-Karlsson et al. 2016). However, harsh living conditions in the informal settlements often compromise migrant's mental health. Women and children also tend to face social risks, such as VAWC, that do not impact adult men in the same way (Mullick and Goodman 2005; Izutsu et al. 2006; Khan and Flora 2017).

4.1 Gendered roles, entrapping spaces, and intergenerational cycles of violence

Many women and girls experienced a shift in their gender roles with the move and livelihood change (Ayeb-Karlsson et al. 2020; Ayeb-Karlsson 2021). This was described as a social devaluation that came with transitioning from household labour to working outside the house. Some women felt that the move provided exciting new opportunities, while others expressed a loss of identity, social value, and honour. The empirical narratives

explained that women tending to outside work were perceived as having stepped away from God's righteous path which could result in punishment:

4.1.1 Extract 1[8]

Why are there so many disasters? Because we must have left his [Allah's] path. Women are working outside the house and going here and there. This is not good. We have to return to his path. Otherwise, we will have to face the consequences. The cyclone shelter will not be able to save us then. I can feel that the weather is changing. I think it is happening because we forgot about Allah. It is the punishment of Allah. /…/ The cyclone strikes are holy creations. The same way God created man, he created cyclones. Therefore, God will decide how they will affect you. Those who have done him right, and who have followed in his footsteps will be put in safety (Ayeb-Karlsson et al. 2019:763).

Some women felt that this shift in labour activities and workplace made them less honourable and healthy. One mother, for example, associated her daughter's health issues with her income-earning activities as a housemaid:

4.1.2 Extract 2

I do not know what disease my daughter has. Not even the doctor was able to understand what kind of sickness it is. She has fevers, but it does not show all the time. We got sick from doing household work in other people's houses. That is how we got the disease (Ayeb-Karlsson 2021: 8).

Other migrant women turned to work opportunities in the garment industry. Many slums with large influx of female new settlers therefore form around these factories. The poor work conditions received international attention with the 2012 fire and the 2013 Rana Plaza collapse. Studies also indicate a correlation between climate-induced female migrant factory work and VAWC, and that it may lead to depression (Akhter et al. 2017; Parvin et al. 2018; De and Murshid 2018; Fitch et al. 2018; Rahaman et al. 2018). The research sessions captured how men would take advantage over girls upon their arrival:

4.1.3 Extract 3[9]

If a girl moves to Dhaka for work, she should keep in mind that she has to send money to her parents, and that she must wait to marry until her parents want her to do so. If she forgets this and gets into a relationship with a man, marries him and starts a new family, she may suffer in the long run. Girls often meet men in the

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[8] This article uses a text extract referencing system for analytical transparency of 'Extract 1', 'Extract 2', 'Extract 3', and so on. As the word count in this article is limited, we were unable to incorporate all the text extracts that serve as basis for our analytical conclusions in the result section. We have instead included some of the text extracts in the supplementary material. To make it clear what analytical section each text extract in the supplementary material relates to, we have numbered them in chronological older and placed a footnote every time an excluded a quote had to be moved to the supplementary material.

[9] See also text Extract 4 in supplementary material.

garment factories and start a relationship, but the husband may leave her even after she has had his child. This is the punishment for marring someone without know-ing enough about him. The first six months or so the husband may behave well, but then, what generally happens is that he changes. It is the girl then who has to suffer. In this situation, she can no longer go back home to her parents – she will have to work to provide and care for his child. She will have to work alone to support herself and her child. Perhaps she keeps her child somewhere under a tree while she works, and when the child cries, she comes running to calm her down. That is what her life has become, miserable./…/A man can surely get married again, even a girl if she is a dreamer. She could get married to another man too. Though it is the child who suffers the most in this kind of situation. A mother can re-marry with the child, or she can leave the child behind./…/The mother got another husband, the father got another wife, but what is there for the child? What did she get out of all this? Shame and hatred! This is why the child suffers the most (Ayeb-Karlsson 2021:6).

Few studies link climate-induced urban displacement in Dhaka and Khulna to compro-mised wellbeing (Ruback et al. 2002; Ruback et al. 2004; Rahaman et al. 2018). The longer-term complex pathways leading to reduced life satisfaction are difficult to capture. Young unmarried women face additional societal risks through shame, punishment, and stigmatisa-tion that can result in serious wellbeing implications. Social stigma was described in the ses-sions as passed down intergenerationally to the children. Marrying the 'wrong man' could end up costing a woman a lifetime of sadness that only God had the power to erase:

4.1.4 Extract 5

If there was any chance to live a better life where my children had the opportunity to work, then I would go back to the village [on Bhola Island]. However, I was left by my husband, and then I got sick. I do not have any hope left for my future. /…/ Life was good until my husband got re-married./…/It is unbearable to utter the words of my miserable story to you. I never want to speak of them. My husband married three other women besides me. You cannot do anything to relieve my sadness or misery. Only Allah can help me (Ayeb-Karlsson 2021:7).

Child marriage came up as a common coping mechanism to income loss and food insecu-rity. It must be understood as a form of structural violence that poses serious mental health implications upon girls. A woman perceived her kidney failure as associated with giving birth at the age of 14. She sought medical attention from a female doctor but was sent home as her husband needed to collect the results for her. The husband never told her what was wrong but started seeking financial solutions to pay for the medical treatment:

4.1.5 Extract 6

I got married when I was twelve years old. A few years later I gave birth to my first son. I faced a lot of problems giving birth to him./…/A woman from work was a doctor so she took me to Dhaka Medical Hospital. There they did some tests and noticed that my kidneys were failing. She gave me an injection and told me that I had to go home and ask my husband to meet with her. Then she gave me some pills and sent me home. I told my husband that he should go and met with her. She was the

one who notified my husband about my kidney failure, but she never told me what was wrong. My husband looked worried when he returned home so I tried to find out why, but he never told me what was wrong. He just started to work really hard, saved up money, and even took out a loan. The family I worked for at the time also gave us some money./.../At one point when I was sick and he could not do enough, he even thought of selling his blood, but I warned him not to do so. He does not have that much blood so he would surely have died. If we are both dead then who would look after our children? (Ayeb-Karlsson 2021:7).

In his financial efforts, and because of a work-related accident, he develops health issues of his own. The family is forced to take out a loan to cover the medical expenses. Ultimately, the husband considers selling his blood. The wellbeing loss is experienced by the entire family; the parents worry about whether they will survive to raise their children, while the children are terrified of losing a mother as well as a father.

In the session, the mother explains how in her childhood her own household struggled with poverty and health loss. Her parents saw no other option than to marry her away at the age of 12. They could not afford to keep her in the family. She was married off to alleviate for the household. The intergenerational cycle of poverty, health, and wellbeing loss is complete. Her boys may similarly need to leave school and start working; if she has a daughter, she may be forced to marry while still a child.

Life in the informal settlements goes hand in hand with poor dwelling and work conditions that contribute to health and wellbeing loss that can stretch over an entire lifetime and sometimes beyond. Some people have to spend their income on medicine or medical treatment. Others are forced into debt or child marriage to cope. These wellbeing losses impact entire families but hit women and children hardest. It becomes a vicious cycle of poverty aggravating physical and mental ill health that must be understood as longer-term structural violence.

4.2 Gendered disaster immobility, wellbeing loss, and healing

Women and children also faced gendered cyclone risks that adult men did not experience. For example, gendered social constraints around outdoor swimming for women and girls increased their risk of drowning during floods. Women also got stuck with their hair and saris or drowned while trying to rescue their children:

4.2.1 Extract 7[10]

Women die because of their hair and clothing. They are also emotionally weak. Children are always fond of their mothers. Women cannot leave them during such an event. That is why they too become victims of the disaster (Ayeb-Karlsson 2020a:6).

This gendered immobility particularly impacted unmarried adolescent women and girls. Poor families feared both alleged and actual sexual assaults on the way to or in the shelters. Toxic rumours could ruin their daughters' chances of getting married and financially impact the entire household. Some families therefore considered it safer for girls and unmarried women to stay behind and wait out the cyclone at home:

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[10] See also text Extracts 8 and 9 in the supplementary material.

4.2.2 Extract 10

It is not right [for unmarried women to go to the shelter] because it could create problems./ … /I do not like women going to the shelter. It just does not feel right. Wherever they go, things happen (Ayeb-Karlsson 2020a:6).

The economic and non-economic losses that women and children experienced during the cyclones included wellbeing loss and its relation to domestic tensions:

4.2.3 Extract 11

Besides the mental traumas that they leave behind, the worst impact upon people is the loss of human lives on an annual basis. Money and time can reduce damages, but they cannot return a lost life./… /Some internal losses may also take place. / … /During the cyclones, some people get injured internally. Injured within such an important organ that he or she may face complications afterwards. They may approach doctors and seek medical treatment in secret, but some losses cannot be healed by doctors./… /People face mental issues because of these traumas. Family problems arise as a result, and they grow larger by each day. However, when we talk about floods, it is often the economy that receives the most importance./… /The only doctors that came to see us [after the cyclone] were [physical] medical specialists. They were not able to give mental or psychological support to the victims here (Ayeb-Karlsson 2020a:8).

The narratives described wellbeing losses and damages as 'internal injuries in an important organ' that could not be treated by general practitioners or doctors. These wellbeing losses impacted entire societies but were disproportionately felt by women and children. Research in Bangladesh shows that VAWC, including sexual abuse, increases in the aftermath of cyclones (Akhter et al. 2015; Ahmed et al. 2019; Rezwana and Pain 2020). Yet, mental health provision is often not part of post-disaster and humanitarian responses. The lack of mental health support hindered the healing of post-traumatic stress and resulted in serious long-term wellbeing impacts. In the absence of appropriate mental health services, children turned to play and re-enactment to deal with cyclone-induced trauma and fear:

4.2.4 Extract 12

We noticed that some children would bury their toys after here and there. / … /From the children's behaviour we sensed their fear. They often repeated: 'When will the flood strike again? Will I have to go [to the shelter] again then, or will I die next time? If it happens again, then please promise me not to leave me'./…/The parents reassured their children that the flood will not come back, and that they should go back to living life in the way they had done before the disaster stroke (Ayeb-Karlsson 2020a:8-9).

Many adults turned to religion as a source for healing. The belief in a higher power helped people deal with climate uncertainty and loss:

4.2.5 Extract 13[11]

> When I think about why I survived that day, the day of Sidr, why I did not drown although the flood pulled me away. There is only one answer: Allah looked after me. Allah kept me safe (Ayeb-Karlsson et al. 2019:762).

People put their faith in God's hands and in their power to protect and save those who believe. Religion provided a belief system that emotionally and psychologically helped people carry on living with the cyclones. We feel that religion and cultural traditions must be better incorporated in inclusive adaptation planning that support people's management around climate-induced loss and grief.

5 The case of the Fiji Islands: women and children at risk of violence

Fiji is a highly vulnerable SIDS located in the South Pacific due to seasonal and interannual climate variations. The country's 18,000 km^2 is spread across 332 islands whereof 110 are inhabited. The majority of its 912,241 people live on two large islands, Viti Levu and Vanua (UN 2019). Fiji faces various environmental challenges that represent major obstacles to achieving the outlined economic and developmental goals. Sea-level rise, ocean acidification, floods, and the spread of vector-borne diseases have been documented across Fiji's settlements (Nolet 2016; Orcherton et al. 2017; Piggott-McKellar et al. 2019). Annual floods, tropical cyclones, storm surges, and coastal inundation significantly affect its GDP growth. The largest cyclone to hit Fiji was category 5 tropical cyclone Winston in 2016 that impacted over 40% of its population, caused a US$2 billion (20% of GDP) financial loss, and killed 44 people (GoF 2017).

VAWC is reported to increase during and after cyclones in Fiji according to humanitarian response workers. For example, 2021 saw an outcry across the country after a 10-year-old girl on Vanua Levu was raped by her uncle while seeking safety in a shelter during 2020 Cyclone Yasa. The uncle was sentenced to 14 years in prison for the sexual assault as well as a previous rape that took place when the girl was 6 years old (Fijivillage 2021; MaiTVFiji 2021).

According to reports, overcrowded shelters and lack of privacy create unsafe shelter conditions for women and children (FWCC 2013, 2021; Kopf et al. 2020). Many lavatory facilities cannot be locked, lack doors, or have windows that provide insight. Adding to this, emergency and disaster responders are not trained in identifying signs of (sexual) abuse and therefore fail to identify and prevent further violence (Fijivillage 2021; FijiSun 2021). The 2020 Yasa incident was not an isolated event. Previous records exist of women experiencing domestic rapes in overcrowded shelters or children being trafficked for sexual purposes after the Fiji floods (UNESCAP 2009; UNWomen 2013, 2014; ECPAT 2019). It is estimated that 7% of Fiji's GDP is lost to GBV where a study estimated that 94% of child abuse survivors and 70% of reported rape cases occur in the context of a known perpetrator (UNWomen 2014; GoF and UNWomen 2018). The narrative sessions also captured unprobed experiences of sexual and other VAWC in the context of natural hazards.

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[11] See also text Extracts 14, 15, and 16 in the supplementary material.

5.1 Gender-based and sexual violence during disaster events

Women and children generally face disproportionate disaster impacts due to inherent and socially constructed power hierarchies. Cyclone Winston approximately affected 120,000 children (below 18 years old) whereof 36,000 were under the age of five. Another 5600 pregnant women were impacted, and an estimated 600 births took place a few months after the cyclone strike (Live & Learn and CARE 2016). The country battles one of the world's highest rates of domestic abuse (DA) which is far above the global average of 35% (ReliefWeb 2016; UNAIDS 2020). A national study involving 3193 women showed that 72% suffered DA, whereof 61% physical violence, 54% emotional abuse, and 34% sexual abuse. A striking 16% had been sexually abused before turning 15 and most by a family member or a close friend (FWCC 2013; Kopf et al. 2020). VAWC in Fiji, as elsewhere, is clearly not caused by the natural hazards but based in deep rooted structural power inequalities that may increase with societal, financial, environmental, or political pressures:

5.1.1 Extract 17

There is already an unequal distribution of responsibilities within households and the family. Climate change and floods aggravates the dynamics of such a family. Women are always affected by disasters. The men get aggressive. Women are more prone to violence when food is not provided. Women are the poorest of the poor and because of this, women are affected by disasters and climate change as they do not have the financial capacity to adapt to the floods (Suva, Woman 22, 07.04.2010).

Cyclone Winston acted as a trigger and occurrences of sexual and GBV increased during the disaster (ABC 2016; ReliefWeb 2016; Kopf et al. 2020). As with 2020 Cyclone Yasa and the 2009 floods, women reported how overcrowded spaces, lack of privacy, electricity, and light placed them at risk:

5.1.2 Extract 18[12]

Women are more vulnerable to gender-based violence in the wake of cyclones. In tents and makeshift shelters, there's a lack of privacy and proper lighting, which makes it harder to stay safe (Female Red Cross health coordinator, TNH 2017).

5.1.3 Extract 19

Another way it affects women and girls, is through their displacement to flood evacuation centres from homes. In Fiji, most of these evacuation centres are in schools or community halls which cannot adequately cater for female reproductive rights. The evacuation centres are not able to take care of pregnant women and females undergoing a menstruation period. Because of the traditional and cultural setting of Fiji, women are unable to speak about these issues with others and, they usually have to take care of their reproductive needs in isolation or at night in evacuation centres (Suva, Female NGO worker 21, 05.04.2010).

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[12] See also text Extract 20 in the supplementary material.

The cyclones and floods saw increased rates of DA correlated with distress, trauma, and socio-financial pressures (UN Women 2013; Kopf et al. 2020). After Winston, a female member of the parliament stated that women were partly responsible for DA, leading to a clarifying speech by PM Bainimarama at the 2016 World Humanitarian Summit in Turkey.[13] This is one way that VAWC is kept alive through a framework of power and control. Women and children are controlled and locked into positions of submission through the reproduction of attitudes framing victim-survivors 'alone' as somehow responsible (e.g. victim blaming) for the experienced violence. Many disaster and humanitarian stakeholders as well as policy makers have thereafter tried to transform such social attitudes and values (see GoF and UNWomen (2018:92) 'Guide for Referrals of GBV Survivors' as well as UNWomen 2015, 2023 and The Equality Institute and UN Women 2023):

5.1.4 Extract 22[14]

> [do] not touch children without the permission of their parents or unless they are hurt. /…/ By doing this, you are encouraging pedophile-behavior/…/and not setting a good example /…/Also stop using children for photo opportunities and do not increase their trauma. When you take supplies into the communities, don't try to be photographed with it. Think about the people's trauma. They are going through a lot (Female activist and crisis coordinator, FWCC 2021).

Increased incidents of VAWG were reported during and after disasters, but it is important to outline further vulnerabilities by other intersectional positions. For example, elderly women, young girls, or women and girls living with disabilities are disproportionately impacted. As natural hazards do not *cause* sexual exploitation and violence but can increase, intensify, or trigger existing dynamics of violence as part of a network of interconnected casual factors, we need to analyse the systemic risks around wellbeing loss as a system (Berry et al. 2018; Hayward and Ayeb-Karlsson 2021). Children living with disabilities were, for example, identified as a particularly vulnerable group in a study investigating sexual exploitation in Fiji:

5.1.5 Extract 24

> A father raped his 15-year-old daughter who was confined to a wheelchair. The father had dug a hole from the outside of their house to her bedroom on the pretext of providing her with a toilet facility. At night he would crawl through the hole into her bedroom and abuse her. She reported the abuse to her mother but was not believed. Later she reported it to the police, who initiated investigations. The girl was placed in the care of the Social Welfare Department, and the case was taken to court. However, the mother withdrew her statement even though there was enough evidence to convict the father. The family also turned on the victim, blaming her for the abuse. The girl lost her case. She continues to reside in a care facility (Staff Member, Vocational Centre for Disabled Persons, SCF 2005: 27).

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[13] See text Extract 21 in the supplementary material.

[14] See also text Extract 23 in the supplementary material.

5.1.6 Extract 25

A pregnant fifteen-year-old Indo Fijian girl who was suffering from downs syndrome and severe dyslexia, was brought into the SCF office by her brother seeking financial assistance. Both of her parents had passed away. She had dropped out of school at Class Four after her teachers noticed her slow progress in class but could not identify the cause. Her brother, a heavy grog drinker, had befriended their neighbor, an Indo Fijian male who was in his late twenties at the time. This neighbor was a frequent visitor to the girls house for grog drinking sessions with the girls' brother. He later began to visit the girl when she was alone at home. A sexual relationship developed between the two and resulted in the girl being impregnated. SCF found out that the girl went on the suffer a miscarriage but damage for her had already been done in the form of the stigma she suffered at the hands of her family for falling pregnant to the next door neighbour out of wedlock. As a result, she took to the streets and earned her living as a prostitute. However, she has since been successfully integrated back into her family by a Womens' Group who found her on the streets and conducted extensive rehabilitation work with her (Staff Member Save the Children, SCF 2005:21).

This represents an important gap in the literature on climate- and violence-induced wellbeing loss. People living with disabilities seldom represent the main study group in climate change research and less so children living with disabilities.[15] As women and children are more likely to experience sexual exploitation due to inherent gendered power relations, which likely increase with environmental and financial pressures, we believe that this represents an area of non-economic wellbeing loss that currently remains largely undetected.

Women and children with overlapping intersectional positions of marginalisation such as young poor girls or boys living with disabilities are also likely to be at an increased risk of rape and child sexual abuse in the shelters which longer term may lead to child marriages primarily for the girls, as in Bangladesh, but also human trafficking for girls and boys due to the increased commercial opportunities in Fiji:

5.1.7 Extract 26

In the dark they have to go out and this places women in unsafe conditions. In evacuation centres women and children get exposed to sexual dangers – children's rights are ignored. In this country, disaster management is not a very quick recovery for women and children (Suva, Woman 22, 07.04.2010).

After Winston, sexual assaults as well as human exploitation featured in the media describing how women and girls were forced into 'prostitution' or coerced into sex for food (Charan et al. 2016; Live & Learn and CARE 2016). Financial losses forced girls out of school and into child marriage. Natural hazards often disrupt social and legal order making it a particularly dangerous time for children who experience neglect, abuse, and

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[15] We acknowledge the difficulties and complexity of safely conducting such an ethical high-risk investigation as an empirical study on children living with disabilities who have experienced sexual and other abuse in the context of natural hazards, but the research gap currently leaves these crucial voices unheard and unsupported (see also ICGBV (2022) 'Ethical Storytelling on Gender Based Violence'). A secondary data analysis of judgements and police or social services records may represent other ways to begin this work.

exploitation. As Fiji is a frequent destination and transit country for child trafficking and sexual exploitation, this represent another largely unexplored area of climate- and violence-induced wellbeing loss. The child sex industry is often facilitated, covered up, or embedded into regular tourism and post-colonial continued exploitation (including though the UN and other international 'humanitarian' intervenors) which makes it harder to combat (Vahedi et al. 2022; Anania 2022; Harrington 2022). This represents another area of research into climate and violence-induced wellbeing loss coupled with the influences of international humanitarian disaster response that remains relatively unexplored (SCF 2005; ILO 2010; UNWomen 2014; ECPAT 2019):

5.1.8 Extract 27

A network of young schoolgirls involved in prostitution operates out of the motel in which I work. How this network works is that if clients want young girls when they come to the motel, then they tell the Receptionist what type of girl they want and come back the next day. In the meantime, the Receptionist will get in touch with whichever one of the young girls closely matches the description. Contact is made on the girl's mobile phone. The girl will come into town the next day, change out of her school uniform then come up to the motel to wait for her client (Female Motel Worker in Nadi, SFC 2005:16).

5.1.9 Extract 28

A single mother of four living in a squatter settlement in Suva sought the assistance from SCF for her children's education. After a while she requested that her children be removed from the program because she had married an Australian man who was going to adopt her children. The woman moved her family to Nadi to live with her new husband. One year later the woman returned to our office and told the SCF staff an alarming story. Her new husband had moved the family to Australia and upon their arrival they were held captive in his house. She told me about the sexual exploitation of her oldest daughter (she was 14 years old at the time) who was allegedly drugged and gang raped by her step fathers' friends. This incident was filmed in the presence of her other children. The woman was too scared to go to the Police and lived in fear whilst in Australia. She and her children eventually fled Australia with the help of a neighbor. The oldest daughter is now involved in prostitution in Nadi. While there was no further evidence of her account of exploitation, we saw the scars of what looked like needle marks and cigarette burns on the woman and all four of her children (Staff Member Save the Children, SCF 2005:21).

In recent years, several Asian countries have pushed back against 'Western' child sex tourism, leading travelling child sex offenders, who have identified convenient loopholes in the law, to turn towards the Pacific. Tourist locations such as Nadi, our coastal study site, have seen an influx of internally trafficked children due to the new perpetrator demands from Australia, New Zeeland, the USA, and Europe (UNESCAP 2009; ECPAT 2016, 2019).

5.2 The hidden burden of gendered dependence

The research sessions suggested that food insecure women and children faced an increased risk of violence and sexual abuse in the aftermath of disasters. This inherent vulnerability traces back to patriarchal gender roles, power imbalance, and dependence often due to a lack of access to financial resources. A framework of power and control helps us reveal how gendered dependence locks marginalised groups into continued patterns and exposure to structural violence. Male gender roles carried the economic burden of providing for families which could hinder women's livelihood engagement. Meanwhile, women were socially pushed towards food suppliance through supporting roles in subsistence farming and coastal fisheries (such as shellfish collection). Children would plant or sell vegetables or sea produce after school and during school holidays. These gendered dynamics form the basis of income and subsistence within most Fijian (and patriarchal) households and societies. As natural hazards impact the productivity of rivers, fisheries, catchments, and agricultural land or gardens, women faced losses of basic services and food supply:

5.2.1 Extract 29

People cannot buy groceries. Groceries become expensive. Old stock and poisoned food are sold. That is when the health inspectors check the food supplies. They tell us not to buy such food. So, some poisoned foods and spoilt ones are thrown away. Poor people collect the poisoned food, but Fijians from squatters also collect the poisoned food (Nadi, Woman 36, 17.03.2010).

This pushed women and children to inner reaches of mangroves or outer areas of shorelines in search for river and marine fisheries. Municipal markets remained closed long after the floods, forcing women and children to sell their produce on the streets while exposing them to physical and sexual harassment. Women remained responsible for childcare and most domestic chores next to the food supply. Floods and storms often disrupted water and food sources which increased their household workload. The labour division during and after the hazards tended to be unequal in the sense that mothers were responsible for the evacuation of children and the elderly, needed to look after and care for sick family members, clean the house, put food on the table, and support children's return to schools, while men sought employment. The women were left feeling 'over stretch', overworked, and tired:

5.2.2 Extract 30[16]

Women have to clean up the flood. They have to decide where to set things. Women start from the very bottom, what to bring in the house after floods and how-to set-up the house. Everything has to be done by the women. From cleaning the house to finding food and taking sick children after floods to hospital (Nadi, Woman 39, 17.03.2010).

Rising sea levels and coastal erosion has led the government to begin relocating and resettling its population. Several villages are at some stage of a relocation, while another

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[16] See also text Extract 31 in the supplementary material.

42 villages have been earmarked (GoF 2014, 2018; Fiji TV 2018). Women and girls were often excluded from the relocation decision-making and expressed more adverse sentiments related to attachment and identify loss, heightened fear, and health impacts (Piggott-McKellar et al. 2019; UN Women 2016). Relocation from the coast to higher ground or household and caring chores also excluded women from their coastal fishing resources while increasing their dependence on men for food:

5.2.3 Extract 32

As soon people hear about floods, they run to higher places. Women take the children to hospital and schools. Husbands stay behind in house. People put their vehicles in higher places. The Meteorology Office and news tell people quickly, so deaths are reduced. Climate is changing, there is more rain, the earth cannot soak so much rain which is a lot now days (Nadi, Female religious leader 37, 18.03.2010.

Women expressed heightened anxiety and sadness around losing their local ecology, fear for the younger generation, hopelessness, and helplessness. The anticipation of the next disaster, fear, and traumatisation often echoed through the villages. Climatic changes left traditional knowledge and natural early warning systems less reliable. The feeling of eroding knowledge and reduced access to climate information further heightened women's insecurity and dependence. People associated natural hazards with the death of family members, loss of livelihood and income, belongings, food and water, or hunger, suffering and increased crimes.

Psychosocial distress was triggered by intense rain, cyclone, and flood warnings that forced people to evacuate and seek shelter on higher grounds (Chandra and Gaganis 2015; Du Bray et al. 2019). Women and children of particularly vulnerable intersectional positions, such as poor women living in informal settlements or marginal farming societies, experienced additional fear when evacuating and leaving their homes to seek social assistance. Poor farmers and small business households were anxious about leaving their limited possessions and belongings behind. Women were also apprehensive about voicing their maternal and reproductive health needs.

Stark examples of the gendered psychological impacts of disasters were provided by the Fijian case study. VAWC intensified with the disasters, and yet, many research gaps related to climate- and violence-induced wellbeing loss were identified. Structural power inequalities and social reproduction of gendered dependence continue contributing to VAWC. Studies in disaster loss must better incorporate a framework of intersectionality and power and control to better understand the interconnections between climatic changes, violence, and mental health losses and damages.

6 The case of Vanuatu: stories of gendered hardship and recovery

Vanuatu is an archipelago in the South West Pacific of 83 islands inhabited by approximately 300,000 people. The country's high disaster risk has consistently been ranked by the World Risk Reports (Heintz et al. 2018; Day et al. 2019). The SIDS is ranked 131 out of 187 countries in the Human Development Index, and its people are often portrayed as poor and vulnerable (United Nations 2015). However, Vanuatu societies paint a contrasting picture of strength, persistence, knowledge, Kastom (traditional culture or

custom), and pride. Marketplaces are a crucial source of income for households across Vanuatu, and women make up most marketplace vendors (Busse and Sharp 2019; McNamara et al. 2020). The dependency on climate-sensitive crops would 'lock households into a system that is disproportionately sensitive to shocks' (Bolwig et al. 2010; Clissold et al. 2020: 102). Women's voices, experiences, and needs are often minimised, ignored, and neglected at both micro and macro scales, despite their wealth of knowledge and capacities.

6.1 Stories of loss, gendered dependence, and hardship

Many marketplace vendors emphasised the livelihood risks posed by cyclones and droughts through experiences of loss and hardship. 2015 category 5 Cyclone Pam was the worst cyclone to have hit Vanuatu causing deaths, displacing around 65,000 people, and impacting 80% of rural livelihoods, including 96% of the food stocks (Esler 2015). The women described Pam's devastation on their gardens, homes, infrastructure, and livelihoods:

6.1.1 Extract 33

All the things from the garden went down. House also gone away. (Epule village FGD 2018).
Almost 10 houses in the village. /…/ everything like coconut and mangos, and crops, all the nuts, everything /…/ there's nothing there. until today, all the mangos are still not, haven't bared fruit (Female FGD, Nguna village 2018).

Women first had to try and clean their homes and go to the gardens to see if anything could be salvaged for their families to survive over the coming days and weeks. The destruction made it difficult to access the gardens:

6.1.2 Extract 34

They found it very difficult to enter the garden because all the woods are blocking the entrance to their garden. You had to go over the garden or go over the big trees (Female FGD, Emua village 2018).

Once the men were able to clear the garden entrances and remove the large trees, the women returned to their gardens to start the clean-up and re-planting. This process had a significant impact on their ability for self-subsistence and their livelihoods given that selling fresh produce and handicrafts at marketplaces was what they did to support their family. Women felt unable to provide food to the household which resulted in wellbeing loss and made them feel dependent on men. Cyclone Pam significantly impacted women's lives by haltering marketplace operations for months and for some over a year:

6.1.3 Extract 35

After clearing the gardens, plant and it took them one year to actually come back to the market and start selling (Female FGD, Emua village 2018).

Later that year, the worst drought in 20 years hit people who were barely recovering. The reoccurring hazards significantly reduced women's wellbeing. It was described as a heart-breaking experience; 'the crops are all destroyed' (Emua village FGD 2018). For many women, growing crops after Pam was critical to their family's survival and a gendered responsibility. Women felt that tending to crops that were brought back home was a way to express care for their children, husbands, and the wider family. This represented a grave loss as the drought dried out the crops or 'stunted' them (Emua village FGD 2018). After this, women began to rely on fewer more drought-tolerant crops such as manioc and taro.

6.2 Stories of recovery and hope

Stories of recovery and healing for women in Vanuatu revolved around social networks, changing agricultural behaviours and diversifying livelihoods to build a more hopeful future. Women worked together as a unified collective which in time of crisis was particularly pertinent. Their social networks extended across islands which served as a useful resource in times of produce shortages. Women from different islands were useful in overcoming issues with peripherality. The social connections also acted as safety nets when women temporarily faced low stocks. The social resources were described as crucial to recover from Pam:

6.2.1 Extract 36

She makes orders to other islands, to other women. So family members that are in Paama or Ambrym that have nuts, or Epi… they send it over to her and then she resells it and gets her money, but she pays them... oh they do exchange with food. They package them a box of food for that muma and that muma sends things over (Female FGD, Nguna village 2018).

Women were also agents of social change by ensuring equity and inclusiveness in disaster recovery, by consistently helping and involving those less able in the gardens and marketplaces (i.e. widows, disabled, marginalised). After Pam, an important change in practice among women was the decision to save seeds. Given the lengthy wait for supplies to arrive after Pam, including seeds and tools, women pro-actively began to collect seeds following each harvest. Another agricultural adjustment applied by the women related to keeping smaller plantations and having multiple gardens near the home:

6.2.2 Extract 37[17]

I know that if one disaster comes now, I've saved some seeds. /…/ Don't wait [for external assistance] (Female FGD, Epau village 2018).

As a way of recovering from and preparing for a more hopeful future, women spoke with excitement of diversifying their income sources by becoming entrepreneurs:

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[17] See also text Extract 38 in the supplementary material.

6.2.3 Extract 39

I paint fabrics and then I sew them the dresses" and "They have built businesses at their homes, little canteens (Female FGD, Epule village 2018).

6.2.4 Extract 40

It really impacts the life of women in the community. They are doing businesses like food selling, handicraft. They are doing printing, painting and all this stuff just for money before they came back to their communities and they do the same thing as well. This is a very big change that I've seen (Female FGD, Silae Vanua Market Vendor Association 2018).

Vanuatu illustrated important narratives of women's strength and persistence. The storylines portray women in a refreshing light seldom seen within female disaster representation. Women's social vulnerability due to power inequalities must be acknowledged without portraying them as helpless and passive victims (Ayeb-Karlsson 2020b; Clissold et al. 2020). These unhelpful gendered stereotypes build expectations of women as glorified perfect victims which represents an unreachable position for any human being.

By instead acknowledging women's vulnerability in gendered dependence, but also their strength and innovativeness in disaster preparedness, their role is elevated and celebrated. In Vanuatu, socially reproduced female traits such as inclusive disaster responses and caring for the weak were presented as strengths. Women were active enablers of recovery, and their disaster responses, societal rebuilding, and collective healing strategies must be shared as sustainable disaster response practices. These stories of loss, gendered dependence, hardship, recovery, and hope are important illustrations of how women stood proud on the disaster frontlines while collaborating and collectively sharing knowledge and skills within their social networks. These women illustrated holding diverse and innovative social resources to rebuild what was lost and damaged while also aiming to address the underlying root causes of vulnerability such as the inequitable power structures that erode women's, and societies', wellbeing.

7 Discussion

Research into climate-induced wellbeing loss and despair is not new. Studies exploring such experiences however, often describe male loss of productivity and natural resource–based livelihoods such as farming and fishing. Distress in the context of environmental changes is a global occurrence that nobody can escape. Societies may adapt, but their strategies often include irreversible losses, values, or trade-offs. This article explored spiralling non-economic losses in the context of VAWC and mental health that eroded women's and children's wellbeing while impeding coping, risk reduction, and adaptation actions. Women, girls, and boys face patriarchal risks, stemming from societal gender inequity that adult men will not experience in the same way. The identified non-economic wellbeing losses were shaped by structural violence such as unsafe living or work conditions, systemic food and employment insecurity, or control, dependence and loss of decision-making and agency.

An important finding from Fiji was that experiences of structural VAWC targeting particularly marginalised intersectional positions intensified during and after disasters. Structural VAWC should not be blamed on the hazards, nor should it be understood as unique to Fiji (see Enarson and Fordham 2001; Thurston et al. 2021; van Daalen et al. 2022). Research in Bangladesh found similar VAWC trends where young unmarried women and girls feared sexual assaults, while DA and child sexual abuse also increased in the aftermath of cyclones and floods (Ayeb-Karlsson 2020a; Hayward and Ayeb-Karlsson 2021). Research findings of gender-based and sexual violence in the context of natural hazards have emerged from countries including the USA (Anastario et al. 2009), Pakistan (Memon et al. 2020), and several countries in Southern Africa (Nhamo and Chikodzi 2021), but we still require a greater incorporation of intersectionality into these research studies. Poor, migrant, Indigenous, ethnic minorities, elderly, children, LGBTQ+ or people living with disabilities are rarely the core study group in most climate change investigations. Further to this, among some policy circles, VAWC, including child sexual abuse and exploitation, appears to remain a somewhat taboo subject. We are yet to see an IPCC chapter, or a UNFCCC report, outlining the connections between climate change, VAWC, human trafficking and exploitation, and (non-economic) loss and damage.

Women and children are more often exposed to rape and sexual exploitation as well as physical and emotional abuse than adult men. VAWC leaves deep wellbeing scars that may not even heal within a lifetime. Unlike material losses, the wellbeing impacts upon women and children that are interrelated with VAWC tend to leave long-lasting and intergenerational mental health challenges. Empirical evidence from the two island settings indicated the heightened distress in women extending from dependence and control around their gender roles. In our gendered societies, food preparation is often a 'female' responsibility. In Fiji, food loss in periods of disasters compounded social household tensions increasing the risk of VAWC. In Vanuatu, women felt inadequate after losing their gardens that represented individual self-efficiency, independence, agency, and ability to endure and recover.

The loss of social safety nets or control over food and natural resources also introduced coercion into prostitution, exploitation through food for sex or child marriages. As we noted in Bangladesh, the decision to marry off a child was a family loss that impossibly can be measured in monetary terms. Non-economic losses and damages are often characterised as difficult (or impossible) to estimate and quantify (the lost amount) or valorise (the losses). The article delicately illustrates that it is impossible to compensate or quantify loss of dignity, human value, or lack of respect from society. These irreplaceable losses in the case study countries, although context specific and associated with socio-cultural values, followed similar structural gender and power systems.

The gendered dimension of climate- and violence-induced loss and damage is highly subjective, but closely mediated by our societal regulatory systems such as equity, justice, rights, welfare, and basic services. People's subjective and intersectional understandings of loss and healing were built into local narratives that provide policy with key insights of the values related to losses, coping around irreplaceable losses, and what damages remain thereafter. The uniqueness of life experiences cannot be incorporated into standardised measurements, statistical or economic assessments, but they can act as steppingstones to support adequate risk reduction efforts in vulnerable locations and among marginalised populations.

Narratives around recovery and healing emerged that represent research needs to be prioritised in the future. An enhanced understanding of how people recover from the grief, loss, and heal can provide valuable tools of how-to best support more inclusive policy. Policy must better incorporate counselling, assessment of damage and wellbeing erosion,

local understandings of psychological care, and mental health services for trauma to appropriately support marginalised people. In Vanuatu, support groups of women in the marketplaces shared the emotional and psychosocial burden. Similarly, in Fiji, in the absence of formal psychological care, women-led support groups enabled recovery by exchanging stories about trauma and by collectively gathering strength.

The narrative analysis found an urgent need to create safe spaces for women and children in disaster contexts. This goes far beyond safe shelters to include strengthening social safety networks, building culturally appropriate counselling and mental health services, and caring, as part of climate and disaster planning to minimise and address future losses and damages. Post-disaster mental health and psychosocial support services are often inadequate, leading to societal mental health challenges for several generations to come. The preservation and continuity of cultural practices are key in disaster recovery as local and cultural traditions provide important skills and self-reliance that help strengthen identity formation and feelings of social belonging. This can reduce social dependence and unhealthy power structures which in turn may reduce and help combat VAWC.

8 Conclusion

The idea of limits to adaptation provides a basis for ways to measure loss and damage. Yet in the context of non-economic losses, limited efforts have been devoted to the design of methods that capture mental health loss among marginalised and vulnerable groups. To fully understand the consequences of gendered climate- and violence-induced non-economic losses and damages, bottom-up and people-centred storytelling approaches will be needed. Climate change action must better leverage the various benefits of storytelling approaches that include improved mental health, assessment of gendered needs, cultural belonging, identity, and collective histories. Life experiences effectively support the much-needed local insights and evidence around Loss and Damage. People-centred climate change research still receive little attention, as the general idea appears to be that the *right* set of normative indicators will be the 'panacea for all disease'.

We must also transform our perceptions of 'losses and damages' as something environmental such as in the loss of land, crops, livestock, and food, to include a wider climate-violence nexus that incorporates everything from child marriage, sexual violence, coercive and controlling behaviours, and gendered dependence to human trafficking and exploitation. Our understanding of the causes and triggers to societal and psychological loss and trauma must extend from the environment to the socio-psychological relations with the environment. These associated mental health impacts may pose long-term consequences leading to intergenerational wellbeing losses for entire societies, countries, and regions in a climate changed future.

National and global policy frameworks that aim to address non-economic losses and damages must better prioritise women, children, and other intersectional marginalised groups. A stronger acknowledgement within climate policy must accept that losses and damages to mental health, wellbeing, and dignity cannot and should not be measured in monetary markets. Certain elements in life are invaluable, and the fact that we do not attempt to measure them is precisely what gives them a unique value.

Author contribution SAK developed and led the conceptual and theoretical idea of the article. All three authors gathered primary data, led empirical data analysis, and drafted a case study section each: Bangladesh by SAK, Fiji by AC, and Vanuatu by KM. SAK also carried out the literature review, compiled, and analysed the secondary data that is included in the Fiji case study. SAK took a leading role in writing and reviewing the manuscript, but all authors contributed to the writing and actively engaged in revisions to critically shape the manuscript into its final stage.

Data availability Primary data available upon request.

Declarations

Ethics approval All procedures performed were in accordance with the ethical standards of the institutions at which the studies were conducted, and ethical approval was obtained from their Research Governance and Ethics Committees.

Consent to participate All research participants have agreed to take part in the study through written informed consent.

Consent for publication The authors give the publisher the permission to publish the work.

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