



The Female Perspective on a Situation of Uncertainty

Examining gendered and accumulated
vulnerability in multi-exposure to stressors
through a case study in rural Nepal

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The Female Perspective on a Situation of Uncertainty. Examining gendered and accumulated vulnerability in multi- exposure to stressors through a case study in rural Nepal

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Abstract

Climate change impacts are becoming more severe globally, with estimations of a continued negative trend in the future. This interacts with increasing natural disasters as well as non-climatic stressors, such as pandemics or social stressors, creating a multi-exposure to stressors especially harmful for rural populations and small-scale farmers who depend on natural resources for their livelihoods. Men and women are impacted differently by stressors and face different opportunities to respond, which relates to gendered social roles. The multi-exposure to stressors, and interaction of them, may also have accumulated effects. Therefore, this thesis examines how women experience and navigate exposure to multiple environmental and other stressors over time, and what the accumulated effect of continued exposure to it is on women during their life trajectories.

Nepal is a country that has experienced multiple different overlapping stressors in recent years, such as climate change, the 2015 Gorkha earthquake, high levels of food insecurity, significant out-migration and the COVID-19 pandemic. For this reason, it provides an opportunity for examining how multiple stressors intersect long-term within a household and how it impacts women's daily lives. Through a case study, the thesis builds on semi-structured interviews combined with other participatory rural appraisal methods. For a deeper understanding of how social structures and biophysical factors shape how women in rural Nepal experience and navigate multiple stressors over time, the analysis builds on the concept of vulnerability. Vulnerability refers to the susceptibility of being harmed by an event and is in this study conceptualized as contextual, gendered and with a cumulative effect.

The empirical findings show that not all women experience a stressor in the same way, however, there is a common feeling of women being more impacted, feeling more concerned and facing a heavier burden than men. Stressors lead to increased time and labor for women in the responsibilities they have, such as domestic work, agricultural work and childcare. It also shows how women greatly worry about food, safety and health of the family when experiencing different types of stressors. These aspects all relate to social structures and gender roles, affecting women's daily lives, experienced impacts and responses. The gender roles also mean they lack voice and decision-making power. Multi-exposure to stressors is found to lead to an increased emotional stress for women. Through highlighting life histories, the study shows how vulnerability is personally experienced and that interaction between multiple stressors over time shapes women's long-term prospects for lives they value. While women are found to be restricted in their gender roles, there are also demonstrated ways in which women come together and organize themselves. This indicates that changes may be happening and that gender does not only mean differentiated vulnerability. Shared gender can also be a source of strength and solidarity in times of stress.

Keywords: Multi-exposure, Stressors, Climate change, Ghorka Earthquake, COVID-19, Vulnerability, Gender, Nepal, Life histories, Small-scale farmers

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Abbreviations

FGD	Focus Group Discussion
IPCC	International Panel on Climate Change
KI	Key Informant
KII	Key Informant Interview
PRA	Participatory Rural Appraisal

1. Introduction

1.1 Background

The Intergovernmental Panel on Climate Change's (IPCC) latest report shows that vulnerable communities are disproportionately affected by climate change, although they have historically contributed the least to it (IPCC 2023). Vulnerable communities are generally communities living with poverty, limited access to services and resources, climate-sensitive livelihoods and governance challenges. An estimated 3.3-3.6 billion people live in highly climate change vulnerable contexts (ibid). The increase in climate extremes has exposed millions of people to acute food insecurity and reduced water security (ibid). Food insecurity was rising even before the COVID-19 pandemic (United Nations 2022). Growing inequalities, climate change, COVID-19 and conflict are now jointly resulting in heightened food insecurity globally (ibid). Negative climate change impacts are unequally distributed across regions and largely found among e.g. indigenous people and low-income households in Asia. Climate-exposed sectors such as agriculture suffer economic damages (IPCC 2023). Small-scale farmers are among the most vulnerable groups in rural areas, but have an important role in agriculture and the work towards combatting hunger (United Nations 2022). Destruction of homes or infrastructure, income loss and food insecurity affects individual livelihoods. There is a risk that this could increase gender differences or affect women more if losses and damages are unequally distributed. Displacement due to climate extremes is increasing globally, including in Asia (IPCC 2023).

To address people's challenges we need to know how climate change influences their lives. Knowledge of everyday experiences holds the potential to facilitate an understanding that lived experiences of climate change are inseparable from relations with other humans as well as the biophysical environment (Eriksen 2022). The IPCC report shows that climate change affects weather and climate extremes in all regions worldwide. This is attributed to human causes and has negative impacts on nature and people. Changes in extreme events, e.g. droughts, have increased over the past 10 years (ibid). At the same time, the Sustainable Development Goals Report 2022 shows that over four years of progress on poverty eradication were lost due to the COVID-19 pandemic and 93 million more people were pushed into extreme poverty in 2020 (United Nations 2022). For the first time in a generation there is an increase in number of people living in extreme poverty (ibid). An estimated one in ten people across the world suffers from hunger and approximately one in three is food insecure. These numbers have been increasing since 2014 (ibid). Global warming and climate hazards are predicted to continue to increase worldwide, including intensified multiple and concurrent hazards (IPCC 2023). Droughts are predicted to become more frequent (ibid). By 2030 it is estimated that drought will displace 700 million people and medium-to large-scale disasters will increase by 40% from 2015 (United Nations 2022). Climatic risks will further interact with non-climatic risks, creating more complex risks for ecosystems and humans (IPCC 2023). Climate-driven food insecurity is predicted to increase and interact with non-climatic

risks such as pandemics and conflicts. High reliance on climate-sensitive livelihoods in rural areas means vulnerability there will be heightened (IPCC 2023).

With loss of livelihoods and increased burden of unpaid work at home, women are among those facing the largest burden of crises (United Nations 2022). Women are often responsible for household work and caring for children, and the burden of feeding the family often falls heavily on them. Their paid and unpaid work leads to longer working days for women than men and a so-called women's time poverty (Criado Perez 2019:42). Globally, women account for 75% of unpaid work, with twice as much childcare and four times as much household chores (ibid:45). Work tasks necessary to sustain lives and which women continue to carry out in spite of e.g. a pandemic (ibid:251). 10 million more girls are estimated to enter into child marriage by 2030, adding to the already 100 million girls predicted at risk before COVID-19 (United Nations 2022). Women are also highly represented among poor and small-scale farmers, and unlikely to own the land they farm (Criado Perez 2019:133). There is a risk that impacts of extreme climate events will be more severe for poor communities and women (Khadka et al. 2022). When women are not properly represented and participating in data, debates and decision-making bodies, they risk becoming dispensable, ignorable and invisible (Criado Perez 2019:34).

1.1.1 Research problem

Existing research has argued that vulnerability is not just a function of exposure to climate and other stressors; rather, social conditions in a place also put people in a position where they risk harm (Penn et al. 2016). The susceptibility to be harmed by a hazard and being unable to deal with the harm due to social processes creating and maintaining the susceptibility is often viewed as a definition of vulnerability (Kelman et al. 2016). For people who are already in a position to be harmed by a stressor, new additional stressors may interact with what they are already dealing with and perhaps also exacerbate their vulnerability and the severity of it (Penn et al. 2016). Climate change does not happen in isolation. There are many non-climatic issues occurring alongside climate related ones. Environmental challenges restrict people's possibilities to improve their livelihoods. Poor smallholder's livelihoods are made more precarious and their food insecurity further exacerbated with risks to production, such as climate change predicted to disproportionately affect them (Chenais et al. 2022). At the same time, health issues, natural disasters, conflicts or socio-political changes may provide further obstacles for improved livelihoods. Pre-existing stressors may affect the experience of a new stressor. Rather than focusing only on immediate short-term needs it is important to further explore vulnerabilities already there, and to analyze long-term effects as well as the situation preceding an event. To understand who is left behind in the global development and challenges they face, one needs to have data on vulnerable populations (United Nations 2022). The COVID-19 pandemic has shown how global and social interconnectedness relates to our vulnerability in the midst of a shock (Eriksen 2022). However, people, communities and countries face different shocks and have different abilities to respond.

Lived experiences of marginalized groups are often not highlighted in global debates regarding climate change and other stressors (Sultana 2021). Climate change impacts are culture specific, since culture is often place-based. Impacts become culture specific due to differences in values, rituals and behavior shared by communities and tied to cultural symbols (Adger et al. 2013).

Cultural practices can also influence response strategies to climate change, since values and beliefs shape understandings of environment and how people perceive and respond to a risk (ibid). This means that even if impacts are not viewed as the most relevant in the global debates, they may lead to a position of experienced increased vulnerability for local communities (Adger 2006). By looking at lived experiences it allows us to dig into the complex linkages between experiences of climate change and how we act on it (Eriksen 2022).

Despite a large body of literature on vulnerability or climate change, there remains a need to further empirically show the lived experiences and long-term effects it has on people. There is a lot of work trying to quantify vulnerability, and to look at specific events and challenges. There is much less work that has examined how people experience vulnerability over time. If only looking at specific events and challenges, the research risks missing the full impact of the interaction of stressors and what consequences this has on people's life prospects. By not including lived experiences of marginalized groups in global debates one risks losing different needs, perceptions and aspirations. This in turn could inform climate change adaptation strategies in a way that does not align with the needs, perceptions and aspirations of marginalized people. It could also lead to long-term effects not being considered properly in interventions.

As argued by Criado Perez (2019:11pp) the lives of men has historically often been taken to represent humans overall in worldwide data. This, she argues, is the gender gap and the female absent presence, which impacts women's everyday lives. Not including women's perspective creates unintended male bias passed off as gender neutrality. The gender data gap creates an assumption that what is male is universal. When women are not seen and acknowledged male data makes up the majority of our knowledge. It places half the global population, women, as a minority (ibid:33pp). Although gender has become a well-known concept in research, there is a growing need for gender data to increase understanding and management of on-going global crises and challenges (UN Women 2022). Within climate change and vulnerability research it has been argued that women and men experience and respond to climate change differently and that one needs to understand changes taking place, or likely to take place in a near future, by attending to different gendered experiences of risk and stress (Sultana 2014).

Therefore, this thesis will examine poor and vulnerable women's experienced impacts of multi-exposure to stressors of rural farmers in Nepal. It will focus on women in order to provide not only further understanding regarding contexts of more than one stressor but also to provide a female perspective on it. Out-migration of men in Nepal has reshaped women's social roles by leading them to take a greater responsibility for many aspects of the household, which may also increase exposure to stressors. Nepal is a particularly insightful context for the study, since it is a country that has experienced multiple different overlapping stressors in recent years, including those related to climate change impacts, the 2015 Gorkha earthquake, high levels of food insecurity, significant out-migration, and a public health emergency in form of the COVID-19 pandemic. These shocks have potential to directly impact a wide variety of things related to women's societal roles. Thus, it provides an important context to understand how women respond to multiple intersecting shocks.

The high climate change impact, earthquake and global pandemic in Nepal provides a valuable setting to examine lived experiences of people in a context of multiple stressors, and how effects are accumulated over time and how this impacts everyday lives. Therefore, the thesis intends to

empirically provide lived experiences of women and thereby show long-term effects and interactions of stressors.

1.2 Aim and research questions

The aim of the thesis is to empirically study how multiple stressors of different kinds intersect within a household and how this impacts women's daily lives. It aims to understand long-term effects of it, such as impacts on livelihood, well-being and/or the surrounding environment. Hence, it will set out to see this through observing lived experiences. To do so, the thesis builds upon an understanding of vulnerability as contextual, gendered, that can be accumulated over time, which will guide the analysis. The research questions are:

1. How do women in rural Nepal experience and navigate exposure to multiple environmental and other stressors over time?
2. What is the accumulated effect of continued exposure to environmental and other stressors on women during their life trajectories?

1.3 Thesis outline

The first chapter presented the background to the research problem, the aim and questions. The second chapter presents a literature background on vulnerability as contextual, gendered, and one that can be accumulated over time, as well as research relevance. The third chapter states the conceptual framework and examines vulnerability, gender and feminist theory. The fourth chapter presents the methodology, how data was collected and analyzed as well as limitations. The fifth chapter introduces Nepal, Ramechhap district and the villages Charghare and Khanidada as study context. The sixth chapter presents empirical findings and analyses the contextual multi-exposure to stressors, women's role in context of multiple stressors and vulnerabilities accumulating over a life trajectory. The seventh and final chapter consists of a concluding discussion summarizing key findings and its implications.

2. Literature background

2.1 Contextual vulnerability

Vulnerability has been argued to have a predictive and forward-looking quality often reflecting pre-existing marginality or exposure (Rigg et al. 2016). It has also been argued that the context in which climate change occurs affects people's ability to respond to stress as well as climate change's impact on wellbeing (Khadka et al. 2022; O'Brien et al. 2007). Vulnerability is a multidimensional process influenced by social, political and economic aspects and interactions (ibid). The term vulnerability will be further defined and conceptualized in chapter 3. Individuals or groups may be vulnerable due to how the biosphere interacts with society, but it also depends on the context it occurs in (Naylor et al. 2020). Contextual conditions can in turn be influenced by responses (O'Brien et al. 2007). One needs to look at structural inequalities, systemic marginalization, and social and economic conditions that could make households vulnerable (Gupta et al. 2021; Sultana 2021). To reduce vulnerability and increase individuals' ability to respond to change one has to alter the context climate change occurs in (O'Brien et al. 2007).

For marginalized people, climate-induced stress may push them into insecurity and poverty (Hallegatte et al. 2018). Thus, to decrease severe climate change impacts one needs to tackle everyday conditions preceding climate events. Marginalized people in this context refer to those who have limited access to resources, opportunities and power. This is generally the result of social inequality. Marginalized people are argued to be disproportionately vulnerable to climate change, in terms of loss of livelihood and assets, dislocation, hunger and famine (Ribot 2010). Exclusion from access to service, land and social networks increases climate vulnerability. Reinforced unequal power distribution drive vulnerability (ibid). Combatting climate change impacts can also reduce vulnerabilities. Poor people have few resources and are less able to rebound from or protect against stressors (Hallegatte et al. 2018). They often live in rural areas at risk of climatic and other stressors, lack social protection and have little influence to demand support (ibid). Rural populations often protect against stress by migrating, storing assets, sharing assets or diversifying assets, in comparison to rich people who have insurance and can travel to safety (Ribot 2010). Climatic, economic or public health shocks may e.g. interrupt education, destroy assets and deepen social inequality (Hallegatte et al. 2018). Shocks are unexpected events, which can be said to be turbulent and breach expectations of structures in a place (Sewell Jr. 2005:198p). Structures can be explained as dynamic principles of order and the outcome of social interaction (ibid:151). Events may redefine and reshape those structures (ibid:200). Marginalized groups living with multiple risks have to manage overlapping natural, social, political and economic hazards (Ribot 2010). They often suffer the earliest and most severe impacts (Khadka et al. 2022). Underlying causes of vulnerability include interactions between processes of change and contextual conditions (O'Brien et al. 2007). Processes of change can be social, economic, institutional or political. They interact dynamically with the contextual conditions of a community and influence how exposed they are to climate change (ibid).

As argued in literature, there are large differences in impact of climate stressors. People's different vulnerability to environmental hazards depends on social, economic, historical and political factors (Khadka et al. 2022; Ribot 2010). Vulnerability is differentiated even within local communities and different social groups experience different risks in the same event. In general, marginalized groups experience more negative effects of stressors and have more limited possibilities to cope (Gupta et al. 2021; Sultana 2021). Rural vulnerability has been argued to be altered, exposing people to new forms of systemic shocks, and households often adopt different strategies in face of stress although options are made more limited (Gupta et al. 2021).

2.2 Vulnerability and multi-exposure

There have been discussions around dual exposure to stressors. Leichenko and O'Brien (2008) have looked at double exposure in order to highlight the interaction and close connection between two processes of change, namely climate change and market exposure. Through that, one may notice the complexity of interactions between the two transformative global processes. Since processes can be changed, contextual conditions improved and interventions influence outcomes, one needs to draw attention to the two processes interacting together (ibid). Other scholars have since built on this to argue that it is not enough with double exposure, rather one should look at multi-exposure to stressors. For example, Kelman et al. (2016) have argued that development and disaster risk reduction literature has historically had a multiple exposure perspective. In the area of climate change, this could be incorporated through viewing climate change as one stressor of many, which contributes to challenges and opportunities of the vulnerability process. Vulnerability to natural disasters such as earthquakes and vulnerability to stressors such as climate change are linked with development challenges in terms of e.g. poverty, inequality, lack of education and globalization. These often overlap and cause adverse impacts for those with less choice, resources and abilities to address it (ibid). Those who are most vulnerable to one challenge are often most vulnerable to other challenges as well, which illustrates multiple exposures to multiple threats at multiple scales (ibid). People are made more marginalized or disadvantaged through lack of options and access to grow adequate crops, maintain adequate livestock or access adequate employment or services. It is then a long-term process making them increasingly vulnerable (ibid). Vulnerability can then be argued to be determined by continuous interaction of multiple stressors, in addition to the interconnectedness of structures interacting with them (Naylor et al. 2020).

A study of coastal communities in Thailand indeed found not only a double exposure to stressors, but a multi-exposure (Bennett et al. 2015). Although they did not look at how stressors intersect, they thought it likely that climate events impacting already vulnerable households would likely lead to increased vulnerability. Multiple stressors have thus been suggested to increase vulnerability and limit adaptive capacity and it has been argued that there is a need for further empirical studies on multi-exposure looking at perceived and experienced interaction between stressors (ibid). Another study on coastal communities by Freduah et al. (2017) found that vulnerability to stressors is better explained by a combination of stressors than a single stressor. They argue that true effects of one stressor is difficult to understand without considering the other stressors and that interaction between stressors have synergistic influence on livelihood,

environment and adaptive capacity. Similarly, a study by McCubbin et al. (2015) in Funafuti, found that people were exposed and sensitive to several climatic as well as non-climatic conditions and that the non-climatic conditions affected their livelihoods most. Interconnected socio-economic and cultural stressors influenced people's wellbeing, in terms of e.g. food insecurity and economic hardship. They argued therefore that vulnerability to climate change can be the result of a synergy of climate and non-climate stressors and that by strengthening people's basic livelihoods one will reduce their vulnerability to climate change and enhance their adaptive capacity (ibid).

As argued, climate change can be seen as one of many stressors causing people to have to cope. Thus, to address one source of vulnerability or a specific stressor in a specific time may not be effective in vulnerability reduction to other factors. Rather, one should consider how these stressors interact (Dilling et al. 2015). Still, it has been argued that interaction of stressors and its effect on vulnerability in different contexts needs further research (Freduah et al. 2017).

A study by Gupta et al. (2021) shows how the pandemic intertwined with other stressors in Nepal, i.e. climatic shocks and the aftermath of an earthquake, which exacerbated negative impacts. This is in line with arguments that climate change interlinks with, and exacerbates, new stressors and those hardest hit by the pandemic are generally also those hardest hit by climate change (Sultana 2021). The pandemic increased food insecurity (Gupta et al. 2021), which is noteworthy in the argument that food insecurity can increase vulnerability to stressors (Nagoda & Nightingale 2017).

Vulnerabilities may be created by past decisions and not revealed until more time has passed, meaning it might not be sufficient to look at only the current situation (Dilling et al. 2015). It is then over time a process where multiple stressors interact and increase, which affects how impacted people are and how well they can respond to stressors (Naylor et al. 2020). The accumulated effect is said to be from multiple stressors, climate or non-climate ones, jointly resulting in impacts on a community or individual (Penn et al. 2016). Loss or damage from climate change can unfold all at once or sequentially (Tschakert et al. 2017). For example, loss in food production may first affect income, then nutrition and then cause migration. Gradual losses like these tend to accumulate and have profound impacts on households (ibid). It has been argued that compounded vulnerability is often found among those who are most marginalized or has the least socio-political power in society (Eriksen et al. 2021). To adapt to future climate change one needs to address more than the current vulnerability to climate changes and impacts (ibid). By looking at multiple stressors or exposures over time one can gain a better understanding of how differential vulnerability develops in a community (Naylor et al. 2020).

2.3 Gender perspective on climate change and vulnerability

Eriksen (2022) has argued that everyone experiences vulnerability in some way, but the kind and extent of it varies. Due to gender differences vulnerability to climate change impacts is generally higher among women, both in households and in society (Khadka et al. 2022). How vulnerable people are to climate change varies based on social and gender structures in a specific location at a specific time (ibid). Due to gendered social structures men and women are expected to have different social roles based on their sex (Blackstone 2003). This is what is referred to as gender

roles. They can be seen as products of interactions between individuals and their environment and entail what is seen as appropriate behavior to one's gender (ibid). They carry different expectations that societies and social groups place on individuals based on their sex and societal beliefs and values on gender (ibid). The traditional view of the female gender role sees women as nurturing and it may place them as working fully with household chores at home rather than having occupations outside of the home. At the same time, the traditional view of the male gender role sees them as occupying powerful positions in society and indicates them as head of household and the ones who should provide financially and make important family decisions (ibid). Khadka et al. (2022) have argued that gender roles and discrimination place women in a worse position in climate events such as droughts and floods. Women may be left without obstetrical care and have to deliver under unsanitary conditions (Criado Perez 2019:250). However, impacts of gender on a vulnerable community vary by place and context depending on the gender structure in that specific place and at that specific time. Hence, vulnerability is often seen as socially structured and not only the result of events, since social and contextual conditions mean that people face pre-existing inequalities that effect how vulnerable they are.

Furthermore, gender should be seen in its particular context and women are not a homogenous group (Arora-Jonsson 2011). One should not see vulnerability as a universal occurrence for women. Since they are not homogenous, different women have different experiences of vulnerability. It will differ according to e.g. all forms of economic and social contexts and strata. If generalizing women as one homogenous group one cannot meet specific needs of particular groups of women and see potential climate change mitigation in different contexts, since it does not show social power relations in a particular context (ibid). In a systemic review on gendered perceptions of climate change and practices in farming communities globally, Haque et al. (2023) found that climate change perceptions are contextual and varied. The variation is between gender and different intersectional aspects, i.e. age, class, ethnicity or marital status. Societal roles may result in women having different capacities to undertake responses compared to men. If interventions do not take into account existing gendered social roles, they may not accurately address women's needs or positions long-term (ibid). Similarly, climate change impacts are unevenly distributed between men and women and thus, not gender-neutral.

Vulnerability thus tends to be discussed as heavily gendered. Climate change is often argued to possibly exacerbate gendered vulnerabilities and abilities to cope with multiple changes. Gender differences of natural resource experiences can influence people's priorities of response strategies and perceptions of socio-ecological changes. It has been argued that power and complex contextual understandings of gender needs to be in focus (Sultana 2014). One needs to see marginality through power relations producing vulnerability to start with. Gender, class and/or ethnicity become important depending on the context and the power relations in that situation (Arora-Jonsson 2011). Thus, social, economic, cultural and power relations mean women and men face different climate change impacts. This can exacerbate or mitigate existing vulnerabilities, inequalities and unequal power relations (Khadka et al. 2022). While unequal gender relations do not cause climate change, it effects how the environment is managed (Arora-Jonsson 2011). Unequal gender relations often mean unequal decision-making power in environmental management, with women often excluded from meaningful participation (ibid). Women and men perceive climate change experiences

differently. Women often depend more on climate-sensitive resources than men do and many are preoccupied with the household's immediate livelihood options (Khadka et al. 2022). One needs to understand gendered power relations to understand women's role in tackling climate change. Their role in natural resource governance is often not acknowledged (ibid). Women involved in agriculture generally have limited access to resources and decision-making power (Shrestha et al. 2023). Through greater attention to gendered identities one can potentially explain existing complexities and bring focus on how gender and climate change relations play out (Sultana 2014).

Feminist theorists have contributed to climate change and vulnerability research by analyzing the way that lived experiences of these aspects intersect with cultural, social and political processes and social relations (ibid). Feminist theories have long been concerned with the everyday life and how such a focus can make practices, such as caring, visible. In regards to climate change this could allow identification of what is produced and reproduced through daily practices (Tschakert et al. 2017). Focus on everyday lives highlights the impact of uneven power dynamics on determination of whose values, aspirations and priorities are noticed and considered. By highlighting lived experiences, it can show how people inhabit places through daily encounters. Stressors can threaten a physical place as well as affective experiences and daily practices tied together with the place, which could potentially result in stress, loss and hopelessness, and affect people's well-being (ibid).

One should be aware of the social context, worldviews and priorities of marginalized groups, as well as the political context and realization that these priorities and worldviews varies between subgroups (Eriksen et al. 2021). Hence, gendered inequities worsen differentiated vulnerabilities. Women and men generally have different ability to cope and adapt to stressors and social power relations often affect strategies deployed at community level (Sultana 2021). People's vulnerability and access to assets is shaped by social inequity and marginalization and women are often among the most vulnerable to stressors due to lack of assets and representation in decision-making (Khadka et al. 2022). Thus, gender relations is an example of social marginality in vulnerability (Rigg et al. 2016). If not understanding the contextual vulnerability, including socio-political gender relations, impacts and response strategies could lead to reinforced or redistributed vulnerability (Eriksen et al. 2021). A failure by society to account for how gender restricts women's lives by placing them more at home and in gender roles could contribute to worsened impacts for women (Criado Perez 2019:253). Due to gender roles and the social power roles they incorporate, response strategies could also reinforce women's vulnerability. Social constructions in societies can develop vulnerability across multiple hierarchical scales (Naylor et al. 2020).

Furthermore, scholars have argued for the inclusion of emotions in feminist theory (see e.g. Gonda 2019). Emotions have been said to relate to embodied experiences and individual expressions and can support envisioning new conditions for everyday lives in a sustainable and equitable way in a climate change context (ibid). Emotions in climate change debates bring in a relational view of vulnerability and the power to affect or be affected. Thus, the argument is that through feminist theories one can highlight the embodied and emotional aspects of vulnerability to climate change (ibid). This shows an increased focus among feminist scholars on individual vulnerability. Vulnerability research often tries to tell stories of people whose voices are not commonly heard in public debates. Previously, research has accounted more for material loss, but focus on emotions allows us to go beyond that. By representing needs of the most vulnerable one

might promote development that can widen the gap between climate and distress. Literature has been argued to treat vulnerability as an abnormal condition brought about by climate change (Eriksen 2022). However, policy interventions are not enough to remove vulnerability and there is a need to engage with vulnerability through looking at lived experience of it. People do not experience the same vulnerability emotionally or materially. It has even been argued to be individually unique (ibid).

Studies early in the pandemic highlight outcomes on vulnerable groups in rural Nepal, one being an increased burden on women (Nichols et al. 2020; Gupta et al. 2021). It has been argued that there is a feminization of labor and agrarian distress leading to increased responsibility for women (Nichols et al. 2020). The pandemic disrupted migration patterns and male migrants returned to Nepal, which could potentially change gender roles and women's responsibilities. Migration of men could lead to women's increased participation and representation. Women may find different responsibilities and possibly different decision-making ability when their husbands are migrated (Khadka et al. 2022). On a global level, Sultana (2021) has argued that there has been a gender-blindness in the response to the pandemic and that policy advice and lived realities can differ, e.g. hand washing advice during the pandemic could increase women's burden and challenges to fetch water. A study by Nichols et al. (2020) in Nepal showed that a return of men has diminished women's agricultural burden, although it also made it more difficult to collect water and fire wood. Shrestha et al. (2022) looked at women and labor migration in western Nepal and found that migration of men did not increase women's household bargaining power. They looked at women's participation in community groups and found that migration impacts interaction of individuals in communities, but women still often depend on male relatives and their access to resources is often through men. More women are found in agriculture due to male out-migration, non-profitability in agriculture and the gender role placing women to assure food security (Haque et al. 2023). As for Nepal, it has been argued that the most marginalized are often excluded from meaningful influence on policies and decisions despite community participation processes, which risks excluding the poorest and creating new vulnerabilities (Nagoda & Nightingale 2017). The most vulnerable communities are those dependent on natural resources for their livelihoods. Marginalization and social exclusion pose barriers to vulnerability planning on a micro-level (Khadka et al. 2022). Eriksen et al. (2021) argues that in Nepal influential community members monopolize benefits or manipulate projects.

2.4 Research relevance

The literature showed that vulnerability has evolved to be seen as a dynamic concept caused not only by stressors, but also of societal structures and gender roles. It also shows how focus has come to include more types of stressors rather than focusing on a single one or a double exposure. It is now recognized that people face multi-exposure to stressors over time, which has been argued conceptually and theoretically. However, there remains a need for further empirical evidence in different contexts on how people experience it. Therefore, there is a research need to include multiple stressor types and through empirical material demonstrate impacts of multi-exposure to stressors on different types of rural communities. Vulnerability approaches often focus on a specific

situation at a specific point of time and thus, often become short-term focused. Most research does not look at exposure over time. Hence, there is a need to understand how households navigate multiple stressors and how it plays out long-term. The accumulative effects of stressors and vulnerability, and the effect of when events occur over a timeline, needs to be better empirically evidenced. A longitudinal view might help us understand how pre-existing vulnerabilities, different stressors and response strategies continuously interact with and affect one another. It might also help us understand how individuals experience this interaction over a lifetime and how this in turn shapes people's life prospects. In this way, one can see how vulnerable communities are not only impacted directly by an event, but there are past drivers that may affect the impact and events may have different consequences for individuals long after they occurred. These factors are not easily seen if research is focused on a specific situation at a specific point of time.

As shown, vulnerability is argued to be differentiated among social groups and even between individuals in the same communities. Although research, especially among feminist scholars, have lately argued more for the need of an inclusion of lived experiences of climate change impacts there remains a gap on long-term impacts and lived experiences. Due to the data gender gap, policies often harm women. There is often a failure to collect data on women and realize that the female perspective matters (Criado Perez 2019:224). Gender data is the best way to achieve gender-responsive policy action to the Sustainable Development Goals and to ensure no one is left behind. At the current rate it will take approximately another 20 years to close the gender gap related to the Sustainable Development Goals (UN Women 2022). While gender is researched in climate change, much policy does not focus on gender enough partly due to a lack of data on lived experiences of women (Soubeyran & Choudhary 2023), and further research continues to be needed. Further gender data will support policies better responding to specific needs and constraints of women (ibid). The gender gap in post-disaster relief needs to be addressed since climate change is making the world more dangerous and women are over-represented in fatalities due to natural disasters (Criado Perez 2019:252). Therefore, it is important with a gender perspective in research on stressors, as previously argued in the literature. With further gendered data it would be easier to emphasize why women's needs cannot be ignored in times of stress (ibid:260). We need to increase female representation. To ensure sustainable interventions one must see the local context, problems, possibilities and priorities of smallholders. It might differ from those of other stakeholders involved (Chenais et al. 2022:29). Women experience the world differently than men due to being treated differently and thus, have different needs and priorities (Criado Perez 2019:229).

Therefore, this thesis aims to address the research gaps highlighted by providing a further understanding of multiple stressors' impact over time. Main stressors included in the thesis are climate change, natural disasters, high levels of food insecurity, out-migration and the COVID-19 pandemic. The thesis also intends to support a deeper understanding of local perceptions and lived experiences of their impacts. By focusing on women the thesis intends to empirically show women's role, drivers of gendered vulnerability, the accumulated effect of this and how it affects situations of interacting and overlapping multiple stressors long-term.

3. Conceptual framework

As stated, the aim of the thesis is to empirically show how multiple stressors of different kinds intersect within a household and how this impacts women's daily lives. This chapter will explain how the concepts of vulnerability, gender and feminism will help analyze the empirical material through looking at vulnerability as contextual, gendered and that can be accumulated over time.

3.1 Vulnerability

Scholars often define vulnerability as the degree to which a system or individual is susceptible to impacts of a hazard or adverse event (Naylor et al. 2020). Discussions have included a view of vulnerability as dynamic across time and space rather than static, and as constantly shifting along with decisions, processes and changes in environmental and social conditions (Dilling et al. 2015). Therefore, the analysis will look at vulnerability over time and as something that can be changed due to inclusion of new stressors, changes in societal roles or changes in the context. Vulnerability studies may look at outcomes from two or more stressors. It can also view multiple stressors as key for understanding contextual structures and its influence on stressors (O'Brien et al. 2007). By analyzing impacts only one might understand that a place could be affected by predicted climate change, but one will not understand why the place or the people there are sensitive or why they lack resilience (ibid). This thesis will use a conceptual framework of vulnerability as contextual and gendered. In the vulnerability analysis, the key things that will be looked at are multi-exposure and cumulative effect, context, interaction between stressors and life trajectories.

The contextual vulnerability analysis will be built upon the respondent's notion of the stressors and the context in which it occurs. A main approach to analyzing vulnerability is through a livelihoods approach. It includes analyzing factors producing crises for a household, such as assets failing to safeguard against hunger or cope with environmental change, and look at livelihood strategies embedded in the larger environment (Ribot 2010). The livelihoods approach analyses multiple vulnerabilities related to the broader condition of poverty. By acknowledging that hazards change available resources, which can intensify vulnerability of people, this approach links vulnerability to biophysical factors. Pre-existing conditions of the context that need to be analyzed and will be brought up in the analysis of this thesis include livelihood practices, infrastructure and assets. As argued by O'Brien et al. (2007) it is useful to approach vulnerability from different perspectives and contextual vulnerability studies often focus on differentiated vulnerability and why some social groups are more vulnerable than others (ibid). The gendered vulnerability analysis in this thesis will look at pre-existing conditions such as women's social roles and daily activities, and their inclusion in decision-making, access to support and access to community groups. When analyzing vulnerability one must account for local people's needs and aspirations (Ribot 2010). Thus, the thesis will also look at how women perceive their needs and aspirations, and whether they see them being matched.

Vulnerability analysis often looks at the exposure, sensitivity and adaptive capacity to climate change (Khadka et al. 2022; Ribot 2010.) Contextual vulnerability is more focused on multiple stressors and how different types of stressors, such as socio-economic climatic and cultural, create differential exposures, sensitivities and adaptive capacities (Naylor et al. 2020). Exposure relates to how a community or individual is vulnerable and to what they are vulnerable. Due to different exposures communities do not experience the same vulnerability to climate change and extreme events (Khadka et al. 2022). This will be analyzed through looking at the stressors highlighted and the impacts of and responses to stressors. The multi-exposure part will look at intersecting stressors. Sensitivity relates to why people are vulnerable to what they are exposed to, such as social structures (ibid). This will be analyzed through the contextual and gendered vulnerability, as explained above. Adaptive capacity refers to their ability to cope with and respond to the events they are exposed to (ibid). This will be analyzed through looking at women's role in the situation of multi-exposure to stressors, as well as related to the gendered dimensions mentioned before.

To add to the contextual and gendered vulnerability, an analytical approach of cumulative effect will be used drawing on the ideas of Penn et al. (2016). They have argued that new climate challenges will interact not only with one another but also with other social and cultural factors. They will accumulate over time, either additively or synergistically (ibid). This could bring holistic perspectives to vulnerability by analyzing the interconnectedness of stressors instead of studying them separately. It adds to the vulnerability concept by looking e.g. at synergistic effects, where stressors not only accumulate in an additive way but have complex interactions among environmental stressors and context-specific characteristics in economic or demographic terms, which then create complex outcomes (ibid). Through looking at accumulated effects one can focus not only on short-term impacts, but also long-term ones (ibid). The accumulated effect and impact fits well with the livelihood analysis presented above. There is a dynamic nature in the sense that if people are impacted or respond bad they lose assets and if they are impacted or respond good they improve their position. The analysis will look at impacts and experiences over a few women's life trajectories of multi-exposure, social structures and responses. Hence, vulnerability is in this thesis conceptualized as contextual, gendered and with a cumulative effect in terms of exposure, sensitivity and adaptive capacity of individuals.

3.2 Gender and intersectionality in feminist theory

Gender as a concept is not the same thing as sex (Blackstone 2003). While sex refers to biological characteristics between male and female, gender refers to the social meanings, values and characteristics ascribed to the different sexes (ibid). Gender is often viewed as a social construction (Hacking 2000; Blackstone 2003). This is seen by how individuals, groups and societies attribute different traits, statuses or values to individuals based on their sex. As previously discussed (see chapter 2.1.3), this creates gender roles. The social meanings attributed to people based on gender varies across societies or cultures and in societies over time (Blackstone 2003). It has been argued that gender lead to set-ups benefitting some members of a social group, even when the social group is not aware of it. Thus, one must unmask these set-ups and looking at gender as a social construction motivates visions in which women are subject to male dominance (Hacking 2000).

Both sex and gender have significant consequences for women as they navigate their lives. Gender is argued to be the reason for a gender gap in data due to the social meaning we ascribe to it and the failure to account for it (Criado Perez 2019:13). Feminist paradigms generally contribute to the analysis by highlighting that there is a socially structured and culturally reproduced patriarchal social order in society (Inglis & Thorpe 2019:223). Ortner (2005) argues that women often experience social restriction and have a secondary status in society. Still though, women's relative power, contribution and treatment vary from culture to culture and over time (ibid). Gender inequalities impact people's influence and limits opportunities for women (ibid).

As seen in the literature (section 2.1.3) vulnerability is differentiated and there is no one homogenous group of women. Shields (2008) has argued that there is no aspect of one's identity alone that can fully describe how one responds to the social environment or how others respond to oneself. Rather, there are several aspects of our identity influencing this and gender is one of them. Multiple different groups of women exist and they are divided by e.g. age, class, caste, ethnicity and sexual orientation. However, as with the concept of gender, although they are continually present the social meanings attached to them vary between cultures and over time (ibid). The idea that social structures interact to produce unique experiences to specific social groups is referred to as intersectionality (Weldon 2008). With an intersectionality perspective one acknowledges aspects of an identity in relation to one another on individual, interpersonal and structural level (Shields 2008). Hence, there can be differences between groups such as between men and women, but also differences within the groups such as different experiences of women of different ethnicity (Bond 2021). Intersectionality does not necessarily mean creation of marginalized groups though; it is part of the social structures in everyday lives by acknowledging e.g. how gender structures shape lives of women and men (Weldon 2008). People may be intersectionally marginalized, privileged or experiencing both (ibid). People may be privileged in one way and disadvantaged in another. As an example, one may be disadvantaged due to one's ethnicity but advantaged for being a man in a traditional gender structure. Hence, while one factor may put a person in a privileged position (e.g. ethnicity), other factors (e.g. gender, disability or sexual orientation) might put the same person in a position of marginalization (Bond 2021).

Weldon (2008) has argued that intersectionality contributes to feminist theory with an effort to understand social relations, especially where social structures jointly create social categories containing unique experiences. There may be impacts of events caused by only gender or ethnicity and it may also be impacts caused by the combination of the two factors (ibid). Shields (2008) has further argued that in some situations intersectionality may create a specific situation of marginalization and disadvantage, but gender may still be a significant explanatory constant.

For this case in rural Nepal, the most important factors to acknowledge besides gender will be age, caste, class, ethnicity, disability and marital status. By including other aspects of people's identity jointly with gender it is recognized that gender may not be the sole factor behind a finding and that women may have different experiences. Following the argument by Weldon (2008), some impacts may be intersectional while others may be solely gendered. Following on the argument by Shields (2008), gender could be a consistent factor though.

3.3 Phenomenological feminism

On a global level, women spend on average three to six hours per day on household chores compared to men's average of 30 minutes to two hours. This imbalance of household chores starts early and increases as they grow. Girls as young as five do significantly more household chores than their brothers (Criado Perez 2019:68). Young girls often learn the female role identity growing up while young boys are often with their mothers as children but then shift to the male role identity through identification with the father (Ortner 2005). The view of a child as female means she is brought up to expect and accept her role. With lack of data on women and their lives the world continues to naturalize gender discrimination, without properly seeing it (Criado Perez 2019:263). The feminist perspective on gender roles might tell that since gender roles are learned they can be unlearned, creating new and different roles (Bond 2021). With a feminist perspective, gender roles can also be viewed as more than only appropriate behavior for women and men as it may also be linked to different levels of power by men and women in society. Men might hold more power in society through e.g. maintaining economic control of their family (ibid).

Therefore, a feminist theory of relevance is the phenomenological feminism, which emphasizes people's practical activities (Inglis & Thorpe 2019:237). The authors argue that the individual's sense of reality is created through activities on micro-level and uses both a Marxist critique of capitalist power relations as well as a feminist orientation (ibid:240). Furthermore, feminism provides an understanding that men are able to occupy powerful positions in society because women attend to household chores. The work of women is systematically devalued. With phenomenological feminism one has the analytical focus of looking at the world from the perspective of women and an understanding that social theory must reorient itself to incorporate and be based on views of reality experienced by women (ibid:240). Ruling relations mean that activities of oppressed groups, e.g. women, are denied agency because the ruling relations organize social order in a way that everyday life is controlled by dominant institutions (ibid:241). Following on the arguments by Inglis and Thorpe (2019) this thesis intends to look at lived experiences of women and their emotions, feelings and perceptions of being a woman in a context of multiple stressors. It will also examine the gender roles, social structures and power relations in practical activities. One could perhaps also see if stressors disrupting the everyday life could disrupt the social order and ruling relations, providing an opportunity for increased agency of the oppressed group. Thus, this approach will bring the female perspective to the lived experience of multiple stressors.

4. Methodology

4.1 Research design

This thesis uses a qualitative research design and builds on a case study. Global debates are in need of embodied lived experiences of climate crises and stressors to humanize the debate around climate change (Sultana 2021). Since the case study is empirical and relies on collection of evidence about what is going on (Robson & McCartan 2016:150) it is a good means of highlighting such embodied lived experiences. Case studies can provide understanding of different factors producing and reducing vulnerability. They highlight particular dynamics and opportunities for vulnerability reduction in a place, but may also provide more general understandings (Ribot 2010). Case studies are often linked to contextual vulnerability and can provide a means of understanding how multiple stressors interact with drivers of vulnerability in a specific place (Shields 2008).

In line with the research aim to analyze accumulated effects the study has a life history approach. Life history research is a particular type of case study with the intention to tell the story of a person's life (Robson & McCartan 2016:165). As for this thesis, however, the life history approach has been adapted to life histories more focused around stressors within the past ten years. The life histories centers on women from a few selected households and examines how they have navigated around stressors, which responses they have undertaken and their perceptions on their situation as women. Personal stories has the potential to 'humanize' people in research (Eriksen 2022).

Eriksen (2022) has argued for a more compassionate approach in vulnerability research, as it may otherwise have differencing and othering tendencies. Methodologically this can be by locating oneself with the research participants. One should have data collection that allows personal encounters and recognize people's lived experiences of vulnerability rather than measuring it (ibid).

The choice to focus on Nepal was made due to its high relevance in debates regarding climate change and risk of natural disasters. Long et al. (2016) have argued that research looking at a specific community should be considerate of how community bounds may influence findings. There are almost always competing interests in small rural communities and may be competing interests and different perceptions within the community. This aligns with the differentiated vulnerability.

4.2 Data collection

This chapter presents the different types of data collection used. Having multiple methods of data collection allows for data triangulation. Triangulation is beneficial to counter threats towards validity, otherwise often used as criticism towards qualitative research (Robson & McCartan 2016:171). The different methods chosen relate to Participatory Rural Appraisal (PRA), with the aim of involving local people more in participatory activities (Chambers 1994). Therefore, data was collected during four weeks of fieldwork in Nepal in February 2023 out of which 2.5 weeks were spent in Charghare village and Khanidada village, ward number 5 Rampur, Ramechhap district.

4.2.1 Individual semi-structured interviews

As part of the life histories approach data was collected through in-person semi-structured interviews with women. Stories and case studies such as histories and coping with crisis relates greatly to PRA (Chambers 1994). By including emotions of suffering and coping one can explore lived experience of vulnerability, including needs, agency and relationships (Eriksen 2022). Doing interviews allows participants to provide historical information (Creswell & Creswell 2018:264). It is a flexible way of gathering data and holds potential to adapt questions, follow up on interesting responses and investigate motives (Robson & McCartan 2016:286). An interview guide was made to guide the conversation, however, order of questions was altered to follow the conversation flow. Unplanned questions were asked as follow-up on what was said and questions were re-phrased along the way to find wordings that worked for the context and structure of the Nepali language. Even though interviews are semi-structured it is common to include some more highly structured parts (ibid:291). This was done to get standard biographical and agricultural facts.

Respondents were mainly chosen through snowball sampling. At a first stage, individuals were identified as key informants (KIs). They indicated possible respondents and after interviews, respondents often suggested where to go for the next interview. Snowball sampling builds on respondents supporting in identifying other respondents (Robson & McCartan 281). The intent was to get diversity in household composition, in terms of out-migrated family members, underage children in the household or being a widow, as well as age and ethnicity of women. This was deemed beneficial to capture potential differences and generalizations among women with different life stories, and to see it from an intersectional view. In the field, a high rate of migrated women in their 20s and 30s was observed, especially in Charghare village. This made it difficult to find women of these ages to interview and presented a methodological challenge. If only talking to elderly women, there would have been a risk of missing potential changes and understandings over generations. Therefore, it was decided that purposive sampling was needed towards the end since it was deemed relevant to make more specific and focused choices of respondents to get a diversity in age. With purposive sampling one selects respondents based on what is considered of interest, through first carrying out an initial sampling and then extend the sample with guidance from emerging themes and theories (ibid:281). Thus, purposive sampling was also used to get more variation between Newar and Tamang people. This was based on information on household distribution in the villages, obtained from KIs and drawing of a participatory resource map.

This resulted in 18 individual female-focused interviews. Seven in Charghare and eleven in Khanidada. Since the villages are geographically nearby and very similar in aspects such as natural resources, livelihoods and demographics they are jointly analyzed rather than compared. A comparison would not be feasible or have research relevance due to the similarities. Interview times varied between approximately 40 minutes and 1 hour and 20 minutes in time and were largely carried out outside of participants' homes. In a few cases it was done outside a neighbor's house or near a small shop. The intent was to carry out interviews in a natural setting, to counter the possible limitation of information provided in a designated place (Creswell & Creswell 2018:264).

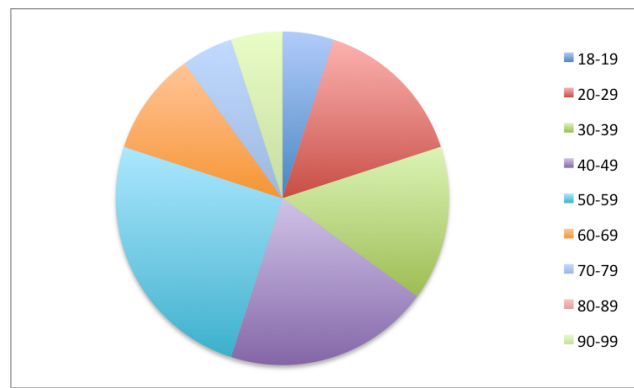


Figure 1. Age division of final number of individual respondents

4.2.2 Field observations and field conversations

Since a limitation with interviews is that it may provide indirect information filtered through the views of respondents (Creswell & Creswell 2018:264), it was combined with observation. Generally, through living in the villages during data collection and spend time walking around in the villages to familiarize with the setting. By doing interviews near respondents' homes it was possible to observe their houses and nearby agricultural lands. Field notes were continuously taken regarding setting, activities carried out, and perceived emotions. One should work with personal impressions as a resource to understand what was observed (Eriksen 2022). Observation can set data obtained in interviews in perspective. It can validate statements provided by respondents in interviews (Robson & McCartan 2016:321). Data from observation can sometimes contrast with or complement data derived from other methods due to its directness. There might be a discrepancy between what people say that they do and what they actually do (ibid:320). Thus, observation supported to confirm what people said regarding environmental stressors, living conditions, village developments, and landscape use. However, one should be aware of possible effect on the situation by the observer being there (ibid:320). Social aspects may have been more difficult to get. Gender roles were still apparent through observation of respondents' interaction with family members or villagers. Dynamics were observed to change when other people joined the interview setting, with women becoming more quite and men answering more which could show gender power relations.

In addition to general observation, two specified field observations with inclusion of loosely semi-structured conversations were carried out. One in Charghare conducted in the agricultural field and one in Khanidada conducted as a forest walk. The forest walk can be described as a transect walk. Transect walk is a PRA method in which the researcher walks with local people through an area and observes, listens and identifies different land uses or resource access (Chambers 1994).

The field observations and conversations consisted of around one-two hours in time. Due to their time limits, they were done with women who were not respondents in interviews and thus, the total number of respondents in individual data collection is 20. Field notes were taken regarding activities and observations of behavior. Photographs were taken to capture and remember details. Questions were open-ended and general. This can allow participants to freely provide their views (Creswell & Creswell 2018:263). It allowed them to show in practice how they carry out their daily activities and why. Another potential benefit is the first-hand experience with participants, although one risks being seen as intrusive (ibid:264). In this case, respondents were the ones extending

invitations to join in their daily activities. It provided opportunities to further understand the daily life of women in the villages, the challenges they meet and the ‘real life’ context in rural Nepal.



Figure 2 (left). A woman collecting and carrying stones in her agricultural land (photo by thesis author 2023).
 Figure 3 (right). A woman collecting and carrying fodder in the forest (photo by thesis author 2023).

4.2.3 Overview of respondents in interviews and field observations

Table 1. Overview of the respondents in individual data collection

	Charghare (8 respondents)	Khanidada (12 respondents)
Age	18-95	23-75
Ethnicity	Indigenous (6 Newar, 2 Tamang)	Indigenous (9 Newar, 2 Tamang)
Marriage	1 unmarried, 1 widow, 6 married (1 whose husband has left) At age 12-21	1 widow, rest married (2 whose husbands have left) At age 11-21
Marriage type	Child marriage, forced marriage, arranged marriage, love marriage	Child marriage, arranged marriage, love marriage
Education	2 grade 12, 1 grade 3, rest no education	1 grade 12, 1 grade 10, 1 grade 4, 1 grade 1 and 3 adult education, rest no education
Livelihood	1 studying, 1 shop owner, all agriculture and all household activities	1 shop owner, 1 sell liquor, all agriculture and all household activities

Children	1 with underage at home, 5 out-moved	6 with underage at home, 6 out-moved
Husband	5 out-migrated	6 out-migrated

4.2.4 Key informant interviews

For a further understanding of the village contexts and developments Key Informant Interviews (KIIs) were carried out as initial data collection when starting the fieldwork in the respective village. As previously mentioned, they also supported the sampling process. Using KIIs can be done as part of PRA methods by enquiring who are local ‘experts’ and seeking them out (Chambers 1994). Therefore, two KIIs were done, one in Charghare and one in Khanidada. People with a social position and presumed knowledge of the villages were chosen as KIIs. The KII in Charghare was done as a group interview with two KIIs while the one in Khanidada was done with one KI but included a later follow-up after new information appeared in other participatory methods. The KIIs focused on general climate issues and impacts of the earthquake and the COVID-19 pandemic on the villages, as well as main livelihoods and women’s position.

4.2.5 Participatory resource map

After Charghare there was some confusion regarding village boundaries and access to infrastructure and resources. It was deemed beneficial with an additional method to gain further insights on this in Khanidada. Hence, to complement the understanding of the village context in terms of number of households, ethnicities and access to infrastructure and natural resources a participatory resource map was drawn for Khanidada. Participatory mapping is another PRA method in which local people make a map of e.g. demographics, natural resources such as agricultural lands, forests and water resources, and services such as health and education (Chambers 1994). A ward member working with women and children’s rights provided initial information. The resource map was later created jointly with the ward head of ward 5 Rampur and a few other villagers who joined the process. It provided knowledge on village developments. It was also beneficial to gain a better perspective on data obtained in interviews as it allowed for better understanding of where different land types, water sources, infrastructure and wildlife etc. is found within or near the village.

4.2.6 Focus group discussion

A Focus Group Discussion (FGD) was carried out in Khanidada with local women. FGD is a group interview with focus on a specific topic and is an open-ended discussion (Robson & McCartan 2016:300). In total 11 women of different ages participated and estimated discussion time was around 30 minutes. It took place in relation to an agricultural group meeting for women revolved around microcredit loans. Thus, it also had participation of a field assistant from Charghare who facilitated the group meeting and had gathered the attending women. The FGD was done after the initial meeting and with the same women who had participated there.

Due to their limited time and a few individuals taking over the discussion it was relatively short. This shows how group dynamics play a major part in data collection. A few individuals dominating is a common problem with FGDs and group dynamics can affect who speaks and what they say

(Robson & McCartan 2016:299). One should not take lack of dissenting voices as consensus, since it may just as well reflect an unwillingness to express dissent (ibid:302). Not all people may be as articulate and perceptive (Creswell & Creswell 2018:264). This was seen by one person saying “*No one is speaking except me*” and another responding “*I don't know what to say*”. Therefore, the FGD has primarily been used to complement other data on context, village life and community groups.

4.3 Data analysis

During fieldwork notes were taken in interviews. Reflective notes were taken after each interview relating to the setting, observations of power relations with family members or others and potential power relations between researcher and respondent. After the first village visit data was briefly analyzed to see possible themes emerging. The approach was to organize data in themes and work inductively, back and forth between themes and database to identify a comprehensive set of themes. Then deductively use themes and look at data and see whether more evidence can support it or whether additional information is needed (Creswell & Creswell 2018:257pp).

While still in Nepal, an initial summarizing of findings was done based on field notes, with the aim of identifying overarching themes. After overarching themes were found a more thorough coding was done with interview transcripts from recordings of each interview. The summarizing and coding of transcripts was done with sensitizing concepts and an additional excel file for quick overview of standard facts of respondents. In addition to analytical concepts, which include specific attributes, one can include sensitizing concepts that are more of a ground for interpretation (Bowen 2006). Sensitizing concepts used included e.g. gender roles, support system and power relations. This approach was beneficial for the flexibility of the study and the qualitative research. In a situation with multiple stressors and semi-structured interviews it was good to use concepts to facilitate interpretation and sorting of the rather large amount of data. This due to the fact that using sensitizing concepts can provide the researcher with an idea of how observed phenomenon fits within the conceptual categories (ibid).

For a selection of the individual interviews timelines were drawn as a way to further compile life histories, analyze data and understand correlations over time. Due to time constraints of respondents it was considered non-beneficial to create the timelines jointly with respondents. Generally, events flowed naturally in conversations and estimations of timeframes were always asked for. Therefore, timelines were instead drawn after interviews and based on respondents' narratives. By using PRA methods major remembered events in the villages were combined with chronologies of events, accounts of the past and changes recounted by respondents (Chambers 1994). Having a selection of timelines to look at during data analysis facilitated an understanding of the intersection of stressors within a household over time as well as vulnerabilities faced by women throughout their life cycles. It supported analysis of accumulated effect of stressors and vulnerability.

4.4 Ethical concerns

One ethical concern is respondents' integrity and to ensure anonymity and confidentiality for them when presenting findings (Robson & McCartan 2016:219). Therefore, the thesis uses no names or direct descriptions of individuals that can make them easily identifiable. For this reason, social positions of KIs are not revealed. Furthermore, respondents have been asked for informed consent, including for making audio recordings and taking photos. At the start of each in-person data collection they were informed about research purpose and how information will be shared. They were also informed of their ability to withdraw from participation.

Due to language limitations an interpreter has been used in all in-person data collection. This poses another ethical concern. The interpreter has been acknowledged, chosen with care and consulted throughout the process regarding interview questions, sampling process and interview settings. As an outsider, a researcher may not have sufficient understanding of local politics, attitudes and decision-making to be able to respond effectively to participants' concerns (Long et al. 2016). Thus, a local interpreter familiar with the context can support in bridging relations as well as provide inputs regarding local attitudes and traditions.

With awareness of potential heaviness of some interview questions, the questions were intended to be open-ended so respondents could choose what and how much to share. Sensitive matters were not asked about in detail and if they chose to share it was on their terms how much they wanted to tell. Attention was kept to whether they seemed uncomfortable in which case it would be asked if they wanted to stop the interview or take a break. Generally, spontaneous feedback from respondents after interviews was positive. Comments included that the questions made her happy because she got to reflect back on her life or that she had liked getting questions related specifically to women. Lastly, as Robson and McCartan (2016:208) state ethics is not an endpoint but rather a process, meaning that ethical concerns were continuously reviewed throughout the research process.

4.5 Reflexivity and limitations

Creswell & Creswell (2018:260) suggests taking notes where one reflects on own experiences and possible effect on interpretation. Therefore, this was the practice during the fieldwork. Taking notes was good for continuously reflecting on whether I might have interpreted something that was not there or exaggerated findings due to seeing things I expected to see. After interviews I discussed and reflected back together with my interpreter to see if we interpreted things similarly, considering our different backgrounds. According to Eriksen (2022) it is also important to reflect on the emotional competence when doing vulnerability research with compassion since compassionate encounters are emotionally demanding and may entail listening to traumatic experiences in interviews. Reflective de-briefing sessions with my interpreter were helpful to maintain a compassionate approach towards respondents while actively keep listening to stories of hardship. Before, during and after data collection it was good for me to consider how factors such as my background, past experiences and culture could affect how I interpreted things. My gender, upbringing in an urban city and socio-economic situation are relevant aspects here. I analyzed gender in a rural setting in a, for me, new context. I have no previous connection to the

communities I visited. I tried to be vary of potential power relations relating to me as outside researcher and community members as research participants, and the fact that cultural differences between community members and me as researcher could lead to misunderstandings (Long et al. 2016). The presence of a researcher may also bias responses (Creswell & Creswell 2018:264).

Hence, the interpreter's role was important to bridge these potential challenges and build rapport with villagers. The interpreter was a woman from the same district of Nepal. This could make respondents feel more comfortable talking to two women and avoid possible gender power relations between us. It could also mean that respondents felt more at ease with someone who has similar local knowledge and background as them. However, a potential risk is that things are filtered through the lens of the interpreter who may find things obvious that are not obvious to a foreigner. In relation to this, it is interesting to reflect on how people I interviewed might view me. As a foreigner I drew attention from the villagers who might have had certain expectations of me.

When communicating through an interpreter the researcher is distanced from the original meaning as intended by the respondent. Cultural differences adds another level of complexity to interpretation of findings (Shimpuku & Norr 2012). With translation it is common with language changes. Interpreters may translate not only the literal meaning of the word but also how it relates conceptually to the context. The context may be the place where it is spoken or the expression used. Hence, the study risks losing the conceptual equivalence in Nepali or words of respondents may have been altered (Squires 2009). Conceptually important things may be lost in translation or there might be insufficient words or phrases to directly translate. With concepts or phrases translated differently there is a risk that themes emerging in analysis have changed and does not fully reflect what was said (ibid). Although questions are open-ended when asked in English, they may be more steered when translated. This could be due to the Nepali language making questions more detailed than initially intended. This may influence study findings (Shimpuku & Norr 2012).

Another limitation is the amount of time in the field and the time of the year when fieldwork took place, both limited to fit the scope of this thesis. It was a rather short time to familiarize with the context and build confidence with the local people. While the study intends to incorporate a phenomenological approach, it may lack ethnographic depth. The time of the year might also affect what people recall for their daily lives, as activities are seasonally determined. It may be that something is a major stressor during parts of the year, but not in people's mind during the rest of the year when it has no direct impact on them. It may also be that people think more on aspects affecting what they currently do or have historically been doing at this time of the year.

Lastly, data collection focused on women in the villages, not those who have migrated due to stressors. However, since the thesis focuses on multi-exposure in rural communities this was deemed sufficient. Migration is not a main focus, but noted as response and livelihood strategy.

5. Context of study

5.1 Nepal

Nepal has a low contribution to global greenhouse emissions (Subedi et al. 2018), but is exposed to climate stressors and given high rates of poverty, dependence on farm-based production and limited infrastructure this is likely to bring significant challenges. As a result of climate change Nepal experiences increased temperature, frequent drought, floods and landslides, shortened monsoon season, drier winter months, decrease in total annual rainfall and in relation to these events, effects on biodiversity (Joshi & Dongol 2018; Poudel & Duex 2017). In the past, rainfall was more generally spread out from May through to September. Now it increasingly occurs in June, July and August (Poudel & Duex 2017). Erratic and irregular monsoons and changed rainfall pattern is becoming more and more noticeable (ibid). This includes a decline in water resources, increase in natural hazards and shrinkage of glaciers. Water scarcity has affected agriculture, livestock and public and ecological health (ibid).

Although the country has vast water resources many rural villages are facing serious water shortage. In rural areas settlements are often located on mountaintops and slopes and agricultural terraces on hillsides (ibid). The primary livelihood, and major economic activity in the rural parts of the country, is agriculture (Subedi et al. 2018; Poudel & Duex 2017). Agriculture is primarily rainfed, making weather and climate having a big impact on agricultural productivity (Subedi et al. 2018). This means that agriculture is negatively affected by the frequent droughts and thus, rural poverty is exacerbated. Livelihoods and crop production is being affected by change in temperature and erratic rainfall (ibid). Unlike neighboring India, there is no public food distribution system in Nepal to support those whose livelihood is impacted (Gupta et al. 2021).

Nightingale (2011) argue that Nepalese women place pride in their ability to carry large amounts of firewood, compost and fodder, and that this strength is closely tied to their identity as women. It has also been argued that suffering is another part of Nepali women's identity and seen as a part of what it means to be a woman due to e.g. the pain of childbirth (Leve 2007). Nightingale (2011) further found that women who did not use their education for migration often were in a similar position of disempowerment and that caste discrimination is produced by those in a position of power, but also upheld through internalized systems of hierarchy between people. Cultural views of women in Nepal are defined by social differences, resources and practices between ethnic groups (ibid). Gender often intersects with age and caste. Caste is often referred to in hierarchical terms of 'high' and 'low'. People are born into it. Caste distinctions revolve around e.g. what people eat and which occupations they have (ibid). There are 125 ethnic groups in Nepal, often delimited by their place in the caste system since everyday practices connect ethnic groups with caste. The ones relevant for the study site are Tamang and Newar (Government of Nepal 2023).

Hence, social inequality exists, spatial inequalities remain, Nepal's geography presents challenges, and natural hazards are significant threats (Rigg et al. 2016). One example of a natural hazard is the major earthquake in 2015, known locally as the Ghorka earthquake. It killed over 9000

people in Nepal (Poudel & Duex 2017). Additionally, it caused over 5000 springs to dry up (ibid). Many regions are still recovering from the earthquake as of today (Gupta et al. 2021). Henceforth, when the earthquake is referenced it always refers to Ghoroka in 2015.

From 1996 to 2006 Nepal suffered from civil war (ibid). After that, a protracted political transition followed. In 2015 Nepal presented a new constitution that included a federal governance structure. Power is decentralized in districts into wards, the smallest unit of local governance in the country. There is some state support available, but the social safety net is limited (ibid).

Recently, COVID-19 has been a devastating crisis for the country; they were poorly prepared and had limited responsive capacity. Nepal had almost a million confirmed cases and nearly 12000 deaths as of May 2022 (Pandey et al. 2022). The first confirmed case was in the end of January 2020. In the second half of March 2020 the government imposed a four month long nationwide lockdown (ibid).

5.2 Mid-Hills region: Ramechhap district

Ramechhap district is located in the Mid-Hills region (Joshi & Dongol 2018). Located east of Kathmandu, it is a remote district with less developed infrastructure in terms of e.g. roads and health services (Gupta et al. 2021). The main component of Ramechhap's rural economy is subsistence farming and cash cropping economy is less developed (ibid). An important source of income is livestock and in areas prone to risk of e.g. drought farmers take livestock as alternative source of income. Many have shifted from large to small animals and many prefer goats since they are more drought tolerant (Subedi et al. 2018). Other strategies to cope with climate events include change of crop pattern and planting crops early (ibid). Farmers in the district are exposed to several risks to agriculture. These include climate, pests or market-related risks (Gupta et al. 2021). New diseases and pests are emerging due to climate change, increasing damage on crops. Pest and diseases have mainly affected winter crops and it has been found that farmers primarily use traditional practices of pest control (Subedi et al. 2018). Furthermore, natural hazards impact communities in form of e.g. landslides on agricultural lands (Poudel & Duex 2017).

Production diversification in Ramechhap is largely constrained by significant water shortage (Gupta et al. 2021). In 2012, approximately 7% of the district had irrigation facilities (Subedi et al. 2018). Of the 13 million people estimated to live in hill and mountain areas in Nepal, in 2017 approximately 80% relied on springs as primary water source (Poudel & Duex 2017). Across the region there has been drinking water projects and yet, many communities experience increased challenges in meeting daily water needs due to e.g. land use changes and water sources drying up (ibid). Water sources have also been affected by natural disasters. There have been reports from Mid-Hill watersheds showing around 15-30% of springs having dried up over the past 10 years as of 2017 (ibid). These factors cause less drinking water available and less water available for livestock and irrigation, affecting crop production. It also impacts households' ability to maintain general cleanliness (ibid).

Ramechhap is highly drought prone and many villages in the district face high vulnerability to drought. In 2010 Ramechhap was declared a drought district and it is the second most vulnerable district to climate change impacts in Nepal (Subedi et al. 2018). Annual rainfall in Ramechhap is

below the national average (ibid). Climate change has affected crops such as maize and rice paddy over the past 10 years (Joshi & Dongol 2018). There are primarily two agricultural land types. Irrigated cropland or paddy field usually on flat land, called Khet, and rainfed cropland in slopes, called Bari (Marquardt et al. 2020). Both are used for food crops and fodder. Subedi et al. (2018) found that 18% of paddy land converted to Bari land and many people had insufficient land and food production. Farmers are unable to plant crops in time resulting in crop failure and poor harvest (Poudel & Duex 2017). People face more uncertainty and difficulties in agriculture with insufficient livelihood sources, due to e.g. seeds drying. This creates increased seasonal migration (Joshi & Dongol 2018). A substantial proportion of households in Ramechhap have at least one family member who have migrated for labor work and is working with primarily unskilled labor either in Kathmandu or abroad (Gupta et al. 2021). Production logic often depends on farm labor and remains essentially a subsistence one and many households receiving remittances continue to depend on agricultural production (Marquardt et al. 2020). Households often survive due to remittances and off-farm income, but have not prospered off it. Labor migration overseas and remittances have reduced land pressure and allowed forests to recover. However, it has led to retreat of cultivation margins, shifts in land use and giving up land (ibid).

Migration has potential to increase household income and reduce risk to agriculture resulting from extreme weather conditions. It impacts women in terms of managing household activities as well as agricultural activities. It has been argued that in houses where husbands migrate women face problems managing families and farms, including e.g. water access and crop selection (Joshi & Dongol 2018). Increased required time for water fetching, fodder and fuel wood collection and crop production increases women's workload (Poudel & Duex 2017). Furthermore, women are more impacted by drought than men. They spend a long time fetching water and face problems during harvesting when there is no male family member in the house (Joshi & Dongol 2018).

5.2.1 Khanidada and Charghare

Khanidada and Charghare are two villages located in ward 5, Rampur, in Ramechhap district. Estimations during KIIs account for 25 households in Charghare, with a total of 125-130 people, and 100 households in Khanidada, with a total of 800-900 people.

Main developments were electricity access and water lifts (installed with support from the Nepalese Red Cross Society), which has greatly reduced the amount of time needed to fetch water since they previously had to go far to the rivers for water. There is a fixed amount but households pay extra for additional use. Estimations of when they received access to electricity or water lift system varied. Some said they had it since before the earthquake, while others stated the water lift construction had started after the earthquake and they had only had access to it for the last 3-4 years or even less. Another main development was the road construction. While time of construction and access to it differed, most viewed the road as positive development having led to the access to vehicles and bus facilities. However, two respondents shared that while the road construction was now positive, short-term implications had been negative to them. They had lost land to the road construction and not received any compensation. As the road was not paved, many respondents mentioned that as a hope for the future of the village due to the dust coming from the road.

Khanidada has an active women’s group started by women in the village and with some support from e.g. the Nepalese Red Cross Society in the early phase. It was started in 2014, one year before the earthquake. There had been a previous one, which was not active. It was informed by a respondent that a previous women’s group had been dissolved during the civil war. The women’s group is run as a micro-credit loans group, where women deposit money and take loans with interest. It has 48 members with no new women having joined after its start. Invested money is returned when leaving. Meetings last around one-two hours and loans are provided every three or six months on rotational basis. The women decide jointly who has the greatest need for money and is less able to take loan from another source. Amount is individually needs based. Within the next six months the loan has to be repaid.

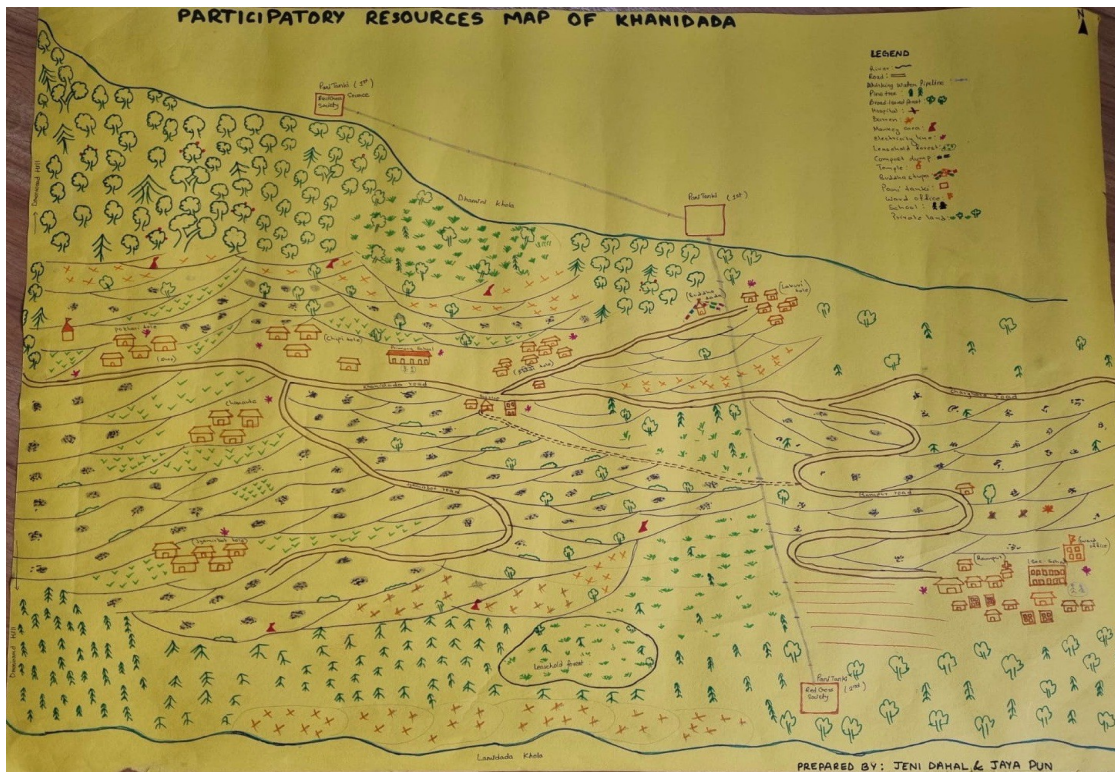


Figure 4. The participatory resource map of Khanidada, with Rampur village down right (redrawn by Jeni Dahal and Jaya Pun 2023).

As seen in Figure 4, Khanidada is located on a hill with houses spread out over the area. There are nearby forests and different agricultural lands. There are also two main rivers nearby. A main road connects to the village and continues to the city of Rampur. The context of Charghare is similar. The dimensions of daily life and livelihoods in the villages will be further described in the following discussion on contextual vulnerability.

6. Results

As stated in the conceptual framework, this chapter will present findings analyzed through aspects of vulnerability. It will start by looking at the contextual vulnerability and livelihoods, to then focus on stressors and interactions. Following on that, it will analyze the gender aspect of it and women's role. Lastly, it will analyze the cumulative affect by looking at individual life histories.

6.1 Everyday lives and contextual vulnerability

The main household livelihood of respondents was agriculture. One received pension from the government, two owned small shops and one sold liquor. Out-migration is common, both seasonal and permanent. Many depended on remittances from male family members who had migrated seasonally to Kathmandu or abroad, i.e. to Saudi Arabia, Malaysia or Japan. In Khanidada it is told that men who live abroad usually return back after two, three or five years. The culture in rural Nepal means girls move to husband and in-laws' house after marriage, hence they live with in-laws while husbands are migrated. With high rate of out-migrated men women take larger responsibility for agricultural tasks and remain working in the village. When the men are in the village they either work in farming or with labor work. Agriculture was mainly subsistence farming, but some sell crops and many sell animals. Thus, livelihood options are limited and mainly on-farm in the villages, with little off-farm employment locally. Dependence on natural resources and remittances means it is vulnerable to both environmental stressors and shocks disrupting migration patterns.

A majority had a diversified and seasonal agriculture with different crops and vegetables at different times of the year. However, no one had rice paddies anymore despite that previously having been a staple crop and rice still being a major source of food intake. This means they increasingly have to buy food rather than rely on their subsistence farming, increasing their need for income, which increases the insecurity of their livelihood with a seasonal migration. Nowadays, most common staple crops were maize, millet and lentils with maize being sown in April and harvested in July – August and lentils sown after that and then harvested by November. Then it is time for vegetables like onion, potatoes, garlic, turmeric or coriander. Following this seasonal schedule, the agricultural seeding and harvesting goes on throughout the year. This pattern is shown to have relevance in the impact of major shocks. Many stated limited or no harm to their livelihood of the earthquake due to no crops planted at that time of the year (April). It was stated by quite many respondents that they faced problems in agriculture due to insects appearing during the dry season and destroying mainly maize cultivation in April. Some also said they destroyed lentils. These insects were referred to as Salaha insects. Pests like these means that people are consistently worrying about their agriculture. Some also experienced animal diseases, another frequent worry. Thus, some stressors are consistent every year following the seasons. There is insecurity in the agriculture, which means the context of their livelihood is vulnerable.

All respondents owned animals, although numbers and types varied. Most common was goats and hens, followed by cows and buffalo. Some also owned ox. One owned pigs for income

generating purpose. Similarly, goats were mainly raised for the purpose of income by selling them. The road construction changed the market access and to a large extent it is now the buyer coming to the village for buying goods. This has thus increased financial and market access. Hens were also common to sell, but also to keep for eating. Cows and buffalo were kept for dairy products and sustain the household needs, and also for dung as manure for their fields. Those who owned ox had them for plowing their fields. The access to resources in terms of animals differs a bit though, with more people in Khanidada claiming to own ox for plowing the fields than people in Charghare. In Khanidada it was told that *“All villagers have ox in their house so we only use ours ourselves”* (Woman 13 Khanidada). All respondents owned land, often located around their house (Bari) and further away from the village (Keth). Some had only Bari. Many had to leave irrigated Keth land barren and rely on rainfed Bari. It was shared that the Khet is often barren due to no water in the stream but the Bari will grow if rainfall occurs. These agricultural characteristics with low resource access and dependence on natural resources mean they are in a position of harm to climate change. This context further contributes to rendering people vulnerable in the face of stress.

Almost all stated similar activities when asked about a typical day in their life. They did household chores, e.g. cooking and cleaning, and activities connected to agriculture, e.g. cutting grass, grazing animals and working in the field. These tasks were seen as women’s responsibility more than men’s. These activities are time consuming and often mean women are both spending a lot of time at home and having to walk far to fetch water and collect fodder. The women also indicated a feeling of time poverty when doing unpaid household chores as well as agricultural activities. A feeling of constantly having more work to do.

“I wake up early in the morning, cook food for animals, collect dung of animals and take them out of shed for sun, sweep the floor, clean the kitchen, feed the grains to hens. Such work never make us free in our life, we have to do these always.” (Woman 11 Khanidada)

Hence, women often spend their days at home, in the cultivation land or in the forest. Those with young children often mentioned caring for them as well. A few mentioned watching TV, listening to the radio or browsing Internet during their typical day. Due to the season during which fieldwork was conducted, February, many stated that they carry manure to the fields.

In terms of infrastructure and development the villages have similar contexts. Both villages have small shops. For market people usually go to Ramechhap city. Regarding access to education, both villages now have elementary schools. Charghare has a secondary school too. The nearest secondary school from Khanidada is in Rampur village (see figure 4), approximately 30 minutes to 1 hour away by foot. In Charghare there were around 900-1000 students in the school 8 years ago, now there are only around 250. This could reflect the increased out-migration from the village and urbanization. In terms of health services, Charghare has a small medical hall, which Khanidada has not. For both villages the closest health post is in Rampur village. For severe cases people go to the Ramechhap district hospital, which takes around one hour with bus, or to Kathmandu in even more severe cases. The road is not paved, and not all houses connect to the road. Hence, conditions of people’s daily lives in the villages are simple. Pre-existing inequalities of caste and wealth, intersecting with gender, will greatly influence vulnerability. Social factors that could (re)produce inequalities and vulnerabilities include poverty, limited development and infrastructure and general

marginalization of rural people. As an example, the mother-in-law of a respondent (age 84) shared how 6 out of her 11 children had passed away, according to her due to no available hospital services in the past. This exemplifies a contextual vulnerability experienced by people living in these rural villages. Although there has been development and increased infrastructure over the past years in the villages it is limited and many struggle to get by. It is a remote place and for many purposes, i.e. market, school or hospital, people have to go out of the villages. Those most marginalized may not be able to go by bus and have to walk. For example, one respondent with a leg injury told how the road is not connected to their house and they cannot take the bus so her husband carries her in a maize basket on his back from their house located on a slope to the hospital. The living conditions in the villages thus place people in a vulnerable position already before stressors occur.

Additionally, it is a very drought prone area. This was observed during fieldwork and lands were barren. In general, respondents reported a decrease in crop production and yield. As an elderly respondent said: *“Before 10 years ago there was a huge amount of production of crops”* (Woman 1 Charghare). Many stated that their subsistence farming was not enough to feed them for the entire year, e.g. one respondent said that *“If we do hard work for 12 months, the production of crops will only be sufficient for 6 months and for remaining months we earn to eat”* (Woman 10 Khanidada). Another said it is only enough for 3 months. What this means in their daily lives is that they constantly have to worry about food and production. Irrigation was described as a major challenge to this, with most depending on rainfall for their agriculture. Access to the water lift varied greatly among respondents with some saying they can use it 1h/day and others saying only one or three days per week etc. Thus, the water they receive from the tap is often very limited. For water uses such as washing most fetch water from nearby rivers. Tap water from the lift system works on electricity and it is common that electricity goes out, during e.g. load shedding problems or technical issues. In these cases they walk to the river to fetch water. One respondent said that vegetables are possible in one village area but not another due to difference in tap water access. Hence, water access and crop production is marginal, and although electricity and water lift is seen as a major relief and development it is also an infrastructure at risk of harm even without stressors.

Thus, living conditions with pre-existing inequalities and rural marginalization, limited development and limited livelihood options all contribute to place people in a vulnerable position. It also impacts their abilities to cope with stressors, as their alternative livelihood options are few. The daily activities, village context and agricultural characteristics illustrate the contextual vulnerability.

6.2 Multi-exposure to stressors

6.2.1 Reported stressors

Exposure to stressors relates to how communities or individuals are vulnerable and to what they are vulnerable. People in both villages describe experiencing a diversity of stressors, with the most common environmental ones seen in Table 2 below. While some stressors are viewed as big shocks, others are seen more as everyday stressors people continuously face.

Table 2. Overview of environmental stressors

Commonly reported environmental stressors with high impact					
Drought	Water scarcity	Low rainfall	Wildlife	Landslides	Insects

In Khanidada no one mentioned issues with forest fires neither in the past nor now. In contrast, in Charghare almost all respondents brought up forest fires as a high impact stressor during dry season, since people rely on the forests for fodder and firewood. They related the forest fires to drought. It was also told that when villagers burn in their cultivation land it sometimes spreads to the forest. During observation in Charghare it was informed how people burn corn residue in their land as a means of fertilizer. KI said that there had been forest degradation since the earthquake. It was told that forest fires had increased and that with drought they face forest fires once a year. A major forest fire occurred the previous year. Although elderly respondents said that forest fires had been an issue in the past too, they stated that it had increased. This indicates that location, and possibly also cultivation methods, means that exposure to forest fires differ between the villages. Biophysical factors could mean that the earthquake and the drought impacted the forests higher in Charghare, while Khanidada was less exposed.

It was shared that the villages are not in a flood area and there are no such stressors occurring. Due to steep slope land in the mid-hills water go down without infiltration when it rains as there is no place for it to stay, making the area dry. Even with three days of rain all moisture will be absorbed from the soil with sun for one whole day. Soil moisture has reduced after the earthquake. Impact of season means that water is scare in dry season and high in rainy season. Landslides mainly happen during rainy season when heavy rainfalls occur. Dry landslides were said to have occurred in the past but not anymore. At the time of the fieldwork it was dry and thus, no landslides at the time. Some said their land is not in landslide area, others that it is. One said that since the land is in slope they ‘cannot do anything about landslides’. Instead grass will grow in that land after a year and then they cut grass there. This again shows how biophysical factors of the surrounding environment impacts people’s exposure to different types of environmental stressors.

Wildlife was brought up in almost all interviews as a constant stressor. During dry season wildlife like porcupine and deer destroy crops. During rainy season monkeys destroy crops. Generally, wildlife mentioned was primarily monkey, deer and porcupine. Other wildlife mentioned was wild hen, rabbits, fox and leopard. Deer and porcupine often come at night and destroy maize seedlings while monkey come during daytime and destroy the maize crop. It was thought that wildlife enter land due to forest near the house, or alternatively monkeys not entering land due to it being by the road. Thus, there are spatial differences within the villages affecting perceived occurrence of climate issues and wildlife.

To summarize, people are vulnerable to several environmental stressors, wildlife and insects. These are more long-term stressors compared to the earthquake and the pandemic that were major shocks. The seasons in Nepal increase exposure to some stressors and decreases exposure to others.

6.2.2 Interaction between stressors

The environmental stressors, such as drought and water scarcity, are increasing and in turn increase the appearance of insects and wildlife. When the earthquake occurred it exacerbated most of these

stressors already occurring. Then the pandemic hit and again, on-going stressors were exacerbated. Impacts of both these major shocks were experienced as higher due to the interaction with the other stressors, compared to if they would have happened in isolation. This means that respondents were constantly facing stress in regards to their agriculture and daily lives.

The stressors interacted in several ways. This interaction had impacts on the surrounding environment. Almost all mentioned less rainfall now compared to in the past and that the problem of low rainfall had increased during the past 10 years. It was said that there had been no rain since August-October and usually they had rainfall this time of the year (February). They felt it was less rainfall this year compared to the previous, indicating a negative trend. Several said that water scarcity has increased, despite now having the lift system. This due to water from the lift being limited and only enough for drinking water, the rainfall being lower and thus, a lack of irrigation.

As a direct result of the earthquake many mentioned that water sources had dried up and/or water tanks had been destroyed. It was also often mentioned that low rainfall and water scarcity leads to drought. This drought in turn was connected to the increase of insects in the past 2-3 years.

Almost all respondents mentioned how their daily lives changed due to the pandemic and they followed pre-cautions such as staying at home, avoiding contact with others and increasing personal hygiene. For many this led to increased water use.

The impacts on the surrounding environment show the biophysical aspects of the contextual vulnerability. The dependence on the water tank and the damage of it from the earthquake indicates that there is a fragility of infrastructure which exposes people to stressors. Furthermore, less water available due to climate change and the earthquake but more needed with the pandemic clearly shows how the interaction of stressors can exacerbate one another. The dependence on natural resources mean that when such resources are affected by a stressor, people face increased exposure to future stressors if the resources are already scarce or unable to recover at fast pace.

One can also see that there is differentiated vulnerability in the same community. Some stressors may lead to a small positive for some people due to interaction with another stressors, while for others it causes further vulnerability. This was shown in the fact that some reported that after the earthquake, and in their view as a result of it, they now faced a greater risk of and a higher frequency of landslides. In contrast, there were some who reported that they had previously had difficulties with landslides but in the past 10 years it had decreased, often stated as having decreased after the earthquake. The decrease of landslides was also connected to the low rainfall.

The interaction of stressors also had many impacts on people's livelihoods. It was stated by many respondents that increased drought over the past few years severely affects their farming with lack of irrigation and crops not growing. *"Even this year rainfall is not occurring, which is late for maize plantation"* (Woman 16 Khanidada). The appearance of insects further causes issues. One respondent said: *"When we plant something in the land that will die due to drought and also if it will rain in rainy season the insects will destroy our crops so we have to spread insecticide over it"* (Woman 9 Khanidada). There is also the issue with wildlife destroying crops. Although there had long been wildlife issues it had increased over the past 10 years, with some specifying it as a major increase in the last few years and around the same time as the pandemic. The KI and a few respondents talked about out-migration and abandoned land as reasons behind it, others about less

forest produce. Thus, showing a difficulty with crop decrease due to the multi-exposure of drought on one hand and insects during dry season on the other, as well as wildlife during both seasons.

When the earthquake occurred it led to cracked land and for a few, this led to damages to their agricultural land. One respondent shared how they started planting maize instead of rice after the earthquake since it needs less water and they were no longer able to pull water from the river.

Crop decrease and their land and crops not being sufficient means that very few are sustained from their own farming. People who have previously relied on selling crops are now struggling to continue doing so. Some said they need workers for their agriculture to produce crops, but now cannot pay for it due to no crops to sell. This shows a negative trend with less production due to no means of hiring workers, which in turn is a cause of the less production generating less income.

All reported less access to shop/market during the pandemic, with shops in Khanidada only open two times per day for an hour. A respondent owning a small shop said that there had been no selling of goods in her shop during the pandemic, or after the earthquake. Otherwise, a major consequence was that buyers would no longer come to the village during lockdown and restrictions, which meant that people who relied on selling goods were not able to do so. There was reportedly no selling of animals or crops, resulting in income loss. Similarly, cost of production as well as prices went up during the pandemic. Another significant consequence was income loss for men who worked in construction, but more commonly so who migrated seasonally to Kathmandu or abroad. Many with male family members who had migrated abroad shared how they had either been stuck abroad due to lockdown and travel restrictions, or had returned to the village due to income loss. Those who had returned had primarily worked alongside the women in agriculture or in a few occasions done labor work. This income loss strained household's already strained resource access.

The impacts on livelihoods show that people have had to change crops, mainly from rice to lentils and maize due to water scarcity. Now the less water demanding varieties of crops are giving fewer yields as well. Even maize or lentil will not grow if there is no rain. *"At present there is no rain from the sky, the lentils did not grow due to no water a month ago"* (Woman 14 Khanidada). The impacts also show that there is an increased exposure to new stressors when past or existing ones have caused contextual vulnerability in the form of low crop production, low irrigation and high market dependency. One can again see how exposure is differentiated depending on where one lives in the community, which crops one grows and which livelihood diversification strategies are accessible for people.

The interaction of stressors further had impacts on people's well-being. Many feared that there will not be enough food for them the way their livelihood is constructed now, if the drought and low rainfall continue, since the crops they rely on will not grow and many struggled to feed the family.

Several stated that due to the earthquake they had not received food in time or had lost stored crops. In a situation with low crop production, losing stored crops has a high impact and means they have no buffer for low yield. Not receiving food in time due to the earthquake puts yet another issue on top of the ones previously mentioned to strain crop production. Another high impact of the earthquake mentioned by almost all respondents was damage to their houses, only two said that their houses had not been damaged. However, they all said that there had been no physical harm to family members or villagers. Many reported having lived with a fear of a new earthquake, causing them emotional distress.

With the pandemic many had a fear of them or their children getting sick or dying, which again caused them emotional distress. A few told about how they would get the news on TV or on the radio and thereafter face a fear of someone getting sick with the virus. For some, it nearly led to depression. Some did in fact get sick and others had to care for ill family members. One respondent shared during a field observation that she was not able to fully use her hands to collect fodder as before as a result of having been sick and spending time hospitalized. Others had post-COVID symptoms. For a few, the pandemic led to passing of family members, which led to apparent emotional distress for the respondents. One elderly respondent told about having lost her son and daughter-in-law, and another about having lost a female relative whom she could not visit in the hospital nor appropriately care for after her death. The KI in Charghare informed that four people had died in the village due to COVID-19, all four living in the same part of the village. This fear of getting sick and the passing of people led to recounts of isolation or even stigmatization. A few told how they were scared to go to parts of the village due to people living there having COVID-19 or having passed away from it. One respondent told about how they had received no help when her father fell ill of COVID-19 due to the ward telling everyone to stay away from the family.

The impacts on well-being show how interaction of stressors causes emotional distress for people. They also indicate that the increased exposure, the contextual vulnerability and limited assets mean people lack resources to rebuild destroyed assets. Furthermore, it indicates that major shocks may cause stigmatization, while the contextual vulnerability means that there is a reliance on kinship. This causes further marginalization and vulnerability.

To summarize, the interaction of stressors and the impacts they have on people due to their contextual vulnerability mean that they are highly exposed to stressors. It also means that they live in a state of constant stress. With the diversity of stressors, people have to use several different responsive measures, as seen below in Table 3. These too are impacted by the contextual vulnerability and pre-existing inequalities. Therefore, the responsive measures are non-technical, often time-consuming and may include having to take measures that have negative consequences long-term, such as taking loans with high interest, leaving land barren and changing food intake.

Table 3. Responses by individuals and households

Earthquake	Rebuild house Hire worker	Borrow money	Walk far to fetch water
Pandemic	Borrow money Go to shop only for emergencies Keep surroundings clean	Children helped in house Family members came to help Avoid dusty environments	Change food habits Eat what they had in house Decreasing food intake Buy food from shop
Climate	Walk far to fetch water Change of crops Buy food from shop Help others and receive help in return	Out-migration Plant crops and see what happens Work at other's land Monetary support from	Leave land barren (Khet) No solution for less rainfall/drought Sell animals Hire worker for field

	Decrease food intake Borrow money Borrow water Carry water with her to forest	sons Remittances from abroad Tree plantation Reuse water	Use ox instead of worker in field Store water in buckets Build wall for landslides
Wildlife/insects	Kill insects by hand or stick Buy insecticide	Guard for wildlife Trap for porcupine	Stones, sticks and noise No solution for wildlife

With limited state support, people have mainly relied on their own capacities or their kin and community members to respond. They have received some external support though for the major stressors, as presented below in Table 4.

Table 4. Support from government or organizations, provided to at least one household

Earthquake	3 lakh from government to rebuild house Tent from ward Food	Non Food Items (NFIs) Toilet from Red Cross Money from organization No external support
Pandemic	Face mask and sanitizer Vaccine Food	NFIs No external support
Climate	No support	
Insects/Wildlife	Insecticide from Ward Insecticide from another organization	No external support

It was frequently told of not having received any external support from the government or organizations. For wildlife and climate all said no support and for the pandemic around half said no support. Support appeared to be viewed in monetary terms though and material provided may have not been considered. There is a lack of transparency on state support and experiences differ greatly. Nepalese Red Cross Society has been the main organization supporting. Insecticide provided was stated by all who had received it not to be enough, meaning they also had to buy themselves. Money from the state to rebuild houses was considered insufficient and short-term, increasing other types of vulnerability: “*was not enough, we had to add 3 lakh 50 thousand for completion. We took a loan*” (Woman 16 Khanidada).

6.3 Gendered vulnerability in multi-exposure to stressors

6.3.1 Gender roles, women's agency and power relations

Women's particular vulnerability to multi-exposure of stressors was found in underlying patriarchal social structures in society and gender roles. The patriarchal social structure generally restricts women and means that men are head of households. One notable thing is that it is often gender in relation to other factors that increases women's experience of vulnerability. Several of those aged between 70-95 continuously highlighted how they were facing difficulties due to being 'elderly women'. Others highlighted how they face difficulties as 'disabled women'. The respondents whose husbands had left them very often came back to being 'alone women' when talking about difficulties they face.

Elderly respondents told stories of forced marriage as children while younger ones, ages 18-23, said it was by own choice and 'love marriages'. It was told that in Charghare many women marry before 18, often running away for it, while no men marry before 18. A respondent in Khanidada, talking about her children, said: "*Should I talk about the daughter too, who ran away with a boy?*" (Woman 16 Khanidada). This indicates a continued trend of child or early marriage for women in rural Nepal. Reasons for continued marriage at young age could potentially be if social and cultural structures means it is seen as unacceptable for girls to be in a relationship before marriage or if girls get pregnant and feel they need to marry. One respondent was unmarried (age 20). The rest married between ages 11 and 21. Many had their first child young, often around 18-21, one as young as 15. This could contribute to maintain gender roles, restrict women's agency and limit girls' livelihood options as they enter early in marriage, pregnancy and household chores at in-laws house. It could reinforce their vulnerability.

After marriage, a majority shared they faced difficulties moving to their husband's house and having to adapt to life there, living with strangers and taking on household chores. "*It hurt to go to someone else's house because I was too young to work. I felt pain thinking about how to cut grass, how to bring water and how to work in someone's house*" (Woman 20 Khanidada, married at 11). Social structures mean that women were expected to take a heavy workload of household chores when moving to their husband's and in-laws house. "*But after marriage the whole situation changed. I had to come to someone else's house. I was scolded by father-in-law and mother-in-law for not doing work all the time*" (Woman 14 Khanidada, married at 20). This societal tradition appear to often emotionally impact women negatively and as simply stated by one respondent: "*Is it fine to leave our parents and move to another house? No*" (Woman 4 Charghare, married at 16). Some shared how their husbands left them and moved away with other women. They no longer lived with their in-laws. They were married, but it impacted their livelihoods and response to stressors as they often faced it alone.

Some women said they are happier now or always happy. Others are not happy in life due to being alone or facing a heavy workload of household chores. However, many women had their happiest moments in life during their childhood when they lived at their parents' house due to having had clothes and food or more freedom. After that, when having children and as their children grow up. "*After having a child I stopped feeling pain like before*" (Woman 16 Khanidada) and "*It's very sad when we don't have baby but after having we are happy*" (Woman 19 Khanidada)

were examples of notions told by several. One also added that *“First I gave birth to a son so everyone was happy and praised me”* (Woman 20 Khanidada), which indicates a son preference at least in the past. Social structures mean sons often support their parents financially and are the ones who live with their parents, while women traditionally move to their husband’s house after marriage. Respondents often talked about jobs of sons but mainly mentioned daughters as married. One can assume that these are factors impacting a potential son preference.

A high out-migration of men in the villages was also found. In Charghare it is told that every house has a male member out-migrated, either husbands or sons. One respondent got emotional telling that her sons have moved to Kathmandu but since marriage do not send money or come to visit, leaving her and her husband living on the margin and facing stressors alone. Another elderly respondent shared that *“one elder son doesn't return back from abroad”* (Woman 1 Charghare) since many years and she never knew what happened to him, causing emotional distress. Out-migration can thus also turn into a stressor. With men out of house women are left to face the problems. It was found that women also migrate to an increased extent. Now around 15-20 women in Charghare had migrated as well. It was shared by villagers that many women in their 20s-30s were migrated. Often husbands went first and later on when they were more established in the new setting the wives and children joined. Out-migration can then also diversify livelihood and relieve pressure through increased income, including for women. The same respondent shared how she felt it was easier for young people today compared to the past since *“we used to go so far for collecting grass, fodder and we had to work in agricultural land the whole day, but now people are living comfortable lives (in cities)”*. Another said that her family’s life had improved over the past few years since her children were now out-moved, lived in the city and supported the family financially.

All respondents started doing household chores at a young age. Women generally felt more concerned about what to eat, while feeling that men were more concerned about earning money. Very few reported equal share of responsibilities at home. One said it is equal and her husband ‘does not think she should have to work more’. This points to restriction of women’s agency and maintenance of gender roles over time despite village development and livelihood diversification with on- and off-farm work. Similarly, many had no or less access to education, which they felt impacted their lives greatly. Many said their brothers had attended school while they remained at home. This was, however, noted as having changed in the present and those with underage children all sent their children to school regardless of gender, indicating a social change. During the KII in Khanidada it was informed of a basic education previously available for all interested adult women. Only a few respondents had participated. Those who had not gone to school at all or only for a limited time all shared that they started doing agricultural activities at a young age.

There were also observed power relations, both between genders but also between different groups in society or educated and uneducated. This indicates a social structure where some societal groups, often related to class, caste or ethnicity, are in more powerful positions. As previously stated, contextual power relations is an important part of what differentiates vulnerability and can reinforce vulnerability as well as affect experiences of impacts. Quite often men contributed to interviews with when facilities were added or who provided support. Mainly men engage in what was referred to as ‘social activities’, generally participation in community groups. Men were said to roam around while women stay at home. During the pandemic many worried about self-isolation and

men still going outside. Additionally, some respondents first said it is easy for women to participate in community groups, only to later follow it up by explaining that *“Those who participate and understand have done well, but those who do not read like me only come and listen. Those women who have read have also reached the higher post”* (Woman 8 Charghare). This indicates that education is viewed as a means of improving one’s social status and opportunities. The FGD had participants saying that *“There is different role and right of educated women in village and we uneducated only know to cut grass and perform household activities”* and *“We just cut grass and sit and also collect animal’s dungs”*.

The most common meetings women attended were in groups specifically targeting women. Some respondents were members of the women’s group or a mother’s group in Khanidada. In a KII it was told that the women’s group means women *“can do small expenses ourselves, not depending upon others or men”* and that *“we are organizing this women’s group to show society that uneducated women can also do some social work to become independent.”* This seems to suggest that savings is seen as having potential to decrease inequities and strengthen women’s agency. During the FGD it was found that some were part of an agricultural group, which had micro-credit loans sometimes focusing specifically on women. Participants shared that reasons for joining where: *“To see if we will get help when we need it. We have to deposit a small amount because this deposition will help us in the future and if we start from today to deposit it will be more in the future, which help solve our problem at that time”* and *“I am depositing here in hopes of getting 200 from deposition of 100 and like that, if money will increase that will be helpful in our future”*. Indicating saving groups as seen as a potential means of resilience and plan for the future. After the earthquake the women’s group activities, including loans, were stopped for around three months though and after that money for all three months was collected. After the pandemic activities were stopped for two months and again money was collected for two months when activities resumed. Showing a direct effect of stressors on resilience building.

A few respondents were not part of any type of community group whatsoever. They typically said they had no time to go, no money to deposit or no possibility due to living alone with small children. The respondents who were members of women’s or mother’s group said they generally go to meetings. In contrast though, there were some women who said they had previously been members but now left the groups. Reasons for leaving were stated by women as not having money to deposit or not being able to attend meetings. If one did not go to a meeting, the person was met with a fine. It was informed that around six have left the women’s group within the last year, due to lack of finances. One respondent said that the reason she had only been member for a year before leaving was because her mother-in-law had forced her to leave the group. This exemplifies power relations sometimes visible in households, between mother-in-law and daughter-in-law.

It was repeated by several respondents that women now had equal access to and possibilities of participation and say in community groups. Some said that in the past, 5-10 years ago, women had been discriminated against and men had not wanted to let them attend or speak in community group meetings. They said that at present this was changed though. However, when asked who attended the meetings it was almost never the respondents themselves who attended but rather their husband or father-in-law. *“My father-in-law use to go. I just look after my baby at home so I don’t go anywhere and my father-in-law goes everywhere”* (Woman 18 Khanidada). It shows how women

may, as some say, have possibility to participate more, but due to gender roles it does not change much in practice and many women remain at home. Two respondents described it as equal in their household regarding who attended, with both saying they attended school meetings while their husbands or father-in-laws went to the rest. One also said that her husband had said she could attend school meetings. With several women now arguing that it is equal, phrases such as the following could make one wonder: *“Now the society has changed. They are teaching that there is no discrimination between men and women”* (KII Khanidada). It is not clear if there has been much change in practice. However, what this statement could imply is that there is increasing recognition in society that things should be equitable.

6.3.2 Women’s role in situation of multi-exposure to stressors

A majority felt that they are more impacted by stressors than men in general and that they are more worried than men. This is since they have to look after children, fields and animals, i.e. do heavy workload of household and agricultural activities, especially when their husbands are migrated.

“I have to do all the work in the village, my husband work abroad so I am more impacted here because my husband is not at home and he doesn’t have to do all agricultural and household activities here.” (Woman 9 Khanidada)

What this statement shows is that women stay near the house during the day while men migrate for work or search for labor work. Therefore, many felt that women should face most household issues. *“People are saying men and women are equal, but yeah women are suffering more about household issues”* (KI Khanidada). This indicates a difference between what is said and what is actually occurring in the daily practices, despite recognition that things should be equitable. A husband present at an interview also said: *“She is more impacted than me. Because she is the one who looks after the agricultural land and stays at home”* (Husband of Woman 7 Charghare). Women generally feel that they have to do hard work and they feel a burden:

“I have been more impacted because men move out from the home and I live in the house and do hard work to produce crops. So if we don’t get the amount according to the hard work we have done, at that time it feels bad for us.” (Woman 19 Khanidada)

What this shows is also how women feel more worried putting in hard work without proper yield. When crops are destroyed they worry about what to feed the family. *“What will we feed the family after insects and monkeys eat the crops? The woman is more worried at that time. Maybe men are also worried but women are more worried”* (Woman 16 Khanidada). Feeling more concerned about feeding the family they worry more when crops do not grow, wildlife eat crops, there is not enough food and they have to go buy food if crops are destroyed. Part of why women feel a burden could be because they feel responsible for choice and management of crop plantation. *“I use to worry about how I could manage the seed for next year if it doesn’t grow this year. We women have to save the seed of crops for next year but men don’t care about that”* (Woman 14 Khanidada). Thus it may also be that while women are more concerned about food in the future, they are also more preoccupied with the multiple stressors occurring concurrently since they likely experience them all firsthand while men might work in other areas. *“Talking about all risks, women are more affected.*

Like when there is a problem women think about how to solve it or how to do it. There are not enough things to deal with it. In this way we use to be worried“ (KI Khanidada). This could further imply that women feel they do not have the capacity to respond to burdens placed on them.

Very few reported the lack of difference in stressor impact. Those who did said that everyone was impacted. As one said: *“The damage of house is not only a risk for me, it is for all, so there was no different risk to me compared to my husband”* (Woman 14 Khanidada). A few said things like: *“impact was equal for both men and women from the earthquake”* (Woman 19 Khanidada) at first, only to then tell how they were more impacted living outside or having difficulties cooking food outside. As women, they are expected to feed the household and it was their responsibility to cook outside with winds and rain presenting an obstacle. Similarly, they faced difficulties providing food for workers or paying workers as women alone. When water tanks were destroyed or electricity was out they had to spend a lot of time fetching water from rivers, or in some cases searching for new water sources. This indicates that women view the direct impacts of the earthquake as more non- differentiated, while gender roles may then place them in different positions in consequences afterwards. For others, difference in impact was more apparent due to being pregnant or having small children with them at the time:

“I was affected more because I was pregnant and it was difficult for me to cook good and healthy food outside of the house. Also I didn't get good care in my pregnancy time which was difficult for me.” (...) “I suffered a lot because I was pregnant and I gave birth to my baby inside the tent after earthquake which was so difficult for me.” (Woman 10 Khanidada)

This indicates that pregnant women did not receive any specific support after the major shocks, showing potential gender blindness in the response. Other respondents who had been pregnant during any of the major shocks also told of no specific support. Similarly, several echoed a sentiment of fear of not being able to run due to pregnancy or caring small babies:

“At the time I was pregnant and my baby was too small (...) so living alone outside was scary most of the time. We also didn't get food on time due to fear of earthquake, and I was unable to run at the time. I was pregnant and my body was heavy to run around, so I felt at the time I was more impacted than men.” (Woman 19 Khanidada)

Even without pregnancy and small children, women could face bigger problems to save themselves in case of a major climate event, such as an earthquake. This since they generally spend more time in the house and less time out in the village. In the FGD one participant said that: *“We have to do a lot of household work so it is difficult for us to move out quickly from the house compared to men.”*

Women feel that they are more concerned about the children and family health than men are. One described feeling depressed after the earthquake due to her son being in Kathmandu and she felt afraid. Some were unable to meet relatives during the pandemic and children who had previously come to visit frequently were unable to. One shared the emotional distress for her not being able to visit her elderly parents during this time. Many also stated they felt concerned about and feared for the health of their male relatives, i.e. husbands or sons, working in Kathmandu or abroad at the start of the pandemic. With the earthquake many felt it was unsafe to sleep outside in a tent without her husband there:

“I feel like I was impacted because we had to live outside of the house and it was difficult for us. We have another agricultural land in the next part of the village so most of the days he (husband) lives there because only living here is not working for our agriculture. He left us and lived near to the other agricultural land so I had to live alone with my small children in the house. I was worried because my children were small at the time and I had to live alone outside of the house during the time of the earthquake. (...) At the time we didn't even have one good tent and some strange noise used to make us afraid at night.” (Woman 4 Charghare)

What this statement shows is that the consequence of living outside was gendered, especially since women are the main caretakers of children in the households, as per their gender roles. Those whose husbands lived with them outside generally reported feeling safer since they had their husbands, alternatively grown up sons, with them. One young girl said she felt safe when with her family, but also added that: “*Earthquake was gone, there was fear that some attacks will come from somewhere at nights. (...) At such time, thieves tend to rob the houses and girls are more affected at this time because people use to look at them with bad eyes*” (Woman 18 Khanidada). This further strengthens the argument of consequences as gendered and with adverse impacts on women.

For widows or those whose husbands had left they all felt impacts would have been different with their husband still with them. One said that the support she would have needed during the shocks was her husband and son with her, both passed away by then. Others that they would not have needed to hire a worker and someone else would have earned an income. It was felt that this would be different as a man living alone. Few women engaged in other types of income-earning activities, aside from agriculture. An issue when subsistence farming is not enough to sustain them. As said by an elderly respondent: “*I used to weave clothes and earn some money, with that money I bought some food from the market*” (Woman 1 Charghare). Hence, another source of income could make women more independent and might be why they felt it would be different as a man. They have to enter the traditionally male role of income-earner. That could depend on context and power relations allowing them to do so. The same respondent said her husband was a traditional healer and “*used to move around the village sometimes and lived in the house without doing anything*”.

Another respondent said about the water lift construction that: “*People used to say to me that I worked like a man because I used to carry sand more than men while making the water tank*” (Woman 15 Khanidada). This can be an example of women's work not being measured equally as men's since they otherwise often do work that could be seen as more 'invisible'. It indicates that women's work is systematically devalued. Phrasing it as 'work like a man' when carrying out physically heavy work indicates that women's work is not regarded as similarly physically heavy. The same respondent also said “*when I told my problem last year about less water coming to my house, one old man told me to not use the tap water. (...) I have calculated that I had worked 90 days for making the water tank with no son and husband with me. (...) I had done a lot of hard work but they didn't respect my hard work*”. Thus, perhaps showing a feeling of not being valued. These statements could also relate to gendering of tasks and doing something typically not within one's gender role. Respondents and their husbands sometimes talked in terms of 'helping' the other with their household or agricultural tasks, showing a clear gendering of tasks. This was seen in both field observations, with a husband helping to collect fodder (typically the wife's task) and a wife helping to remove stones from the agricultural field (typically her husband's task).

Generally, people did not know if there was a gender difference in access to external support. As with participation in community groups though, one possible explanation could be that men tend to

be the ones asking for support if they carry the role of income earners and are probably the ones interacting with government officials. *“I haven’t faced that because while taking support like money during earthquake time my father-in-law went there to ask for money”* (Woman 9 Khanidada). Some said that there is no support for anyone or that the ward does not discriminate, others that they had to go several times to receive the support for rebuilding their house or received it long after the house was completed. Some got no support due to not being able to attend, generally an issue for women alone with children. These support issues could show general marginalization of rural populations, a factor that can (re)produce vulnerability.

On a similar note, a few said that there was discrimination between groups in society referred to by respondents as ‘high and low people’. One woman stated that *“I feel like they acted like they listened to the rich people but not poor like us”* (Woman 5 Charghare) while another said that *“they discriminate among people because a little more was given to the wealthy people and a little less was given to lower people”* (Woman 4 Charghare). It was told how some people had received money from the government due to the earthquake even when they were perceived not to have any house damages. One respondent said that: *“Those who speak could get everything, those who do not speak have nothing and they cannot even speak. Some people took a lot of clothes and blanket and tent from ward office but I didn’t get anything”* (Woman 15 Khanidada). The line about not being able to speak could mean several things. It could be that they do not have possibility to physically go there to speak to those handing out support. It could also be that due to e.g. gender, caste or educational level people feel less entitled to speak out. Again indicating marginalization and unequal power relations. A few others said that there is discrimination between men and women, and that men talk loud and do not listen to women. One shared that her mother went for help but received none:

“At the time of the earthquake father was in Kathmandu so the ward didn’t listen to our mother for help. I thought that the ward would have been a little more interested or listened if our father was here.” (Woman 5 Charghare)

However, as with community group participation and education, some said there had been a difference in access to support over the past few years. *“In the past they used to discriminate us. In the past if we asked them for loan they didn’t believe us and they didn’t give us being women but now this has changed and I think both men and women are equal now”* (Woman 10 Khanidada). What this could tell is that woman depended even more on male family members in the past to respond to stressors, since money is vital in many response measures. It could be that they are slowly gaining more possibility in household bargaining or facing greater prospects to alternative money as female headed households due to being able to access loans as women. As argued by Bond (2021), men’s role means they hold power through economic means and thus, women’s increased access to their own money could support increased power and agency for them.

Potentially, men and women could have different views on what should be prioritized as response strategy. One woman shared how she believes that to mitigate climate issues they should plant a tree in open place, clean water sources and plant a green plant by the water source *“because it helps to protect the water sources which is important for us and we don’t have to walk far and buy water. Our time will be saved if the water sources are near to our house”* (Woman 19

Khanidada). Since fetching water is often gendered and a women's task and, as shown, can become time-consuming in time of stressors one can imagine that this could be something of higher concern for women. The same respondent was one of few to say that response measures were equally divided and decided by her and her husband though, however, she said that *"it's the same because if he planned to go outside he first suggests me to do things and I do according to that"*. What this indicates is that while they indeed implement the same response strategies for the whole household, her husband may be the one who takes a bigger part in deciding what those strategies should be. Their roles in the process differ and her role is more related to carrying it out. When discussing women's role in responding to stressors in the FGD one participant said *"we women should be together and work, like this group which develops the participation of women in social activities. That is the role of women."* Hence, one could see this as an example of women supporting each other to jointly increase their agency and influence in decision-making. This could potentially disrupt gender roles, especially with more and more men migrating with women remaining behind. As Bond (2021) argued, since gender roles are learned they can also be unlearned and new roles can be created. Perhaps then, with women organizing themselves and potentially taking more influence in community groups, participation aspects of their gender roles could be altered in the future.

6.4 Life trajectories, multi-exposure and accumulative vulnerability

In order to further understand lived experiences of the accumulation of vulnerability on individuals and long-term impacts, life histories of four women of different age will be looked at in more detail.

Woman 2 (63 years old, Newar, living in Charghare):

While her brothers went to school she did household activities and cut grass for animals. Her childhood was her happiest time in life, since she had food and good clothes. She got married around age 18 and said in her own words: "I got married at a young age and I used to think the life of a girl is difficult." She then moved to her husband's house. Within five-six years her husband met another woman and left her. She is still married, but states that her husband did not care about her after that and he is no longer living in the village. She never had children. With no children and no longer living with her in-laws she has no family to support her. It left her feeling that she will have to do all the work alone for eating and living until no longer physically able. Talking about major shocks she says that: "The earthquake caused a lot of damage." The direct impact was that her house got destroyed and she received money to rebuild. She also received support to rebuild her toilet. However, she recounts having faced many problems building her house as a woman living alone, such as not having enough money to pay for workers. The destruction of her house was not all the impact she felt though as she continues telling: "After the earthquake, there was drought and no rain." Her agriculture was damaged with less crop production and the forest was impacted with less forest produce. Nowadays, she spends her days digging the field and planting crops. Due to drought, nothing will grow and land remains barren due to a lack of water: "It is more frequent after the earthquake. After the earthquake the water source also dried up and remaining fields

remain barren.” Due to decreased rainfall and drought increasing daily she has to take loans from others to buy food from the shop. She also sells some goats.

The dry season often sees forest fires and wild animals like porcupine and deer destroying planted vegetables, while the rainy season sees monkeys eating the maize. A major stressor for her livelihood, she feels it has increased over the past years. She now has to watch the whole day for wildlife, hoping for someone to come up with a plan to control it. If not, she fears farming will be even tougher: “If this increases like this there will be higher impact in the future which will make our daily livelihood more difficult.” Already now, she buys food as her own production is not sufficient and when the pandemic struck prices became very high. For her cattle she still had to leave the house to go to the forest, until she got sick and had to stay in bed for some days. A situation extra precarious when you are a woman with no family to support you: “There is no one to take care of me, there is no one who earns and gives five rupees to me when I am sick.” First eating what she had at home, she later had to buy food again when her stock went out. And for this, she needed another loan: “I took a loan from others instead of going to die of hunger.”

During the pandemic she received no support and another of the difficulties she feels is need of money for medical check-ups when sick and not having anyone in the household with income to support her. However, she does not know if there is any support available and she won't ask anything of others. Now she fears the future will be even more difficult: “I cannot earn so I worry for how I could live in the future because I won't do hard work in my old age, and from now there is no production in the field due to the impact of drought.” Migrating is not something she sees as a choice, saying that: “Where to go? There is no other place to be happy.” Instead she will sustain herself for as long as she can and if needed will ask villagers for help with food when older. Since she witness young people and families leave the village and move to the city, she thinks Charghare will be empty in the future. Only a few young people have stayed and she feels the trend to migrate has increased. With drought and no production in agricultural lands people face difficulties eating for a full year and thus, migrate to earn income for food. As for her situation, she says the situation is hard for her now and it is difficult to do all the hard work, as she is getting old. Being a woman living alone has impacted her life and left her spending her life alone. Now with a different feeling from she was as a child: “There is no happiness anymore in my life.”

This story shows how vulnerability can be accumulated over time not only due to stressors but also due to responses, in this case, mainly in terms of loans and workload. She has both had to face a heavier workload in her agriculture by e.g. having to watch for wildlife and she is facing increased debt. Hence, it appears to produce a negative and unsustainable dependency, as it is short-term focused. It follows the social pattern creating differentiated vulnerability in the first place, such as gender, age or ethnicity. Social roles and cultural norms in the context stressors occur affect the vulnerability to them. As an elderly woman living alone she is in a state of vulnerability already and the multiple stressors and her available response strategies exacerbate it. Perhaps this is an example of human factors reinforcing unequal power distribution interacting with physical and ecological systems to drive vulnerability (Ribot 2010). This was exemplified in a story of another household as well who had taken a loan to build a new house just one year before the earthquake and then, had to take a new one to rebuild the house. They are now still paying of the loan with a high interest. They were not the only ones who had to take loans with high interest as response, this was a common

response. This story also shows an increased market dependency due to the multiple stressors. People can no longer sustain themselves and have to rely more and more on the market for food, placing them at risk when shocks, i.e. the pandemic, interrupting the market occurs. She also expressed that she will most likely have to rely on her neighbors and other villagers when she is older and can no longer carry out the agricultural work. This indicates a reliance on kin and community in a context with little social protection. It shows how compounded vulnerability is found among the most marginalized with the least socio-political power in society (Eriksen et al. 2021).

Lastly, it is a story of suffering. Many used similar phrases e.g.: *“Our pain is with us”* (Woman in FGD Khanidada) and *“We suffered what we had to suffer”* (Woman 1 Charghare). Similarly, it shows a common feeling among elderly of not seeing much hope for the village in the future. As said by one: *“What should I hope? All the young villagers have started leaving the village and there won't be people in the village in the future maybe”* (Woman 8 Charghare). It matches what Leve (2007) found, that Nepalese women's identity is closely linked to their suffering. Even among younger ones it appears to remain as one said that: *“Our dream is to give good education to our children and help them become independent even though we suffer”* (Woman 18 Khanidada). However, she also said *“We don't have to suffer as much as our parents”* when talking about village development. Perhaps this could indicate that although stressors are increasing and interacting more frequently, development such as education and infrastructure is slowly changing the view on what causes suffering. It could also indicate suffering as intersectional and tied not only to gender but also rurality. Feelings of suffering could demonstrate internalized disempowerment.

Woman 13 (35 years old, Newar, living in Khanidada):

She daily does household chores, cares for children, cuts grass and grazes animals 'from morning to evening'. She did not go to school since her parents passed away when she was a child. “I thought my life would be difficult and hard in the future because I didn't get a chance to study. After all, education is most important. I also lost my parents in my early years so, it will be difficult for a daughter not having her parents.” (...) *“I used to think I am unlucky and also that I will have to do a lot of hard work being a village girl.” She married young at the advice of others. Her husband is a farmer and moving to his house was difficult since she had to do all the work there herself. They now have two children who are studying. Having children made her happy since if you do not people talk badly about you, so it's better to have a child after marriage. However: “Even when giving birth to children I had to take care of all the household work myself, so it was difficult.”*

They have Bari land but the land is insufficient for them. Only little maize and lentils grow there and they also feed maize to their animals. Hence, they have to buy rice from the market to eat. They have one buffalo, two ox, four goats and two hens. When they have baby goats they sell some, otherwise they do not have enough to sell. When the earthquake occurred it damaged their house and they had to live in tents. Living outside she perceived risky as a woman. With small children with her she used to worry about a new earthquake. Heavy winds and rain damaged their tent and she was not able to cook food outside. “We didn't get a chance to eat on time.” They received support to rebuild the house but the money was not enough to cover expenses, as they needed much water that had to be fetched from the river so they had to pay people to help. They had to collect building materials too. They worked at other people's houses and received help in return. They also

took a loan. She feels the earthquake impacted her differently as a woman: “Because women have to do all the housework, but men forget every work of house when they go to work on their side. It was difficult for me to look after all the activities of home alone, like collecting water, helping the workers, looking after animals.” After the earthquake all water sources dried up. The stream where they used to collect water was already slowly drying up before the earthquake, but after it dried up completely. “Water is the most important thing in our life, without water nothing could be done.” Before the earthquake there was no landslide problem, but after they faced landslide from uphill caused by heavy rainfall, and they did not know where to move for safety. There was no road by their house at this time. The landslide destroyed crops and they left it without doing anything. Without enough money it was not possible to build a wall as protective measure. Villagers jointly decided to leave the area should the landslides continue to occur, but the landslides stopped on own accord, meaning they could continue to live in their house.

Life got easier when they got tap water in the house for drinking water, around one year ago, which is available for one hour in the morning. The price was lowered two months ago, which she thinks is due to the ward head from their village helping the people. Before they had to go fetch water. Due to the amount needed both her and her husband had to go, but the main responsibility was on her. When her husband goes to work in the afternoon she remains to carry out activities alone. She has to go to the river to wash clothes, but there is not sufficient water. They slowly stopped planting some crops before the earthquake, but with the water scarcity have now reduced it even more. Before they used to plant potatoes and onions in the field, but now they have not planted anything since September-November. “We have to go to the shop and we have to take a loan to use in our daily life for buying food.” Water scarcity, drought, no rainfall and landslides have been major stressors. Problems she feels were there in the past as well although she thinks they have increased. The drought is heavier now and they are still waiting for the rain to come this year.

When the pandemic hit the whole household expect one got sick. Her husband’s brothers came from Kathmandu to help. For 15 days they lived in separate rooms, used separate toilets, ate separately, washed dishes separately and filled water bottles separately. When returning home they washed their hands. These measures increased the need and usage of water. Aside from vaccine, they received no support. Being sick they could not go to the market, but the shopkeeper left goods for them halfway between the shop and their house. At the time they had no animals to sell. Her children did not go to school at that time due to lockdown. She felt the impact of the pandemic was different as a woman: “At that time I used to think of the household work which was difficult for me to do because I was suffering from body pain and fever. Maybe the men were also affected but I was more worried about household activities because I had to do it in normal days. I was also more worried about my children.” During all major shocks she felt that ‘no one care about us’. Despite stressors they are satisfied now since they are able to eat and live. What happens in the future they do not know and they have no strategy for it. If the drought continues they will eat what they can and after that will have to take a loan for buying food from market. She worries about how to feed her family when crops do not grow. At the same time, they are facing the issue of wildlife which has been a present stressor for a long time. They take turns guarding for wildlife. “There is no water on one hand, on the other hand the monkeys destroy all if we plant something, so what to do?”

She says she does not remember when she was last happy. “Because we have to do a lot of work all the time so how could we be happy?” Now she hopes for education and happiness for her children. She wishes for a house in a safe place on flat land and for better infrastructure. With paved road she believes landslides will not occur during rainy season and diseases will decrease with less dust. She believes they have to help each other develop the village and shares how the road was constructed to their house after they voted for the village leader to win the election and after winning he constructed it. Villagers make decisions together since: “People are much more powerful and likely to succeed when they work together towards a common purpose.” In her family though, her father-in-law or sometimes her husband attend meetings. She goes to school meetings because her husband ‘sends her there’. She was previously member of the women’s group but has now left due to lack of money to deposit. “After the earthquake the group was impacted. The work was not conducted for 3-4 months and after COVID-19 the same situation happened and I left the group because of my weak situation.”

This story shows how vulnerability is accumulated over time in terms of interaction of stressors. As argued by Naylor et al. (2020) it is a process over time where multiple stressors interact and increase, which affects how impacted people are and how well they can adapt to stressors. Water is scarce due to climate change, then sources dry up due to the earthquake and after that there is a pandemic requesting them to use more water than usual in their daily life. Hence, vulnerability is determined by continuous interaction of multiple stressors connecting with the structures around them (ibid). Structures in this context means little social protection and reliance on kin and community, as demonstrated by the household members working at other people’s houses to receive help in return after the earthquake as well as her husband’s brothers coming to support when they were sick with COVID-19. It also shows how response strategies can become stressors, such as savings through the women’s group that is meant as a means of resilience and mitigation but became a stress when major shocks impacted the work and led to larger sums of money having to be paid at a time when households were struggling with impacts of shocks. Pressing short-term needs triumph over long-term needs and savings for the future, showing how the multiple stressors affect the adaptive capacity. Furthermore, one can see how there is no proper resilience building or planning for the future because of the difficulties of planning ahead and building resilience when everyday life is a struggle. Consistently facing a stressor makes it difficult to mitigate or respond since one is continuously focused on getting through the present stressor. As said by one: *“We haven’t made any plan (...) because we can’t do anything. We will earn for eating by doing hard work (...) will depend on husband’s income”* (Woman 10 Khanidada). Another said *“there is nothing”* (Woman 7 Charghare) and her husband added: *“We cannot think of ways to do anything”*. This shows a feeling of no possible solutions available. With few assets it was common to see no solutions for e.g. low rainfall, drought or wildlife and hope for the best. It correlates with a view often stated that the future will be more difficult. As she says, water is everything to them, in line with the most vulnerable being those dependent on natural resources for their livelihoods (Khadka et al. 2022).

One can also see potential power relations due to other factors as she attributes both the road construction and lowered water price to the current ward head being from their village and that they have voted for him to win, after which he ‘has to help’. No other respondent mentioned lowered

water prices, which could strengthen views of different treatment regarding support. Through the multiple stressors and exposure over time one understands how differential vulnerability develops (Naylor et al. 2020). Throughout all stressors she has felt more impacted and felt a burden over responding to stressors while also doing household chores. Additionally, despite villagers making decisions 'jointly' she is not the one attending meetings. Male family members are. It is an example of how gendered vulnerability is socially constructed. It is also an illustration of how women being occupied with household work mean that men are able to occupy more powerful positions in society (Inglis & Thorpe 2019:240). This is the story of someone who did household activities as young and thought her future would be the same. Social structures in this context mean that women have less access to education than men and enter early into marriage and household work. Throughout her life she has had a belief that she will have to work hard in the future. Socio-political gender relations and contextual vulnerability seems to reinforce vulnerability as Eriksen et al. (2021) has argued it could. It has increased her burden and placed her in a position with less decision-making power over responses with possible long-term consequences. One could argue that leaving the women's group, supporting in stress responses and still carrying out household chores could increase her dependency on male relatives and reinforce the differentiated vulnerability.

Woman 17 (40 years old, Newar, living in Khanidada):

She did not go to school. She has Bari land and plants lentils, millets and maize. She has two-three goats and one buffalo. She helps her neighbors carry manure and they help her. She married at 17 years old in a marriage arranged by her family. She felt difficulties moving to a new household and only a few days into marriage her husband went to Kathmandu for work. Soon after the marriage her husband met a new woman. Now they only meet occasionally when he visits the village. She has three children, out of which one is still living with her. An older son is studying and a daughter is married. Having a child made her happy since if you do not villagers will talk badly about you.

She remembers the earthquake almost killed them and they had to live outside in their agricultural land in a tent. Neighbors, friends and relatives helped with her tent. Eating outside was difficult for her. Her husband was in Kathmandu with another woman and she was alone at the time. "There was no food, no money, and no husband with me, but after 10 or 15 days he came to visit us and asked for money and food. I didn't even have money and I had a small baby with me, so it was difficult to go anywhere with a small baby son to earn money." She further tells how some people received more food as support afterwards, but she did not. People who used to go at night got it but she went by day and did not. When asked if she believes her being a woman was different she replied: "Maybe that is true, because they discriminate us being women."

After the earthquake there was no water at home for some days and she had to go to the pond, otherwise it was okay. The water tank was damaged by the earthquake but after awhile people repaired it. Since the house was in her husband's name she did not get any support to rebuild it. She believes her husband got the money instead. "I am just living in the old house which is cracked from the outside." She has remade some cracked areas but for others she did not do anything. Nowadays, there is not enough water for watering the vegetables. Therefore, she borrows from a friend's tap to irrigate. Insects damage the crops and monkeys come into their field as well as their house. Insects have increased in the past years and they use insecticide and sometimes remove them

with a stick. Last year they received insecticide from the ward but this year she bought it herself. Wildlife has increased over the past 8-10 years and she has to run back to scare them away. "I am more impacted because my husband is not with me so I have to bear all losses. What to eat after the monkey eats all the crops that you have planted?"

With the pandemic they still had to go to the shop to buy food, despite fear. "I was worried because at that time there was no source of income, our goats were also not sold and my husband also didn't care for us." Her husband did not send any money to support. She is not in any women's group or other micro-credit loans group: "I have difficulties to feed and educate my children. How could I stay in such groups?" She also feels there is a difference in access to support between men and women, stating that: "If it was a man, he would get his help even by fighting. But we women only go there, stand there and return back without taking anything."

This story shows a direct gender impact on multi-exposure to stressors because it is the story of someone who is in a worse position to face stressors due to being a woman alone. As simply put by another respondent: *"When there is no men in your house to earn some money, you have to feel weak"* (Woman 15 Khanidada). With men having the role of income earners, that is another role women have to take and add to their own with no man in the house. Nagoda & Nightingale (2017) argued that people's vulnerability and access to assets is shaped by social inequity and marginalization and that women are among the most vulnerable to stressors due to lack of assets and representation in decision-making processes. This is exemplified here by a lack of assets such as owning her house and a lack of decision-making both related to her husband, as well as in situations of support. There may also be elite capture of resources and reinforced power relations (Eriksen et al. 2021). The story of this woman illustrated how women, in contrast to men, do not receive support as they go there, wait and return back with nothing. Perhaps this is a local and small-scale example of elite capture of resources, reinforcing power relations. It could relate to gender through men being more expected or feeling accepted to ask for support, which means that women living alone do not have that type of agency. As previously shown, it could also relate to class, ethnicity and caste since other respondents have felt a difference between what they referred to as 'high' and 'low' people and 'wealthy' and 'poor'. 'High' and 'wealthy' people were perceived as having received more financial and external support. Thus, support to stressors maybe does not reach those most in need in the village. It also illustrates fragility in responses with how the response to water scarcity, water tank, was temporarily destroyed by earthquake, causing that stressor to reappear. Similarly water scarcity here is viewed primarily relating to drinking water and thus improved with the water lift system, although water for irrigation has to be borrowed.

Her economic and social position means that she is unable to participate in savings groups, which further increases her lack of assets and vulnerability. It shows how vulnerability is a multidimensional process influenced by social, political and economic aspects and interactions (O'Brien et al. 2007; Khadka et al. 2022). Her adaptive capacity is limited due to gender roles. She did not receive support due to not having legal rights, is unable to earn income with small children and faces losses alone. This further strengthens Ribot's (2010) argument that inability to manage stress does not fall from the sky, but is the result of e.g. social inequality, unequal resource access, poor infrastructure, poverty and underrepresentation. There is a need to provide food and money to a husband who does not provide support in return, as well as a feeling of discrimination in society.

It also echoes a sentiment felt by many, namely a hope for a better life for their children with education, jobs and independence. As put by one respondent: *“I wanted to study in the past but I didn't get the chance so I think I will sustain my life by doing all these household activities and agriculture. I hope my daughter will study well, we had to do a lot of hard work so I hope my daughters won't have to do hard work like me”* (Woman 10 Khanidada). Showing how women wish for different lives for their daughters than what they have had. Farming in the village is deemed to continue being difficult in the future and has become a less valued option. As one wishes for her grandchildren to: *“get a big government job and get respect”* (Woman 1 Charghare). Indicating that as farmers they do not feel they earn respect for what they do. The hope for independence is often connected to the children earning money and supporting their parents, as opposed to the parents caring for the children.

Woman 3 (20 years old, Newar, living in Charghare):

Recently having finished high school she now helps her mother with household activities. Her brother works abroad and her father passed away in her childhood. It is now her brother's role to financially support the family as head of household, but with many sisters in the house her brother has struggled to pay school fees for all. As a child she dreamt of being a dancer but her brother told her dancing was not good, and she would not be able to do it or leave the house since they had no relatives in the city: “You are a girl so it will be hard to live alone in the city area for a girl. You have to face many difficulties.” At first she felt bad, but after thinking about it some time, felt it was right. She does not go anywhere without asking her brother and mother.

At the time of the earthquake their house was damaged and they had to live outside. Being only women they felt scared of living in a tent and instead went to live in the school building. At that time they were not able to pay for a worker. They heard that single women would get 50 thousand in cash but her mother did not get that amount and she does not know why. For her, the earthquake meant she could not go to school regularly afterwards due to fear of a new earthquake. So her education was affected. When the pandemic hit she once again did not get a chance to go to school regularly and faced a study gap, which was an emotional stress for her. Her brother's job was stopped at the time so he came back from abroad and stayed for a year. He used to send remittances back to the family. At first to his mother's bank account but as she got older and struggled to get to the bank to withdraw money, he started sending it to his wife's account instead. This was stopped when his job abroad stopped: “That was a problem for us, but we solved it by borrowing money from others for a certain time.” At home her brother worked in an iron shop before eventually going back abroad. Due to this, she says her brother was more directly impacted since she already did not go anywhere when the pandemic hit.

The family sells crops. Nowadays there is an issue with insects destroying the maize. The problem of drought and insects was not high before, now with rainfall not occurring on time it has increased. Porcupines also destroy their crops and for that they have not done anything, but other villagers set traps to kill the animals. Regarding why these problems have increased she believes it is because of pollution. She says they have to stop cutting down trees, restore forests, clean water sources and not throw garbage everywhere. This, she believes, will also decrease risk of disease. To achieve it they need raised awareness. But older people do not listen to her: “Grandparents are

now in the same situation as before, they won't listen to us young people because they say: 'nothing has happened in our time now, how could you child solve these problems'?"

As for her future, she hopes to go to Kathmandu for work and earn money to help her mother. She has tried looking for a job in the village and talked to people in the ward, but 'they said that only married women would be given higher priority'. Now she hopes to eventually gain skills and find a job, probably in the city: "If I were a boy I already would have been there, but being a girl I have to help my mother in household activities."

This story shows how vulnerability is accumulated over time in terms of missed education due to major shocks. Lack of financial means also limits the ability for further education. Although this is arguably the same for boys, it has previously been shown in respondents' answers how education is a further limitation for women, their sense of knowledge and contribution, and their decision-making in the village. Thus, contextual gender norms, relations and cultures places a gender difference in vulnerability (Khadka et al. 2022). As many others, it is someone who thinks that with more education she would get another job. Eriksen (2022) argued that vulnerability socio-political relations marginalize and produce differentiated vulnerability. Although many people experience some sort of vulnerability, access to education and gender roles create a different vulnerability for rural girls. With an impact on education girls' adaptive capacity and navigation of multiple stressors is impacted. As exemplified, out-migration as response is a desire also for women but it is also a strategy that is gendered. Although women are increasingly migrating as e.g. one respondent said: *"My one granddaughter was in Qatar"* (Woman 1 Charghare), it is still more difficult for women than men due to risk, gender roles and need to do activities at home. Women and men are in a different position to cope and respond to stressors (Sultana 2021). These gendered inequities worsen differentiated vulnerabilities. All respondents point to education as main driver for vulnerability reduction. However, even with education she is still in the same position as the women in the village who had no education. This is in line with what Nightingale (2011) found about women who did not use their education for migration being in a similar position of disempowerment. Perhaps this could be explained partly by what another young woman shared:

"Our attention was paid to the fact that we should help our mother and father in household activities instead of studying. Nowadays, when I see others reading and writing I am worried about what will happen in the future in my life because I now know the importance of education in life. In our childhood we used to think about the household, like we have to eat, we have to wear, we have to help our parents with work and so on."
(Woman 18 Khanidada)

It matches what Naylor et al. (2020) argued, that social constructions in societies can develop vulnerability across multiple hierarchical scales. Accumulation of vulnerability and multi-exposure to stressors could mean that girls are too busy dealing with current stressors to plan for the future. This in turn exacerbates vulnerability as adults. It is also a story of unmatched aspirations due to stressors and limited options. Another young girl shared a similar life story: *"I dreamed greatly of my future when I was a child. I thought I would become better by studying well, but it didn't happen due to lack of money."* (...) *"I wanted to get a job. I have my small children so it stops me from getting a job. Where should I go carrying such small children? We have to go out from the village to get jobs"* (Woman 19 Khanidada). As (Ribot 2010) argued one must take into account local

people's needs and aspirations when looking at vulnerability. In this case, aspirations are not matched due to gender roles as well as stressors reinforcing those gender roles and feminization of agrarian distress.

It is also a story of how return of out-migrated male family members due to shocks can greatly impact livelihoods through income loss and thus, yet again new loans for a household to pay off. This was exemplified in another story as well where the father and brother used to live in Kathmandu, but returned home during the pandemic due to lockdown and after that *"father was not able to go to Kathmandu. Even when my father and brother did not live in Kathmandu they had to pay a lot for the room in rent"* (Woman 5 Charghare). Through this, they are arguably in yet a worse position to tackle climate change. Ribot (2010) argued that to combat climate change impacts one can reduce individuals and communities' vulnerabilities. Reliance on remittances and uncertain livelihoods are standard in the villages and places people in a precarious situation when new stressors emerge and interact with pre-existing ones. Her brother supports his mother and sisters financially, illustrating a kinship social construction in the village. It indicates that girls generally rely on male relatives for financial support. She thinks her brother was more directly impacted losing his job and did not account for the loss of remittances for the women remaining at home as an impact. Showing different types of vulnerability between her and her brother, with him as income-earner and her doing household chores and agricultural tasks. Climate change increases rural people's vulnerability and through combatting its impacts on food security e.g., one could reduce people's vulnerability in terms of uncertain livelihoods and unsustainable short-term coping.

7. Concluding discussion

The thesis aim was to empirically show how multiple stressors of different kinds intersect within a household and how this impacts women's daily lives. Furthermore, to understand long-term effects and lived experiences of it. Through a theory of vulnerability as contextual, gendered and that can be accumulated over time, this has been analyzed by looking at women in rural Nepal experiencing multiple stressors. Life histories have highlighted how people in a similar context personally experience vulnerability. Everyone's vulnerability is unique even in the face of the same shock. Biophysical factors, intersectional factors and differences between and within households mean that not all women experience a stressor in the same way. Despite this, there is a common feeling of women being more impacted, feeling more concerned and facing a heavier burden than men.

Women navigate and experience stressors in several gender-specific ways. Stressors increase time and labor for women due to the responsibilities they have in their gender role. This includes household chores and childcare. The findings show how women experience multi-exposure to stressors with high impact on their daily lives through increased work in agriculture while still doing household chores. Findings also show how they navigate around multi-exposure to stressors by adopting several non-technical responses such as changing crops, taking loans, watching for wildlife and leaving land barren. State and organizational support was limited and differentiated. Traditional gender roles and male migration point to women taking a lot of the workload in carrying out responsive decisions. Traditional gender roles and women's apparent exclusion from influence in community groups, however, point to men making the decisions. A second gendered aspect thus is that women often lack voice, with some expressing it clearly and in other instances it was found indirectly through access to community groups and external support. In general, men are the ones attending meetings and asking for external support, even in this context with high male migration. However, as argued in literature, events can reshape structures. Perhaps then, the gendered impact of events and the consequences of it, such as male migration and feminization of agriculture, could contribute to reshaped social structures in the villages and changed social positions for women.

Social structures of a patriarchal society including early marriage for women, women moving to their husband's house at marriage, limited access to education for women, limited access to meaningful participation in community groups and men as traditional head of households create pre-existing vulnerabilities for women. It also impacts the type of response they can take to stressors and the consequences it has on them. As exemplified with the earthquake, direct impact was perhaps more similar, but consequences after were different for women. They do not migrate to the same extent as men, they face different risks when coping with shocks and traditional gender roles mean they highly care for their children during stressors. As becomes evident by the stories of women living alone as well as those who have family members sending them remittances, a part of the contextual vulnerability here is reliance on kin and community. For women there is an importance of kin to support you, since men are traditionally the financial providers of families. Lack of it increases vulnerability before, during and after stressors.

As shown in the life histories, the ways that vulnerabilities and stressors intersect shapes people's long-term prospects for lives they value. Multi-exposure to stressors affects women and

their life trajectories in a few different ways. One can see how vulnerability can be accumulated or exacerbated over time through interaction between stressors. Clear examples of this is water scarcity, crop decrease and food insecurity. Climate change and the earthquake combined to create a situation of multiple stressors when yet another one, the pandemic, occurred and caused further strains in an already severely strained context. Social aspects and gender roles can be a stress for women due to forced marriage or moving to husband's house. Gender roles mean they are largely responsible for household chores. When major shocks occur new stressors are placed on top of this and cause women to deal with social stressors as well as the other stressors and increase their vulnerability. With the gender roles women have in this context, they are brought up to expect and learn their roles and often experience they had no other potential paths to take in life than the ones closely connected to their gender roles. Many talked of suffering as part of life. Disrupted education is a form of accumulated vulnerability, particularly harmful for women's life aspirations. While women dream of education and off-farm employment as children, as adults they often find themselves unable to match these aspirations due to gender roles interacting with the multiple stressors placed upon them. Additionally, the accumulated vulnerability and multi-exposure to stressors place people in a situation where everyday life is a struggle and planning for the future does not seem to be neither a possibility nor a priority. Being in a savings group might be good for future mitigation, but it may not be an option when the daily now is too marginal. Through the life histories it seems as though many live in the present and do what they can in their situation. Even more so for women whose alternative livelihood options are limited when agriculture is feminized.

It could also be that some connect problems to an apparent shock rather than gradual stressors, e.g. earthquake rather than climate change. This could explain why many referred to several stressors being caused by the earthquake. Although the earthquake, as evidenced, impacted water sources the situation was already fragile. The earthquake became a tipping point. Similarly, one can see it with the issue of wildlife. As seen in speculations regarding less food in the forest and of out-migration causing abandoned land, there could be many factors behind it. Land left barren due to climate events, i.e. drought or landslide, could also factor in. This could account for differences in experience as where one lives in the village might affect it. Common for all factors is that they are caused either by environmental stressors due to climate change or by actions taken in response to that. Build up of consecutive loans also shows how responses are affected by the interaction of stressors and how responses can in turn exacerbate vulnerability.

Women were found to worry about food, safety and health related to all types of stressors. These are all aspects related to the caregiving roles of women. They feel the burden of feeding the family. Throughout their life trajectory women continuously perceive that stressors impact them differently, regardless type of stressor. Once they had coped with one stressor another occurred, which leaves not enough time or means to deal with them all. With too many concurrent stressors they simply have no choice but to deal with the one that has the highest impact at this specific time. Building up their life for the better through rebuilding the house after the earthquake or change to more drought tolerant crops does well short-term for livelihoods. It does increase women's labor though through continuing with household chores in addition to supporting in short-term response measures. Long-term, however, response measures and increased seasonal climate events place new stressors in their path. When interacting with non-environmental stressors, i.e. a pandemic, it forces people to

strain their already strained resources even further. For women, it appears the worries regarding food, children and health remained a consistent throughout their lives as they entered their gender role at early age. Many felt it was easier when their children are grown up and supports the family financially rather than the parents caring for them. Women's care-related worries often continued in times of shock even when children were out-moved though.

Related to this, another gendered aspect is the increased emotional stress women experience. Women's emotional distress never seem to disappear, but is heightened with major shocks. Lately it appears to have remained at high level for many women. It was common for them to see no possible solution to the continuous impacts of stressors and to view the future as difficult. This stress can also be related back to gender roles and social structures, placing them in a situation of emotional stress already at a young age. It connects to the gendered impact of events and their care-giving roles and related worries. It also connects to their important roles in responding to stressors and the limited response options available to women. The emotional stress can be linked to the fact that many shared how their happiest moments had been before entering into marriage and working life.

What is also seen in the empirics is the way in which women are organizing themselves, which could indicate that change is happening. They formed a women's group providing loans for women, which could provide some economic independence and decrease their vulnerability. It was, however, stopped in times of major shocks (the earthquake and the pandemic) since women did not have time nor financial means to attend meetings and deposit money. It could work as buffer for shocks or as means to improve their life situation some time after shocks. At the least, it can serve as a platform for women to come together. Similarly, potential change could be found in women's increased recognition of gender equality. Hence, gender does not simply mean differentiated vulnerability, but shared gender may also mean that in times of stress women come together. Thus, gender could be a source of strength and solidarity when facing stressors.

The IPCC report states that worldwide climate resilient development is more urgent than previously assessed, due to observed negative climate change impacts and vulnerability trends. The findings of this study support this. With the gendered vulnerability and lived experiences one can argue that gender equality cannot be left to deal with until after major shocks since it may reinforce women's vulnerability and have directly affect exposure, sensitivity and adaptive capacity. One can also argue that men's position is indeed taken as universal since men's societal role place them in power positions in everyday lives and in shocks. Women's contribution, different needs in relief efforts and feeling of distress are found in their daily activities. As seen, both short and long-term impacts and vulnerabilities may differ between men and women. As climate change is predicted to continue to increase, a gender perspective on policies and projects is as urgent as ever.

The area of multi-exposure to stressors would benefit from more case studies within other regions of the world in order to increase generalization possibilities, since contexts are important for outcomes, as this thesis has shown. The data gathered for this thesis also rendered several interesting themes. One theme, relating to power and gender relations, is access to local networks. A household or individual may have access to one but not another. For future research it would be interesting to examine how the access or non-access to local networks influence how women navigate and respond to stressors or what women themselves believe is the best-targeted network type to help them build resilience.

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Popular science summary

All over the world climate change is happening with negative outcomes, and its effects are predicted to be even worse in the future. They now happen more frequently alongside natural disasters as well as issues caused by other factors than climate change. These other issues can be health-related, such as pandemics, or political and social changes. When the different types of issues occur alongside one another they combine to create a situation of multiple issues for people to deal with at the same time. This causes particular harm for people living in rural areas, engage in small-scale farming and need natural resources for their farming and daily lives. In these situations of combined issues men and women face different consequences and have different abilities to respond to them. Society expects men and women to behave in different ways and to take on different responsibilities. The different types of issues occurring in the same place and near each other in time can also pile up stress for people. To understand the consequences this has on women, this thesis looks at how women experience and navigate a situation of multiple issues of different type. It also looks at what are the combined effects of continuously living in a situation with issues.

Nepal has experienced many different issues in recent years, near each other in time. These include climate change, the 2015 Gorkha earthquake, food insecurity, out-migration and the COVID-19 pandemic. The study uses mainly interviews but also other methods, such as observation. To analyze the context and cultural factors, the analysis uses a theory of vulnerability. Vulnerability refers to the probability to be harmed by an issue. It can be seen as being decided by the context, being different for men and women, and having the possibility to pile up.

The study shows that everyone has a unique vulnerability even when living in the same village and facing the same issues. This is due to differences in e.g. age, caste and marital status, alongside gender. There is a common feeling that women are struck harder by the issues, are more concerned about them and carry a heavier burden than men do. The issues increase the time and labor for women to carry out their responsibilities, such as household chores, agricultural work and childcare. It is also shown how women to a large extent worry about food, safety and health of the family when different issues occur. These concerns can all be related back to the expectations society has on women regarding behavior and responsibilities. This affects women's daily lives, how they experience the consequences of issues and how they respond to them. Society's expectations on women also mean that they are unable to speak out or make decisions. It is found that the many issues cause an increased emotional stress for women. By looking at life histories, the study shows how vulnerability is personally experienced and that several stressors over time has effects on women's long-term prospects for lives they value. The study also shows ways in which women come together and organize themselves. This indicates that changes in society may be happening and that women can find strength and solidarity in one another during times of stress.

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