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# Community Knowledge of Landslides and Perceptions of Aid Relief: A Qualitative Investigation in Rural Uganda

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**COMMUNITY KNOWLEDGE OF LANDSLIDES AND PERCEPTIONS OF AID RELIEF:**

**A QUALITATIVE INVESTIGATION IN RURAL UGANDA**

by

Maria Theresa Mejia

A Thesis

Presented to the Graduate and Research Committee

of Lehigh University

in Candidacy for the Degree of

Master of Arts

in

Sociology

Lehigh University

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Maria Theresa Mejia

Thesis is accepted and approved in partial fulfillment of the requirements for the Master of Arts in Sociology.

**COMMUNITY KNOWLEDGE OF LANDSLIDES AND PERCEPTIONS OF AID RELIEF: A QUALITATIVE INVESTIGATION IN RURAL UGANDA**

Maria Theresa Mejia

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## **ABSTRACT**

Climate related disasters such as landslides continue to contribute to premature mortality and underdevelopment in many regions in less-developed nations like the Bududa District in Uganda (e.g. Roberts and Thanos 2003; UNDP 2004, 2014; UNISDR 2001, 2008, 2012, 2014). This study utilizes 19 semi-structured interviews, three of which were in the form of focus groups, to investigate the conceptions of the causes and effects of landslides, with an emphasis on aid relief and perceived needs. In doing so, this study highlights the incongruousness and inadequacy of aid in meeting the needs of community members. Not only do community members provide prescriptions for improving aid relief, they do so with a wealth of knowledge about the signs, causes, and effects of landslides, and the economic situations that hinder poor nations like Uganda and its populations from living safe and secure lives. This study contributes to literature on micro and macro connections of community-based knowledge and global political economic decisions and their effects on disaster management and disease and injury prevention.

## **INTRODUCTION**

Communities throughout the world are facing disasters on an unprecedented scale. In the past decade, natural hazards such as landslides, floods, severe weather events, earthquakes, droughts, tropical cyclones, volcanic eruptions, and wild fires have caused significant losses in human lives and livelihoods, the devastation of economic and social infrastructure, and environmental harms (UNISDR 2001, 2008, 2012, 2014). Moreover, natural disasters continue to challenge development as they pose situations that destroy countries' gains and contribute to the cycle of poverty. With the increased frequency and intensity of natural disasters witnessed recently, it is projected that damages from disasters will swell to US\$400 billion per year with climate change likely to worsen these situations (UNEP 2014).

Issues related to natural hazards have recently emerged at the forefront of discussions around resilience plans, climate change adaptations, and development such as the Millennium Development Goals and in particular, the target of halving extreme poverty by 2015 (UNDP 2004). Patterns of crises that manifest from the aftermath of disasters are evident in landslide occurrences in the Bududa District in Uganda. Landslide events, which are the most widespread geological event globally (WHO 2015), continue to burden Ugandans as they displace entire populations, endanger the integrity of ecosystems and the people who depend on them to survive, erode community infrastructure and citizen's livelihoods, and damage lives (Doreen 2011; IRIN 2011; Kitutu et al.2011; Mafabi and Butagira 2013; Manuel 2007; NEMA 2010; Rosebellk 2012; UNDP 2004, 2014; UNEP 2008; UNEP "Disaster and Conflict" n.d.; UNEP

“Disaster Risk Reduction” n.d.; UNISDR 2001, 2008, 2012, 2014; Wanzusi 2013; Wanzusi and Watala 2013).

The destruction that landslides have caused communities around the world is evident in the aftermath of the Nametsi landslide in the Bududa District of Uganda. On March 2010, torrential rains triggered landslides killing 300 people and forced thousands to abandon their homes in the mountainous villages of Nametsi, Kubehwo and Namangasa (Disaster Preparedness and Refugees Office of the Prime Minister 2010; IRIN 2011). “No [fewer] than 10,000 people are at risk in eight districts around Mount Elgon,” reports Martin Owor, Commissioner for Disaster Preparedness and Management in the Office of the Prime Minister (IRIN 2011). The disastrous landslide occurrence of March 2010 was not an isolated incident. News reports highlight the increasing regularity of landslides and the affected Ugandan citizens, especially those residing around the Mount Elgon region (Associated Press 2012; Doreen 2011; International Federation of Red Cross and Red Crescent Societies 2010; IRIN 2011; Kitutu et al.2011; Mafabi and Butagira 2013; Manuel 2007; NEMA 2010; Rosebellk 2012; Wanzusi 2013; Wanzusi and Watala 2013). Ugandans’ increasing susceptibility to such catastrophic events has put much pressure on the government and aid relief agencies to alleviate landslide disasters and their negative effects (Disaster Preparedness and Refugees Office of the Prime Minister 2010; IRIN 2011). However, despite the continued occurrence of landslides and the development of disaster preparedness, management, and relief work in the Mount Elgon region of Uganda, little has been done to evaluate why Ugandans continue to be harmed by landslide disasters and the efficacy of such works.

While environmental disasters are often considered by many people to be “natural”, such calamities do not occur spontaneously and are thus rooted in larger social processes. In fact, UN Secretary General Kofi Annan said in 1999 that the term “natural disasters” has been misused, considering the historical contexts of human relationships with nature (Roberts and Thanos 2003: 67). He explained that in reality, human decisions and actions create, control, and reconstruct natural hazards into what should be renamed “unnatural disasters” (Roberts and Thanos 2003: 67). Further, a wide literature emphasizes that globally, poor populations are most vulnerable to suffering from natural disasters like landslides, and have the least amount of resources to respond (UNDP 2004, 2014; UNEP 2008; UNEP “Disaster and Conflict” n.d.; UNEP “Disaster Risk Reduction” n.d.; UNISDR 2001, 2008, 2012, 2014).

Even with ongoing efforts to prepare, manage, and alleviate the effects of landslides by major organizations, landslides remain a persistent and growing threat in the Mount Elgon region (Bwire 2013; Doreen 2011; IRIN 2011; Kitutu et al. 2011; Mafabi and Butagira 2013; Manuel 2007; NEMA 2010; Rosebellk 2012; Wanzusi 2013; Wanzusi and Watala 2013). These major organizations include the Uganda Red Cross Society (URCS), the Office of the Prime Minister for Disaster Preparedness and Response, International Federation of Red Cross and Red Crescent Society, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), Oxfam GB, and Save the Children (Bwire 2013; Doreen 2011; IRIN 2011; Kitutu et al. 2011; Mafabi and Butagira 2013; Manuel 2007; NEMA 2010; Rosebellk 2012; Wanzusi 2013; Wanzusi and Watala 2013). Nevertheless, disaster events such as landslides ravage communities and retard development by hindering the establishment of economically and

environmentally sound livelihoods, creating premature mortality, diminishing worker productivity, creating absenteeism from work or school, and straining medical, economic, and social resources (Atuyambe et al. 2011; Caspani 2014; Doreen 2011; Kitutu et al. 2011; Mafabi and Butagira 2013; Manuel 2007; Mercer et al. 2010; Namwamba and Lyles 2007; Ndikaru Wa Teresia 2007; Pellow 2007; Roberts and Thanos 2003; Rosebellk 2012; Shandra 2007; UNDP 2004, 2014; UNEP 2008; UNEP “Disaster and Conflict” n.d.; UNEP “Disaster Risk Reduction” n.d.; UNISDR 2001, 2008, 2012, 2014; Wansuzi 2013; Wansuzi and Watala 2013). Despite good intentions, critical scholarship highlights that prevention, management, and aid relief efforts often fail in many less-developed regions due to a combination of social, economic, and environmental inequalities (Atuyambe et al. 2011; Caspani 2014; Doreen 2011; Namwamba and Lyles 2007; Roberts and Parks 2007; UNDP 2004, 2014; UNEP 2008; UNEP “Disaster and Conflict” n.d.; UNEP “Disaster Risk Reduction” n.d.; UNISDR 2001, 2008, 2012, 2014). Moreover, much literature underscore how globally, poor populations like those in Bududa are most vulnerable to suffering from natural disasters like landslides, and have the least amount of resources to respond (e.g. Roberts and Thanos 2003; UNDP 2004, 2014; UNISDR 2001, 2008, 2012, 2014). Additionally, critics of aid relief agencies are often suspicious of how effective they are in helping meet the needs of victims of disasters, as such organizations may take on very narrow focuses both in geographic location and interventions that have very limited benefits all while they rely on international donors whose influence may overshadow the local culture and needs (e.g. Seckinelgin 2005, 2006).

An investigation of qualitative perspectives on community perceptions of landslides, including their causes and reactions or consequences, may elucidate the macro-connections between political, economic, social, and ecological structures that contribute to vulnerabilities to disaster and limitations in effective relief efforts. This study will therefore contribute to sociological research investigating how communities in developing countries like Uganda are affected by landslides, and how local and global organizations respond to such events. In so doing, this work fosters a better understanding of how global development and inequality impacts a particular locale.

#### **SOCIOLOGICAL EXPLANATIONS OF ENVIRONMENTAL DISASTERS**

Exploring human society-nature relationship sheds light on the intricate dynamics of how society influences nature and how nature influences society (Austin and Clark 2012; Foster 1999; Gould et al 2008; Greene 2006; IFPRI 2003; Isbister 2003; Jorgenson and Burns 2007; Longo and York 2008; McMichael 2011; Mol 2002; Mol and Sonnenfeld 2000; Pellow 2007; Rice 2007; Roberts and Thanos 2003; Shandra 2007; Shandra et al. 2010; WHO 2013; World Hunger 2013). World-systems theory provides perspective on the relationship between economic development and the environment, as well as human-nature relationships more broadly. World-systems theory highlights unequal power relations, whether economically, politically, and/or socially, between rich and poor populations which distributes a disproportionate burden of environmental risk on the poor globally (Frank 1966; Isbister 2003; Jorgenson and Burns 2007; Longo and York 2008; McMichael 2011; Pellow 2007; Rice 2007; Roberts and Thanos 2003; Shandra 2007; Shandra et al. 2010). This theorization takes a historical look at the

relationship between the core, semi-periphery, and periphery nations in which core nations benefit from the unequal exchange structures with nations below them in the hierarchy (Frank 1966; Isbister 2003; Jorgenson and Burns 2007; Longo and York 2008; McMichael 2011; Pellow 2007; Rice 2007; Roberts and Thanos 2003; Shandra 2007; Shandra et al. 2010).

The concept of unequal exchange explains that differences in the profitability of products across core and periphery nations lead to the accumulation of wealth and consumption in core nations, while simultaneously degrading the environment, labor, and social conditions in periphery nations (Rice 2007). This concept of unequal exchange provides a view through which we can understand how the socio-economic relationships between nations benefit core countries while negatively impacting periphery countries within the globalized economy (Jorgenson and Burns 2007; Rice 2007). Unequal exchange is a product and producer of the world-systems hierarchy and the environmental dimensions of unequal exchange has been partially perpetuated by the internationalization of the agro-food industry and the increased global demand for food production (Longo and York 2008; Pellow 2007; Rice 2007; Roberts and Thanos 2003; Shandra 2007; Shandra et al. 2010). Empirical research demonstrates that periphery nations produce most of the world's food, yet continue to suffer from hunger as most of this food is exported to core nations (e.g. Austin et al. 2012). Additionally, this body of research emphasizes that food production is very costly to the environment, as agricultural production has been linked to deforestation, biodiversity loss, and pesticide and fertilizer use (Longo and York 2008; Pellow 2007; Rice 2007; Roberts and Thanos 2003; Shandra 2007; Shandra et al. 2010). So while core populations consume the bulk of

the world's food, the negative environmental and social consequences are concentrated in periphery regions.

In addition to trade specialization, world-system scholars often emphasize structural adjustment and issues of debt to explain the increased prevalence of environmental problems in periphery nations. For example, development organizations such as the International Monetary Fund provide a model for poor nations to “develop” by having governments “earn more” and “spend less” through structural adjustment policies that require governments to cut funds, many of which are for environmental conservation and public services (Shandra et al. 2010). Nations are also encouraged to give corporations tax breaks or tax holidays and privatize community goods, including land and natural resources (Shandra et al. 2010). Moreover, with the interconnectedness of our world economy, the richest 20% of the world's population controls 80% of the world's income, thus power with regards to policies and restrictions, leave the poorest 20% to control only 2%, thereby stifling their ability to negotiate in the global realm (Roberts and Parks 2007). Due to their weak economic positions, periphery nations are essentially forced to adopt structural adjustment policies that enforce cuts in social spending, liberalization of trade and financial markets, weaken the welfare of their citizens, and increase their country's dependency on foreign capital, imports, and markets. This economic dependency limits the capacity of developing nations to negotiate for more equal trade relationships, thereby forcing poor nations to degrade their natural, social, and economic resources as profits are funneled to core nations (Roberts and Parks 2007). Pressure on less-developed nations to produce raw materials for core nations force them to degrade the environment through over-cultivation and

deforestation, which consequently represents a significant cause of disasters like landslides (Roberts and Parks 2007).

The vulnerability of communities to natural hazards is intricately intertwined with unequal relationships among nation states. According to Roberts and Parks, hydrometeorological disasters are processes or phenomenon of atmospheric, hydrological, or oceanographic nature that may cause loss of life, injury, or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (2007). Climate-related disasters such as floods, hurricanes, and extreme storms that facilitate landslides are increasing over time due to increasing issues of climate change which are rooted in global hierarchies and relationships as well (Roberts and Parks 2007).

Roberts and Parks (2007) emphasize that climate change is a global issue in which burdens and benefits are asymmetric, and responsibility for the causes and consequences of the problems due to climate change is greatly divided along lines of international inequality. Vulnerability is defined as “the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard” (Roberts and Parks 2007; 8). Climate risks of communities are related to pre-existing human vulnerability, not merely natural occurrences (Roberts and Parks 2007). Historically, countries that emit more, use more fossil fuels, and have a bigger carbon footprint tend to be wealthier nations (Roberts and Parks 2007). For example, the United States only accounts for 4% of the world’s population, but is responsible for 20% of the world’s emissions (Roberts and Parks 2007). On the other hand, 136 developing countries altogether are responsible for 24% of global emissions

(Roberts and Parks 2007). Although the geographic location of many less-developed nations in tropical areas makes them ideal places for growing crops, this only makes them more susceptible to climate-related risks. With the agro-food industry and the increased global demand for food production, the international division of labor creates a world-systems hierarchy in which rich nations externalize the environmental costs on poor nations that are forced to degrade their environments for the purpose of exporting primary sector goods (Longo and York 2008; Pellow 2007; Rice 2007; Roberts and Thanos 2003; Shandra 2007; Shandra et al. 2010).

While climate related disasters may affect all peoples globally, the developing nations are repeatedly at the top of lists for those most affected by these phenomena and their deleterious effects (Roberts and Parks 2007). Roberts and Parks show that there are about ten times and even one hundred times more people dying in developing nations than in wealthy nations like the United States (2007). Moreover, a study of 18 nations shows that the number of people affected from cumulative effects of multiple disasters over the study period equals or exceeds the national population. For example, some populations were constantly suffering from floods and hurricanes, thus increasing the number of people affected beyond the national population. On the other hand, a wealthy nation like the United States only had 1.5% of the population affected at any time over the past 32 years by climate related disasters (Roberts and Parks 2007).

The uneven burdens of climate related disasters indicate how the world-systems hierarchy distributes risks and developmental outcomes. As the natural resources of poor nations are degraded, rich nations are able to sustain their lifestyles, leaving periphery nations to stay under-developed politically, economically, and socially, and therefore less

capable of anticipating, coping with, resisting, and recovering from the impact of natural hazards (Longo and York 2008; Mercer et al. 2010; Pellow 2007; Rice 2007; Roberts and Parks 2007; Roberts and Thanos 2003; Shandra 2007; Shandra et al. 2010; UNDP 2004, 2014; UNEP 2008; UNEP “Disaster and Conflict” n.d.; UNEP “Disaster Risk Reduction” n.d.; UNISDR 2001, 2008, 2012, 2014). Periphery nations like Uganda that suffer most from climate threats lack political and economic power to prevent and respond to disasters.

With the deterioration of the government’s public programs due to structural adjustment policies and unequal trading partnerships, aid relief in many poor nations have become central roles of international non-governmental organizations (INGOs) (Namwamba and Lyles 2007; Roberts and Parks 2007; Shandra 2007; Shandra et al. 2011). According to world polity theory, INGOs influence the structure and the language of treaties, policies, and codes of ethics that put pressure on various institutions to attend to the well-being of environmental and social conditions in developing nations by utilizing their flexibility to circumvent international systems dominated by national governments to enact public policy and to specify and identify local needs (Pellow 2007; Roberts and Parks 2007; Shandra 2007; Shandra et al. 2011). Additionally, INGOs are instrumental as vehicles of international aid, as many organizations provide services, especially emergency services in the wake of disasters.

However, the role of INGOs in promoting well-being in developing nations is very controversial. A critique made by world-system theorists points out that decision-making in these organizations is often based in core nations where stakeholders and donors tend to reside, thus the activities of INGOs may ignore local cultural needs and

goals (Namwamba and Lyles 2007; Shandra 2007; Shandra et al. 2011). Furthermore, while aid by INGOs from core nations may be provided in times of crises, it often comes too late; many of the deaths and injury that occur as a result of disasters happens immediately or before aid is able to arrive (Caspani 2014; Doreen 2011; Namwamba and Lyles 2007; Ndikaru Wa Teresia 2007; Roberts and Parks 2007). Additionally, emergency aid is more likely to be given to easy-to-reach segments of the population. Other studies show that some aid supplies provided through INGOs end up being sold on the open market rather than provided to populations in need (e.g. Doreen 2011).

The Bududa District in the Mount Elgon region of Uganda represents an appropriate place to focus investigation of such phenomena as this mountainous area has been a site of increased landslide activity, and also has key features that relate to theorization on global inequalities.<sup>1</sup> Uganda generally, and this region in particular, is reliant on exporting primary sector goods, such as coffee and tea, to more developed nations. Uganda has also been a key site of structural adjustment and has high levels of foreign debt. Located directly on the equator, poor populations in Bududa are forced to deforest and utilize unsustainable agricultural practices to grow cash crops for the international export market like coffee, as well as subsistence production (Doreen 2011; Kitutu et al. 2011; NEMA 2010; Watira 2011). The corrupt and impoverished government lacks appropriate protection for the local citizens, especially to natural hazards (Aljazeera 2012; Bailey 2008; BBC 2012; Hall 2013; Kron 2011; Maxwell et al. 2008; Tran and Ford 2012). Thus, the role of aid relief agencies in the wake of landslides

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<sup>1</sup> The increase in landslide activity is evident from news reports and the National Environment Management Authority's website. However, the exact number is unknown as there is a lack of reporting on landslides, and in particular those that do not take lives.

in the Bududa District will be a key focus, and this area represents an appropriate case to investigate.

### **COMMUNITY-BASED KNOWLEDGE AND DISASTER MANAGEMENT**

Although natural disaster risk and its connection with human development have been made, less attention has been given as to how perceptions of the community regarding the causes, risks, and management of disasters shape their responses and the aid provided in the wake of such calamitous situations (Doreen 2011; Manuel 2007; Mercer et al. 2010; Ndikaru Wa Teresia 2007; Roberts and Parks 2007; UNDP 2004, 2014; UNEP 2008; UNISDR 2001, 2008, 2012, 2014). Although policy makers, INGOs, relief agencies, and donors take action in the wake of disasters, attention to and integration of individual, household, and community perceptions and beliefs to aid intervention are scarce (Agrawal 1995; Davies 1999; Laws 1994; Rist and Dahdouh-Guebas 2006). The limited acknowledgement and value of community-based knowledge impede citizens' participation in disaster preparedness and management. This study aims to shed light on the perceptions that communities have with regards to the causes and effects of landslides and ways in which aid, management, and responses are carried out. Thus, this study contributes to the gap in knowledge and attention to community knowledge about disasters and response.

The lived experiences and various components of one's identities such as class, religion, education, race, and disaster experience provide diverse understandings and explanations for natural disasters and ways of ameliorating emergency situations. In fact, Kitutu et al.'s "Farmers Perception on Landslide Occurrences in Bududa District, Eastern

Uganda” captures how farmers’ experiences of landslide occurrences have influenced their understanding of the causes of this disaster (2011). Kitutu et al. report that farmers mainly categorize factors that cause landslides in Bududa as having steep slopes, water flowing from underground, and concavities (2011). While Kitutu et al. utilized semi-structured questions in learning more about the perceptions of farmers about the causes of landslides, these authors also highlight how the views and beliefs of farmers are also supported by other studies and scientific reports (2011). Similar to the reports of farmers about how steep slopes may be a factor in landslide occurrences in an area, Knapen et al. also observes this phenomenon (2006). Moreover, farmers’ understanding of concavities, the presence of water underground, as well as soil texture, porousness, and matrix are all scientifically supported as well (Kitutu et al. 2011; Knapen et al. 2006). Farmers in Kitutu et al.’s study explain how the specific particle sizes of soil result in differing vulnerabilities of an area to landslides, where “sandy soils will allow fast flow of water into the soil which in this case is held in the deeper layers, which have high clay content causing water saturation and slope failure” (2011; 10). This study depicts the wealth of knowledge farmers have as they tap into their accumulation of lived experiences and observations.

While a growing awareness of the value of community-based knowledge like that embodied by farmers may elucidate the causes of disasters, challenges continue to persist in its use within disaster risk reduction (Mercer et al. 2010). With this, local communities, its peoples, traditions, knowledge, problem solving skills and experiences are thus unheard and further marginalized despite the fact that poor, local communities that rely on the passing down of knowledge are those who suffer most in disaster situations

(Doreen 2011; Manuel 2007; Mercer et al. 2010; Ndikaru Wa Teresia 2007; Roberts and Parks 2007; UNEP 2008; UNDP 2004, 2014). In fact, some scientists express concern about the advocacy of community-based knowledge, equating it to the advancing of pseudoscience and anti-science (UNEP 2008).

However, the United Nations Environmental Programme (UNEP) explains that indigenous and community-based knowledge are not pseudoscience or anti-science because neither try to embody, replace, or go against science, and that efforts should be utilized in deciphering how community-based knowledge and western knowledge can be incorporated to synthesize the most beneficial practices for the community (2008). For example, some communities may utilize their local knowledge about medicinal use for post-disaster disease outbreak or take preventive measures such as digging channels to alter floodwater flow. However, such actions are still limited by the community's developmental issues that make them vulnerable to natural disasters (UNEP 2008). Here, the integration of western and community-based knowledge may bridge the gap and/or shed light on the ways in which aid relief, disaster risk reduction and management may be better shaped in meeting the needs of the community.

Investigating how aid relief is carried out with regards to local community traditions and beliefs may also elucidate the efficacy of the help provided. Scholarly works (e.g. Agrawal 1995; Davies 1999; Kitutu et al. 2011; Knapen et al. 2006; Laws 1994; Mercer et al. 2010; Rist and Dahdouh-Guebas 2006) that focus on bringing to light the benefits and import of community-based knowledge about environmental changes are helpful in reimagining more effective and culturally sensitive disaster management protocols. My study builds on this literature focused on how insightful community

members are regarding their environment and the hazards they face, thus contributing to the valuation and recognition of the need to integrate community-based knowledge in disaster management (Agrawal 1995; Davies 1999; Kitutu et al. 2011; Knapen et al. 2006; Laws 1994; Mercer et al. 2010; Rist and Dahdouh-Guebas 2006).

## **RESEARCH OBJECTIVES**

Knowing that the Bududa District in Uganda has had many landslides that greatly disrupt the communities and their resources, it is my aim to investigate the perceived causes and consequences of landslides, as well as the perceptions of the aid relief that is provided in the wake of a landslide, whether local, international, and/or government-provided. More specifically, this study aims to assess the community's perception of the efficacy of aid in reducing negative health and other consequences of landslides.

## **Research Questions**

1. How do local community members perceive the causes of landslides?
2. How do landslides affect the lives and health of the community members?
3. How do people, organizations, and the government respond to these events?
4. What types of community knowledge and local infrastructures exist to handle prevention of and response to landslides?

## **The Research Area: The Bududa District**

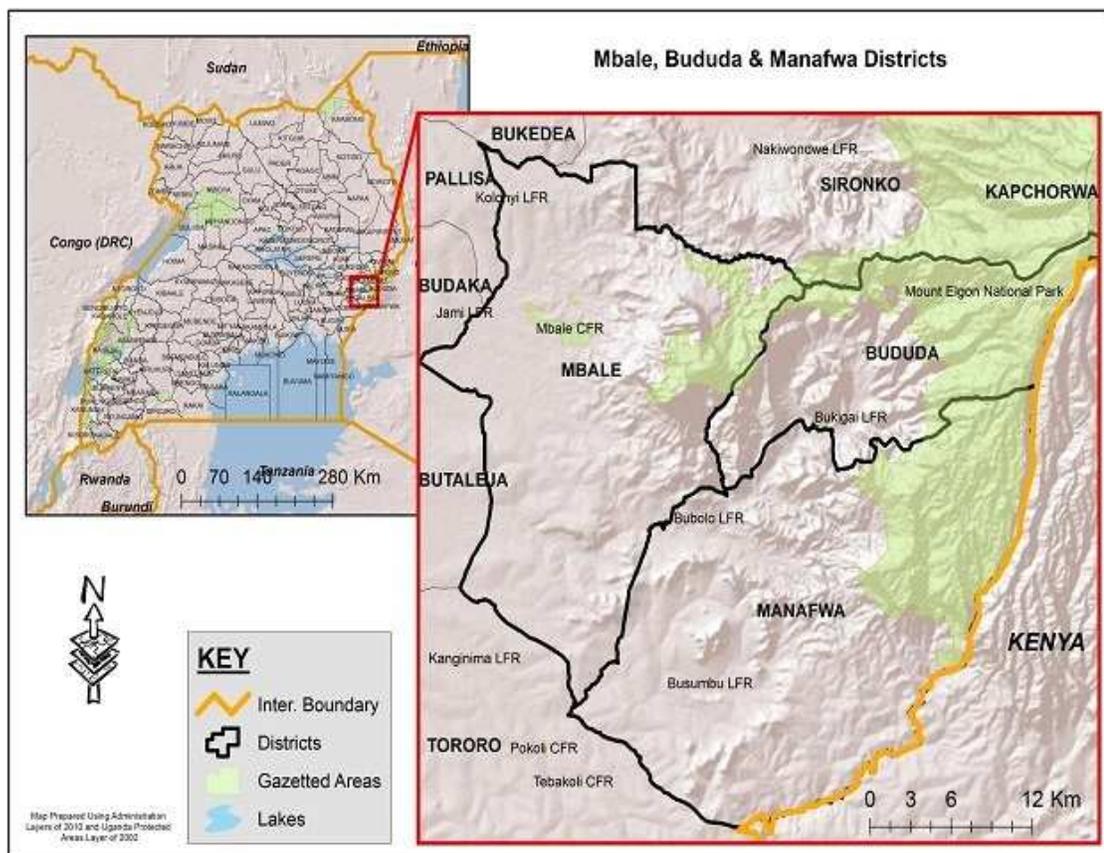
The Bududa District is located in the eastern region of Uganda, which is in eastern Africa. This district lies at the foot of the south-western slopes of the Mount

Elgon volcano. Similar to many other districts in Uganda, it was named after its chief town called “Bududa” and was carved out of Manafwa District in 2006 (Republic of Uganda: Ministry of the Local Government n.d.). Bududa is bordered by Sironko District to the north, the Republic of Kenya to the east, Manafwa District to the south, and Mbale District to the west (Republic of Uganda: Ministry of the Local Government n.d.). The Bududa District is geographically bound by latitude 2° 49’ N and 2° 55’N, longitude 34° 15’ E and 34° 34’ E (NEMA 2010). This district consists of 15 sub-counties and one town council, with 90 parishes and 899 villages (Republic of Uganda: Ministry of the Local Government n.d.).

According to the Ministry of Water and Environment of Uganda, the district is estimated to have a population of 167, 000 in 2010, with 56% of the population in the 0-18 age group and 4.6% in the 60 years and above group, thus leaving about 40% of the population to be economically active (The Republic of Uganda: Ministry of the Local Government n.d.). Moreover, Kitutu et al. note that Bududa has a high population density of about 952 persons per square kilometer in some areas, a statistic that has been linked to the increase in deforestation (Doreen 2011; Kitutu et al. 2011). Beyond these reports, the current population in Bududa has surpassed these estimations. In fact, according to the Republic of Uganda National Population and Housing Census of 2014, the growth rate for Bududa is 3.8 percent, which is higher than the national population growth rate of 3.2 percent (Uganda Bureau of Statistics 2014). This 2014 census reports that the Bududa District has a population of 211,683 with 105,938 males and 105, 745 females (Uganda Bureau of Statistics 2014).

The Bududa District has a unique set of natural resources such as fertile soil from volcanic soils and regular and abundant rainfall, which allow community members to practice subsistence farming (Doreen 2011; Kitutu et al. 2011; Watira 2011). According to the National Environment Management Authority of Uganda (NEMA), Bududa has an average precipitation of over 1500 millimeters of rainfall per year, which is controlled by the high altitude of 1250-2850 meters (2010; Watira 2011). Furthermore, there are two distinct wet seasons from March to June and September to November. A short dry season occurs during June and July, while a longer dry period ranges from December to February (Nema 2010; Watira 2011). The combination of fertile soil and ample rainfall help facilitate the intensive growth of crops such as bananas, coffee, beans, and vegetables which are commonly grown through subsistence farming, the major economic activity in the district (Doreen 2011; Kitutu et al. 2011; Watira 2011). Such conditions make the Bududa District an area that is heralded for its highly favorable and reliable agricultural production, thereby making it one of the most important national agricultural bases and food baskets (Watira 2011). Other economic activities include livestock rearing and bee keeping, small- to medium-scale business enterprises such as retail trading, sand mining, timber decking, local beer sales, food stands, transportation services, and limited tourism in Mount Elgon forest reserve (Doreen 2011; The Republic of Uganda: Ministry of the Local Government n.d; Watira 2011).

## Map of Uganda: Bududa District



**Figure 1:** This map shows the Bududa District with other surrounding districts in Eastern Uganda (The Republic of Uganda: Ministry of the Local Government. N.d).

## **History of Landslides in the Bududa District**

NEMA defines landslides as “a downward movement of rock material and soils by gravity” (2010). Landslides are a prominent global occurrence that affect ecosystems, human lives and livelihoods, and social, economic, and political infrastructures (Atuyambe et al. 2011). Moreover, NEMA reports that population explosion, urban expansion, and climate change contribute to making communities even more vulnerable to the hazardous impacts of landslides. This is due to a cyclical effect where landslides cause negative economic and social impacts that further debilitate community infrastructures to build resilience for future disasters (NEMA 2010; UNDP 2004, 2014; UNEP 2008; UNEP “Disaster and Conflict” n.d.; UNEP “Disaster Risk Reduction” n.d.; UNISDR 2001, 2008, 2012, 2014).

Communities in the Bududa District in eastern Uganda have been recently experiencing above normal rainfall, which has led to landslides and, consequently, the loss of life, property, as well as increases in disease and injury (Associated Press 2012; Doreen 2011; IRIN 2011; Kitutu et al.2011; Mafabi and Butagira 2013; Manuel 2007; NEMA 2010; Rosebellk 2012; Wanzusi 2013; Wanzusi and Watala 2013). In fact, according to Pathways Development Initiative (PDI), a local health and education non-governmental organization (NGO) in the area, the Bududa District is currently struggling with various social, health, and environmental issues that combine to increase susceptibility to landslides (2012). This rural district has had an increase in population, which exacerbates pressure on forest resources and contributes to numerous landslides that have resulted in over 1,000 deaths since 2010 and over 20,000 displaced people (PDI 2012). More specifically, landslide occurrences in the eastern and western mountainous

areas of the Mount Elgon region in Bududa have been increasing in frequency in the past few decades (NEMA 2010). In fact, according to soil surveys conducted by Kitutu et al. and Knepan et al. in the Bududa District, the area around Mount Elgon is considered to be under risk of soil slips (2011; 2006).

Although landslide occurrences in the Bududa District have been documented since 1900, much of the focus has been upon landslide occurrences within the past few decades, beginning with the landslide of 1989 (NEMA 2010). Scholars note that the district experienced a major landslide at the time, when the population was smaller and the slopes of this mountainous region were still very much forested, and thus, not as inhabited compared to today. Therefore, the landslide had a less severe impact on the lives, livelihoods, and infrastructures on the community (e.g. Kitutu et al. 2011). The landslides from 1997-1999 are often documented in scholarly work, as these occurred as a result of El Niño rains. These disasters resulted in the loss of 48 lives and the displacement of 10,000 others (Kitutu et al. 2011). More recently, the landslide of March 2010 has been considered a major disaster which had and continues to have a devastating impact on the districts around the Mount Elgon region. This landslide hit the Nametsi Parish, with rocks as large as cars and houses tumbling down the mountain, destroying anything and everything in their paths (NEMA 2010). The landslide of March 1<sup>st</sup> 2010 covered an area of about 80 meters wide from the starting point of where the land and rocks slipped and 250 meters wide at the bottom of the slope. This tragedy resulted in 300 missing people and over 8,500 survivors displaced and left helpless (Doreen 2011; NEMA 2010). Overall, landslide events are reported when there is loss of life, but many

are never reported even when community infrastructures, ecosystems, and citizens' livelihoods are ravaged (Doreen 2011; NEMA 2010).

The historical presence of landslides and their destructive effects on the lives of community members in Bududa provides an appropriate case to investigate. Through semi-structured interviews, this study tries to illuminate the community-based knowledge about landslides, as well as their understanding of how aid relief contributes to reducing negative health and other consequences of landslides. By listening to the voices of those most affected by disasters, this work takes on views that are otherwise unheard while simultaneously providing information about the reasons as to why they continue to be exposed to such risks.

## **RESEARCH METHODS**

This research makes use of 19 semi-structured interviews, three of which were in the form of focus groups, altogether consisting of 26 research participants (10 females and 16 males). Participants include community members such as farmers, elders, healthcare providers, NGO officials, and NGO and government staff who all lived in the Bududa District of Uganda and were directly or indirectly affected by landslides. The interviews and fieldwork were conducted over a period of three and a half weeks in July 2014 across the Bududa District in eastern Uganda. All interviews were audio-recorded and lasted between 20 minutes to 1 hour (with one lasting about 15 minutes).

Conducting interviews with community members of the landslide-prone Bududa District in Uganda is vital in unearthing the processes through which locals create meanings and inform their behavior. The strengths of utilizing interviews to gather data

are especially pertinent in this study. By employing interviews, I was able to gain detailed information about participants' thoughts and behaviors, as I broadened my understanding of the structures and factors that contribute to the continued susceptibilities of community members to landslides (Boyce and Neale 2006; Weiss 2004). Through interviews, I gained insight to the context of other literature on disaster management and aid, thus obtaining a more complete picture of how and why community members and aid relief react to catastrophic events. During my interviews, I made sure to provide a relaxed and open atmosphere so that participants would feel comfortable discussing their experiences, some of which were sensitive and emotional. Moreover, by maintaining an interviewing relationship which requires time and the knowledge by the interviewer about the kind of information the study needs and the ability to help the respondent provide it, I collected data rich in information which goes beyond what can be gleaned from survey data (Boyce and Neale 2006; Weiss 2004). I established a reliable research relationship and paid close attention to markers, defined as "a passing reference made by a respondent to an important event or feeling state" (Weiss 2004; 77). Doing so, allowed me to probe participants about important topics that led to the exploration of more materials important to this study that simultaneously demonstrated my interest in the participants' full experiences (Weiss 2004).

The interview instrument was designed to facilitate wide-ranging discussions about community members' understanding of landslides and aid relief, including questions about causes and effects of landslides, trends in their frequency, community infrastructure in responding to disasters, coping with the effects of the hazards, perceived needs and prescriptions for improving their lives. Though much work has been conducted

about disaster management, climate change, and the role of aid relief, INGOs, and NGOs in the wake of disasters (e.g. Namwamba and Lyles 2007; Roberts and Parks 2007; Shandra 2007; Shandra et al. 2011), there is a lack of attention to and disavowal of individual, household, and community-based knowledge and needs. By conducting interviews, I am able to dissect the experiences of community members for the mechanisms that produce the conceptions about landslides and the perceived gaps in the help that they receive in Bududa.

Despite some fluidity in the exact questions asked and the order in which they were asked, as a general pattern, I asked about organizations or agencies that help the community prepare and deal with disasters, how and when they usually get involved, and how community members would like to be helped three quarters through the interview, often after I ask whether landslides affect men and women, and elders and children differently. Yet, community members explained their grievances, feelings of desperation, their impoverished state and understanding of the destructiveness of landslides throughout the interviews. Thus, while discussions about community-based knowledge about landslides and aid relief were purposefully built into the interviews, it was also clear that fear and lack of resources were prominent themes that shaped their responses to landslides and perceptions of aid relief. In this way, I was able to utilize the experiences of those in the Bududa District to examine more closely how community-based knowledge links to political economic decisions and hierarchies at a global scale.

Although the national language is English and many community members speak English, I was able to connect with a local male interpreter/translator for interview sessions with the help of my host family, the Zaaes. With the aid of a local male

interpreter, I was able to capture the experiences and stories of all community members regardless of their ability to speak English. Moreover, by employing my translator, I navigated situations framed around traditional gender norms which would have barred my role as a researcher. For example, as a non-Ugandan young female researcher, I would not have been able to coordinate interviews with community members, especially those who are male, elders, and leaders as these are managed by men. The semi-structured interviews were conducted face-to-face (see Appendix for Interview Guide).

My interview questions were guided by my research questions. For example, I would first ask participants to tell me about their experience with landslides. I then asked how they knew or found out about the landslide. To learn about how landslides affect the lives and health of community members, I asked whether they think landslides pose a current threat to their well-being. Moreover, I asked participants how people usually respond to landslides and their effects, including aid efforts, in order to learn about the protocol carried out by community members and actors who respond to disasters. Overall, I paid careful attention for markers, trying to pick up any indications of things that may be important, such as how people would get sick after landslides or how aid relief sites are difficult to reach. To avoid harm to participants, I submitted this proposal to Lehigh University's Institutional Review Board and followed the ethical considerations. I made efforts to conduct my interviews in a stress-free manner; they were generally conducted in a quiet, private setting, in the local language.

To gather data, I employed snowball sampling in order to connect with a small group of community members who have been affected by landslides in the Bududa District. My initial contacts allowed me to network with others in the community who

have also experienced landslides. Staying with a local family in Uganda was paramount in this study as it allowed me to observe and interact with the local community. Through this connection, I learned more about how health and injury prevention programs are conducted and disseminated, especially in the wake of landslides. Moreover, the Zaales had already expressed how important and applicable my project will be for the community as a whole, further supporting the community's need for and interest in my study.

To begin the analysis of my data, all interviews were transcribed using the transcription software Express Scribe. The transcriptions were imported into an electronic database, and coded systematically using the qualitative software ATLAS.Ti. I wrote memos during my fieldwork in Uganda and when transcribing the audio files to identify and keep track of evolving themes and ideas that influenced the first round of coding (Friese 2012; Lofland 2005; Miles and Huberman 1994; Saldana 2009; Strauss and Corbin 1990). This initial round of coding was focused on grouping together a variety of themes in a meaningful way based on how they can elucidate my research questions. For the first round, I focused on organizing basic ideas about causes of landslides, effects on the economy, actors who respond in the wake of disasters, and feelings of desperation in families of codes. To avoid losing context when community members explained their knowledge about landslides and their effects, I coded references to each family of codes liberally, capturing as much of the surrounding texts as I needed to understand the connections and conceptions members made (Friese 2012). In this way, I coded sections where ideas would connect, such as how religious ideas influenced members' understanding of the causes and effects of landslides.

I carried out a recursive process of coding where I “move back and forth between noticing and collecting, for instance when developing subcategories” (Friese 2012; 101). After the first round of coding, I decided to hone in on more specific details provided by the participants (Friese 2012; Lofland 2005; Miles and Huberman 1994; Saldana 2009). I expanded my codes in order to capture diverse topics such as various health effects, beliefs about the signs of landslides, and distinctions between different roles of soil. With the expansion of codes, I was able to more clearly identify how people understand and continue to be affected by landslides. I focused subsequent rounds of coding more on the emotional particulars that people discussed on topics such as restarting life, deaths, wanting help, and feeling unsafe. By conducting these later rounds of coding, I was able to link people’s experiences with their emotions, thus bringing out the voices of community members.

Although many of the initial codes produced were based on themes and ideas from my memos, the majority of the codes emerged from the data and were refined over the multiple rounds of coding (Friese 2012; Lofland 2005; Miles and Huberman 1994; Saldana 2009). My memos and coding processes highlighted themes and quotes necessary in providing the perceptions of community members on landslides and the aid relief received in the wake of this disaster. Quotes were organized according to the sets of codes and themes with which they were associated. This list of quotes was investigated and specific quotes were chosen based on how they are able to elucidate the research questions.

## **FINDINGS**

Deciphering how community members think about and characterize landslides is important as it sets the framework for their conception of possible solutions to this disaster and aid response. The semi-structured interviews conducted in the Bududa District of Uganda reveal that community members generally define landslides as an event where soil slips off or is cut off from the hill and moves downward. Interestingly, however, a number of participants specified that landslides also cause deaths and destruction of property, land, and animal lives. A member explicates,

“...a landslide is disaster...it mainly happens to destroy property and take away people’s lives...a landslide is when the soil is cut from uphill and destroys people’s property, destroys people’s lives and then spoils everything. Even animals.”

Though it is not surprising that respondents know the commonsense physical descriptions of what a landslide is and link them to their human impacts, their basic understanding of the destructiveness of landslides builds the foundation about how they evaluate aid relief and how they would like to be helped. Understanding how community members define landslides is the first step in distinguishing how and why they respond to disasters and aid, thus tracing the roots of their grievances.

## **BELIEFS ABOUT CAUSES**

The interviews with community members shed light on the diverse explanations formulated about the contributing factors which cause landslides. Overall, the causes of landslides can be classified into three categories: natural events which encompass climatic and geological phenomena, anthropogenic activities, and religious- and spiritually-based beliefs.

## **Natural Events**

When asked about the causes of landslides, community members explained that weather and climatic variations such as precipitation and seasonal changes in rainy and dry seasons contribute to the occurrence of landslides. More specifically, research participants expressed how continuous and heavy rainfalls are conditions that they believe not only cause landslides, but are also signs that a landslide is more likely to occur. Although the community members did not mention any official warnings utilized by the national or local government systems, many common occurrences serve as indicators that landslides are likely to occur.

Heavy rainfall and climate change, most commonly understood by research participants as changes in temperature and rainfall, are often viewed as linked to landslide occurrences, whether as causes of landslides or warning signs of its possible manifestation. In fact, many of the community members explained how continuous and heavy rainfall brings about fear among the community that at any moment, a landslide will ensue. A male community member who has witnessed “plenty” of landslides during his young adult life describes how “during the dry season it’s ok, but when it starts raining, it causes a lot of threat.” A female community member provides a similar theory as she points out that “when it drizzles then it’s fine but when it rains too much that’s when trouble comes in.”

An overwhelming number of the participants depict how their past experiences with landslides, whether as victims or neighbors coming to rescue fellow community members, involve the presence of substantial rainfall lasting for an extended period of

time. Sixteen out of nineteen interview sessions discussed rainfall as a contributing factor of landslides.<sup>2</sup> Moreover, eleven out of nineteen interview sessions mentioned that changes in weather and increasing rainfall over time contributed to the manifestation of landslides. Of the sixteen interview sessions that discussed rainfall as a cause of landslides, eleven of those overlapped with those that mentioned factors linked in the scientific community to climate change. Despite not having any or minimal formal education, many community members were able to discern how increases in rainfall over time are tied to landslide occurrences. Though community members did not use the phrase “climate change” when characterizing the intensification of rainfall and variations in temperature as climate change, it is clear that such acute observations demonstrate their deep understanding of their local environment.

In addition to changes in precipitation levels and frequency, community members make specific associations between climatic events and geological properties of the land area and soil where they reside. Members point out the interactions between considerable and consistent rainfall with the soil composition in the hilly areas of the Mount Elgon region. This interpretation is illustrated during an interview with a community member about the causes and warning signs of landslides:

“They realize when...it rains too much heavily, like from morning up to evening...they just know that a landslide is going to occur, because water comes out from different areas, mostly in the mountain...it disrupts the land because even in the mountains there, people just know that this outcome of water from the soil...that anytime...land can what, slide.”

Here, the participant describes the community knowledge about how episodes of heavy rainfall occurring throughout the day and in many cases over the course of days and

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<sup>2</sup> Focus group sessions are also accounted for as “interview sessions” throughout this work.

weeks, coupled with the accumulation of high volumes of water in the soil can lead to landslides. More specifically, community members interpret the effects of consistent rain to the soil “softening” up, and therefore causing the land to slip off the mountain. Interestingly, this knowledge demonstrated by the community members have been studied in the scholarly community (e.g. Kitutu et al. 2011 and Knapen et al. 2006), where farmers’ understanding of concavities, the presence of water underground, as well as soil texture, porousness, and matrix are all scientifically supported. In particular, the idea of the soil softening after excessive raining is understood in the scientific community under the context of the specific particle sizes of soil and thus their ability to be permeated by water (Kitutu et al. 2011). Although community members do not communicate their understanding of the soil properties and geological structures in academic or scientific terms, they demonstrate their high level of knowledge about the soil and how its interaction with water may likely lead to landslides.

Community knowledge extends to their understanding that when cracks through the soil are present along the mountainside, a landslide is then likely to occur. Moreover, community members depict how climatic events and geological changes may indicate that a landslide will transpire, as one details:

“...the landslide issues, the cracks, you see, it began, it began as if it’s just something like soil erosion and when it comes down, it widens and when it reaches time to find out that it will even carry some soil at a distance from there to here then it stops there. But when the rain comes again, the heavy rain comes, it grows again then it will again...carry all the soil and push people, and animals, and their properties.”

This citizen depicts his understanding of the important components that catalyze landslides. While many other elements have been suggested to explain the causes of landslides, community members overwhelmingly identify excessive and constant rainfall

coupled with the hilliness of the Mount Elgon region as triggers of landslide occurrences. In addition to identifying the contributing factors of landslide events, it is important to point out that community members like the one above are able to articulate the larger context of how such a disaster can affect people and the community as a whole, despite not having the scientific background researchers may utilize in understanding these events. Moreover, no official warning signs by scientists or government officials have been formulated, thus pointing to the acute awareness of community members in deciphering the causes and signs of landslides. Their knowledge about the relationship between humans and the environment are further elaborated when discussing anthropogenic activities as contributing factors of landslides.

### **Anthropogenic Activities**

Other causes of landslides identified by the community members include anthropogenic activities such as deforestation, overpopulation, over-cultivation of the land, and the use of fertilizers. The overarching theme within this category of causes is the idea that humans are contributing to the degradation of the environment.

Agricultural activities are one of the most important components of the communities in the Bududa District, as the majority of the community members engage in subsistence farming. While the volcanic soil and heavy rainfall provide fertile land for cultivating cash and food crops including coffee, beans, bananas, cabbage, carrots, tomatoes, and various other green vegetables, the rapid increase in population coupled with pressures on families to make ends meet have led to human activities including deforestation and excavation of slopes for construction and farming practices that trigger

landslide occurrences (Dai et al 2002). When asked about the factors that induce landslides, a member sheds light on the causes and effects of deforestation:

“...the landslides have been caused because they have cut many trees down, deforestation. Many trees have been cut down. We’re not having more trees as wished, and the most that we’re just now ...are eucalyptus, but I don’t think they’re good for the landslides...Bigger trees. Bigger roots. That would be a good prevention of the landslides...This trees, this is the cutting timbers...and also the Bududa...we have populated, over populated. We are now very many. Because the average of children now we have seven children...so that means more people, missing more trees. So people are using trees for firewood, woods for construction of house, and the timbers. So trees are just going.”

This community member articulates how the increasing population has subsequently resulted in the widespread practice of cutting down trees in order to sell timber for profit and construct homes and farmlands to survive. In fact, the issue of deforestation was discussed in eight out of nineteen interview meetings. The topic of over population was mentioned in four out of nineteen interview sessions, with three of these overlapping with those that discussed deforestation. Community members like the one above, have clear understandings that environmental degradation like deforestation trigger hazards that negatively affects humans. Moreover, they connect the means to generate economic income through environmental degradation, a phenomenon that scholars characterize as part of capitalism and in the global scale, unequal trade.

Despite knowing that deforestation helps generate landslides, community members also seem to indicate that such actions are carried out in order for families to meet their basic needs. A community member explains that in some ways deforestation has been utilized as a means to generate income, because “they want to sell and get money, take their children to school, so you find out that when the trees in the community

are not there, then the landslide occurs.” Families in Bududa frequently encompass “10 or 5 or 7 children,” leaving generations of families, especially those who are poor, to stay on and cultivate the same plot of land. Given such common situations, a community member asserts that over-cultivation and specifically the rampant use of fertilizers are important factors that cause landslides as,

“...people plant of recently...a lot of onions and when they apply the fertilizers in the soil, the soil softens up and then...because the fertilizers softens up the soil it is easy for the landslides to occur...even in coffee, even in cabbage, so very many...like after maybe cultivate, harvesting the plant again you apply more...the soil is used up a lot because you apply a lot of fertilizer...you put more plants which make the soil more softer...”

Community members link the use of fertilizers and, in general, the over-cultivation of the soil to landslide occurrences because of the idea of the soil softening up.<sup>3</sup> A common theory about the softening of the soil is presented when discussing deforestation, use of fertilizers, and over-cultivation of the lands. These ideas are prominent throughout the study as the use of fertilizers was explained in two out of nineteen interview sessions, the issue of over-cultivation discussed in seven out of nineteen interview session, and the idea of soft soil based on environmental degradation was cited in ten out of nineteen sessions. A member explains how deforestation exposes the soil when it rains because,

“...the direct [rain]drops in the soil softens the soil up and causes the landslides. And then...people who use fertilizers when used a large amount of fertilizer on the soil, it softens up the soil and then when the soil softens up, it is easy for them, for it when it rains so heavily to be swept away...for example on top of the hills when it rains so hard, you find that there is a crack which can be found...and then when it keeps on raining, the water collects in...the cracks, so once there is a lot of water collecting in the cracks, it softens up the soil and then that soil is swept off and that’s how the landslides would occur.”

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<sup>3</sup> Based on my review of the literature, it is unclear if the use of fertilizers has been linked to soil softening in the scientific community.

Members of the community have strong and distinct beliefs about the connection between environmental degradation and determinants that bring about landslides. Though the “soft soil” term may be unfamiliar to sociologists, world-systems theorists link deforestation and over-cultivation with the exacerbation of vulnerability to climate-related disasters in poor regions of the developing world, like Bududa. Also, understandings about the causes of landslides are carefully intertwined with non-scientific explanations.

### **Religious- and Spiritually-Based Beliefs**

Members of communities in the Bududa District demonstrate that their understanding of the causes of landslides go beyond natural phenomena and anthropogenic activities. In fact, the idea that even when heavy and consistent rainfall and the softening of the soil are contributing factors to landslide occurrences, the belief that God or rainmakers are those who have control over such disastrous events are evident in six out of nineteen interview meetings. More specifically, participants who depict their understanding of the causes of landslides as having a religious- and/or spiritually-based beliefs were only evident when natural phenomena and anthropogenic activities were also mentioned. Thus religious- and spiritually-based beliefs did not stand alone as any of the participants’ response about the causes of landslides. This was observed in a community members’ response when queried about her predictions on whether landslides are getting worse or will get worse:

“...all goes back to God because it can rain and then you think it’s going to occur and then it doesn’t and then...when it rains you can also, you know when there’s a lot of soil, you have to literally move, at least.”

Although she demonstrates her understanding that rain can lead to landslides, her beliefs signify that at the root of all incidence is God. Comparable to this response is one stated by another member,

“Like so, to God things...go unpredictable, so like you might think they are not going to occur and then they occur...God has control.”

These members of the community elucidate nuanced conceptualizations of how natural and climatic events can be regarded as acts of God.

In addition to references to "God", the idea that rainmakers are regulating rainfall in the district represents a religious- and/or spiritually-based belief expressed in interviews. A community member states that,

“...when the rain is not so heavy, it's fine but when it starts raining heavily that's when the landslides occur. But...there are people who feel they can control rain and they can make it rain, like the rainmaker, so they go on bewitching the rain, so it doesn't know if it is ever God-send or there are people behind the rainfall who bewitch it so it can rain and then cause tragedies in the community, but...there are people who are sometimes behind all this making getting rain so hard so that something can happen in the end.”

Community members in this study demonstrate their ability to have dual memberships in scientific and religious- and spiritually-based beliefs about the causes of landslides. In fact, religious-based beliefs were cited as causes of landslides in five out of nineteen interview sessions, while spiritually-based beliefs was discussed in one out of nineteen interview sessions. However, all six interview sessions which cited religious- and spiritually-based beliefs as causes of landslides also mentioned anthropogenic and natural factors (with one session only mentioning rainfall in conjunction with religious- and spiritually-based beliefs). More importantly, my study highlights how such a combined belief system allows community members to adhere to their religion and/or spirituality without muting or muddling their knowledge about the contributions of

human actions in degrading the environment and climate-change related events as causes of landslides. Community members' ability to navigate two seemingly diverging bases of knowledge becomes more prominent when understanding their perceptions of the effects of landslides and the efficacy of aid.

### **BELIEFS ABOUT EFFECTS**

In addition to the community knowledge about the causes of landslides, people also have diverse ideas about how such disastrous events affect communities including the destruction of people's livelihoods and the upsurge in health diseases, injuries, and deaths.

Community members are very well aware of the devastating effects of landslides, as many participants share their experiences of how their lives changed when landslides wiped out their homes, livelihoods, and family members. One participant outlines the landslide event that nearly took her life:

“So, when it occurred, we were eating food in the house. So when it erupted, we, the three were the only people who were able to run away and the kids remained in the house. When we tried to run...we fell into our garden. When the soil came, it covered us... So the kids were covered in the house itself, the foundation, but for them, they were covered in the garden...So like, when they were covered in the mud for some time... from 3 pm til 5 pm, but when it covered us, they, they lost conscious[ness] and then she literally never knew what had happened, and then after a while she also saw the husband at another place...in the garden. So when the people in the community from barrio, that's when they came and dug this...and then they put them aside. So after that, they washed the mud...and then they took them to hospital.”

This participant shares her tragic experience of the landslide that took the lives of her six children. As she explains, only she, her husband, and brother-in-law were able to survive the disaster after they were luckily dug out of the garden in which they were buried as the

land slipped off the mountain. Her story, although amazing in that she and two other family members were able to survive, is not uncommon. In fact, deaths as effects of landslides were discussed in fifteen out of nineteen interview meetings. In many cases, people are buried in mud and are only found when neighbors come to dig up bodies, if they are even discovered. Moreover, the loss of loved ones is a very unfortunate tragedy that has touched so many lives in the Bududa District. Not only are the deaths of family members horrific, but the mourning process for community members seems to be very painful as well. This participant goes on to say that since she and her husband and brother-in-law were still seeking care at the local hospital, neighbors had to take photos of the different body parts of her children that were unearthed and therefore, no traditional burial was held for her family.

Indeed, community members in the Bududa District have long endured living in the landslide-prone area that they call their home. However, even when people do survive the catastrophic effects of landslides, they face many challenges that affect their mental and physical well-being, ability to meet basic needs, and build and utilize community infrastructures such as health centers and schools. A male participant who had recently lost his wife and two children explains that he has been experiencing a “mental disturb[ance]” for he has not been able to “...believe that that had happened.” Mental disturbance, also referred to as “mental torture” by another member, is only one of the myriad ways in which people in the community experience trauma after landslide disasters. A participant explains how “...she would not eat...” after losing many family members in the Nametsi landslide and that she had to be coaxed by a friend that she had to “...at least...have to make sure you eat” in order to continue on living while

simultaneously mourning her loved ones. Another member illustrates how people "...are not having hope because they are, their plantations and their houses just washed, was washed, so people are just drinking a lot because they want to forget all that."

The discussions about the negative mental health effects of landslides were present in five out of nineteen interview sessions. Though this number may not constitute the majority of my interview sessions and therefore participants, it is important to consider that mental health issues are often taboo in many cultures. However, investigating the losses community members must face in the wake of landslides speak to the high likelihood that trauma is a common experience.

Although some community members are able to survive from landslides, it is evident that they are well aware of the horrific and painful realities that they must face in the aftermath of such calamitous situations, so much so that people articulate how shocked and hopeless they felt and continue to feel as they carry on living with the risks of such a disaster. The experiences of those who escape landslides are depicted by a community member:

"...it happened that it had destroyed the people's lives, people's properties, and most like lands, animals, houses, they fall, people some of them, they are now homeless. As I talk right now, some people are just staying in their relatives' home because everything is taken by the landslide. So, the landslide have been a problem. It has caused what we call homeless, people are now homeless...People are not having their own properties, properties like coffee, coffee plantations, they are taken, the matoke, this one bananas been taken, this one the land, its soil is also taken because they had to move and... we are just seeing the stones... We are seeing the ...soil, where you cannot even grow the crops again there. And then, we are seeing even, that animals...killed."

Despite escaping death when land slips off the mountain, community members articulate that survivors like themselves face many challenges in their ability to live life knowing

that they are not safe nor secure in meeting their needs. Landslides affect people economically and socially as people lose their gardens which they use for subsisting. When crops such as coffee and tea are lost in disasters, a participant describes this as a “big blow to them as a family” since households predominantly rely on their farms for food and income. In fact, the issue of economic losses based on the destruction of homes, properties, and gardens were explained in fifteen out of nineteen interview sessions conducted, thus highlighting the pervasiveness of such losses for community members.

Likewise, the loss of family-owned animals also prove to be devastating for households as well, as “...the animals that their father planned to go and sell it is killed...by the landslide” thus leaving families without means to afford school fees for children. Consequently, families are forced to prematurely pull their children out of school, adding to the large number of children who struggle to complete schooling. Furthermore, cultural practices are disrupted as one participant describes,

“...when a father has planned to...do a wedding with the wife, or a father’s plan...to make what you call dowry...you find out, when the animal is also taken and they’ve planned to take that one to the...father of their man, it also affects...and all suffer.”

The losses from landslide events are extensive, as the effects intrude on many levels of people’s lives.

Moreover, community members point out how people often become homeless and rely on their neighbors and relatives to support them by sharing their homes, foods, and other resources. A participant highlights the endeavors faced by neighbors and relatives who try to keep afloat during critical times:

“Because now, of course, now in my place, I am staying with 80 members, so you find that what I budgeted for my family, for the month, so when that happens...we eat the food in two days or three days and other entire day, I don’t have food.... Like the other

time... the children were just crying, crying because they don't have milk, so they give me more money, for buying them...milk, but so like now, it's got finished...Second, sanitation. Like in my house because we're having now very many using one latrine, which is a health problem, yeah. Very bad. You find that even in the, in the home, now children, they have to, because you know, these young children...defecates... everywhere because you have to tell them. And if it is one, you manage, it defecates...you remove, but now if there is many, that one is going there and another is going there, you find that sanitation is...really not good.”

Although community members are open to taking in neighbors and relatives, participants acknowledge that such decisions come with inconveniences and concerns that strain all involved parties, including the home owner and refugees, especially children and infants. Moreover, this participant illustrates how people must be mindful of their resources because food and sanitary facilities must be rationed and sustained for a large number of people. The problem of hunger was recognized in nine out of nineteen interview sessions, while the issue of homelessness was discussed in four out of nineteen interview meetings.

As this participant points out, health issues commonly arise during the aftermath of landslides. Participants as a whole explain that malaria, diarrhea, and cholera are the most frequently experienced illnesses by community members after landslide disasters. A member summarizes the diseases the community suffers from:

“I believe there is malaria. There is diarrhea. There is cholera. Because the fact that for example, in case a landslide occurs, even when it has not, you know, killed very many people, just the soil moving and you know, the stream, the crop, there is a lot of water...which keeps coming, and...the mosquitoes breed a lot. And then, the fact the very many people don't know the...importance of sleeping under mosquito net, they are being bitten by the mosquitoes and... very many of them end up getting malaria. Another common one is diarrhea because very many people use the river, mostly the main streams to collect water. So the fact that most of the landslide come and pour everything in the river and after people think that after everything has swept away, then the water is clean, after them starting to use the water...you find out that, getting very many diseases like

diarrhea first of all those who shower in the water end up getting skin rashes. Another common one is cholera because for example, the people in the camp, for example in 2010, it happened that...very many people were packed in this same place and their hygiene wasn't the best, so eating bad food, poor sanitation, lack of enough water brought a lot of diseases like I told you cholera and everything.”

Community members are very familiar with the effects of landslides. More specifically, people are also well-acquainted with the processes of how landslides occur and how the movement of water, soil, and everything in its path consequently lead to community members' increased susceptibility to diseases such as malaria, cholera, and diarrhea. In other words, community members are aware of why they suffer from the common illnesses mentioned above, how such situations came to be. Issues of health diseases are notable as the lack of proper sanitation facilities was pointed out in ten out of nineteen interview sessions; cholera was discussed in five out of nineteen interview sessions; cough was explained in two out of nineteen interview sessions; diarrhea was suggested in ten out of nineteen interview sessions; malaria was referred to in thirteen out of nineteen interview sessions; and overall health diseases was cited in ten out of nineteen interview meetings.

Taken together, these perspectives demonstrate that community members understand the mechanisms that trigger landslides as well as the effects that erode the lives and livelihoods of everyone in the community. The attention given by members of the community on the causes and effects of landslides speak to their understanding of how cataclysmic this disaster can be for the community. Additionally, the narratives gathered in this study provide a wealth of information which considers how aid relief can be better aligned to meet the needs of community members who suffer most from this persistent threat.

## **PERSPECTIVES ON RELIEF EFFORTS**

The interviews conducted with community members revealed the types of aid received in the wake of landslides. Moreover, community members explained their perceptions of how aid is organized and distributed, and ways in which it should be altered to more effectively help those who survive the disaster in the aftermath and the future.

According to participants, survivors of landslide disasters are generally provided food including maize flour and beans, sleeping materials such as blankets, household utensils like pots and pans, and coffins in order to allow people to carry out traditional burials. Furthermore, safe campsites for displaced individuals were organized by the national and/or local governments and, in some cases, relief agencies like the Red Cross, the United Nations (UN), World Bank, and UNICEF. However, it must be made clear that the aid received by community members is contingent upon what effects the landslide had on the community, who is providing aid, and how and when the assistance is served.

When asked about the varying supply and support received in the wake of a landslide, a survivor reveals,

“...there was no organization which came to ...rescue, but when the Nametsi incidence happened, they, the UN was the one which came in to help the people...because the one at Nametsi was a very big landslide and it killed very many people, but...this one it didn't kill anybody so they feel because it didn't kill anybody, that's why they never got any help...the NGOs want to help people who have died and then they don't want to help the people who have survived...”

In the eyes of community members who escape death, actors who aim to provide support and supplies for victims of disasters often choose to help after events resulting in the

losses of lives while in many cases failing to help those living individuals whose properties and therefore, livelihoods have been swept away. Such decisions undermine the fact that Ugandan community members in the Bududa District are heavily reliant on their gardens and livestock and that such losses result in vulnerable and incapacitated households.

Although the lack of help is a prevalent issue amongst those in this study, it is also important to point out that some survivors do receive help, while others do not. As one member explains,

“Now, now, if we talk about the government, government cannot provide enough resources to these people, because...the last time, they sent some maize flour and some beans, so the people fought because there were few. And the people are suffering. So they cannot help with all of them. They help some and some not.”

For many community members, the reality is that only some people will receive help, but in the end everyone suffers because they are all very susceptible to landslides and what little resources they receive is simply not enough. The data I gathered from my fieldwork show that community members expressed feeling forgotten in two out of nineteen interview sessions. Moreover, community members explained how they were not helped in six out of nineteen interview sessions, while they also mentioned feeling that they have not received enough help in ten out of nineteen interview sessions. Additionally, community members must typically relocate to disaster aid campsites or neighbors' and relatives' homes in order to restart their lives.

The same sentiments can be observed when participants discuss how people must relocate and are often forced to depend on their neighbors and relatives, thus limiting an already small amount of resources for a large number of people. The reality that only some people will receive help is even clearer when participants who have survived the

Nametsi landslide of 2010 explain how they, too, did not obtain help. They share how they have lost family members like sisters, brothers, nieces, and nephews, along with friends and classmates and were still unable to receive aid in the aftermath of the 2010 landslide despite the media attention on this catastrophic event. Narratives collected in this study show that households were unsuccessful in receiving aid and support from the myriad of aid relief agencies involved in this specific landslide disaster due to how aid was disseminated. A survivor of Nametsi expounds on such a situation:

“The ones who were the outsiders, the people living in Bududa but not from Nametsi are the ones who ended up getting help and then...the people who were relocated, most of them were brought back, not alive but dead people and if not dead, they come back sick, so...most people end up suffering a lot and...they end up not getting help but the people outside Nametsi from other villages are the ones who get this help...the blame [is] on ...the government leaders who have given maybe relief to help the people of Nametsi but at the end of the day, this help is not given...some of the people who lost their family members but have never gotten any help from the government as maybe compensation or something to help...for their tragedy.”

This community member makes clear that although help from the government and other agencies were sent for residents of Nametsi, the process through which such services were provided was unsuitable for those who have just had a traumatic experience. As a member puts it, “...the help only came to the camps and then the old people were not able to get anything because they didn’t go to the camp but they kept promising help but it never came, ‘til now.”. Thus, such situations hinder those most in need from obtaining help. As a member explains, victims “...were still mourning and they were still in shock...” and only found out “...that these people were raiding their camps.” Twelve out of nineteen interview sessions mentioned aid relief as ineffective as efforts failed to help victims of landslides. Moreover, five out of nineteen interview sessions referred to the

need to relocate aid relief sites to more accessible locations. Of the five interview sessions that discussed the need to relocate aid relief sites, four of those overlapped with those that mentioned factors linked to ineffective aid relief efforts.

In addition to the emotional and physical burdens of landslides on community members, the protocol which guides the aid response process proves ineffective as it attracts people from nearby villages who are not the actual victims of the disaster, thus taking away services and resources from those who were harmed. A community member from one of these interview sessions details the procedure employed for aid response:

“You see, what they usually do, when they want to give some sort of assistance, they inform them that, go and collect, where the trading center, down there... if the organizations would come to the particular place to find out who the real people are affected, it’s better than them being taken to the main center and then other people come up... Now in the process of going, even the people from different places who go and not affected by what? Landslides, also go there. So when these people, officials say these sort of agencies or government, come to accept aid, they find that they are now counting people who are not affected. What they do, they usually come, but now they say okay, we’re registering people from down, or they pass over announcements, should come to this place. Of course, somebody may not be able to move the whole place, to find out who is affected. But they have... representatives, like the local councils, okay? So these leaders are the ones who are supposed to identify this... But of course, because of mad practices, some people want to take in their people, their friends or relatives, or somebody, maybe as a bribery here and there, so that they also benefit... Corruption is a big thing.”

As suggested by this participant, aid is not only raided by opportunistic neighboring villagers, but also misappropriated by corrupt leaders. A strong and common sentiment held by this study’s participants is that the victims of landslides are not helped enough, as they are expected to trek to town centers or camps in order to receive resources all while in the midst of experiencing physical, mental, and emotional trauma.

Moreover, there is a lack of accountability for how relief resources are handled. Narratives collected in this study show that it is common for community members to put the blame on government leaders and those who provide aid relief for their corrupt, ineffective, and inefficient aid response practices. Despite continued sense of dissatisfaction and frustration in addition to a host of other emotions, community members continue to utilize their experiences and knowledge about past landslide disasters in formulating ways of ameliorating the current aid relief system. A community member proposes:

“...I would say...if the incident has happened, first of all get pictures of the landslide itself. I would recommend that the people in the village, that the landslide has happened, they register with the names and get them with the photos. I would recommend that those people are going to get maybe cards, to show that they are the one, and when they are given the card, that card will have your face or your picture. You register with one, they know you are the real person. I would say not things to be handled in the subcounty, but maybe the subcounty just helps the LC1s and LC2 where it has happened. So this LC1 and LC2 be in charge and when these people giving things, let them not to call these people here, but maybe go to the area where the landslide has happened, if it has happened here, so we bring things here, so that we know, we are giving the real people. But if the landslide happened in the mountain, but you are running people here, that means that people [not actual victims] here will be coming.”

The community members in this study are well aware of the ways in which aid relief is diverted from the actual victims of landslide events. In fact, the problem with registration accountability with the distribution of aid was identified in seven out of nineteen interview sessions. Moreover, the issue of corruption with the divergence of aid from victims was discussed in seven out of nineteen interview sessions. Interestingly, four out of the seven interview sessions which mentioned the issue of registration accountability overlapped with interview sessions that discussed the problem of corruption. With this, a

number of the participants echo the recommendations mentioned above, as they yearn for accountability and transparency from their leaders and aid donors, and thereby alleviating the current state of ineffective and inefficient aid response system. More specifically, participants like the one above, disagree with the bureaucratic handling of the disaster relief which often creates gaps between the victims, local leaders, and those providing the resources. As noted by this participant, the LC1 and LC2, the local leaders in the community, should manage the distribution of resources to survivors as they are the government officials most familiar with the community. In particular, the LC1 and LC2 should distribute the resources on the site of the landslide, thereby mitigating issues around inappropriate aid relief locations and mismanagement of supplies.

Overall, this study captures the accounts of community members in the Bududa District of Uganda who have experienced landslides and continue to endure the stresses, traumas, and negative effects of such disastrous situations. Sadly, not one participant had expressed feeling satisfied for the help that they received, nor did any member explain that their needs were met through aid relief. Although the government and organizations like the Red Cross were mentioned in some interviews as actors who respond to landslide disasters, members also depict the limited local infrastructure dedicated to this issue. Moreover, neighbors were cited as local actors who helped in the wake of landslides, but none of the members talked more clearly of local organizations focused on disaster management. Thus, this lack of discussion about local infrastructure point to how limited they can be. At its best, assistance in the wake of landslides is undependable and limited, and only some people are helped. The redirection of resources to those who are not actual

victims, abuse of power by leaders, and unsuitable relief sites stand as significant obstacles in people receiving support and services.

### **PERCEIVED NEEDS**

The previous sections outline how community members in the Bududa District in Uganda discern and interpret what constitutes a landslide and the diverse causes and effects of this phenomenon. Understanding how community members conceptualize landslides and their effects matter, as such beliefs are important components that influence people's behavior, livelihoods, and perspectives. The interviews with community members shed light on the wealth of knowledge accumulated over the various landslide disasters that have devastated communities in Bududa. More specifically, this study provides evidence that community members are not only aware of the causes, warning signs, and effects of landslides, but that they also understand how inadequate and too often unreliable aid responses are in meeting their needs. Despite their awareness of the dangers of landslides and the incompatibilities of aid relief in sufficing their needs and grievances, it is a wonder as to why they continue to reside in the hilly Mount Elgon. In other words, why don't the community members who recognize that they are at risk of a landslide disaster move from harm's way?

The stories of the people in this study illuminate the possible explanations as to why even when people know that landslides endanger their lives, livelihood, and overall community well-being, they do not move away. Personal accounts captured in this study eliminate explanations provided in prior literature about how people apply their beliefs in their lives in order to cope with living in areas vulnerable to disasters. Scholarly works

such as those by Basit (2007), Chhean (2007), and Pollock (2007), illustrate how beliefs such as religious faith facilitate the creation and use of social networks and serve as important ways for survivors of disasters to cope with the negative effects. Furthermore, customs and traditional practices intertwined with religious and spiritual beliefs allow people to obtain a sense of identity and security so much so that their perceptions of risks may make them susceptible to more risks. An example of this is depicted by Schipper (2010) on how people in El Salvador are able to live in a flood-prone river based on their faith that God will guard them from the risks of which they were well aware. Similarly, Schipper (2010) goes on to explain that despite not having strong attitudes and thoughts about hazards, people's beliefs may still influence behavior that would lead to increased exposure to risks. Schipper explains that due to the religious obligation to spend considerable amount of time praying, people of the Orthodox Christian faith in Ethiopia withdraw from tending their crops, thus risking their failure (2008).

Unlike prior disaster literature, this study provides evidence that the people of Bududa neither use their religious- or spiritually-based beliefs in reconfiguring how disasters such as landslides affect their lives nor do they lack strong views about the perils of landslides. The interviews with community members shed light on the diverse explanations formulated about the contributing factors which cause landslides, some highlighting the overall vulnerabilities of poor communities with weak governments that rely on aid relief rather than taking on disaster preventative practices. With this understanding, people express unmistakable attention to the risks that many community members are often exposed to. In fact, when asked whether he thinks landslides pose a current threat to his well-being, a member responded,

“Certainly. It kills. They kill. Isn’t it? They sweep away people, they kill relatives, we lose animals, we lose plants, crops. Yeah, it’s terrible. Especially it’s widespread, it is very destructive. Yeah.”

There is a clear understanding about what landslides are and how such disasters can affect people and their communities. In fact, fourteen out of the total nineteen interview sessions conducted call attention to the threat of landslides and its effects amongst community members.

More importantly, community members who continue living in landslide-prone areas are simply not unaware, but rather, in search of ways in which they can obtain help that they see fit for their needs and ability to feel secure. This is depicted in the interview with a survivor:

“She says there are 50-50, they’re not safe, but they just, this is like, they’re living here but not 100% safe...She knows that. Maybe anytime.”

Even when this participant explains that “God has control” over whether landslides will occur or not and who will survive or not, she goes on to explain that she feels unsafe living in her current home because she knows of the possibility that landslides can ensue at any moment.

Moreover, this same member asks about the purpose of this research as she was curious whether it was for completing a requirement for my academic program, sending the results to the government, or is “...there any hope for them...in the community.” This question is interesting as it points to this member’s awareness of the possibility that some kind of help can develop from the research with which she is participating. In this regard, even when she has expressed how her religious views have influenced her understanding of landslides and the effects on the community, her beliefs do not undermine her perspective on how landslides pose real dangers for community members in Bududa.

Despite what the literature says about how religious and non-religious beliefs matter in how community members may cope with being susceptible to risks of disasters, this study shows that people are not making excuses or story lines that justify their staying in the area. On the contrary, this study shows that community members are very much aware of the possible catastrophic effects landslides can have, but that their needs and grievances are not heard nor met by aid relief. In the eyes of those who have experienced landslides, it is pointless to be helped after such a calamitous event has already ravaged the community. As one member suggests,

“Government comes in, I think when they occur but that’s not been enough done to help especially people who are displaced because it is almost meaningless to allow things to happen and then you come in to help. They have not...helped. Sometime, when this, this happened, 2010, it happened after that, Nametsi, many people lost their lives, that’s when they came in and moved...some people. Even when they moved them there, they have not been at quickly what, settled. And I am told where they settled them, life is not all that good. The place is so dry, water is not there, so some people have resorted to...coming back...They only come in when they happen, they find these people these place desperate, so they come and put in issue remedies and then they take to other places, and then maybe wait for another to happen and then they again come in with some relief, I don’t know... They give them some little relief fund, leave them there on their own. What happens next, we don’t know...”

Although aid may come in the wake of landslides, community members like the one above explains that helping people after the landslide has already swept away their homes, gardens, livestock, and family members is absurd, especially when people are aware of the effects of such a disaster. This member also points out that even when displaced populations are resettled, they generally face hardships due to the poor conditions of the new location. This reality is true for some of the participants in this

study as one explains that rather than seeking help at a distant place, not knowing what would happen to him led him to decide to return to his landslide-stricken home.

However, the narratives collected in this study provide evidence that many community members would like to be relocated by the government given that their needs are met, as this desire was indicated in ten out of nineteen interview meetings. For example, it is not enough for people to be relocated to any “funny” place where people would not fit in and do not understand the culture or terrain. Rather, stories from the participants of this study indicate that it is not only important for the government to prevent people from living in landslide-prone areas, and therefore experiencing landslides altogether, but also to do so by providing free land that is within the district so that the people can stay in areas where they are familiar with the culture, language, climate, and agricultural practices. Concerns about relocating to areas with similar culture was voiced in six out of nineteen interview session; ancestral ties was mentioned in five out of nineteen interview sessions; family network was discussed in five out of nineteen interview sessions; language was cited in three out of nineteen interview sessions; and weather was discussed in four out of nineteen interview sessions. One member proposes quite a comprehensive list of mediations for those at risk:

“...what can the government do? First of all, to resettle these people by relocating them... They are very positive about being relocated, but so long as government or relief agencies put in infrastructure such as housing, education, house schools, and also put up health centers in those respective areas provide such amenities. People want to... They are open, they want to go, but if there’s no way they are going, there’s no help, they have no choice other than to live where they are, to die from there... Yes! There’s a threat!...there already cracks, underground cracks which can be seen, and then know anytime, the landslides is mostly going to happen. So, but they have no option, they have nowhere to go. So when I ask, the government to intervene, by providing one, land which is free and

which is not vulnerable to landslides and also provide social amenities to people, schools, hospitals, roads, electricity, water, and some subsidies supporting to afford this food stuffs for the beginning.”

The interventions presented by the community member above outlines both the reasons as to why people continue living in areas vulnerable to landslides and a general wish list of resources people should be provided when they are relocated to a new area. In addition to meeting the needs noted above, it is very important for a number of participants to also reside where they are able to feel connected to their ancestral ties in addition to being able to manage their land and social networks.

More specific to how people perceive aid relief can be better understood when community members discuss their grievances. Some participants reveal that although the government has agreed to relocate people from hilly and risky areas to safer flat lands, this continues to represent a failed promise. A community member explains:

“Government promised, they, when they came and checked, and we went around, they told us that they will welcome these people who are displaced, they will give, the government, our small government the money to buy plots here and then build what? How do we call it?... Story buildings...So we can share, but it has never happened. When I went to the district I just heard that they are taking, they are going to buy land, one billion from (village name) where there is also disaster because they are... they come during the night and kill people and take their things...So I would suggest that they give our government the money and then we look at the plots here, they build those houses here. I think it can help...there are people who are given the authority to maybe look for land where they can locate the people don't come on ground to talk to the people themselves so they literally decide on what to do, choose on what to do without even consulting the people that where do you think would be a good place for you people to be relocated and yeah.”

In this case, there are institutional plans that would allow people from hilly areas to relocate, but as suggested here, the new location may be safer in terms of landslide issues,

but there are many other life-threatening concerns. Moreover, this community member reveals the inefficient timeline which the government uses when working with community people who are in dire need of immediate and effective actions. Similar experiences were told by other members as they share their frustration that although they have registered back in 2012 to be relocated to a safer land, it has been two years since they have heard from the Red Cross about shifting to a lower land level. Feeling the frustration and disappointment in addition to the threat that a landslide can destroy his life, this participant like many others expressed the hope that my research can “help echo what their wants are and their needs are so that they can be in safer land soon.”

A sense of desperation is apparent throughout the narratives in this study. The community knowledge about the causes and effects of landslides are utilized by members as push factors to leave risky areas, regardless of religious and spiritual beliefs. This idea is evident when participants explained their desire to relocate to flat lower level areas as they inquired about why this research was being conducted. A member shares how appreciative she is about being able to share her experience and provide “accurate information” for what she hopes can be useful for obtaining help:

“...very many people have come to do this same research to ask the same questions and then they say that when it occurred, very many people came but they, because they’re still in the shock...they were unable to give...accurate information because they didn’t want to talk about it, so they say the memories are not gone, they are still fresh, but they’re prayer is that whatever your research is all about is that one day, maybe it can be of use and then they get maybe helped.”

This quote captures the strong feelings experienced by this community member and other victims in general as she explains that the mourning period has passed and that it is now time to seek help. The stories of participants voice the importance they put on needing to

concentrate on the quality of life rather than simply surviving and enduring a painful and traumatic experience. This study elucidates the idea that aid relief for the people in Bududa is not meeting the needs of landslide survivors and should instead be refocused on eliminating the possibilities of people experiencing this catastrophic event altogether. Addressing the aftermath of landslides, providing temporary relief, and waiting for the next occurrence of landslides to communicate with community members undermine people's needs, grievances, and hopes of living in safe and secure homes.

In some cases, feelings of desperation are revealed when community members discuss how despite government efforts in helping its citizens, landslides and their destructive effects on the community are inevitable. This sentiment is evident among some participants, as one explains,

“So, probably, the, the government tries to help but it is a big thing. How many people can you help? Because even in Haiti, you had problems they couldn't help them. I remember President Clinton was in charge of that thing, the earthquake, that we even got this, what do you call this thing when people get sick?...Cholera...There's cholera there. And that's virtually developed place, isn't it, as compared to ours?... Remember, those are disasters and how do you move massively people? And how can you help those ...those families?...I feel, make people's lives better. Meaning, provide them with the necessities where they are, ok, as you plan for the worst, let them have probably electricity, have their water, new sanitation, schools nearby. Prepare for the worst really, it's like all of us, even you people down there, you've got your typhoons, tycoons, whatever, you, you, you've got to give them a better living, so that, for the short time that I'm there, at least let me enjoy myself. See what I mean? Prepare them, give them the health services, schools, what certainly essential services, basic, give them the successes, give them education. Now if we give these kids education, some will move away automatically, they will be employed right? They will be employed there and stay there— In the cities and stay there. So give them the education, facilitate them to move away in another manner. Through probably education, through the services. Girls may probably get married with the young man down what, down the valleys, that sort of thing. Give

them a better a life. And then, themselves, will rig out of it somehow. You see what I mean?”

This participant sheds light on how desperation in the context of landslide disasters has led to a conclusion that people should be allotted amenities that would enhance their very limited life, as the government is incapable of relocating its people from landslide vulnerable areas. Rather than asking for better aid in the wake of landslides or demanding to be moved away from such risks, this participant reveals that the government’s lack of capacity to protect its citizens fuels his hopeless and despondent view that community members can be saved at all. Such a view has allowed him to reframe his understanding that people in the community should enjoy their lives as much as possible until they face their premature deaths. In this sense, dying from landslides must be accepted as a part of life for some people; especially those who are poor, because the government is incapable of doing more to help.

Interestingly, this participant contrasts the Ugandan government with that of Haiti. He implies that if Haiti’s government, one of a “virtually developed place” cannot help its people with issues of cholera in the wake of an earthquake, how can people expect a poor nation like Uganda to do better? Although Uganda and Haiti are both categorized as low-income economies (\$1,045 or less) according to the World Bank, this participant supports his proposal of helping people in the Mount Elgon to follow a “business as usual” lifestyle due to his perception of Uganda as a less developed and poorer nation than Haiti when it is not really so (World Bank 2015). The understanding that poverty and lack of access to resources by many of the participants in this study is best explained in the context of the global economy. The same community member who compared Uganda to Haiti expounds on what could be possible for the Ugandan

government and its people if it were only included in the global economy:

“No, for me, you see, probably, what can people do? You, the advanced countries, you can help in a way. Like those afforestation, sanitation, things like that, probably helping people to develop fast growing seeds, not this G, G...[genetically modified organism, GMO] crops—Oh, those are growing, some of us because you see, you produce those things, it means we have always go for seeds from them. But now here we use our own seeds repeatedly—I harvest my crops, next year we use the seeds. But yours, you cannot reuse them... What does it helping us, because we are producing our own local seeds. So you people can help us. You know, you should not exploit us. You shouldn't. Exploitation is bad, but mutual, there are things you can gain from us and we gain from you—For instance, we are coffee growers, in this area—Now, why don't you help us to process the coffee here and sell to you, a ready-made product? Because it gives a value to the crop, but when we sell to you in the raw form, we are getting so little! I will tell you, I wish you will go to the supermarket, but our own coffee it's called Elgon Pride, the price of about 250 grams is about 8,000 shillings. A kilogram of coffee is about 3,000 shillings. Now out of kilogram of coffee, how many grams, grams process do you get? So that's what I am saying, help us to process certain things here locally.”

This community member provides the backdrop to his understanding of why Uganda lacks the capacity to provide better provisions and solutions in keeping members of the Mount Elgon communities safe from landslide risks. He highlights that Uganda's weak economy is at the root of the problem. He outlines how Uganda is often getting involved in “raw deals” where raw goods such as coffee are exported for much cheaper prices than when coffee is processed and sold by developed nations. This community member also demonstrates his understanding of how the suffering of members of the Mount Elgon community is connected to Uganda's position within the globalized economy; where the socioeconomic relationships of rich countries negatively impact poor nations like Uganda. As he points out, Ugandans are responsible for the raw materials such as the growing of coffee beans which are then exported at very low costs to be processed,

advertised, branded, and sold at much higher costs to profit those in developed nations. This community member's recognition of the global phenomenon of the international division of labor highlights his understanding of how the relegation of the production of raw goods in developing nations negatively impacts such countries and its poor and vulnerable populations.

Moreover, he describes how local farmers are hindered from subsisting due to the widespread use of GMO crops which make local and often poor farmers have to continually purchase the seeds each season. Again, he depicts how people of Uganda must rely on rich nations and their technologically advanced processes and products in order to survive in the global economy only to leave developing nations in positions to be exploited. In this way, this community member connects his understanding of the global hierarchy to why the Ugandan government lacks capacity to relocate citizens in the Mount Elgon region to safer areas. Rather than simply asking me whether this research project can help the people of Bududa as many of the participants in this study have done, this community member demands that rich countries like the United States should aid Uganda in developing. Here, he describes his idea:

“Suppose you can also help us to learn how to make vehicles. But you don't, you want us to come and buy from you. Teach us certain things! Certain industries so we learn from you! You see what I mean? That's the mutual thing we really want from you, especially this president here, he's after finished, like we discovered oil down there, now they wanted us to export crude oil, he said no, let's refine the oil here. So, the byproducts, like for instance, I will tell you, I grow coffee, but we don't have fertilizers, fertilizers are from the byproducts of what, petroleum. Now, if we out of the soil we refine it, the byproducts we make our own fertilizers, so we shall put in our coffee, get a better crop, get more money, get a better living. You see? But we are not getting that. We are not getting that...It's a raw deal, but we can profit from each other, you know?”

Although much of the narratives gathered in this study point to the issue of poverty and

its burden on poor populations, this community member bridges his understanding of why subsistence farmers are struggling to provide for and protect their families from health and disaster risks within the global context. The degradation of the environment through over-cultivation and the exploitation of people's labor only profit rich nations. Therefore, he challenges the current system as he questions why there is a lack of a mutual relationship that would allow developing nations to profit as well.

Collectively, the narratives from this study weave together the experiences of community members that explicate the situations which restrict them in the Mount Elgon region. Despite the development of disaster preparedness, management, and relief works in Bududa, constant fear of landslides that endanger their lives and livelihoods is extant throughout communities. Ultimately, these community members express their understanding of how inadequate and ineffective the government and aid relief in the wake of landslides continue to help only easy-to-reach people, while disregarding those who are most incapable of seeking help.

More importantly, this study sheds light on how community members use their understanding of the negative impacts of landslides to support their desire to be relocated to flat, low-level safe lands. In other words, rather than obtaining what limited help they may receive in the wake of a landslide disaster, they strongly feel the urgency to shift to safer lands to completely avoid being susceptible to landslides. Not only should aid relief be reorganized to more accessible areas to victims of landslides and restructured to better establish accountability amongst leaders, but relief work must also be reconfigured so as to focus on preventing people from getting harmed, rather than reacting to landslides.

Contrary to scholarly literature on culture and disaster management, Ugandans in

Bududa do not employ coping mechanisms that “sugar coat” their perception of the negative effects of landslides. In fact, community members point out that desperation and fear is a common sentiment in the community as they wait and wait for some drastic help. Interestingly they also point to how poverty plays a role in limiting their capacity to better their situations. This study makes use of details about participants’ lives and livelihoods, and their perceptions on aid, allowing me to connect this local issue to larger global dynamics. Taking into account the weak economic position of Uganda in the world-systems hierarchy coupled with the negative consequences of landslides, provides insight to how global decisions affect local issues of poverty and inequality.

## **CONCLUSION**

Globally, natural hazards continue to erode communities, their resources, and economic and social infrastructure (Roberts and Parks 2007; UNISDR 2001, 2008, 2012, 2014). Although the increase in frequency and intensity of these disasters has been studied with regards to their economic damage in the coming years (e.g. Roberts and Parks 2007; UNEP 2014) and challenges to development (e.g. UNDP 2004, 2014), scholarly work which harnesses community-based knowledge in conjunction with political economic systems aimed to ameliorate such destruction is scarce. As threats to communities and ecosystems continue to escalate, it is critical that attention is paid to the micro and macro policies that influence natural hazards and the resilience and vulnerability of peoples.

Personal accounts from the community members in the Bududa District in Uganda reveal the wealth of knowledge accumulated through the years about landslides. Participants demonstrate their keen understanding of the signs, causes, and effects of such

disasters that ultimately link human drivers of environmental degradation and their contributions to climate change and natural hazards. Additionally, this study bridges the gap in knowledge in how members' awareness about landslides help to inform their perceptions of aid relief received in the wake of landslide events and ways in which they can be better helped. On a whole, community members must face the reality that only a limited number of people will obtain help and that everyone will continue to suffer due to their constant exposure to landslide risks. Through this study, members express that aid obtained after catastrophic events is senseless as communities will continue to accrue losses in lives and livelihoods, likely to exacerbate due to climate change (UNEP 2014).

Contrary to literature concerning the use of religious and non-religious beliefs as coping mechanisms for community members in disaster-risky areas, this study explicates that members in Bududa have very limited means of escaping landslide occurrences due to their impoverished state and ancestral, social, and agricultural connections within the district. Rather, many participants propose a relocation project where people should be provided by the government with free, low-level, and safe land where the culture, language, and climate are familiar. Without immediate and effective changes to how aid is distributed and organized in the wake of disasters as well as relocation processes, members must acquiesce to the inevitable losses of lives, destruction of livelihoods and community infrastructure.

By utilizing world-systems perspective as a backdrop to understanding the causes and effects of natural hazards in Bududa, it is not surprising that community members remain in the Mount Elgon region despite their astute observations on landslides and their effects. The interviews with community members provide diverse explanations

articulated about the contributing factors which cause landslides, some emphasizing the overall vulnerabilities of poor communities with weak governments that rely on aid relief, rather than implementing disaster preventative practices. Although the fertile volcanic soil and abundant rainfall help facilitate the intensive farming of various crops such as coffee, beans, bananas, and vegetables, such rich natural resources simultaneously make the Bududa District susceptible to massive environmental degradation, and therefore, natural hazards. Linking the case of Bududa to global political-economic factors, it is evident that the international division of labor where rich nations externalize the environmental costs to poor nations like Uganda, contributes to the over-cultivation and degradation of natural resources at the expense of those in Bududa.

A central principle of world-systems theory is the investigation of unequal trade relationships between core and periphery nations, as periphery nations produce low value goods and core nations produce high value goods (Emmanuel 1972; Amin 1974). In the context of Bududa in Uganda, the exchange of high value goods for low value goods such as coffee and bananas, creates a surplus profit that accumulates in the core (Austin 2010). Moreover, just as low-value, low-skill production are concentrated in poor, less developed nations, environmental costs of growing crops and felling trees are borne on the community members of Bududa. As profits continue to be funneled to core nations, political economic systems, climate change, and natural hazards challenge development and the lives and livelihoods of those in less developed nations. Although narratives collected in this study depict community members' high level of knowledge about the connections between human activities and the causes of landslides, examining this case

through the world-systems lens gives rise to how human drivers of environmental degradation contribute to climate change and translate to increased natural hazards for poor, developing regions of the world.

Moreover, the weak position of Uganda in the global political economy forces it to adopt structural adjustment policies that impose cuts in social spending, liberalization of trade and financial markets, weaken the welfare of their citizens, and increase the country's dependency on foreign capital, imports, and markets. Thus, the limited capacity of the Ugandan government to negotiate for more equal trade relationships, hinder their ability to protect their environment and people from natural hazards (Roberts and Parks 2007). In this way, poor nations like Uganda lack the political and economic resources to promote preventative practices that would allow their citizens to move from harm's way while simultaneously being encouraged to degrade their natural resources. Issues of nation-state debts, unequal trade, and ecological degradation, magnify vulnerabilities to hazards, evident in Bududa.

Disasters do not occur by accident, but rather, as results of a combination of political and economic decisions that influence the vulnerability and resilience of communities to natural hazards (Roberts and Parks 2007; UNEP "Disaster Risk Reduction" n.d.). This study provides a specific locale where political economic decisions on the global scale can be traced to local issues of inequality and development. Landslides are among natural hazards that have come to the forefront of public and academic concerns as they are likely to worsen with climate change (Roberts and Parks 2007; UNEP "Disaster Risk Reduction" n.d.). By understanding community members'

knowledge about landslides and their perception of aid, this study points to local and global recommendations regarding the structures of aid and political economic systems.

As explained by participants in this study, accountability must be central to the structure of aid relief. The diversion of supplies and services root in the fact that poor leadership facilitates the distribution of aid to non-victims of landslides. In order to combat this issue, policies should decentralize power and authority from INGOs, NGOs, and state governments and onto the local leaders—LC1s and LC2s. Enabling LC1s and LC2s to survey landslide sites in communities in which they are well integrated would streamline the allocation of aid to those most in need of help. Furthermore, policies should be considered for the development of citizen cards so that individuals can be registered in a database that would compile details about their residence, properties, and identifying information. Creating a registration system with information about citizens can potentially make the distribution of aid supplies more efficacious, as it would help ensure that the aid would go to victims of landslides. Additionally, the reallocation of power to local leaders can prevent the mismanagement of aid from outside leaders. With this structure, more transparency may likely take place across local leaders within the district. However, it may also be possible that such changes in the allocation of power to local leaders may simply shift the locus of corruption.

Beyond this, those who provide aid should consider relocating efforts to easy-to-access locations for those who have just experienced the calamitous event. In other words, rather than advertising that supplies and services can be obtained at the main center where landslides are unlikely to occur but likely to attract opportunistic neighbors, it is vital to physically close the gap between the aid site and victims. Considerations

should also be given for issues for transporting aid around the mountainous district of Bududa. Perhaps funds should also be allocated so that local groups can come together and distribute supplies to the hard-to-reach places, whether by bodas (mortorcycles) or walking.

Although it is important to restructure how aid is organized and disseminated, much of the grievances of community members lay on their need to live in safer and more secure lands. Knowing that aid in the form of goods, services, and camp sites for those who have been displaced are limited at best, the relocation of community members from highlands to lower level lands within the Bududa District, should be a central feature of disaster management and prevention policies in order to reduce the loss of lives and livelihoods and the damage to socio-economic structures of the communities. As indicated by the participants of this study, relocation projects should focus on providing lands located in the lower levels of the district where the culture, language, and families' social networks can be kept intact. As community members rely heavily on agricultural practices to subsist, relocation policies should also focus on providing land that is fertile and located in a region with a similar climate to that of the unique Mount Elgon region. Narratives in this study depict that despite the desperate sentiment experienced by survivors of landslides, the members of Bududa are still seeking aid that would maintain a focus on their standards of living, beyond simply living.

Rather than focusing on the losses of lives or the number of displaced peoples as statistics, this study brings to light the community knowledge from those who have experienced such catastrophic disasters first hand. Their needs and grievances speak volumes about the ineffectiveness of aid and the harmful effects of political economic

decisions on a global scale. As critiqued by world-systems theorists, the surge of INGOs and NGOs in poor nations are “often small in scale and/or narrow in geographical focus” (Noble and Austin 2014; 221). Though INGOs are becoming more integrated globally, INGOs within particular nations are frequently concentrating on regional or citywide projects which enforce a “fragmented” or “patchwork” approach to specific social issues (Seckinelgin 2005, 2006). Moreover, INGOs are often not well equipped in providing public resources while developing nations are forced to cut social programs and provisions in order to meet structural adjustment requirements (e.g. Bose 2011; Shandra et al. 2011). While aid may be provided by INGOs in the wake of landslides, a “fragmented approach” results in providing help to those easy-to-reach populations and may have limited or insufficient benefits. Taken together, discussions surrounding the need to decrease the vulnerability and strengthening the resilience of communities throughout the world should consider the global effects of political economic policies like structural adjustment policies which encourage unequal trade relationships that disproportionately negatively impact poor nations.

It is important to acknowledge that conducting semi-structured interviews has limitations. This study is established from data obtained by interacting with people. The research is therefore open to be influenced by my own personal and emotional dimensions as well as those of the community members with whom I interviewed. In this way, I would like to acknowledge that both the researcher and those being studied are social beings who have shaped this work. Data collected from interviews may therefore have been affected due to the fact that I am a young, female Mzungu, a term that refers to non-African descent peoples, who outwardly appears foreign to many community

members in the Bududa District. Being recognized as a Mzungu, and therefore a clear outsider may have inhibited some members from providing honest answers, or answers at all. Moreover, my introduction as a scholar from a Western nation may have shaped or colored how members speak of aid. However, as a researcher in a foreign nation, I made sure to mitigate these effects. First, I researched Ugandan culture and met and discussed, with experienced travelers, cultural expectations in Uganda. Additionally, I parsed literature reviews, in an effort to developing into an informed researcher. As I noted in my methods section, I employed a male interpreter who is native to Bududa in order to overcome cultural, language, and gender norms that would have otherwise limited my interactions with community members and my role as a researcher. Moreover, I deferred to my translator about identifying participants or asking certain questions deemed inappropriate. In order to combat “fishing” for any side of a story, I made sure to debrief with my interpreter after every interview so as to revise questions to be more relevant culturally for community members and better aid my research. For example, my first participant indicated that he did not know what the government should do to help people in the wake of landslides. With the help of my interpreter, however, we revised the question to ask, “How would you like to be helped?”. Such a change in the format of the question allowed me to better communicate with community members who, as this study shows, have a wealth of ideas for bettering aid relief. Furthermore, by discussing my research questions and how I was conceptualizing the stories of community members with my interpreter and the Zaaes family, I was able to reshape questions and focus on topics that helped my study evolve to its final piece. With the help of the Zaaes, a well-known and integrated family in the community, and my interpreter, I was able to obtain

information that sheds light on the community-based knowledge on landslides and the shortcomings of aid relief in Bududa. More importantly, this work contributes vital information that illuminates how political economic decisions on the global scale and their negative implications can be traced to specific locales.

Despite considerable progress and scholarship on disaster management and prevention, climate change, and aid relief, the roots of inequality and unequal development persist with devastating consequences. The negative consequences of inequality, unequal trade relations, structural adjustment policies, and other globalizing facts are most acute in poor countries, and among those who heavily rely on natural resources to subsist. Although aid relief arrive in the wake of landslides, not everyone has benefited equally, as populations in hard-to-reach locations and those who have been traumatized and injured are still unable to secure supplies and services to meet their basic needs. Undoubtedly, addressing the gaps in aid relief, administering propositions put forth by community members, and addressing global political economic decisions that perpetuate unequal relationships and inequality must be central in tackling issues of disaster relief, climate change, and community vulnerability and resilience.

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## APPENDIX

### Interview Guide

Note: Gender:

1. Have you ever witnessed or experienced a landslide? Tell me about it.
2. What do you think are the causes of landslides?
3. Do you think landslides are getting worse? Will get worse?
4. Do you think landslides pose a current threat to your well-being?
5. How do community members know that landslides were going to occur?
  - a. Who helped the community members learn how to tell that landslides were going to occur?
6. Are you familiar with the idea of climate change? What does this mean to you?
7. Do you think that the occurrence of landslides and climate change are linked? Can you give me an example of what you mean?
8. How do people usually respond to landslides and their effects?
9. How do landslides affect the community? Who do you think are the most affected?
10. What are some health consequences of landslides in the community? Can you give some examples of common health consequences that people experience due to landslides?
11. Are there any particular ways in which women have been affected differently than men during landslides?
12. Do you know any organizations or agencies that help the community prepare and deal with disasters like landslides? How and when do they usually get involved during landslides?
13. What do you think the organizations or agencies can do so that they can be more effective in helping the community?

## **BIOGRAPHY**

Maria Theresa Mejia was born and raised in Manila, Philippines. There, she enjoyed a childhood filled with playing outdoors with her brother, numerous neighborhood kids, and beloved dog, Paula. When she was in elementary school, she and her family immigrated to the United States, where she had to learn English more deeply and adapt to a new culture. She graduated from a magnet school in 2010 where she explored her interests in medicine and the environment.

Theresa solidified her interests in global inequality, especially in the areas of environment, gender, and health while attending college at Lehigh University, in Bethlehem, Pennsylvania. In May 2014, she graduated with a B.A. in Global Studies and Women, Gender, and Sexuality Studies. As a Lehigh University President's Scholar, Theresa will graduate with an MA in Sociology in May 2015. She hopes to pursue a doctorate degree in sociology in the near future.