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Disasters Are Not Natural:
Combating Disasters Through the Enhancement of Female Participation in
Disaster Risk Management in Zambia

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ABSTRACT

Women and girls are considered the most vulnerable groups during climate change related disaster events. Despite being most threatened during these situations, they are usually not included in the disaster management decision making in their communities. The purpose of this paper is to discuss the methods needed to enhance female participation in emergency and disaster preparedness, and the practical changes, services, and resources necessary for women to be at the forefront of disaster and emergency preparedness initiatives in the Zambian context. An extensive literature review and a series of interviews with NGOs, government officials, and experts in the field of disaster management and emergency response and/or gender rights work were conducted. Through an analysis of current policies and initiatives, several essentials for women-led disaster management were determined. These include (1) a full implementation of relevant policies, (2) integration of DRR into development planning and policies, (3) use of the CBDRM model for community targeted initiatives, and (4) empowerment of adolescent girls in disaster preparedness and management initiatives. Moving forward, these strategies can be employed by community-specific disaster management agencies and NGOs that support gender-specific disaster management initiatives so that community capacity building and proactive preventative measures are sustainable.

ACRONYMS

ARDIS - African and Asian Resilience in Disaster Insurance Scheme

CARE - Cooperative for Assistance and Relief Everywhere

CBDRM - Community Based Disaster Reduction and Management

CBO - Community Based Organisation

DDMC - District Disaster Management Committee

DMMU - Disaster Management and Mitigation Unit

DPMM - Disaster Preparedness, Mitigation and Management

DRR - Disaster Risk Reduction

GBV - Gender Based Violence

GCF - Green Climate Fund

GDP - Gross Domestic Product

GHG - Greenhouse Gases

GIRRL - Girls in Risk Reduction Leadership

HFA - Hyogo Framework for Action

IAG - Integrating Adolescent Girls

IAG-PURRZ - Integrating Adolescent Girls in Peri-urban Risk Reduction in Zambia

LCMS - Living Conditions Monitoring Survey

NDMC - National Disaster Management Council

NDMP - National Disaster Management Policy

NDMTC - National Disaster Management Technical Committee

NGO - Non-Governmental Organization

NPCC - National Policy on Climate Change

PDMC - Provincial Disaster Management Committee

SDMC - Satellite Disaster Management Committees

SFDRR - Sendai Framework for Disaster Risk Reduction

UN - United Nations

UNDP - United Nations Development Programme

WQT - Water Quality Testing

INTRODUCTION

During the past few decades, the southern African region has endured through the detrimental effects of climate change. Climate change has contributed to weather variability in a region that relies heavily on rain-fed agriculture for economic prosperity and livelihood support. In the absence of economic growth, the current social, political, economic and cultural issues have the potential to be further exacerbated. In Zambia specifically, disasters are often most often due to floods or droughts. When these disasters occur, infrastructure development and implementation that would lighten the severity of disaster impact is often insufficient given the context of rapid changes in weather variability and limited funding. Entire communities are affected, but often women and children, especially girls, are most impacted. These disasters contribute to decreased crop production, food insecurity, housing infrastructure breakdown, and insufficient/unsafe drinking water. These are all consequences that directly affect the caretaking activities that, given traditional gender roles, women are primarily responsible for. Girls are often subjugated to these roles soon after they begin puberty, sometimes at the expense of their education, especially when the female guardian needs increased assistance during disaster situations.

In disaster situations, it is important to empower women and girls so that communities are adequately prepared for disaster situations. Women and girls usually interact the most with both water and food sources, yet they most often have no decision making voice in matters of disaster risk management and mitigation within their households and communities. Many policies have been passed and initiatives have been implemented by both the Zambian government and non-governmental organizations (NGOs), yet those policies are not well implemented and the projects have limited sustainability. This paper will address the need for enhancement of female participation in emergency and disaster preparedness, and discuss the practical changes, services and resources necessary for gender mainstreaming to be implemented in disaster and emergency preparedness initiatives.

BACKGROUND

Overview of Zambia

As of 2014, Zambia's population size is about 15 million, with the majority residing in the Lusaka and Copperbelt provinces (Zambia in Figures 2014, 3). About 58% of the population resides in rural areas, and 42% resides in urban areas (Zambia in Figures 2014, 4). Nationwide, formal sector work makes up 19.7% of employment, whereas informal

work makes up the remaining 80.3%. In urban provinces, the majority of work is in the formal sector, whereas rural areas primarily rely on agriculture, which comprises 67% of the informal sector (NPCC 2016, 5). Additionally, women account for the majority of the informal sector. 87.9% of employed women are in the informal sector compared to 74.2% of men (LCMS 2015, 61).

Zambia's semi-tropical environment has three distinct seasons: cool and dry, hot and dry, and hot and wet. The economy is reliant on the climate, because the agriculture, fishing, and forestry sectors contribute to about 16 to 20% of the total GDP (NPCC, 5). Until 2012, maize was the primary crop produced until cassava production surpassed it starting in 2014. Other crops grown are soya beans, wheat, ground nuts, cotton, mixed beans, sunflower, millet, tobacco and sorghum (Zambia in Figures 2014, 19).

Working Definitions

The National Disaster Management Policy of 2015 cites a disaster as “an event that is associated with the impact of a human-induced or natural hazard which causes a serious disruption in the functioning of a community or society, causing widespread human, material or environmental losses which exceed the ability of the affected community or society to cope with the hazard using its own resources” (p. iv). Hazards are potentially harmful physical elements of the environment and can be traced to human-induced or natural causes. Human-induced hazards include elements like floods, droughts, gender-based violence, and food insecurity whereas natural hazards fall within the realms of climate variability and livestock/crop diseases (NDMP 2015, iv). Although human actions can contribute to the occurrence of these events, hazards like floods, droughts, and climate variability are largely unavoidable (IFRC, 2014). Even so, these events only become disasters when the coping capacity of the community is exceeded. During exposure to hazards, the capacity, or degree to which a community can absorb or adapt to the impacts is directly associated to the severity of the disaster. When capacity is lacking, vulnerability emerges as a product of ever evolving social, cultural, economic, and political factors that determine the environment people live and experience hazards in (Phiri, 2014).

To conceptualize disaster risk, Phiri (2014) uses the following equation:

$$\text{Disaster Risk (R)} = [\text{Vulnerability (V)} \times \text{Hazard (H)}] / \text{Coping Capacity}$$

In this model, exposure to disaster risks is the product of both vulnerability and hazards, mediated by a community's coping capacity to prepare for and respond to these hazards.

Hazards always exist, but they only become a threat if vulnerability also exists. Furthermore, because coping capacity is deeply tied to the social, economic, and political resources of a community, vulnerability is also embedded in the physical/material, social, or attitudinal/motivational realms (Phiri 2014).

Climate Change in Zambia

Zambians have a high dependency on weather, given that a large majority of the population relies on rain fed agriculture. Over the last four decades, there has been an increase in the frequency of extreme weather events like floods and droughts (NPCC 2016, 3). Rainy season has become shorter and rains have been more intense, primarily increasing during the months of December, January and February. Furthermore, there has been an increase in temperature during both cooler and warmer seasons. The annual temperature increased by 1.3°C between 1960 and 2003, which is approximately twice the increase in the average global temperature during the same period. Other countries in the Southern African region have observed an 0.6 to 1°C increase during the same period. The mean annual temperature is projected to increase by an additional 1.2 to 3.4°C by 2060. Although most of greenhouse gas (GHG) emissions are the result of industrialization in developed countries, some agricultural practices in Zambia contribute to the emission levels. In 2000, land use change and forestry was the largest contribution to GHG emissions at 73.7%, followed by agriculture at 18.9% (NPCC 2016, 4).

Climate change has affected the economic productivity of Zambia. A study on economic impact in 2011 estimated that the government lost about 5 million USD over a 10 to 20 year period (NPCC 2016, 4). The effect of climate change has created the potential for the following to be exacerbated: decreased agricultural productivity and its subsequent effects on poverty levels, increased risk for an energy crisis related to hydropower generation, increased costs of treating climate-related epidemics like malaria, and the loss of natural resources that provide critical services to urban, peri-urban, and rural communities (NPCC 2016, 4). Climate change has affected many sectors, including the water, agriculture, forestry, health, tourism, and energy sectors. The following outlines climate change's impact in these sectors:

- **Water Sector:** Zambia is home to about 40% of the Southern African region's water resources (NPCC 2016, 4). Rainfall variability decreases access to safe and clean water, which increases the prevalence of water borne disease, as well as the water collection labor burden on women and girls. This invariability can also degrade aquatic habitats and cause further disruption of ecosystems.

- **Agriculture Sector:** Detrimental impacts of climate change on crops, livestock and fisheries reduces agricultural productivity, contributing to food insecurity. There is also a decrease on the control and management of pests and diseases in crops, livestock and people (NPCC 2016, 4).
- **Forestry Sector:** Forestry covers about 66% of Zambian land. Deforestation and climate change decrease the roles of vegetation in promoting atmospheric carbon absorption, providing watershed protection and regulating water quality and quantity, roles that are especially needed during rainy season. (NPCC 2016, 4-5).
- **Tourism Sector:** Tourism relies heavily on the wildlife in national parks and predictable water levels at Victoria Falls. Droughts and floods affect water levels of Victoria Falls and impacts biodiversity of wildlife (NPCC 2016, 6).
- **Energy Sector:** Frequent drought and flood conditions decrease fuel wood availability, creating additional collection time and labour burdens that fall on women and girls. Hydropower generation is compromised by droughts leading to load shedding. Flooding also raises safety concerns for dams where this energy is generated, threatening the infrastructure of nearby communities (NPCC 2016, 7).
- **Health Sector:** Rising temperatures and unpredictable precipitation patterns expand vector habitats for diseases including malaria, Zika virus, ebola, and chikungunya. Water-borne diseases such as schistosomiasis, cholera, giardia and dysentery become spread when safe water is compromised by flood waters (NPCC 2016, 7-8).

Climate change has the potential to affect everyone regardless of their associated demographic. However, lack of resources and inadequate infrastructure can contribute to the severity of climate change effects on a community. Women and children are the most vulnerable demographics due to their traditional roles and responsibilities, which often make them more reliant on forestry, crops, and water.

Disasters in Zambia

As climate change leads to irregular rainfall, there has been an increase in seasonal droughts and floods. While rainfall variability occurs annually, the effects of droughts and floods often overwhelm the coping capacity of communities, creating disasters. During disasters, there are negative impacts on agricultural productivity and infrastructure, spiraling into food shortages, displacement, and water-borne disease epidemics. Since the

early 1990s, there have been a series of droughts and/or floods recorded annually in Zambia. The following are a few events marked as disasters:

From 2000 to 2002, abnormal rainfall patterns created alternating drought and flooding periods that led to low crop production and food shortages. With no respite, droughts in the dry season of 2002 were followed immediately by heavy rains in March 2003, displacing over 10,000 people, drowning livestock, and destroying acres of farmland (DCA Actalliance).

An unprecedented combination of early drought in October and November 2006 with intense rainfall in early 2007 led to disastrous effects on infrastructure and food security. It was estimated that a minimum of 140,000 people were affected, especially in the Northwestern, Western, Eastern, and Northern provinces. Health posts, latrines, water sources, schools, roads, and bridges were all submerged leading to water contamination, disease outbreaks, and educational disruption (UNICEF, 2007).

In 2009, the Zambezi River flooded to its highest levels since 1969. As water levels threatened crops and 5,000 houses were destroyed, the DMMU requested people to evacuate to higher lands. Shang'ombo District was isolated from the rest of the country because the road linking Zambia and Zimbabwe was damaged by floodwaters (Lusaka Times, 2009).

In January 2014, flooding in the Southern Province destroyed roads and homes, leaving 20,000 people homeless and without access to relief aid. Just one month later, heavy rains damaged roads, affected crop yields and stranded families throughout Zambia. In Chipata District of the Eastern Province, portions of the Mtenguleni-Madzimawe Road were washed away. Additional road rehabilitation plans to prevent flood damage had been requested, including the construction of drainage structures and embankments on lower areas. However, the authorization of funding was not completed when the heavy rainfall occurred. In various districts of the Copperbelt and Central Provinces, the Mwekera River, Lunsemfwa River, and Mkushi River flooded. The lack of drainage structures made roads impassable and cut families off from schools and other facilities (Jacobs, 2016).

Drought conditions in the 2015/2016 season led to lower harvests of maize, wheat and sugarcane, leading to rising prices of Zambia's staple foods. Maize production fell from 3.3 million tons in the previous year to 2.6 million tons, which increased mealie meal prices from 5 USD to 12 USD per 25 kg bag (Kaunda, 2016). Low water levels in the Kafue River limited irrigation ability. The drought also affected

hydropower generation and subsequent load-shedding adversely affected industry productivity and household activities (Lusaka Times, 2016).

Most recently, a drought in early 2018 occurred during a critical period of maize growth leaving crops withered in the Central and Southern regions. Shortly after, heavy downpour caused flash-floods in the same region, submerging already diminished crops and sweeping away houses and roads (Daily Nation, 2018).

As stated previously, disaster events have the potential to affect the livelihoods of communities as a whole. Although communities face these disasters together, the vulnerabilities of women and children are frequently the most exacerbated. Despite this, they often do not have access to aid that they need.

Social Vulnerability of Women and Girls in Disaster Situations

Climate change has the potential to affect everyone regardless of their associated sector or demographic. However, because disasters are deeply embedded in social, cultural, economic and political contexts of vulnerability and capacity, everyone is affected in different ways. Women and children are often most vulnerable, due in part to their traditional roles and responsibilities. These responsibilities include traveling to the nearest water source to fetch water back to their homes, which can be a number of kilometers away. This water is then used for drinking and bathing, as well as for their various everyday chores, like laundry, dishwashing, and food preparation. During droughts, wells often dry up requiring women and children to travel further to another water source. Additionally, temporary water sources like shallow wells are sometimes sources of unsafe drinking water. When women face increased responsibilities for water collection, particularly during disasters, they often require their daughters to assist them, taking them out of school and hindering their educational attainment.

Studies indicate that girls have high attendance in primary school and that those attendance rates continually drop through secondary school and university. Amongst both girls and boys, there is a larger percent attendance in urban areas than rural areas: 90% primary school attendance and 80% secondary school attendance in urban areas compared to 79% and 73% in rural areas, respectively. In rural settings, where communities are most directly affected by climate change, there are higher rates of attendance for girls in primary school than boys, but in secondary school, there are lower rates of attendance for girls compared to boys: 77% of boys compared to 81% of girls attend primary school and 75% of boys compared to 70% of girls attend secondary school (LCMS 2015, 28). Girls often assume their traditional gender roles once they begin puberty. The stress and burden of

balancing both school and housework responsibilities often can hinder good school attendance and performance for girls.¹ Additionally, factors such as child marriage, teen pregnancy, stigma surrounding menstruation and lack of sanitation pads and facilities at school can contribute to high rates of school dropouts among girls.

The traditional roles of women have existed for centuries within communities. Patriarchal governance is often ingrained in the political, economic, social, and cultural practices and ideologies of many communities. Women are frequently burdened with caretaking responsibilities of their husbands, children, elders in the community. This can leave women without support for themselves. In patriarchal societies, women are not given many rights and sometimes are not aware of the rights they do have. They are often not given the opportunity to be involved in decision making even if it directly involves them, are treated as objects or property, and are subject to physical and emotional abuse. In disaster situations like floods and drought, the everyday social hazards they cope with can spiral into even more severe circumstances, especially if the community lacks in infrastructure and capacity to prepare for and withstand the disaster. In these situations, women are often responsible for cleaning up the disaster's aftermath and care for those affected on top of their existing responsibilities--threatening livelihoods of women in particular.

Policies

Community members are most informed on the problems they face, the potential solutions, and the resources needed in order to solve these problems. There have been many policies enacted in an attempt to empower communities to govern themselves as well as lift the burden of disasters on communities:

- The Decentralization Policy (2002): The policy's aim is to give more power to local governments in order to encourage more civil participation and is an effort "...[t]owards empowering the people" (Decent. Pol 2002). When passed, it was projected to be fully implemented within 10 years. Under the policy, traditional rulers are expected to set up and govern their subjects in line with their traditional and customary laws.
- The National Policy on Climate Change (2016): This policy's aim is to "...establish a coordinated national response to climate change." Up until its establishment, climate change reform efforts were more fragmented, making them unsustainable (NPCC, 9). Its overall objective is to "provide a framework for coordinating climate

¹ UNDP Gender Programme Coordinator. *Personal communication*. 28 June, 2018.

change programmes in order to ensure climate resilient and low carbon development pathways for sustainable development” (NPCC, 11). The policy also outlines several acts that support its aim and objective, which are listed below:

- *National Heritage Conservation Commission Act (1989)*: Provides for heritage conservation and management;
- *Agriculture (Fertilizer and Feed) Act (1994)*: Provides for the regulation and control of manufacture, processing, importation and sale of agriculture fertilizers;
- *Lands Act (1996)*: Provides for the management and administration of land;
- *Road Traffic Act (2002)*: Provides for road safety and transport management;
- *Energy Regulations Act (2003)*: Regulates energy use and efficiency, among other Acts;
- *Public Finance Act (2004)*: Provides for the control and management of Public Finances;
- *Agriculture Lands Act (2006)*: Provides for sustainable agricultural practices, development, investment and management;
- *Zambia Development Agency Act (2006)*: Provides for the trade, investment and industrial development in Zambia;
- *Disaster Management Act (2010)*: Provides for disaster preparedness and responses;
- *Environmental Management Act (2011)*: Provides for the management of environment and natural resources;
- *Fisheries Act (2011)*: Provides for sustainable fisheries and aquatic environmental development and management;
- *Water Resources Management Act (2011)*: Provides for water regulation and management;
- *Mines and Minerals Act (2015)*: Provides for mineral and mines development;

- *Urban and Regional Planning Act (2015)*: Provides for all land planning;
 - *Forest Act (2015)*: Provides for the conservation and protection of forestry; and
 - *Zambia Wildlife Act (2015)*: Provides for the management of wildlife and conservation (NPCC, 26).
- The National Disaster Management Policy (2010-2015): This policy provided for the establishment of National Disaster Management Regime, which is vested in the Office of the Vice President. It is composed of various government offices and facilities at different levels of jurisdiction. Under the act, the role of Disaster Management and Mitigation Unit (DMMU) was clarified as a government department responsible for the coordination of all disaster-related activities. The act also defined the role of the several subcommunities for disaster management, which are the Provincial Disaster Management Committee (PDMC), District Disaster Management Committee (DDMC), and several Satellite Disaster Management Committees (SDMC). These committees operate as subcommittees of their respective Development Coordinating Committees and oversee disaster management activities within their respective jurisdictions.
 - The National Disaster Management Policy (2015-2020): The aim of this policy is to “develop, coordinate and monitor disaster risk management programs in order to minimize loss of life, damage to property and the environment” (NDMP 2015, 9). The policy reaffirms the roles and responsibilities of the Disaster Management and Mitigation Unit (DMMU) as well as the hierarchy of disaster management. Today, the DMMU is responsible for building capacity for response by: conducting simulation exercises, pre-test assessment tools and information management systems, mobilizing resources during the aftermath, conducting search & rescue trainings, enhancing needs/impact assessments, and paying special attention to gender and other special needs in rebuilding livelihoods and other disaster management options. Like the previous policy, it outlines several councils and sub-committees that are responsible for implementing initiatives on the provincial, district, and satellite levels. In addition, the DMMU partners with NGOs and the UN in disaster management, which aid disaster management on a local level.
 - Customary laws: About 94% of the land in Zambia is governed by customary law (*Rainbow Newspaper*, 2018). Although these laws are not necessarily formally

written, it is important to respect them in policy making and implementation because these laws have been governing many communities for centuries.

Existing Disaster Risk Reduction Work

The following are national responses to disaster risk reduction:

In 2010, the National Disaster Management Policy was passed, re-establishing the role of the DMMU and its coordinating disaster management agencies. Under the act, the role of the DMMU was clarified as a government department responsible for the coordination of all disaster-related activities. In addition, the National Disaster Management Council (NDMC) of ministers chaired by the Vice President, and the National Disaster Management Technical Committee (NDMTC) of permanent secretaries were established. The NDMC serves as the supreme policy-making body for nation-wide disaster management. With further membership from relevant line ministries and other partnering organizations, the NDMTC and its subcommittees support the NDMC through supervision of the DMMU and control of Trust Fund disbursements. At more local levels, the PDMC, DDMC and SDMC operate as subcommittees of their respective Development Coordinating Committees and oversee disaster management activities within their respective jurisdictions. The SDMC is composed of community members, requiring membership from a representative of traditional authority, at least three local persons trained in DPMM based on local hazards, a representative of any community based organisation (CBO), one woman and one man from the local community, one youth, a prominent business person or farmer, and a local representative of a NGO involved in disaster management or relief work in the local community.

In 2014, Zambia nominated the National Development Planning Department as its National Designated Authority to the Green Climate Fund (GCF). Since then, several projects have been put forward including: (1) sustainable and climate-smart agriculture initiatives focused on improving the livelihood resilience of rural smallholder farmers and (2) private sector investment in renewable energy to reduce reliance on hydropower that are easily affected by poor rainfall (GCF, 2018).

Furthermore, in 2018, GCF approved an additional 32 million USD of climate finance to the 125 million USD co-financed by United Nations Development Programme (UNDP). Capacity building and climate-smart agriculture initiatives for farmers facing new climate change risks will be coordinated by the Ministry of Agriculture. The UNDP will also lead the development of more integrated technical services through collaborations with the Meteorological Department to improve disaster preparedness. Additionally, GCF

announced plans to designate special climate-resilience efforts for female-headed households and rural businesses (NewsDesk, 2018).

In January 2018, the African and Asian Resilience in Disaster Insurance Scheme (ARDIS) was launched to cover droughts in Zambia, Kenya, Malawi, Mali, and Cambodia. Led by VisionFund International, the insurance scheme provides an injection of debt and insurance funding if the soil moisture drops below a certain threshold during growing season. The debt and funding is entered into VisionFund's microfinance programs. Additionally, farmers will be provided with loans to help them recover after a disaster. Farmers who are clients of VisionFund, 80% of whom are women, are eligible to enter the insurance program (Whiting, 2018).

A drought in 2018 occurred during a critical period of maize growth. In response, GCF approved an additional 32 million USD to the 125 million USD already raised by UN agencies to decrease poverty among affected farmers. Part of the initiative will provide Zambian farmers with insurance that offers automatic payouts when either rainfall or temperature thresholds are reached and crops are seen as dead or damaged. Additionally, the new grant aims to help provide better early warning and weather information to Zambian farmers (Whiting, 2018).

In addition to national responses, there have been number of NGOs that have implemented initiatives aimed at empowering women and girls through capacity building in DRR and emergency response. Implemented in 2012, the Girls in Risk Reduction Leadership (GIRRL) program was a capacity development pilot initiative that worked to involve adolescent girls in community disaster risk management. Using schools as an entry point, a small group of twenty girls were identified by administrators and recruited by GIRRL to attend two sessions per week for four months. During these sessions, girls self-identified specific topics within a few flexibly predetermined themes to discuss with social workers and knowledgeable community members who acted as facilitators. The girls were tasked with identifying problems in the community from their perspective, bridging a gap in information about gender-sensitive hazards. Furthermore, the girls designed an action plan to address the main threats they identified and organized a community event to share the work they completed.

The methodology used in GIRRL was later adapted to other contexts through a partnership with CARE International. The Integrating Adolescent Girls (IAG) project was regionally piloted in four southern African countries: Zambia, Lesotho, Malawi, and Zimbabwe. Implemented as a one year pilot from 2012 to 2013, CARE oversaw the Integrating Adolescent Girls in Peri-Urban Risk Reduction in Zambia (IAG-PURRZ) project based in the Kanyama settlement of Lusaka. Built off of previous CARE projects for resilience, IAG-

PURRZ worked to provide training in Community Risk Analysis; Risk Information Systems; Disaster Preparedness, Mitigation, and Management (DPMM); Disaster Risk Reduction Planning and Mainstreaming; and Early Warning Systems to community members. Using Trainer of Trainers (ToT) workshops, Mulungushi University prepared community members to facilitate three day-long DRR training sessions for three hundred children in theory and practical work. First aid and fire management training were also provided by partnering organizations. Both adolescent boys and girls participated in the identification of general and gender sensitive disaster risks, as well as the exploration of their community capacity to conduct DRR activities. To increase engagement, a smaller cohort of students were recruited to the DRR Committee and a planning meeting half comprised of adolescents was held to submit a season DRR plan to the District Disaster Management Committee (DMMC). Furthermore, a group of participants were trained in water quality testing (WQT) by the University of Zambia Environmental Engineering Laboratory. A portable lab was donated by CARE to the Kanyama Water Trust to allow the newly trained adolescents and DRR committee to evaluate drinking water for biological and chemical pollutants. Finally, a community advocacy event planned by participating adolescents was held to urge for further support for adolescent girls and DRR activities (UNISDR, 2015).

In summary, several promising responses have been addressed in national policies and other initiatives have been implemented by NGOs and other organisations at the regional and national levels.

METHODOLOGY

A series of semi-structured interviews were conducted in order to gather the information needed to guide a broad intervention for women-led disaster preparedness. These interviews involved discussions about gender rights work and/or DPMM. The following lists the persons that were interviewed about their work: representatives from the UNDP in both Gender Programming and Environmental Programming, CARE International, a professor who is an expert in DPMM at Mulungushi University, a Doctor of Philosophy at the African Unit for Transdisciplinary Health Research, Principal Research and Planning Officer of DMMU, Executive Director of Women for Change, and members of the Disaster Management and Response Preparedness Unit of the Zambia Red Cross Society. The interviews with stakeholders entailed discussion about their current perspectives on topics of interest, relevant past projects implemented by their organizations and the lessons learned and best practices from their experience in program implementation. Through a collective analysis of their respective projects, themes were identified to inform the future design of sustainable and comprehensive women-led disaster management initiatives.

Rationale

The stakeholders interviewed were identified based on their investment in gender and/or DPMM, as well as their expertise and experience in the fields of disaster management and emergency preparedness, specifically related to livelihood resilience and women or girl-led initiatives in Zambia. The stakeholders provided information about disasters in Zambia, as well as clarification of the political, economic, social and cultural backdrop in which women and girls experience disaster effects. They also contributed further details about their past, current and future initiatives and goals, sharing the context of their success and limitations. Many of the organizations interviewed are internationally based and have country specific offices in Zambia. The self-defined roles of interviewees included supporting the local government and NGOs, identifying gaps in governance and policy implementation, and spearheading pilot programs to target specific gaps in knowledge. Based on their experience and expertise, four themes were identified as essential inputs for increased and enhanced female participation in disaster risk reduction initiatives.

FINDINGS & DISCUSSION

The following outlines four themes that emerged during research and stakeholder interviews as important considerations for the enhancement of female participation in disaster management and emergency response activities in Zambia. In order to effectively implement women-led disaster management and emergency response, it was suggested that the intervention should: (1) effectively implement existing and new national policies that are congruent with local customary law to empower communities; (2) integrate disaster risk reduction into community specific development planning; (3) encourage community-led initiatives in which the communities are the forefront of intervention planning and; (4) foster female empowerment through adolescent girl led initiatives.

Policy Implementation for Community Empowerment

As outlined above, several policies have been passed with the goal of empowering the Zambian people through capacity strengthening and climate change initiatives that aim to prevent and mitigate the severity of disaster effects on communities. These policies range from a broad sense of empowerment provided through the Decentralization Act (2002) to a more specific empowerment related to climate change management and disaster preparedness provided through the National Policy on Climate Change (2016), the National Disaster Management Policy (2015-2020), and the several supporting acts associated with

these policies. Despite these policies being technically in effect, there has been a lag in implementation.

It was suggested that a lag in implementation of legal frameworks has prevented the actualization of strengthened community infrastructure and capacity that would prevent disaster aftermaths from becoming limiting and devastating burdens. As one stakeholder stated, “implementation is the problem, we have the right policies”.² Often times the government has worked to pass policies to address issues that it is aware of and that empower communities. However, the more local, provincial- or district-level agencies that are responsible for the direct implementation and enforcement of these policies often lack the capacity to oversee the actualization of these policies in their constituencies. This is due, in part, to the lack of practical implementation of decentralisation. These agencies are sometimes overburdened by the number of policies that need implementation and they can lack the physical resources and personnel to fully implement all of these policies simultaneously.³ Although the responsibility for policy enforcement has been technically decentralised, the power in resources and funding has not been practically decentralised. This may create a lag time in implementation or insufficiently enforced implementation of some policies, especially if the agency selects only some aspects of the policy to implement. The more time that passes without the intended implementation of a policy, the greater the potential there is for the buildup of issues within the communities that could have been addressed with more immediate implementation. In short, long lags in implementations of policies can counteract preventative measures written into policies, resulting in a vicious cycle of poor implementation of policies and accumulation of emergent problems. As these problems build up, they may bleed into tangential sector that may not have been directly related before.

Furthermore, lack of practical enforcement of policies at more local levels translates to a lack of community knowledge and self-enforcement of these policies. In this respect, “Good laws [don’t] mean people are actually safe, people need to be aware of the laws”.⁴ Enacted laws have not had any ground impact, unless local agencies are adequately capacitated to implement and enforce this policy. The continuous revision of policies will not resolve issues on the ground if these policies do not reach the local level and are not applicable to the local setting.

Integration of Disaster Risk Reduction and Development Planning

² Professor of Disaster Management at Mulungushi University, Zambia. *Personal communication*. 7 July, 2018.

³ Members of Women and Gender Programming at CARE International Zambia. *Personal communication*. 27 June, 2018.

⁴ UNDP Gender Programme Coordinator. *Personal communication*. 28 June, 2018.

As discussed in the disaster risk model, hazards become disasters when the capacity of a community is insufficient to mediate its vulnerability to these events. Knowing that hazards exist even in everyday settings, the two factors in the disaster risk equation that can be manipulated are vulnerability and coping capacity. Both of these variables are embedded in social, economic, and political processes, which link disaster risk reduction efforts to larger development planning schemes. Failures and inadequacies in development planning can contribute to an environment where communities face hazards they do not have the resources and capacity to adapt to during both everyday and more severe situations.⁵

Integration of disaster risk reduction efforts and development planning has the potential to strengthen community capacity to navigate everyday exposure to hazards, as well as more extensive exposure to severe hazards. Several stakeholders emphasised that this integration should occur during all stages of the disaster management cycle: pre-disaster, during disaster, and post-disaster.⁶ This mentality is aligned with the fourth priority of the Sendai Framework which calls for enhanced disaster preparedness and a commitment to “Build Back Better” during recovery, rehabilitation and reconstruction (Sendai Framework, 2015).

During the pre-disaster stage, thoughtfully planned development projects can strengthen community capacity by utilising local knowledge and technical experts together to identify areas of vulnerability (Phiri, 2014).⁷ Targeted initiatives that strengthen institutions, increase access to information and services, and establish collective action have aided in the empowerment of the community to realise their own resources and the human rights that grant them access to services that can increase their capacity.⁸ These benefits contribute to disaster prevention since the everyday mitigation of hazard exposures could prevent routine exposure to a seasonal hazard like irregular rainfall from becoming a unmanageable flood that spirals into food insecurity and disease epidemics. Furthermore, with the full realisation of their human rights and capacities, women are strong contributors to overall development. Empowered women have more access to resources that can mitigate their every day vulnerabilities to hazards like GBV and to better cope with their increased exposure to these hazards during disaster settings.

In the cases that disasters do occur, emergency response measures that were integrated appropriately within development plans streamlined efficiency. For example, safe water access is an everyday development project that has required additional support during disasters, especially if floodwaters contaminate wells. As a dual contribution to

⁵ Professor of Disaster Management at Mulungushi University, Zambia. *Personal communication*. 7 July, 2018.

⁶ Principal Research and Planning Officer of the DMMU. *Personal communication*. 7 July, 2018.

⁷ Principal Research and Planning Officer of the DMMU. *Personal communication*. 7 July, 2018.

⁸ Executive Director of Women for Change. *Personal communication*. 10 July, 2018.

development planning and DRR, the IAGPURRZ project trained a small cohort of adolescent girls in Water Quality Testing. During floods, these adolescent girls were able to test their water sources for biological and chemical contaminants and inform their community. Improved knowledge of safe drinking water reduced the spread of water-borne diseases. The capacitation of adolescent girls during this project created an opportunity for them to contribute to development and DRR initiatives, empowering them with information and knowledge to participate in everyday mitigation of their community's exposure to unsafe drinking water and emergency response to water contamination during floods.⁹

Post-disaster, the integration of development planning is critical to rebuild community resources and capacities to not only better prevent and respond to disasters, but to also make progress on development goals. In alignment with the Sendai Framework, the DMMU has a commitment to "Build Back Better" (Sendai Framework, 2015).¹⁰ For example, in 2014, portions of the Mtenguleni-Madzimawe Road were washed away by floods. Funding for road rehabilitation plans had not been approved at the time of the flooding which contributed to the severity of the damage. In the reconstruction of the road, the plans provided for the construction of drainage structures and embankments in lower areas to prevent future flood damage (Jacobs, 2016).

Several stakeholders have indicated that integration of DRR into development planning has benefits throughout the disaster management cycle. Integration and implementation of DRR into annual development programming would reduce vulnerability to hazards that consistently exist. This integration may mitigate frequent and unmanageable disaster scenarios as the community would be better equipped to adapt to various hazards, preventing ordinary exposure to hazards from snowballing into severe disasters.

Community-Led Initiatives

Community-led initiatives are shown to be an effective method when addressing disaster and emergency preparedness and management. As outlined in Phiri 2014, the theoretical framework of Community Based Disaster Risk Management (CBDRM) is meant to: (1) empower communities with understanding of conceptual framework of DRR, so as build community capacity in understanding the DRR process holistically; (2) identify and develop profile of disaster risks and hazard in the eyes of the community; and (3) involve community in DRR interventions, which specifically participatory approaches in planning & implementation of DRR activities. Coordinating the national legal framework to the

⁹ Members of Women and Gender Programming at CARE International Zambia. *Personal communication*. 27 June, 2018.

¹⁰Principal Research and Planning Officer of the DMMU. *Personal communication*. 7 July, 2018.

implementation process and evaluation of a CBDRM intervention provides country-level support while emphasising local needs.

Often, community incapability to deal with disasters is linked to other issues that are ingrained in the political, economic, social, cultural, and physical structures of the community. Reactive outside sources provide an emergency response in communities that have faced disasters, rather than implementing proactive initiatives to prepare the community for the disaster management. In contrast, when outside sources support the community implementation of preventative measures, such as infrastructure reinforcement, sustainable farming methods, and general community awareness, it can increase community capacity and strengthen coping methods for disaster aftermaths. Effective preventative methods can reduce the manpower, necessary materials and fiscal resources to recover. In this way, the community becomes more independent and can cope without as many external resources. It is imperative to “get community buy-in from the people that matter”, so as not to impose on local knowledge and to support communal efforts.¹¹ Often, outside sources reject community input for many reasons, such as cultural and language barriers, assumptions about the community’s capacity, perceived hierarchies, and perceived beliefs about their cultural practices. However, it must be acknowledged that “not all culture is bad”.¹² Cultural is an integral part of communities and is what connects all community members to each other. Therefore, this aspect of their livelihoods must be included in interventions. Building community capacity to identify and create solutions for the aspects of their everyday life that contribute to increased exposure to hazards and vulnerability can make communities more willing to adapt certain practices.

In order to create change at a community level, all community members must be engaged because all are involved in the perpetuation of factors that limit their capacity and all are affected by exposure to hazards that exceed their capacity. In community-led initiatives, communities foster their own solutions to their own problems, which is more cost-effective and more sustainable. Once the community recognizes identifies barriers that affect them, members are able to collaborate and create solutions that have everyone’s best interest in mind. Communities are not homogenous groups and operate within specific social and political contexts that an outside organisation may not understand or value. Although an outside source can provide initial support for the community-led initiative, the organisation needs an appropriate exit strategy to allow the community to carry on the activities on their own. Furthermore, this method promotes organisational accountability to the community for their work and community accountability to themselves for the strengthening of their capacity.

¹¹ UNDP Gender Programme Coordinator. *Personal communication*. 28 June, 2018.

¹² UNDP Gender Programme Coordinator. *Personal communication*. 28 June, 2018.

Capacity Building of Adolescent Girls

Previous work in southern Africa on women-led disaster management initiatives has primarily involved livelihood resilience projects through microfinancing or leadership capacity development to increase participation in decision-making roles. Microfinancing schemes, coordinated by organizations like the Green Climate Fund (GCF) or VisionFund, provide loans to Zambian farmers when rainfall or temperature thresholds are reached and crops are qualified as damaged or dead. VisionFund's disaster insurance scheme is offered to clients of VisionFund, 80% of whom are women (GCF, 2018). Other microfinancing schemes provide capital for groups of women to start individual small-scale businesses. Umvoto Africa piloted a women-led participatory study in South Africa tailored to climate change adaptation methods and livelihood resilience after disasters. In the study, it was identified that women who have a personal sense of authority, particularly those who have paid positions, have better potentiality to exercise leading roles. "Positive deviants" such as women scientists were recruited to participate in the identification of community hazards (UNISDR, 2015). Although these microfinancing and leadership capacity development programs have seen some success, there are some limitations in focusing on this cohort of adult women who are either seeking to be or already employed. Although there are some emerging themes in the social, economic, and political barriers that women face, women are not a homogenous group. They are exposed to and experience hazards differently by age, socioeconomic status, marital status, and any number of other factors.

Adolescent girls face a double-jeopardy of being overlooked in disaster and development planning. Not only do they face the barriers of being female, but their age group also falls between the categories of women and children. In many communities, adolescence is not recognized as a separate age group, yet adolescents, particularly adolescent girls starting menses, have different vulnerabilities than children or adults.¹³ Existing gender mainstreaming initiatives in DRR that focus on adult women often cite the need to take advantage of their capacities as family and community caretakers. However, these women may already be occupied by formal or informal work, as well as an overwhelming unpaid care work burden. Although women have a growing role in disaster management, they may also face limitations in their availability to attend additional training and planning sessions or participate in leadership committee meetings (UNISDR, 2015). There are additional challenges in identifying and recruiting women to be a part of these initiatives when they all spend the day working differently. In contrast, adolescent girls share many of the same

¹³ Post-Doctoral Research Fellow at North-West University, Cape Town, South Africa, *Personal communication*, 20 June, 2018.

caretaking responsibilities and accompanying capacities of adult women, but they can be more easily recruited in school settings.¹⁴

The successes of both the GIRRL and IAGPURRZ projects revealed (1) a gap in knowledge about the experiences of adolescent girls exists and (2) adolescent girls have abundant potential and an existing capacity for leadership that should be recognized and utilised. Schools were identified as an appropriate entry point to reach adolescent girls and as convenient host location for sessions for GIRRL and IAGPURRZ. For GIRRL, researchers collaborated with school administrators to identify a small group of adolescent girls who were often overlooked for leadership opportunities, who would benefit from both participation and extra support. Unlike Umvoto's program, GIRRL specifically looked for girls who did not appear as natural leaders using the mentality that "if the underdog can do this, then so can everyone else...those girls are the marginalized of the marginalized."¹⁵ Not dissimilarly, IAGPURRZ recruited a much larger cohort of students from two government schools in the Kanyama Settlement. In both studies, it was demonstrated that participating girls benefited from the privacy and safety of a specific to talk about issues that they identified a need to discuss. The concepts of community based disaster risk reduction were applied, allowing adolescent girls to identify their own hazards, vulnerabilities, and capacities with an emphasis put on establishing cause and effect relationships for risk.¹⁶ At the end of both programs, adolescents had led the design of an action plan and organisation of a community advocacy event. As the GIRRL project was adapted to other contexts, girls from the original cohort were brought in as facilitators at new sites, expanding their roles as community leaders in capacity development and DRR training.¹⁷

The findings of the GIRRL initiative highlighted not only the themes of adolescent girl potential, but also of the need for integration of DRR into development planning schemes and the importance of community led solutions. Before the actual implementation of GIRRL, the assumption of many women-led DRR initiatives was that women were more vulnerable than men to natural hazards that occur during disasters (i.e., greater exposure to flood/drought hazards due to their caretaking roles, drowning during floods, food insecurity due to crop loss). Although this assumption was somewhat supported by the restricted capacity of women to be resilient to these hazards, GIRRL found that when asked to identify the greatest threats affecting them, adolescent girls often identified threats

¹⁴ Post-Doctoral Research Fellow at North-West University, Cape Town, South Africa, *Personal communication*, 20 June, 2018.

¹⁵ Post-Doctoral Research Fellow at North-West University, Cape Town, South Africa, *Personal communication*, 20 June, 2018.

¹⁶ Members of Women and Gender Programming at CARE International Zambia. *Personal communication*. 27 June, 2018.

¹⁷ Post-Doctoral Research Fellow at North-West University, Cape Town, South Africa, *Personal communication*, 20 June, 2018.

related to health and personal safety rather than hazards like floods or fires.¹⁸ The importance of these adolescent girls identifying an increase in vulnerability to sexual harassment/abuse and improper menstrual hygiene must be underscored.

Through engaging adolescents girls in a participatory approach, GIRRL used a community based model similar to that outlined by Phiri 2014. The benefits of using a community based model were clear. Without the active participation of adolescent girls there would be no realisation that their primary threats during disaster scenarios were amplified versions of the same everyday human-induced hazards they faced. This trend strongly suggested that DRR efforts must be linked to social equities and answer the question: what elements in this environment made girls more vulnerable or restrict the development of their capacity? Upon identification of these restrictive elements, the integration of development planning was critical. Adolescent girls shared that in normal settings they were unwilling to go to school during their menstrual cycles because sanitary pads are prohibitively expensive and their school lacks proper disposal facilities. During floods, menstruating girls were even less likely to attend school as the floodwaters flooded the toilets and students had to walk through high waters, making it difficult to manage their menstrual hygiene and increasing the stigma they faced at school about menstruation.^{19,20} The issue of menstrual hygiene management and its effect on school retention among girls is deeply tied to cultural and structural realms of development planning. Development plans that include the construction of appropriate sanitation facilities at schools will aid in the retention of adolescent girls in school and the subsequent increase in their capacity will empower them with the resources to mitigate their own vulnerabilities everyday and during disaster scenarios.

The work and future goals of other stakeholders indicate that not only is there a lack of comprehensive support for adolescent girls, but there is also abundant room to explore the potential of adolescent girls as community and peer leaders in DRR. Successful work completed with this cohort has involved the inclusion of previous themes discussed, such as the integration of DRR in development planning and the use of community led initiatives.

Implications

¹⁸ Post-Doctoral Research Fellow at North-West University, Cape Town, South Africa, *Personal communication*, 20 June, 2018.

¹⁹ Post-Doctoral Research Fellow at North-West University, Cape Town, South Africa, *Personal communication*, 20 June, 2018.

²⁰ Members of Women and Gender Programming at CARE International Zambia. *Personal communication*. 27 June, 2018.

Policy implementation is essential for empowering communities. Therefore, resources need to be made available to the agencies responsible for the local actualisation of policies. In order for the implementation to be integrated into programming, agencies must be allotted reasonable funding, resources, and personnel so as to fully implement policies as they were designed. Agencies are put in a bind when they are given limited funding, yet are expected to implement policies that exceed their capacity. It is also important to note that the agencies must also hold themselves accountable if given this funding. They must prioritize the needs of the communities that they are serving to prevent further misallocation of funds and prove that the policies and the initiatives are sufficient, effective and have the potential to bring sustainable practices to the respective communities. The agencies that are doing the work on the ground have been working in their respective communities for decades and are aware of the local political, economic, cultural, social, and physical environment. It is imperative that the local communities' customary laws are respected when implementing national policies because they are the governing frameworks of these communities.

Policies often complement each other. It is possible that when there is not complete implementation of one policy, other policies may be affected and may not be completely implemented as well. This is particularly seen with the policies mentioned above. There is a lag in the enforcement of the Decentralisation Act (2002), which contributes to the lag in the enforcement of the National Disaster Management Policy. For example, satellite agencies of the DMMU are not allocated adequate resources by more empowered agencies due to the lack of decentralisation, and so are unable to fully implement the NDMP as well as other relevant policies.

Recognition of the link between disasters and failures of development planning amongst stakeholders is imperative for efficient development and disaster mitigation. Accompanying this, national development planning budgets need to account for disaster prevention, preparedness and mitigation needs. Targeted development planning could increase the coping capacity of communities and improve their resilience from disaster scenarios. For example, development interventions that improve quality of housing can protect against the physical and social vulnerabilities of communities, such as limited material resources and economic marginalisation, respectively. However, these development interventions require the support of properly implemented policies.²¹ Following the example of housing development projects, the lack of enforcement of housing policies has allowed informal settlements to become inhabited in dangerous areas. These informal settlements often do not receive basic services from the government, leaving them especially vulnerable to hazards. Development planning that supports existing informal

²¹Professor of Disaster Management at Mulungushi University, Zambia. *Personal communication*. 11 July 2018.

settlements and prevents the formation of new ones can create safer environments where basic needs such as safe drinking water are accessible and productive economic activities can thrive. Housing infrastructure projects such as the establishment of more high quality boreholes and deep water wells can address some community vulnerabilities, as well as mitigate vulnerabilities that disproportionately affect women and girls.

Furthermore, the integration of DRR and development planning initiatives and the formation of effective policies cannot occur without active community participation. Community-led initiatives for disaster management are imperative to design and maintain sustainable solutions. A cycle of dependency can form if communities continually rely on outside sources for assistance. When communities create proactive solutions for disaster management and emergency response with materials that are within their communities, the solutions are more practical and applicable to the community setting. If communities rely on outside sources, the response can be delayed and may contribute to a larger loss of lives and resources. Currently, there are not enough interventions that put the community at the forefront of proactive disaster management. Outside sources often offer aid and resources that are not congruent to the needs of the communities. With community-led initiatives, the community is able to establish an action plan, which creates a general awareness of the hazards in their environment, their capacity to deal with the disaster, and their potential vulnerabilities. In this way, the coping strategies employed are sustainable methods of dealing with disastrous situations. Many NGOs that work in Zambia have had success with this implementation strategy and many of the initiatives are currently being implemented by the respective communities.^{22,23,24}

With the input of the community, some organisations have realised that adolescent girls have an extraordinary capacity to be community and peer leaders, and that knowledge of the hazards they face is lacking. A few pilot projects working to develop the leadership potential of adolescent girls in disaster management shown success. Moving forward, adolescent girls are an important cohort to consider during the development of future DRR programming. Done properly, work with this cohort can incorporate other important lessons learned from previous initiatives: the need for integration of DRR into development planning and the importance of community based disaster risk management. The principles of CBDRM can be used when working with adolescent girls, allowing them to take the lead on identifying their own hazards, vulnerabilities, and capacities. These same principles must be applied when engaging the rest of the community in gender sensitive development planning and DRR efforts.

22 Members of Women and Gender Programming at CARE International Zambia. *Personal communication*. 27 June, 2018.

23 Post-Doctoral Fellow at North-West University, Cape Town, South Africa. *Video call interview*. 20 June, 2018.

24 Professor of Disaster Management at Mulungushi University, Zambia. *Personal communication*. 11 July 2018.

With effective groundwork laid down by the pilot programs and research studies of several organisations, a well coordinated and integrated effort designed by the community with the support of multiple organisations and the government has the potential to move current disaster management efforts forwards. Mostly reactive measures can expand to proactive prevention, preparedness and mitigation efforts. The lessons learned and best practices from small-scale pilot projects can inform larger-scale sustainable solutions that lay within ever-growing community capacities. The cycle of disempowerment and vulnerability of women and girls can be broken and their empowerment will not only contribute, but also drive disaster risk reduction efforts and the overall development of Zambia.

Limitations

There are a number of limitations that were associated with the research process. First, only two months were allotted to develop this research. To be most effective and thorough, years of research go into finding sustainable and practical interventions for disaster management and emergency preparedness that contribute to female empowerment. There were a number of stakeholder interviews and sources that were not included in the final project since there was inadequate time to analyze them thoroughly in the context of this paper. Additionally, due to time constraints and scheduling conflicts, there was a limited number of stakeholder interviews conducted. This may have led to an incomplete set of implications postulated in this paper.

Additionally, there is limited research published online about the overall Zambian context, specific disaster events in Zambia, disaster management and emergency response initiatives. There is also limited data to evaluate these disaster events and responses. Many of the statistics available were from three to four years ago, which may not be representative of the current context. Furthermore, many reports with more recent data have not yet been published publicly and therefore could not be included in this paper. In order to create a timeline of disaster events, several news sources had to be compiled because there is no central source that tracks disaster occurrences in the country and region. Because of this, the disaster event information found from multiple news sources may be flawed or incomplete since they lack substantial supporting documents that verify the event.

Lastly, as the research progressed, there was a realization that stakeholders had inconsistent definitions of the following words: disaster, hazard, and vulnerability. The variance in definition of these words may have affected stakeholder answers, especially the

answers of those were not DRR experts. To mitigate this, all interviews were analysed based on the working definitions outlined in the National Disaster Management Policy of 2015 in congruence with the disaster risk equation from Wisner 2004. Even still, the conclusions made in this paper may have been affected by this inconsistency in the definition of the disaster vocabulary.

Finally, research was confined to the Lusaka area, which is a primarily urban area. However, urban, peri-urban and rural communities experience a variety of hazards and therefore have a large variance in capacities and vulnerabilities. Although Lusaka has some peri-urban settlements and stakeholders based in Lusaka work in a variety of demographic areas, our research may be limited in its generalizability to different demographic and geographic areas.

CONCLUSION

Communities face disasters together, but women are considered the most vulnerable in disaster situations due to their primary and direct contact with resources like water, food, and crops, which become most scarce due to disasters like droughts and flooding. Although women are often at the forefront of the disaster aftermath, current disaster management and emergency response initiatives have not adequately included women in decision making positions. Because of this, there is a gap in support for the specific hazards that women face. Disaster risk reduction interventions must address this gap and dedicate some focus to female empowerment. There are a number of initiatives that are aimed at disaster risk reduction through capacity building in women. Furthermore, the GIRRL and IAGPURRZ projects were successful interventions which targeted adolescent girls, rather than women.

This paper explored four overarching themes that can contribute to the enhancement of female participation in emergency and disaster preparedness. It also identified some practical changes, in regards to services and resource allocation, that are necessary for gender sensitive policies to be implemented in disaster and emergency preparedness initiatives. After an analysis of the current policies and interventions that were aimed at disaster risk reduction and its intersection with female empowerment, there were a number of implications found, which include full implementation of current policies, integration of disaster risk reduction into developmental planning, advocacy for community-led initiatives, and prioritisation of adolescent girls as community and peer leaders in disaster management and female empowerment. Moving forward, responsible government agencies and NGOs should work together to identify specific niches in disaster management efforts so as to complement each other, rather than replicate initiatives. Future disaster management efforts also require the actualisation of decentralised

responsibility and resources and the power of community knowledge, advocacy and resources. These community resources include their women and adolescent girls--a cohort that have endured the neglect of previous disaster management and development work and have still emerged with an unexplored potential to not only contribute, but also to drive the successful disaster management and development of their communities.

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APPENDIX

Appendix A: Timeline of Disaster Management in Zambia

1991/1992 Major drought in southern African region

An ad hoc committee formed by the ministries of Health, Agriculture, Energy & Water Development and Community Development managed drought response.

1994 Yokohama Disaster Reduction Conference

The first major global conference for disaster reduction was held in Yokohama, Japan resulting in the Yokohama Strategy: For a Safer World (1994-2004).

1994 Formation of the Disaster Management and Mitigation Unit (DMMU)

The Disaster Management and Mitigation Unit (DMMU) was created within the Office of the Vice President in 1994 to combat the inefficiencies of the existing fragmented and informal disaster framework. The DMMU was charged with facilitation and coordination of disaster management policies and activities.

1995/1996 Major drought in southern African region

2002/2002 Alternating drought and floods led to low crop production

The Decentralisation Policy 2002

Upon its enactment, the policy aimed to give more power to local governments in an effort "...[t]owards empowering the people" and encourage more civil participation (Decent. Pol 2002).

2003 Floods displace over 10,000 people, drown livestock and destroy acres of farmland

2005 World Disaster Reduction Conference in Kobe, Japan

The Hyogo Framework of Action (HFA) was globally adopted with a key paradigm shift from a reactive disaster management approach to a proactive disaster risk reduction approach focused on disaster preparedness, risk management, and disaster resilience of communities. HFA outlined five priorities for action: (1) make disaster risk reduction a priority; (2) know the risks and take action; (3) build understanding and awareness; (4) reduce risk and; (5) be prepared and ready to act.

National Disaster Management Policy of 2005

NDMP's original aim was to establish a national framework that is designed for disaster preparedness and management. Its responsibilities included: identifying potential high risk

disaster situations, promoting environmental development and sustainability, and sending aid to communities who were struck by disasters.

2006/2007 Early drought followed by intense rainfall submerges health posts, latrines, water sources, schools, roads and bridges, affecting a minimum of 140,000 people

2009 Zambezi River floods to its highest levels since 1969, destroying the road linking Zambia and Zimbabwe in the Shang'ombo District

The NGO Act 2009

The act allows the government to monitor the activity of NGOs that work in Zambia. In order to do work in Zambia, the NGO has to have approval from the NGO Registration Board. Once recognized by the Board, NGOs must submit annual reports of their projects and budgets, and must notify the Board of any changes to their reports.

National Disaster Management Act No. 13 of 2010

Written as a revision to the National Disaster Management Policy of 2005, the National Disaster Management Act No. 13 of 2010 addressed three major weaknesses. First, the 2010 revision included the paradigm shift of HFA from disaster management to disaster risk reduction. Additionally, the 2005 policy did not acknowledge climate change and issues of decentralisation.

2013 Floods force people to relocate to temporary camps

2014 Floods in the Southern Province leave 20,000 people homeless

2014 Floods destroy the Mtenguleni-Madzimawe Road and the Mwekera, Lunsemfwa, and Mkushi Rivers overflow

2015 Third UN World Conference on Disaster Risk Reduction in Sendai City, Japan

The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 is the successor to the HFA and has been voluntarily adopted by UN Member States. The framework includes four priorities for action: (1) understanding disaster risk; (2) strengthening disaster risk governance to manage disaster risk; (3) investing in disaster risk reduction for resilience and; (4) enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction.

2015/2016 Drought conditions affect maize, wheat and sugarcane harvests, driving up the food prices of staple foods

National Disaster Management Policy of 2015-2020

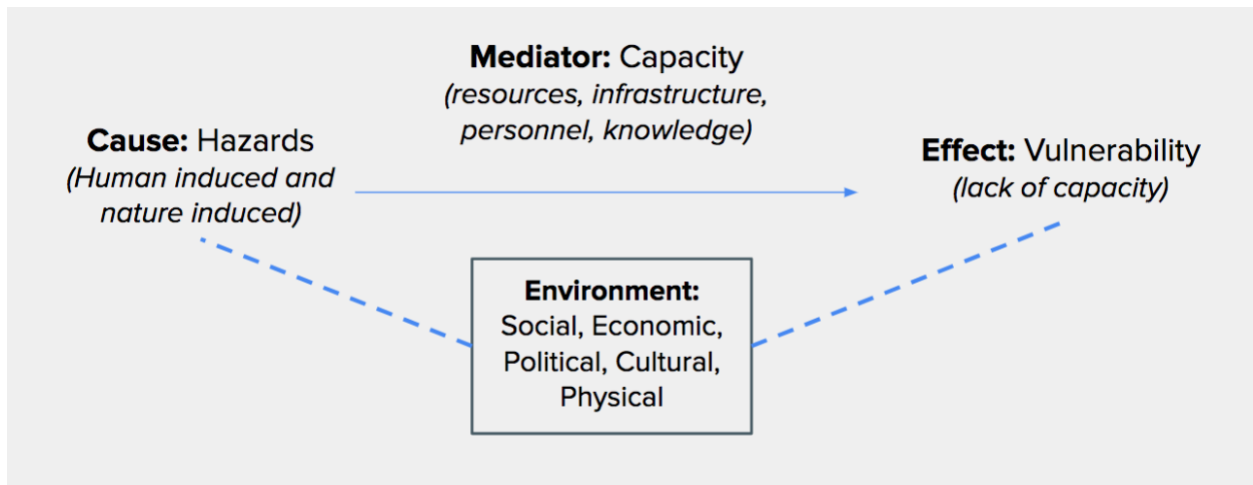
The revised policy supports measures aimed at the creation of development-based construction, reconstruction, rehabilitation, expansion, and maintenance of essential infrastructure to withstand natural disasters. These disasters are known to impact food and water security, health and sustainable livelihoods of rural, peri-urban, and urban communities.

National Policy on Climate Change 2016

NPCC's aim is to “..establish a coordinated national response to climate change”(NPCC 9). Its creation is a direct reaction to the more fragmented efforts towards reducing the effects of climate change in Zambia that were unsustainable.

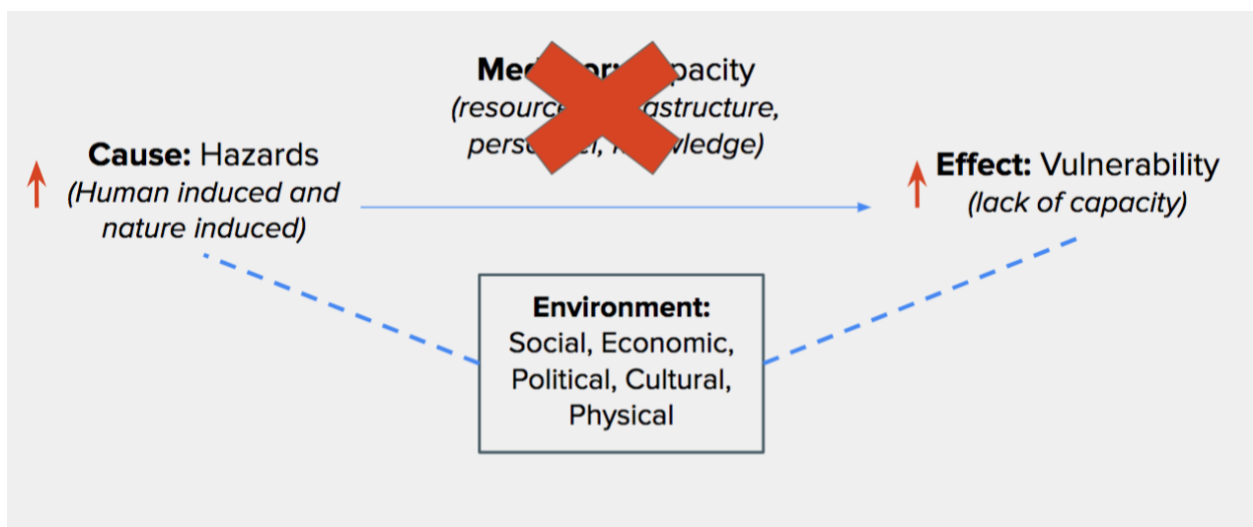
2018 Drought withers maize crops; flash floods follow and contribute to major cholera outbreak

Appendix B: Diagram of the Conceptualization of Disaster Risk



This diagram is meant to conceptualize how events, whether they be natural, weather related events or manmade events, become defined as disasters. There are certain hazards that are associated with every environment, whether they be social, economic, political, cultural, or physical. On an everyday basis, communities have to deal with such hazards, but most often, communities have built up a capacity to deal with them. When a disaster occurs, there is a certain level of capacity, whether that be the resources available, the infrastructure in place, the abilities of the personnel, or knowledge that help the community withstand the event.

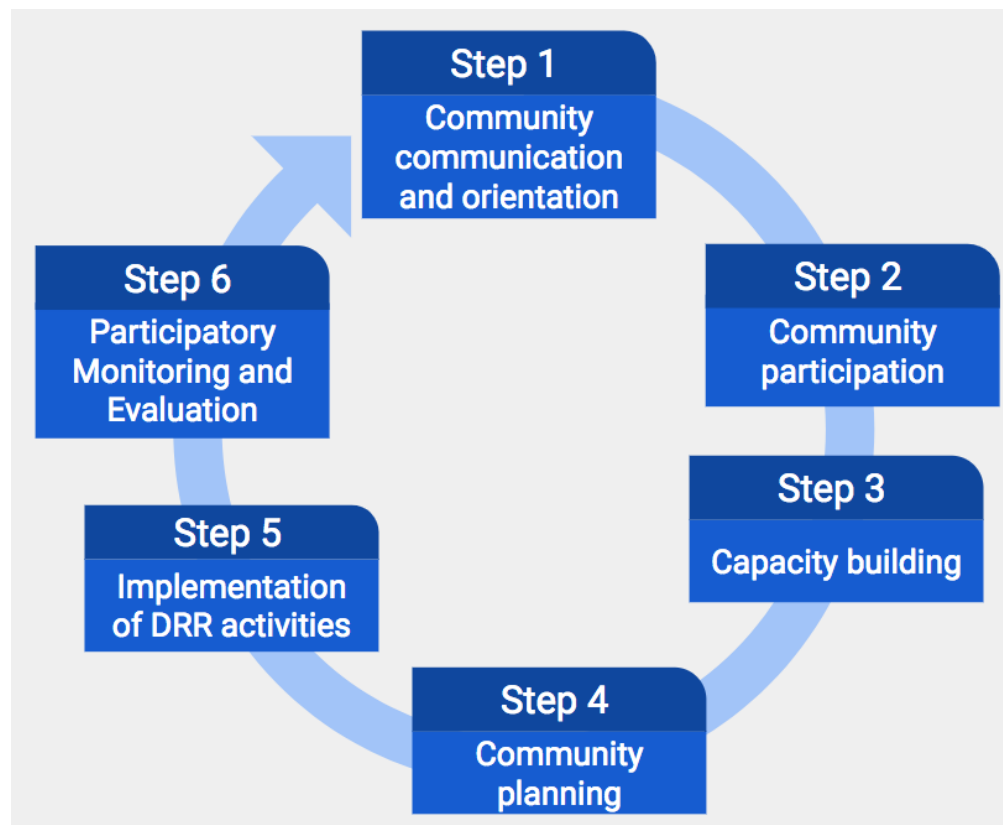
However, in a disaster situation:



An event becomes defined as a disaster when the capacity needed to deal with the event

exceeds the capacity of the community. When this happens, the community becomes more vulnerable and susceptible to the everyday hazards, which become exacerbated during the event. It is important that women are at the forefront of this capacity building because they face the most hazards everyday, given that they interact the most with water and food sources that can become contaminated or scarce due to the disaster.

Appendix C: Cycle of Community Based Disaster Reduction and Management (CBDRM)



Community-led initiatives are shown to be an effective method when addressing disaster and emergency preparedness and management. Reactive outside sources provide an emergency response in communities that have faced disasters, rather than implementing proactive initiatives to prepare the community for the disaster management. Effective preventative methods can reduce the manpower, necessary materials and monetary resources to recover. In this way, the community becomes more independent and can cope without external resources.

A cycle of dependency can form if communities continually rely on outside sources for assistance. When communities create proactive solutions for disaster management and emergency response with materials that are within their communities, the solutions are more practical and applicable to the community setting. The figure outlines the cycle of Community Based Disaster Risk Reduction and Management, which shows the progress of continual capacity building which will result in direct implementation.