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A Gendered Perspective on Deforestation, Climate Change, and Environmental
Legislation in Zambia

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Abstract

Climate change induced droughts, flash flooding, inconsistent rainfall, and soil erosion have a negative impact on Zambia's environment as well as the livelihoods of many of Zambia's citizens. Communities in rural areas specifically experience drastic changes to their everyday lives due to the reliance on agricultural production for food and income. Among the drivers which contribute to climate change issues in Zambia, deforestation has the highest impact on Zambia's climate. This is due to the various ways Zambians both affect and are affected by high rates of deforestation in the country. While the Environmental Management Act, Forest Policy, Forest Act, and Climate Change Policy address issues concerning environmental degradation, issues with implementation, access, and enforcement have led to inadequate use of current policies and legislations as well as failure to propose alternatives for both restoring forest resources and sustaining the livelihoods of people in rural communities. Additionally, failure to address gender issues including the adverse effects of climate change on women compared to men and the lack of representation of women in community meetings and decision-making processes, has raised the need to mainstream gender in planning, programs, and policies concerning the environment. Although civil society organizations play a role in advocating for the rights of rural women, greater coordination between civil society organizations, community members, and government officials must be achieved in order to promote justice and equity with regards to climate change issues. Lastly, Zambia's reliance on wood fuel for energy is unsustainable for the country's environment. In order to improve the state of climate change in Zambia, alternative energy sources in the form of green charcoal, solar energy, wind energy, and biogas must be implemented to increase access to energy in Zambia.

Acronyms and Abbreviations

CSO	Civil Society Organizations
CFMGs	Community Forest Management Groups
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
FAO	Food and Agriculture Organization of the United Nations
GHG	Greenhouse Gas
JFMGs	Joint Forest Management Groups
M&E	Monitoring and Evaluation
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
NGOCC	Non-Governmental Organizations Coordinating Council
REDD+	Reducing emissions from deforestation and forest degradation
TNA	Technology Needs Assessment
ZEMA	Zambia Environmental Management Agency

Background

Over the years, Zambia has experienced drastic changes to its climate. Inconsistent rain patterns, flash flooding, and extensive droughts have led to decreased water levels as well as the relocation of families in various rural communities. These issues are only a few of the effects climate change has had on Zambia's environment. In order to fully assess the impact climate change has had on Zambia, it is crucial to recognize the ways in which increased human activity contributes to climate change. Although large scale greenhouse gas emissions, burning of fossil fuels, air and water pollution, and a variety of other factors impact climate change, the rate of deforestation continues to be a major factor contributing to climate change issues in Zambia. The rate of deforestation in the country is approximately between 250,000-300,000 hectare per annum, which puts Zambia among the top 10 countries with the highest deforestation rates in the world (Matakala et. al, 2015).

There are many drivers of deforestation in the country. Zambia's national strategy for reducing emissions from deforestation and forest degradation (REDD+) outlines the main drivers for deforestation to be wood fuel, agricultural expansion, timber extraction, bush fires, mining, land use and infrastructure development. According to the REDD+ strategy, low income families make up 85% of the urban population. Of these families, 98% depend on charcoal as their main source of energy. Wood fuel is thus a significant contributor to deforestation due to the reliance on charcoal. An estimated 144,662 hectares of woodlands per annum is required to supply charcoal in only four out of nine provinces of Zambia. In general, roughly 20% of Zambia's population has access to electricity. As a result, over 70% of Zambia's energy consumption is due to the burning of charcoal and firewood (Matakala et. al, 2015). Just as charcoal and firewood are valuable resources for the well-being of various families in Zambia, agricultural practices are fundamental to the everyday lives of a number of low income families. As the second highest driver for deforestation in Zambia, agricultural expansion accounts for 90% of forest loss in Zambia. This extreme loss of forests is due to Zambia's increasing population size, increased pressure for agricultural land to meet national food requirements, shifting subsistence cultivation practices, and increased commercial farming (Matakala et. al, 2015). Similar to the burning of wood fuel and agricultural expansion, bushfires serve as another man-made driver for deforestation in Zambia. Bush fires stand as a significant contributor to deforestation in Zambia because, according to the REDD+ strategy, 75% of Zambia's forests are burnt annually (Matakala et. al, 2015).

Issues concerning land use, land rights, and infrastructure planning on the national level have also contributed to unwarranted forest loss in Zambia. Infrastructure development especially for roads, schools, health facilities and electrical networks among others are on the rise and are also expected to contribute to deforestation and forest degradation (Matakala et. al, 2015). Expanding construction activities have also led to increased demand for timber on both the national and international level. However, exact calculations for annual forest loss due to logging from timber harvesting in Zambia are lacking due to the Forestry Department's inability to monitor both timber off-takes in licensed and unlicensed areas. Not only is timber production used for construction and furniture, mining industries also use timber for pit mining. As the final contributor to deforestation, as outlined by the REDD+ strategy, mining adversely affects the environment in many ways. Studies on social impacts of mining in Zambia reveal that mining industries have direct impacts on deforestation. These include unsustainable agricultural practices, displacements of forests, and environmental degradation manifested in air and water pollution through chemical loading from mining effluents (Matakala et. al, 2015).

Deforestation is a critical issue not only for the effects it has on climate change in Zambia but also due to the wealth of natural resources Zambia's forests provide. The Integrated Land Use Assessment (ILUA) phase two states that Forests and trees occupy a large area of the country and provide the majority of the Zambian population with various products for their livelihoods (ILUA Phase II, 2017). Therefore, forests and woodlands are of significant importance to Zambia's social economic and cultural development. Forests have a number of ecological functions including providing habitats for wildlife, organic matter to fertilize and nurture the soil, protecting the soil from erosion and cleaning the air of greenhouse gases. Along with enhancing and maintaining biodiversity in Zambia, Zambia's forests also serve as economic reservoirs for the country and aid the rural economy. This economic value is achieved through ecotourism, fuels, medicines, fruits, honey, mushrooms, timber, and other wood based products (ILUA Phase II, 2017). The uses and functions of the forests in Zambia underscore the need to take care of them in such a manner that they would continue to provide the benefits in a sustainable way. However, assessments of the state of Zambia's forest indicate that there is a decline in forest resources due to degradation and deforestation. This consequently worsens soil erosion, siltation to water bodies, and access to agricultural resources. In order to maintain the livelihoods of Zambia's citizens, especially those in rural areas, efforts must be made to not only preserve Zambia's forests but also ensure that activities which affect the environment are conducted in a sustainable way (ILUA Phase II, 2017).

Introduction

Zambia's high rates of deforestation both affect and are affected by rural dwellers. As a result, climate change becomes an issue that directly affects the poorest members of the population. Although the effects of climate change are far reaching throughout Zambia, Zambian women are the most vulnerable to issues of deforestation. Past environmental legislation has made attempts at lessening the burden deforestation has on the population. However, Zambia's current environmental practices fail to enforce legislation, poorly define steps for implementing sustainable practices, and refuse to acknowledge the impact of deforestation on the livelihoods of rural women specifically. The purpose of this paper is thus to establish the need to mainstream gender issues in climate change discussions. This paper will outline the issues deforestation poses towards women as well as the disadvantages rural women face compared to those faced by men. Additionally, past and current environmental legislation will be analyzed and assessed based on their implementation policies, level of enforcement, and effectiveness when compared to environmental legislation in neighboring countries. Lastly, this paper will assess the gaps in legislation as they pertain to gender equality and propose next steps for civil societies as well as the role civil society organizations can play in creating a voice for rural women in the environmental decision-making process.

Methodology

A variety of resources were used to conduct research for this paper. The environmental management act and relevant environmental policies were analyzed for their effectiveness in addressing environmental issues, proposed implementation strategies, and inclusion of gender based issues regarding climate change. Additionally, a number of experts on issues regarding environmental law, climate change, women's rights, and environmental management were interviewed. The purpose for interviewing experts on these topics was to gain a general understanding of environmental issues in Zambia, the effectiveness and implementation of environmental legislation in rural communities, future efforts for mitigating climate change, the role of civil society organizations in environmental issues, and mechanisms for mainstreaming gender in decisions and policies concerning the environment. The following paper will encompass an in-depth analysis of the research findings as well as next steps for the reduction of deforestation in Zambia.

Gender

Although the effects of climate change are present all across Zambia, climate change issues adversely affect many members of the population. For example, the effects climate change has on the lives of women is vastly different from the effect climate change has on men. In

Zambia specifically, women face a greater burden from the loss of forest resources¹. The discrepancy in the burden women face due to climate change compared to men is largely a result of the cultural and gender norms which surround African societies². The role of women in African countries is very different from that of men. Women are often the main care takers in the majority of households. This includes women doing the bulk of cooking, raising children, and collecting medicinal herbs to care for their family. Outside of these practices, women have limited alternatives for sustaining themselves and their family³. While men traditionally find jobs outside of the household, women would look after the homestead. This limits women because household chores such as cleaning, tending to fields, and firewood collection requires a large amount of time. Additionally, cultural beliefs hold women responsible for caring for children, the sick, and the elderly. As a result, women are unable to take on other forms of employment⁴.

The views towards women due to cultural norms in African society constantly put women at a disadvantage. Traditionally, women were viewed as less than men⁵. Although more urbanized areas have shifted away from this mentality, issues of gender inequality are still present in rural communities. Not only do cultural norms limit the type of work women are able to do, these norms limit the representation of women in their communities. For example, the dominance of males in African society often leads to men making decisions on behalf of their household and community. On the other hand, in African tradition, it is not common for women to speak in public meetings or community gatherings. Similarly, women do not speak out in the administration of land, especially under customary law.⁶ Additionally, due to the daily chores of women, many rural women spend their time collecting materials for their household or selling produce rather than participating community meetings. As result of these factors, women's participation levels in a number of development processes is hampered. This makes it difficult for the needs of women to be known and addressed in full⁷.

The cultural norms surrounding women coupled with Zambia's high rates of deforestation causes women to be more vulnerable to environmental issues.⁸ Zambian women, especially those in rural areas, rely heavily on subsistence farming for their livelihood. Not only do women use agricultural products for feeding their family, women are also able to earn

¹ Interview with NGOCC

² Interview with NGOCC

³ Interview with NGOCC

⁴ <http://www.our-africa.org/women>

⁵ Interview with NGOCC

⁶ Interview with NGOCC

⁷ Interview with NGOCC

⁸ Interview with the Zambia Climate Change Network (ZCCN)

income by selling crops in markets. Unfortunately, climate change issues make agricultural production extremely difficult. In Zambia, climate change can take the form of droughts, flash flooding, inconsistent rainfall, and soil erosion. These factors can lead to depletion of water resources and decreases in arable land. This leads to the displacement of families and many people losing agricultural production as a source of income.⁹ Although both women and men engage in subsistence agriculture, women have limited alternatives for sustaining their economy. For example, while men are able to work in the mining industry or other fields outside of agricultural production, the majority of women are only able to take care of their families or tend to the household. This places a huge burden on women because women are still responsible for being care takers and must work harder in order to provide resources for their family.

In addition to greater climate change issues, women in Zambia are directly affected by deforestation. Although agricultural expansion contributes to the deforestation, the lack of electricity in the country especially in rural areas leads to high demands for wood fuel as an alternative source of energy. To meet this demand, many people in rural areas participate in wood fuel production for personal gain. The majority of charcoal production is led by men.¹⁰ However, both men and women sell charcoal as a form of income. The issue with charcoal production is that it leads to the depletion of forest resources. This adversely affects women because women rely on forest resources for firewood, collection of medicinal herbs for family care, and goods such as mushrooms and caterpillars which can be sold in markets.¹¹ Due to deforestation, women are forced to travel long distances in order to access resources, lose a vital source of income, and find it difficult to sustain their livelihoods for both them and their families.

Due to the number of factors which put women at a disadvantage in African society, there is a need to address the needs of women as they relate to climate change issues. The poorest members of Zambia are women and children.¹² Additionally societal norms have led to women taking on the majority of the responsibilities for their family. In order to ensure that women have the resources to sustain their livelihoods, climate change issues must be addressed from a gendered perspective.

⁹ Interview with Ecologist from the Copperbelt

¹⁰ Interview with the Zambia Institute of Environmental Management (ZIEM)

¹¹ Interview with climate change activist

¹² Interview with Lecturer, specialised in Environmental Law, at the University of Zambia

Environmental legislation review

The purpose of this review is to analyze current environmental legislation and policies in Zambia. The documents analyzed include the Environmental Management Act of 2011, Forest Policy of 2009, Forest Act of 2015, and Climate Change Policy of 2016. The following section will include a summary of the documents being addressed, various principles and guidelines outlined in the document, and a list of organizations which either contributed to the development and enforcement of the documents. Additionally, each section will include an assessment of the effectiveness of proposed policies, acknowledgment of key stakeholders involved in environmental issues, and methods for implementation. Lastly, each environmental document will be analyzed for its inclusions of gender specific issues.

The Environmental Management Act

The Environmental Management Act was enacted on April 15th, 2011. The act provides for integrated environmental management and the protection and conservation of natural resources. The act includes provisions that relate to the preparation of state of the environment reports, plans for environmental management and sustainable development, and conduct of strategic environmental assessments of proposed policies. The environmental management act also outlines measures for combatting pollution and environmental degradation. Additionally, the act establishes the Environmental Fund and the Zambia Environmental Management Agency (ZEMA). Due to its cross cutting analysis of environmental issues, the environmental management is Zambia's main environmental legislation.

The environmental management act has a number of statements which connect human rights with environmental decisions. The act states that every person living in Zambia has the right to a clean, safe, and healthy environment (section 4, Environmental Management Act, 2011). In order to ensure that these resources are available, the act proposes monitoring and environmental audits. Additionally, the act states that every person has the duty to safeguard and enhance the environment (section 5, Environmental Management Act, 2011). Based on this, any person shall not undertake any project that may have an effect on the environment without the approval of ZEMA and any person responsible for environmental degradation should restore the degraded environment to its condition immediately prior to the damage.

In order to preserve environmental resources, the act addresses the need to disseminate information and involve communities in decision making processes. This includes collecting and responding to public comments, concerns, and questions relating to the

environment. Adverse effects shall be prevented and minimized through long term integrated planning and the coordination, integration, and cooperation of efforts which consider the entire environment (section 6, Environmental Management Act, 2011). Planning, policies, and programs for environmental management will involve community participation in natural resources management and the sharing of benefits arising from the use of the resources shall be promoted and facilitated. Also, the act outlines that citizens will have access to environmental information to enable them to make informed personal choices which encourages improved performance by industry and the government (section 6, Environmental Management Act, 2011).

Although the environmental management act addresses many environmental concerns as well as issues concerning sustaining the environment and involving community members, the act is flawed due to the lack of implementation¹³. In rural areas especially, government officials have limited resources for monitoring and enforcing the measures outlined in the act. For example, because the majority of people living in rural communities produce wood fuel or agricultural practices, Zambia experiences high rates of deforestation¹⁴. Due to the high demand for these resources, it is almost impossible for government officials to regulate or hold people accountable for large scale environmental practices. Similarly, there is little enforcement regarding community engagement. Unless government officials are actively engaging in rural areas, it is difficult to determine if all community members are present at meetings or are able to have their voices heard. Additionally, the act fails to outline if women will be allowed to participate in community meetings.¹⁵ The lack of gendered approaches for addressing environmental issues implies that there are no measures to ensure that women will be involved in the environmental decision-making process. Lastly, due to the lack of electricity and electrical appliances such as computers in rural areas, many people who rely on wood fuel as their main source of energy may never be able to access the act. Even if these resources are available, the language and terminology used in the act may be difficult for people to understand. The environmental management act establishes that people should have the right to be informed but fails to present information regarding the environment in an accessible way. As a result, many people are unable to use the legislation effectively. For example, the environmental management act confers on members of the public the right to enforce provisions outlined in the act and prosecute environmental law offenders. Not only does lack of access to information lead to low utilization of enforcement and prosecution rights, limited understanding of the legislation leads to limited community involvement and community members being unaware of the power they have over their environment.

¹³ Interview with the Ministry of Gender

¹⁴ Interview with the Policy Monitoring and Research center (PMRC)

¹⁵ Interview with NGOCC

The Forest Policy

The National Forestry Policy or forest policy of 2009 is a review of the National Forestry Policy of 1998. The need for this review arose because of the increasing demands for forest resources in Zambia, the need for devolution of management systems, and the need to address emerging issues such as climate change, bio-energy development, prioritization of agriculture, eco-tourism, and environment as engines for Zambia's development (National Forestry Policy, 2009). Unlike the 1998 policy, the forest policy for 2009 includes strategies relating to the contribution of the forestry sector to poverty reduction and Zambia's national economy based on projects that anchor in the national sustainable development criteria, carbon forests, and trade. The main goal of the policy is to re-direct and motivate responsible forestry management and feasible stakeholder interventions in forestry development for the good of Zambia. To achieve this, the policy outlines principles of devolution, empowerment, equity, justice, and community and private sector participation (National Forestry Policy, 2009).

The forest policy recognizes the need for forest resources. The policy states that the livelihoods and integrity of the ecosystem in Zambia hinges on how well forests are managed and emphasizes the critical role of forests to the sustainable development of the country. The policy also outlines the various factors which contribute to deforestation in Zambia. For example, the policy addresses the threat faced by Zambia's forests due to unsustainable harvest practices and competition for forest land for agriculture, settlements, mining, and other land uses (chapter 1, National Forestry Policy, 2009). These unsustainable and destructive harvesting systems such as charcoal and wood fuel production, excessive forest clearing for farmland, forest degradation, and uncontrolled annual burning lead to reduced biodiversity and contribute to climate change in Zambia. In response to the factors causing deforestation in Zambia, the forest policy proposes greater community involvement especially in the rural areas. Community involvement would thus involve increasing awareness and sensitization of local communities on the effects of deforestation and forest degradation on the environment and on the livelihoods. This will include encouraging harvesting techniques that ensure optimal regeneration of non-wood forest products, empowering traditional leaders and local communities in forest establishment and management, and promoting community based participation in the management of protected forest areas and forests on customary land (chapter 1, National Forestry Policy, 2009).

In conjunction with the incentives to empower community members, the forest policy states that all community members including men, women and children are expected to

participate fully in the development of the forestry sector while enjoying equal rights to training, education, research, ownership, governance, financial, and other material support and benefits (objective 14, National Forestry Policy, 2009). This stands out because it exemplifies that the forest policy acknowledges the need for women in decisions concerning the environment. Not only does the policy outline that gender equity is a fundamental principle to achieving sustainable management and utilization of forest resources, it seeks to promote gender mainstreaming in all aspects of forestry management, industrial development, production and utilization of forest products and services, and the forestry extension, training, and education sub-sectors. Additionally, the forest policy addresses the important role women play in the utilization of firewood, fruits, mushrooms, medicines, and other forest products as well as the dominance of males in the forest management decision making process at both the community and national levels. As a result, the policy strives to ensure that women, youths, and persons with special needs are not disenfranchised and receive equitable participation in and benefits from forest management and development programs.

The Forest Policy of 2009 outlines a number of measures that aim to increase the sustainability of forest resources. These include facilitating the development of appropriate technologies, providing a framework for undertaking clean development mechanisms and reductions of emissions from deforestation and forest degradation initiatives in the forestry sector, promoting sustainable production methods that contribute to the long-term development of forest resources, and the rehabilitation of degraded and threatened ecosystems. Additionally, the Forest Policy establishes that civil society organizations shall play a determinant role in ensuring gender mainstreaming, equity in benefit sharing, and equitable participation of stakeholders in the management and utilisation of forest resources. Although the Forest Policy makes efforts to address multiple issues with forest management, the policy fails to propose specific methods for implementation. Due to lack of proper monitoring resources as well as lack of capacity within the forestry department, it is very difficult for the Forest Policy to be enforced on the level proposed in the policy (chapter 2, National Forestry Policy, 2009). Similarly, the policy does not provide a framework for REDD+ implementation that effectively aligns with other policy and legislative instruments. Lastly, the policy fails to propose steps for increasing equity for women and does not substantially address the inequitable control and ownership of land by men to the exclusion of women. The forest policy effectively addresses the need for a gender approach to issues concerning the environment but, without proper mechanisms for enforcement, there is no way to determine if the policy is effective at the community level.

The Forest Act

The Forest Act was enacted on August 14, 2015. This law was created in regard to the fulfillment of Zambia domesticating international agreements such as the United Nations Framework Convention on Climate Change (Forests Act, 2015). The Forest Act establishes and declares national forests, local forests, joint forest management areas, botanical reserves, private forests and community forests. It also provides the opportunity for community, local authorities, and non-governmental organization's participation through the implementation of; honorary forest officers, community forest management groups (CFMGs), forest development fund, and joint forest management groups (JMGs). In addition, the Forest Act establishes consequences for persons who access gazetted forests without a permit or a license.

A CFMG is a group of people recognized by a Chief and local authority, which communally controls, uses and manages a forest in the area of the Chief and the local authority (Forests Act, 2015). Citizens able to participate in a CFMG includes anyone who is a member of a village near a forest, managing part of a forest or has desires to manage a forest or part of a forest. As outlined in the Forest Act section 32.1, duties of CFMGs include to protect, conserve, and manage the community forest, assist the Director in enforcing provisions of the Act in relation to all illegal harvesting of forest produce, and do anything that is necessary for the efficient conservation and management of the community forest. JFMGs differ in that it consists of both community members and state authority members. The function of JFM committees include the management and development of the joint forest management areas and the distribution the benefits among the local communities. Therefore, the overall purpose of community participation in forest management is the promotion of greater property rights of communities while providing more sustainable and equitable forms of natural resource management (Umar and Vedeld, 2012).

Despite the Act's inclusivity of community participation, it does not specify or provide exact provisions for regulating the role of community members in forest management. Also, the Forest Act requires the approval of Chiefs for community members to participate in both CFMG and JFMGs. This can hinder the equal opportunity for any community member, especially women, to join the forest management groups. The reasoning behind this stems from cultural norms in Africa which disproportionately affect women. In African culture, especially in rural areas, the needs of women as well as their representation are not valued as highly as those of men.¹⁶ Therefore, being that most Chiefs are men, the likelihood of choosing a woman to represent their community in a CFMG is small. This reality

¹⁶ Interview with NGOCC

contradicts the clause of anyone desirous of joining a forest management group as stated in the Forest Act.

In addition, this law fails to include strategies for monitoring and evaluating forest management groups so that resources and funds are being equally distributed throughout the community. In a study which evaluated the joint forest management groups in Katanino, Zambia, local elites who were members of the JFMG monopolized their needs over the community's causing an unequal distribution of benefits. In meetings, other community members voiced their opinions less, especially if it contradicted that of local elite because they were viewed as more knowledgeable (Umar and Vedeld, 2012). Furthermore, the local elites captured a bulk of the benefits, which led to less participation of poorer community members in JFM activities. This shows the importance of having a mandate for periodic evaluation, to reduce the corruption that can arise in community groups.

Lastly, a mandate to require a minimum percentage of women in forest management groups is not included in the Forest Act. Studies have shown that increasing the percentage of women in forest management groups has proven to be effective in other countries. A review of JFMGs in Nepal and India reported mixed gender management groups that were female dominated provided better results in forest management (Argawal, 2009). Their assigned forest area was in better condition and showed greater improvement. A correlation was found between a higher percentage of women on the executive committee and lower percentage of forest degradation (Argawal,2009). Mixed gendered joint forest management groups were also proven to be more successful when conducted in Kenya, Uganda, Mexico and Bolivia as well. In Indian states such as Gujarat, at least two women in a community forest management group is required (Argawal, 2009). However, it is specified that not all states met the requirement. Nonetheless, one of the first steps in creating change is having mandates documented in laws and policies. Therefore, the inclusion of a minimum percentage of women in forest management groups in the Forest Act in combination with strict enforcement and implementation will be one step in mainstreaming gender in forest management.

Climate Change Policy

The Climate Change Policy was created in April 2016 under the Ministry of National Development Planning. The purpose of the policy is to create a coordinated effort between different ministries and departments to tackle the issue of climate change in Zambia and to

outline the goals a government ministry hopes to achieve.¹⁷ The Climate Change Policy fulfills this requirement because it adequately outlines the objectives the country hopes to achieve in terms of climate change issues. However, it is lacking the precise methods that will be used to reach the outlined goals.

This policy discusses the impacts of climate change in various sectors including forestry, energy, agriculture, water, and health. By doing so, it emphasizes the need and urgency to address climate change issues and mitigate the effects on the country. In addition, the Climate Change Policy presents climate change as a cross cutting issue and recognized the ways in which women and youth are affected by climate change in comparison to men. In section 2.3.9, women and youth are categorized as vulnerable groups and their dependence on natural resources for food and their livelihood are noted. Also, it is recognized within the policy that vulnerable groups such as women are not adequately represented in the decision-making process and explains their lack of representation limits their ability to contribute and implement their expertise. The gender component of the policy is reinforced being that a specific objective listed in section 6.2 of the policy states the enhancement of gender Climate Change programs and activities in order to promote gender equality and equity in the implementation of such programs. In addition, this policy emphasizes the importance for monitoring and evaluation (M&E) of future programs and states the creation of a framework to facilitate effective M&E.

The inclusion of specific gender objectives and recognition of the lack of representation of women in climate change issues is the first step in mainstreaming gender in environmental issues such as climate change. This policy opens the discussion and puts pressure on other ministries to recognize and include a gender component when creating environmental legislation and programs.

Even though the needs and problems inflicted on vulnerable populations are recognized in the Climate Change Policy, there are no methods to better the inclusion of vulnerable populations in the climate change discussion. Without specific strategies put in place it is hard to enforce and implement gender in climate change initiatives. An outline of methods and strategies are also absent for the reduction of forest degradation and loss of forest ecosystems. Rather, reduction in forest degradation is listed only as a measure to promote investment in climate resilient and low carbon pathways. This is a recurring theme in environmental legislation and policies; objectives and needs of the community are

¹⁷<http://www.etu.org.za/toolbox/docs/govern/policy.html>

adequately addressed but strategies to achieve the objectives are lacking which makes implementation and enforcement difficult.

Lastly, the Climate Change Policy does not emphasize the way in which Zambia contributes to climate change but places more importance on its effects. In doing so, the policy frames Zambia as a victim of climate change rather than a contributor. Due to Zambia having one of the highest the rates of deforestation in the world, the damaging effects of human activities need to be recognized and stressed. In order to combat these effects, more responsibility must be placed on not only government officials but also citizens to preserve their land and environment.

Overview of Environmental documents

The Environmental Management Act, Forest Policy, Forest Act, and Climate Change Policy provide a variety of policies which seek to address environmental issues. Although the documents provide invaluable resources for addressing environmental issues, they fail to clearly state steps for implementation. Due to this, there is little enforcement and regulation. As a result, many of the issues the documents seek to solve remain present in Zambia. Secondly, the documents fail to outline steps for mainstreaming gender in environmental legislation and decision-making processes. Even in cases where the rights and needs of women are acknowledged, little is said about how women will be supported or how their livelihoods will be improved due to policies outlined in the documents. Also, due to the limited steps for implementation, it is difficult to determine if communities are actively participating in decisions concerning the environment, women are being included in meetings and discussions, and the voices and concerns of the community are reaching government officials. Additionally, issues relating to the access of environmental resources puts many community members at a disadvantage. The majority of people, especially in rural areas, are not connected to electrical resources. This leads to the majority of people who are most vulnerable to the effects of climate change not being able to access or be aware of the environmental documents that are created to help them. Even when people are able to access environmental legislation and policies, the information and language in these documents may be too difficult for them understand. In order for these documents to be effectively utilized, there is a need for environmental policies and legislation to be enforced in critical areas, displayed in a way that is both accessible and understandable, and adapted to incorporate the issues women face.

Why Gender Inclusivity is Needed

Due to the fact that women are more affected by environmental issues such as deforestation, it is important to have gender inclusive climate change strategies and plans. Inclusive policies reflect equality and equity: both men and women need to be equally and meaningfully involved in planning and decision making.¹⁸ Because the nature of climate change affects women differently they have valuable expertise and strategies that need to be shared and used to promote sustainable methods. Studies have shown that women have a greater awareness of health issues, risk perceptions, and environmental concerns, while men are geared toward more convenience.¹⁹ In addition women, are easier to organize and use more collaborative methods when advocating for causes.²⁰ With more women involved in the decision making process regarding climate change efforts, it is hypothesized that the inclusion of all community members including men, youth, and women will lead to greater representation and the needs of the community being adequately addressed.

As previously mentioned, the increase in effectiveness of forest management groups in other countries was correlated with the presence of women participation. In a Gender and Forest Management Review conducted by USAID knowledge service centers, this correlation was attributed to five reasons (USAID, 2012). First, high proportions of women in forest committees increases knowledge and enforcement of rules. Second, women aided in the increased regulation of illegal activities and capacity for conflict management. Also, there was improved security of women's property and forest access rights (USAID, 2012). Lastly greater understanding of the forests was accomplished due to activities in women dominated fields which traditionally require specific knowledge for harvesting non-timber products (USAID, 2012). This shows the importance of mainstreaming gender in environmental issues because the participation of women can directly promote increased use of environmentally stable practices.

The involvement of gender in climate change issues can include increasing the number of female representatives during the formation of environmental policies and laws as well as including experts and policymakers who understand the ways in which both women and men are affected by climate change issues. Outside the legislative level, gender inclusion in rural areas can include pushing for access to information and education on climate change issues. The first step in creating change regarding the environment is making sure the people who are most affected understand the ways they contribute and can adapt to effects

¹⁸ <http://eige.europa.eu/sites/default/files/documents/Gender-Equality-and-Climate-Change-R>

¹⁹ EU paper gender and climate:

<http://eige.europa.eu/sites/default/files/documents/Gender-Equality-and-Climate-Change-R>

²⁰ Interview with Zambia Climate Change Network

of climate change. In terms of deforestation, increasing awareness of the importance of forest maintenance due to the role of forests as carbon sinks, habitat for wildlife, and reservoirs for water catchment is vital. Increasing comprehension on the way traditional practices negatively impact the environment such as the clearing of forest due to the need for arable farming land, excessive timber extraction, and charcoal production can in return make community members more environmentally conscious.

The Role of Civil Society Organizations

Along with the need to address climate change issues, there is need to analyze how people are affected by climate change. The framing of climate change as a social, ethical, and political issue rather than a solely scientific or technological problem creates the foundation for climate justice. Climate justice thus serves to take a human centered approach to climate change issues. Climate justice seeks to increase fairness and share the benefits and burdens of environmental issues. For example, the lack of involvement of women in decisions concerning the environment in light of the severe effects of deforestation on their livelihoods make women an extremely vulnerable population. The goal of climate justice is to highlight the effects climate change has on vulnerable populations and ensure that people are protected. By doing this, climate justice addresses the needs of people and respects human rights. Although it exemplifies the need for equity with regards to environmental issues, measures must be taken to promote climate justice. These measures would include educating and empowering communities as well as increasing the representation of community members in decision making processes. Community members have the right to information concerning their environment and should have the tools necessary to make informed decisions. Promoting climate justice would ensure that concerns on the most micro of levels are heard and addressed on the national level. This includes not only making the voices of rural communities heard but also recognizing the adverse effects of climate change on both men and women. Based on this, promoting climate justice would lead to greater community and government engagement, equal representation in decision making processes, and mainstreaming of gender in environmental legislation.

Promoting climate justice is the goal of civil society organizations (CSOs) and non-governmental organizations (NGOs). Zambia has multiple CSOs and NGOs that tackle a variety of issues including human rights, gender equality, education and the environment. Some operate on a local, national or even on an international level. NGOs and CSOs are vital in-service delivery and implementation and ultimately act as a bridge between members of the community and government. Many CSOs in Zambia focus exclusively on human right issues but are looking to branch into the environmental and climate change issues. Given

many CSOs human rights based background, advocating for climate justice is a gateway for organizations to engage in environmental and climate change issues.

A huge part of climate justice is the promotion of gender equality and equity. Therefore, with the lack of gender inclusive policies in Zambia's environmental legislation, a major responsibility for CSOs is pushing for not only gendered centered climate strategies but also for its implementation and enforcement by the government. CSOs need to continuously monitor and evaluate current government implemented programs regarding climate change issues and gather gender-specific data to conduct impact assessments on women involvement within these programs. With effective M&E, CSOs can become more evidence based and, use their analysis to hold governmental officials more accountable. NGOs and CSOs are key to the dissemination of information to communities and helping them understand their rights under established laws. Through partnerships with grassroots organizations CSOs and NGOs can build the capacity to go to rural areas, which is an area government official are unable to reach. For this reason, organizations carry the weight of educating communities on the issue of climate change and their role in mitigating and adapting to the effects. Also, there is a need to sensitize the public to issues involving deforestation, specifically the effects on women and the importance for their inclusion.

Specific ways in which NGOs and CSOs can mainstream gender include looking at the National Determined Contributions (NDCs) for Zambia. As a party to the Paris Climate Change Agreement in 2015, Zambia is required to report regularly on the country's emissions and implementation efforts hence the creation of the NDCs. In the NDC previously submitted specific strategies for adaptation and mitigation on climate change issues, with more emphasis on adaptation strategies. However, there was very minimal inclusion of gender specific adaptations. The next submission of Zambia's NDC is due in 2020. This grant CSOs and NGOs the opportunity to be involved in the creation of the next NDC and advocate for the inclusion of a gender component. Organizations can look at who is involved in the preparation of the NDC and specifically look at stakeholder and shareholder participation. In addition to advocating for a gender component CSOs can push for women consultation and representation during the creation of the next NDC.

Another route for gender mainstreaming in climate change initiatives include examination of the Technology Needs Assessments (TNAs). TNAs assist developing countries in determining their technology priorities for mitigating greenhouse gas (GHG) emissions and adapting to climate change. The approach stated within Zambia's TNA for adaptive strategies is not gender sensitive. Climate related technology policies and projects need to increase recognition of women's human rights and their contributions to climate change responses, as well as the promotion of the developments of new opportunities for women

in the mitigation and technology sectors.²¹ Organizations need to advocate for the ensuring of greater skill sharing and knowledge opportunities by making sure women are involved in every stage of the technology cycle. CSO's can help influence government to consider technologies to address gender differentiated needs.

Mitigating Deforestation and Alternative Energy Sources

Charcoal Production

In Zambia 70% of the nation energy consumption stems from firewood and charcoal. The production and burning of charcoal uses trees and adds to the rate of deforestation in the country. The burning of charcoal emits greenhouse gases which contribute to climate change. However, charcoal is a huge source of energy in the country and the selling and production of charcoal is a main economic driver in rural areas. Banning charcoal production in the country is not a practical or realistic idea and can even cause increase poverty. As a result, strategies have been development to make charcoal greener or environmentally friendly.

Currently in Zambia, Earth kilns are being used to produce charcoal (TNA, 2013). Earth kilns are highly inefficient and requires more biomass per unit charcoal being produced. This means more trees have to be cut down, increasing the country's contribution to deforestation. Earth kilns have been categorized as the most traditional and simplest technology for charcoal production. The Food and Agriculture Organization of the United Nations (FAO) issued a report on green charcoal which proposes strategies to aid in greening the charcoal value chain, to mitigate climate change and improve livelihoods. The charcoal value chain includes the collecting and cutting of wood, the carbonization of wood in kilns, the transportation, trade and distribution of charcoal, and consumption by household or enterprises.

Greening the charcoal value chain includes a more sustainable production of wood which will immensely reduce the of the net GHG emissions. Sustainable wood comes from forests that are managed in accordance with sustainable forest management criteria²². Production of sustainable wood can incorporate increased agroforestry because it reduces both deforestation and pressure on woodlands, by switching reliance on farm grown woodfuel instead. Also mentioned in the report was turning charcoal waste into briquettes which increases the amount of charcoal produced while using less biomass.

²¹ Women and Gender Constituency: *Position Paper on the 2015 New Climate Agreement*. June 2015. http://womensgenderclimate.org/wp-content/uploads/2015/06/WGC_FINAL_1June.pdf

²² Sustainable production chains wood, 2005 -2013: Government of the Netherlands <http://www.clo.nl/en/indicators/en1465-sustainable-production-chains-wood>

Another important part of the charcoal value chain is the carbonization of wood in kilns. Carbonization of the wood accounts for 80% of the GHG emitted during charcoal production.²³ Therefore, by switching to modern kilns such as brick and metal will reduce the amount of GHG emitted while using less trees. However, to make this transition funding is needed to help communities afford and have greater access to this technology. For this reason, the FAO report also includes improvement of traditional kilns until the transition to modern kilns are more financially feasible. Yet, specific examples of improvements were not listed. In addition, reducing the distance between wood sources, carbonization plants and consumption centres can decrease the amount of fossil fuels burnt in transportation and distribution, which is part of greening the charcoal value chain. Lastly increasing the use of fuel-efficient stoves for cooking and heating will increase charcoal use efficiency, while lowering emissions

Overall the cost to implement green charcoal may be higher than traditional practices currently used but it does not outweigh the benefits. The use of improved kilns will potentially generate more charcoal per unit tonnes creating more revenue. Greening the charcoal value chain will increase sustainable practices for wood sourcing, lower rates of deforestation and GHG emission. In Kenya, a cost benefit analysis was conducted, and it was reported that a total of US\$15.6 million per year (excluding upfront cost) would be required to improve the charcoal production within the country. However, US\$20.7 million per year will result in benefits.²⁴ Another added benefit besides cost effectiveness includes reduction in cost of healthcare and environmental remediation. This shows the long-term effects greening of charcoal can have.

Implementation of green charcoal in Zambia includes not only funding but incentivizing communities to use sustainable practices during charcoal production. One incentive can include differentiated taxation on sustainable products. Also, the government can use the revenue from licensing and taxation to re-invest in technology needed for the greening process. The implementation of subsidies to cover the cost for start-up technologies can also increase citizens participation. Creating proposals of the benefits of green charcoal, while linking it to climate-change mitigation strategies, can attract international funding. In addition to incentivizing funders, enforcement of current policies and laws is needed. In the Forest Act there are consequences for people accessing the forest without a license and permit. However, without proper regulation and proper execution citizens are able to access the forest and contribute to its damage. Furthermore, increasing transparency of

²³ The Food and Agriculture Organization of the United Nations. 2017. The charcoal transition

²⁴ The Food and Agriculture Organization of the United Nations. 2017. The charcoal transition

revenue streams at the government level to ensure the profits generated goes back into community participation in the green charcoal process and granting communities and organizations access to that information, can increase citizens participation. Specifically, the private sectors in Zambia which include CSOs and NGOs can help with implementation of the green charcoal by increasing production of pilot projects and monitoring and evaluating said projects. CSOs and NGOs can help with the coordination of stakeholders and shareholders including government officials, charcoal producers, traders and consumers. With increase coordination it will guarantee the effectiveness and implementation of greening charcoal production in Zambia.

Solar Energy

In order to decrease the rates of deforestation in Zambia, Zambians must decrease their dependence on charcoal and other wood fuels as an energy source. As an alternative to wood fuel, solar energy would not only provide a renewable and sustainable energy source but would also provide energy to more households. Especially in rural areas where the vast majority of households rely on wood fuel, solar energy could better the livelihoods of poor families by increasing their access to electrical appliances. Additionally, using solar power as an energy source would have a positive impact on Zambia's environment. Shifting towards solar energy would lead to a decrease in greenhouse gas emissions from other energy sources. Also, using solar energy to power more homes in both rural and urban areas would allow for more forests and forest resources to be conserved. As a result, solar power provides clean energy, decreases rates of deforestation, and allows for more forests to be used as carbon sinks.

Although solar power would provide a reliable alternative energy source, the feasibility of implementing solar power plants in Zambia must be addressed. Luckily, based on the recent solar energy projects in Zimbabwe and Malawi, solar energy seems to be an effective and reasonable means for both reducing the adverse effects of climate change and bettering the livelihoods of people in rural communities. Due to the close proximity between Zambia, Zimbabwe, and Malawi, the three countries share many similarities. Along with sharing many of the same resources, the countries also have similar climates and landscapes. As a result, the climate change issues faced by Zimbabwe and Malawi are very similar to those of Zambia. For example, all three countries experience droughts as a result of climate change. Practical Action, an organization which seeks to challenge poverty in several parts of the world, states that farmers in Malawi and Zimbabwe often struggle to grow enough produce to sustain their families. This is a result of the extensive drought

periods which leave fields barren and unarable. In order to better the livelihoods of people in Malawi and Zimbabwe, Practical Action launched their Sustainable Energy for Rural Communities (SE4RC) in February of 2015. With funding from the European Union and other grant programs, the SE4RC project has connected irrigation schemes to solar powered mini grids. These 99kw solar grids are expected to benefit at least 10,000. Additionally, the program has set up farmer field, schools that provide farmers with knowledge on new farming techniques to help them grow more and better crops and increase their income²⁵.

Implementing Solar energy plants in Zimbabwe and Malawi has improved the livelihoods of many people living in rural communities. Practical Action states that the SE4RC project will generate over 200KW to power schools, clinics, businesses and irrigation schemes²⁶. The energy produced from solar energy will not only earn opportunities for many communities in Zimbabwe and Malawi, but will also transform their education, health, and wellbeing. For example, the success of solar grids in Zimbabwe has led to businesses being able to stay open, rural schools being able to provide computers and adequate teaching staff, and children being able to do homework and study at home. The advancements in education in rural areas as a result of solar energy has both increased the number of children who are able to attend school and increased the quality of education for children. From a gender perspective, solar energy would have a positive influence on the lives of women. Because women participate in agricultural production, the benefits solar energy has for crop cultivation would allow women to attain access to more fertile land, spend less time and energy tending to crops in the field, and earn more income by selling crops in markets. Additionally, the advancements in education due to the spread of solar energy in homes and schools would ease some of the caretaking responsibilities of women being that their children would be able to spend more time at school. Also, increased access to education could allow more rural women to become educated and be able to develop skills which can be used in fields outside of agricultural production. This would increase the opportunities available to women and allow women to sustain their livelihoods.

Due to similarities between Zambia, Zimbabwe, and Malawi, the implementation of solar energy in Zambia would be both feasible and effective in bettering the livelihoods of its citizens. Civil Society Organizations can play a role in the implementation of solar energy in Zambia by pressuring government officials and educating communities on the benefits of solar power. Government officials must also support CSOs in their endeavors to better the livelihoods of people in rural areas. Although the SE4RC project was a funded initiative, the

²⁵ Practical Action, Sustainable Energy for Rural Communities <https://practicalaction.org/se4rc>

²⁶ <https://practicalaction.org/se4rc>

benefits of the project have improved the lives of many people in Zimbabwe and Malawi. The high rates of deforestation in Zambia as well as climate issues which affect the lives of many citizens must be addressed on the national level. Implementing solar energy grids in Zambia could be the first step in mitigating climate change due to the clean, eco-friendly, and reliable energy it provides.

Wind Energy

Similar to solar energy, wind energy would also be an effective alternative energy source. In addition to being renewable, studies have shown that wind energy would be a feasible innovation in Zambia. In March 2013, Zambia's Technology Needs Assessment and Technology Action Plans for Climate Change Mitigation was released. The TNA proposes the installation of a 100MW wind energy park for producing electricity on shore. In order for the parks to operate optimally, they need to have an average wind speed of more than 7 metres per second at 50m height (TNA, 2013). The identified project areas where implementation of wind energy would be feasible include Chongwe, Muchinga Escarpment, and Western Province. These areas are suitable candidates for wind energy parks because they have wind speeds of 6-9 meters per second. The TNA also states that, based on the location for implementation, the energy produced by the wind energy parks will feed into either the national grid or be developed as a decentralised system. Due to the known possibilities for wind parks in Zambia, implementing wind energy as an alternative power source could reduce reliance on charcoal and wood fuel in the country.

Biogas

Exploring options in biogas could offer Zambia another source of energy outside of wood fuel. Biogas refers to the methane, carbon dioxide, and other gases produced from the anaerobic digestion or fermentation of organic matter. This includes manure, sewage sludge, municipal solid waste, biodegradable waste, energy crops and other biodegradable feedstock.²⁷ The energy produced from biogas can be converted to electricity or heat. Because of this, biogas production would not only provide families with alternative sources for cooking, the energy produced from biogas can increase the proportion of people in rural communities who have access to electricity. Additionally, biogas could lead to better lighting in schools, allowing more people to study and stay in school for extended hours.

Due to its reliance on waste material, implementation of biogas energy plants would provide Zambia an energy source that is both renewable and eco-friendly. Zambia produces a large amount of waste material which is often destroyed in trash fires. As a result, trash fires produce a large amount of toxic fumes which decrease air quality and increase the

²⁷ http://www.big-east.eu/info_biogas/info_biogas.html

amount of greenhouse gases, leading to poor environmental outcomes and higher rates of climate change in the country. While the implementation of biogas can serve as an alternative source of energy, biogas production could lead to waste reduction and improved waste management. Additionally, there is a wide variety of waste material which can be digested for use as biogas. Damaged and untreatable harvest resulting from unfavorable growing and weather conditions and pest contamination are suitable for biogas production. Biogas production also limits waste production by using all parts of plants regardless of the plants being fully ripe or dried. Lastly, biogas production by anaerobic digestion is popular for treating biodegradable waste because valuable fuel can be produced while destroying disease causing pathogens.²⁸ This would not only decrease waste production but would also improve health within the country.

Studies have shown that biogas production in Zambia would be both feasible and sustainable. There is a total biogas potential of 76 PJ y⁻¹ from crop residues and livestock waste (Shane et al., 2015). The study by Shane et al (2016) concluded that the highest potential is in the southwestern and eastern provinces, followed by the Central and Northern provinces, Copperbelt, Lusaka, Luapula and Northwestern province has the least potential (Shane et al., 2017). Not only does biogas burn at about 60% efficiency compared to firewood, the carbon dioxide emissions from burning of biogas and biomass are biogenic, meaning that they are related to the natural carbon cycle, and end up being used by growing plants (Shane et al., 2017). Biogas production would also have positive impact on the lives of rural women. Due to the reliance on wood fuel, many women in rural areas spend a considerable amount of time collecting firewood to power inefficient stoves. If biogas was fully adopted, women would be able to spend less time on cooking and no time on firewood collection (Shane et al., 2017). This will allow women to have more time to devote to other activities and will drastically decrease the burden women face from daily household chores.

In conclusion, shifting towards biogas production as a source of energy would be beneficial for Zambia. The use of biogas could decrease deforestation, decrease land clearing, reduce greenhouse gas emissions, allow women to have more time to participate in other activities outside of household chores, and conserve nitrogen reservoirs in soil. Biogas production could also lead the replacement of inorganic fertilizer with organic fertilizer (Shane et al., 2017). The replacement of fertilizer could lead to improved agricultural practices and better crop yields.

²⁸ http://www.big-east.eu/info_biogas/info_biogas.html

Discussion

In terms of adapting and mitigating effects of climate change, Zambia is becoming more progressive. Zambia is a party to many international agreement, such as the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and Paris Agreement which outlines objectives for the country to meet in terms of climate change. Specifically, in terms of deforestation, Zambia has completed phase one of the REDD+ strategy which includes initiation of national dialogue, facilitation of institutional strengthening, and on-ground demonstration activities related to reducing deforestation and forest degradation throughout the country. Zambia has also completed Phase two of ILUA which was conducted from 2010 to 2016 and was the largest forest inventory undertaken in Zambia. (ILUA Phase II, 2017)

Zambia is also progressive in the advancement of women rights due to initiatives for ending early child marriages, the creation of the Gender Equity and Equality Bill in 2015, and the ratification of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). Under the current political regime, the Ministry of Gender was created in 2012. Additionally, the election of Zambia's first female vice president in 2015 has led to an increase in women representation in government.

However, the link between issues of climate change and gender equity and inclusivity is lacking within environmental legislation, policies and climate change mitigation strategies. Due to the lack of gender inclusive environmental legislation, there is a lack of gender centered climate change programs being implemented throughout the country. Specifically, in terms of deforestation where the burden of forest degradation affects the livelihoods of women the most, there is not adequate representation of women in decision making processes. As a result, vulnerable populations such as women are not readily able to adapt to the effects of climate change.

Besides the lack of gender inclusive policies, current environmental legislation is not being implemented and enforced throughout the country. If current laws were readily enforced, the mainstreaming of gender throughout climate change related issues would have a stable platform to stand on. The current lack of implementation, thus raises the question; Would gender inclusivity actually persist even if recognized within national environmental policies and laws? The answer to the question relates back to the purpose of laws and policies and the imperative role of CSOs and NGOs.

Advocating for the inclusion of gender progressive laws and policies with regards to climate change grants the opportunity for NGOs and CSOs to hold government officials accountable. Organizations play a pivotal role in pushing for not only effective policy but for effective implementation as well. For this to occur, a high degree of coordination between organizations must persist. Also, organizations can aid in increasing the awareness of climate change effects as well as the ways in which Zambians contribute to climate change. CSOs and NGOs need to change the way climate change is framed and increase the movement for climate justice especially in the area of gender inclusive programs.

Established barriers for lack of implementation by government and lack of coordination between CSOs and NGOs include issues with funding and organizations not being equipped with the right personnel.²⁹ In the case of the government, lack of funding can stem from how resources are currently being distributed throughout the various departments and ministries. Distribution of resources are directly affected by what government sectors consider to be more of a priority. There is a lack of resources given to combat climate change issues within the country because it has not been deemed a priority by the government. This attitude of government officials can be extremely detrimental to the environment. Climate change issues have, in the past, gained little attention in politics. This mentality is due mostly to the fact that climate change is perceived as a long-term issue. The majority of people in Zambia do not acknowledge climate change as an urgent issue³⁰. As a result, less of the country's funding goes toward climate change initiatives. Not only does this limit the work of CSOs, which results in vulnerable populations being neglected in policy formation. Although it is known that climate change is a cross cutting issue which affects agriculture, the economy, health, and other areas of society, measures must be taken by CSOs, community members, and government officials to ensure that environmental issues do not become an afterthought in Zambia.

Issues regarding the funding of environmental programs must be addressed on all levels of Zambia's policy framework. Although CSOs can advocate for action in this area, adequate mechanisms for funding will ensure that communities develop the resource capacity needed to implement large scale environmental restoration strategies. Greater collaboration between government programs, CSOs, and NGOs would increase the implementation of policies, representation of community members in decision making processes, and improve the effectiveness of environmental policies. Additionally, funding environmental programs would drastically improve the livelihoods on Zambians in both

²⁹ Interview with Ministry of Gender

³⁰ Interview with Lecturer, specialised in Environmental Law, at the University of Zambia

rural and urban areas. However, funding programs which regulate deforestation or other damaging activities will not be productive if government officials fail to present community members, especially rural women, with alternatives for sustaining their livelihoods. By addressing problems and not proposing effective and realistic solutions, environmental policies in Zambia fall into an unproductive cycle rather than actually moving the country forward. Based on programs in Zimbabwe and Malawi, funding on alternative energy sources such as solar energy would increase the access of households to not only electricity but also higher quality education and advanced agricultural practices. Diversifying energy sources in Zambia will thus decrease the country's reliance on wood fuel which will in turn decrease the rates of deforestation in the country. Also, better education systems would provide more opportunities for people in rural areas. However, education systems require implementation on all in society. Government officials must fund programs so that CSOs will have the capacity needed to educate community members. Additionally, educating community members in sustainable agricultural skills or skills which can be applicable to other income generating professions, will ultimately enhance the quality of work communities are able to participate in. If there is greater communication, coordination, and implementation between government officials and CSOs, Zambians will experience significant improvements to their daily lives, especially in terms of their environment.

Conclusion

The high rates of deforestation in Zambia present a need to make climate change issues a priority in all aspects of society. This shift in mentality concerning climate change requires cooperation between government officials, civil society organizations, and the rural communities which are directly affected. The current state of environmental policies lacks the implementation necessary to make this cooperation realistic in Zambia. Moving forward, there is a need for civil society organizations to pressure government officials and push for equality in environmental decision-making processes. This would require the involvement and equal representation of men, women, and children in decisions relating to their environment. CSOs must empower these communities and ensure that the voices of the most vulnerable members are heard at the national level. Additionally, community members must engage in smart agricultural practices that will positively impact environmental resources. Community members must develop the capacity to make informed decisions concerning the maintenance of their environment. Government officials can aid in this process by increasing the accessibility of environmental policies. Government officials must also take action to not only address the significant gender differences with regards climate change issues but also provide alternatives for those affected. Steps to both improve Zambia's forest resources and the livelihoods of women must be outlined in environmental legislations. Once effective and realistic steps are

established in policies, government officials must actively enforce the implementations. Lastly, government officials must empower civil society organizations being that CSOs are capable of going into rural communities and relaying the needs of the people to government officials. In doing so, this level of cooperation across all sectors of society will provide a foundation for promoting climate justice and climate resilience in Zambia.

As previously stated Zambia is one of the top 10 countries with the highest rate of deforestation in the world. Yet the ways in which Zambia contribute to climate change is not emphasized in relevant policies and strategies. Instead more emphasis is put on the effects of climate change Zambia experience. This is a problem because the way in which climate change is framed in the country affects the perceptions citizens have, and their willingness to engage in environmentally friendly practices. The lack of ownership of Zambia's contribution to climate change especially in the context of deforestation discourages the political will necessary to promote effective change and progress on environmental issues. Without proper responsibility climate change issues will always be viewed as an outside issue portraying Zambia as a victim rather than a major contributor the problem. Increasing the country's accountability in climate change issues is an imperative step in mitigating and adapting to the effects of climate change throughout the country.

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