

The Correlation Between Climate Change and Women in Developing Areas

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ABSTRACT:

The climate and the environment heavily influence the way humans live, from their sources of food to sources of income. However, with climate change, developing countries are expected to experience the most adverse effects. The vulnerability arises from the countries' reliance on natural resources and agricultural sectors, as agrarian productivity plays an essential role in improving employment and food security. Yet, climate change lessens the guarantee of rainfall during cropping seasons, decreasing the quality and quantity of agricultural resources.

In developing countries, women are expected to experience the forefront of climate change, as agricultural industries and poverty rates are dominated by women. Climate change has, and will continue to, risk women's physical beings and deplete their sources of food and income.

This research will be composed of a literature review and a case study. The literature review uses recent scholarly articles and analyzes the following in developing areas: (1) patriarchy's effect on women and gender inequality; (2) women's positions in society; (3) impacts of climate change on women in terms of (a) health, (b) mortality rate, (c) economic conditions, and (d) violence; and (4) governmental actions taken to mitigate these issues. The case study will review initiatives taken by three non-governmental organizations: Women Deliver, GenderCC, and Women Environmental Programme. An in-depth discussion of the literature review and case study will then be conducted, comparing the strengths and limitations of the organizations' methods and providing recommendations for policymakers. The findings of this research will urge activists and policymakers to create change.

KEYWORDS:

Climate change, sustainability, women, developing areas, patriarchy, women's rights, sustainable development

1 INTRODUCTION

Since the late 19th century, changes in human activity and an increase in atmospheric carbon dioxide have amplified the earth's natural greenhouse effect, thus resulting in a 1.1°C rise in global temperature. Climate change is increasing the severity and frequency of environmental disasters, changing the patterns of seasonal cyclones, season diversity, and quantity of rainfall (Rahman, 2013). Out of all regions of the globe, however, developing countries are expected to experience the effects of climate change most adversely (Arora-Jonsson, 2011). The vulnerability predominately arises from these countries' reliance on the agricultural sector, as agrarian productivity plays an essential role in reducing poverty and improving food security (USDA ERS, 2011). For example, areas such as Nigeria rely on the sector to provide for 42% of its GDP and employ 70% of the active population (Onwutuebe, 2019). Yet, climate change starkly reduces the guarantee of predicted rainfall and sunshine during cropping seasons, reducing the quality and quantity of agricultural resources (Onwutuebe, 2019). As a result, poorer populations with the least amount of resources and a heavy reliance on the weather will be the most disproportionately affected by climate change (Sheu, 2021).

Of those in developing countries, women are expected to experience the forefront of climate change. Currently, there are 1.3 billion poor people in such areas, and 70% of this population consists of women (Arora-Jonsson, 2011). Women's poverty rates are expected to increase since much of the agricultural industry is dominated by women. The root of this issue, however, stems not from climate change but the patriarchy in developing nations. The gender inequality created by the system has suppressed women into the agricultural industry and vulnerable situations, making them disadvantaged in the face of climate change's effects.

In consideration of gender inequality, women's conditions, and the impacts of climate change in developing areas, the purpose of this research is to provide an overview of climate change's disproportionate impacts on women in developing nations and the system that exacerbates the issue.

2 LITERATURE REVIEW

Much of society— especially developing areas— is currently patriarchal, where men exercise the most power and influence in politics, business, women's rights, and other areas of life (Arora-Jonsson, 2011). Transmitted and sustained through cultural and religious fundamentalism, patriarchy reinforces male supremacy and fails to recognize the equality between men and women; instead, it creates and furthers the gender inequality between the two. This often forces women to be submissive to the opposing gender, continuing to limit women's potential while providing higher levels of prestige to men (Onwutuebe, 2019).

In developing countries, women lack community and governmental support (Glazebrook, 2011; Akinsemolou, 2020). In some cases, they eat the last and the least among their family members, and their needs are taken into little consideration in household and political settings (Arora-Jonsson, 2011). Their education is also disregarded in society and made more challenging to achieve to the extent that in Ghana, only 19% of women have completed their formal education, and 42% are literate; comparatively, 37% of Ghanaian men have completed their formal education, and 66% are literate (Glazebrook, 2011). These social constraints limit women's mobility and keep them in vulnerable positions where they often lack the power to make autonomous decisions in their families and communities (Rahman, 2013; Akinsemolou, 2020).

Women currently comprise “one-third of the world's formal sector and do four-fifths of all informal work, but receive only ten percent of the world's income and own less than one percent of the world's property” (Glazebrook, 2011, p. 764). In fact, 70% of the 1.3

billion living in poverty are women, and the agricultural industry is dominated by women. Poverty has the potential to cause environmental degradation, as poor people over-exploit already strained resources. This, in turn, worsens poverty levels as people are unable to find resources to meet their daily needs, which leaves many women even more economically, socially, and physically vulnerable (Glazebrook, 2011).

In parts of Africa, women are burdened with domestic tasks for their families. They are responsible for 80% of food production, and 70% of the world's farmers are women who produce 60-80% of the world's food crops (Glazebrook, 2011). Girls and women are also typically responsible for preparing food, fetching water, collecting firewood, and disposing of waste to help out their households (Rahman, 2013). While women's roles generally remain static, men have higher levels of flexibility for vocational mobility or change, often migrating to different areas and leaving their families behind (Onwutuebe, 2019). These conditions have not been created naturally but have rather been achieved through patriarchy's systematic use of coercion and threat (Wonders, 2018).

Climate change itself does not directly disproportionately affect women, but “the socially constructed system has created a situation where climate change will play a key role in instigating their vulnerabilities” (Rahman, 2013, p. 75). Women performing in agricultural industries will be especially affected due to environmental changes and increased responsibilities (Goh, 2012), and the gender-based and culturally assigned roles will provide women with less bargaining power within their livelihoods, putting them at the forefront of climate change impacts (Rahman, 2013).

2.1 Health Effects

Climate change influences “the socio-environmental determinants of health, including safe drinking water, proper shelter, adequate food supply, and clean air” (Akinsemolou, 2020, p. 5). In many developing areas, women are frequently socially expected to collect water for their families. When some natural disasters such as droughts occur, the water supply is sharply reduced—many developing countries already suffer from a critical water shortage, and climate change will worsen the issue (Onwutuebe, 2019). To alleviate the shortage and acquire water, women and girls are forced to travel long distances, placing them in dangerous conditions and compromising the quality of the water they collect. As a result, women carry the highest risk of getting in contact with polluted water and falling sick—many fall ill to cholera, malaria, typhoid, or jaundice during and after disasters (Rahman, 2013).

Women are socially expected to eat less than their male counterparts in their households, and women of all ages have been shown to be more calorie-deficient than men. In developing areas such as Bangladesh, 70% of women suffer from nutritional deficiency and 30% suffer from calorie deficiency (Rahman, 2013). With the food insecurity that climate change is expected to bring, such percentages will inevitably increase (Onwutuebe, 2019).

The effects of climate change especially adversely impact pregnant women. During pregnancy, women require higher levels of nutrition and food, and low nutrition is known to cause delivery problems and an infant's low birth weight. Natural disasters and extreme temperatures risk the food and water supply, increasing the likelihood of getting into contact with contaminated food and water (Akinsemolu, 2020). These conditions can expose pregnant women to anemia, risking adverse birth outcomes such as infant mortality or preterm birth (Akinsemolu, 2020). During an in-depth experiment on the correlation between extreme heat and pregnancy, it was discovered that pregnant women have a compromised ability to thermoregulate, meaning that they are susceptible to increasing temperatures

(Kuehn, 2017). As a result, extreme heat can cause preterm birth, low birth weight, and increasing weight of stillbirth (Keuhn, 2017).

Women's health is especially jeopardized due to the poor healthcare system in developing areas. After natural disasters, communities usually prioritize the state of their physical surroundings instead of the physical and hygienic needs of women (Rahman, 2013). Especially in a male-dominated society, the system and its policies are inept to accommodate women's needs, especially with the social taboos regarding menstruation, contraceptives, and birth control pills. These all further the chances of contracting illnesses, including perinea rashes, urinary tract infections, and sexually transmitted diseases (Desai, 2021).

2.2 Mortality Rate

Women are fourteen times more likely to die during natural disasters than men, with more women dying in areas where they were more socioeconomically disadvantaged (Arora-Jonsson, 2011). The high mortality rate stems from diseases and women's limited access to information such as early warning systems— in South Africa, women typically use extension officers as mediums of dissemination for seasonal forecasts and agricultural research, whereas men use radios which can immediately communicate unpredicted events (Goh, 2012). These officers, however, cannot manually inform the population of emergencies, which leaves women uninformed and unequipped to handle such situations. Developing areas also face weak housing infrastructure and feeble health infrastructures that do not have the capacity to respond adequately to natural disasters (Rahman, 2013; Akinsemolou, 2020).

The social constraints and lack of mobility also augment the likelihood of exposing women to situations that can be fatal. In some patriarchal societies, women are forbidden from relocating without permission from a male relative, even amid climate-related emergencies (Akinsemolou, 2020).

2.3 Economic Conditions

Climate change will continue to change historical weather patterns and produce unexpected droughts, rain seasons, and natural disasters. These will contribute to the hindrance in cultivating and harvesting crops. Conventional times of cropping seasons will be altered, and the quality and quantity of agricultural resources will inevitably be reduced (Onwutuebe, 2019, Glazebrook, 2011). The resource depletion translates to food insecurity and drops in crop yields, which decreases the amount of revenue produced within the agricultural sector and women's potential for optimal agricultural productivity (Onwutuebe, 2019).

It's crucial to mention that compared to men, women take more time to compensate for economic losses caused by natural disasters (Rahman, 2013). Many women in developing areas depend on their immediate surroundings and their home for their economic activities. Climate change, however, deteriorates household and working conditions, and many girls in these areas sacrifice their schooling to fulfill their increased domestic duties after environmental disasters— this exacerbates the already low average literacy and education levels (Rahman, 2013). The lack of schooling translates to poorer and less access to developing entrepreneurial skills and ability over financial resources, ultimately stunting women's potential for employment elsewhere. The disadvantage in their skillset, in conjunction with women's lack of property rights, worsens women's vulnerable situations and makes it difficult for them to financially recover after disasters (Sheu, 2021).

Women's decreased economic position is aggravated by the projection that climate change will create price instability with an approximate 30% to 50% increase in prices overall (Sheu, 2021). For poorer households, which mainly consist of women, inflation will worsen their situation and push them further into poverty (Sheu, 2021).

2.4 Violence

In socially and culturally diverse regions, disasters have been shown to cause an elevation in domestic and public sexual violence against women and girls. In fact, 71.6% of women were subject to more violence during disasters in Bangladesh (Reggers, 2019)— this is caused due to a crisis in family and society, as well as the sudden breakdown of family and community structures arising from forced displacement. (Desai, 2021). After environmental disasters, many families are moved into refugee camps or homeless shelters, which reduces the amount of privacy that women have while they sleep, wash, or dress. These conditions frequently expose women and girls to various forms of sexual violence ranging from rape to sex trafficking (Rahman, 2013).

According to the UN Environmental Programme, trafficking during disasters tend to rise by 20-30%, especially among those in poverty. Cheap labor is typically demanded after weathered events, which creates the conditions of being exploited for human or sex trafficking. The financial desperation creates “an opportunity for a ‘supply’ of people willing to take on work outside their comfort zone and ‘demand’ from nefarious individuals to take advantage of those vulnerable people in offering opportunities that may eventually prove to be fraudulent” (Sheu, 2021, p. 325). For instance, after extreme weather events, families from South and Southeast Asia, Central America, and East Africa send children and younger adults to find labor opportunities to support their families' economic situations (Sheu, 2021). Young girls, however, are more likely than boys to be sold by poor families to traffickers during monetary hardships, and women are more likely to be promised employment opportunities that later turn out to be trafficking conditions (Sheu, 2021).

The lack of societal rights for women increases their risk of being victims of sexual violence, yet there are currently no international legal instruments directly dealing with sexual violence against women during and after natural disasters (Sheu, 2021). The ineffective government action prolongs the issue, which will only compound with worsening climate change.

2.5 Governmental Action and Gender Inequality

Most climate change policies revolve around men and lack recognition of women's needs (Wonders, 2018). Recently, the government has been developing and is beginning to recognize the effect that climate change will have on women (Arora-Jonsson, 2011). For instance, the National Policy on Climate Change for Namibia and Mauritius National Climate Change Adaptation Policy Framework both acknowledge that climate change disproportionately affects vulnerable women and the rural poor (Nhamo, 2014). The South African National Climate Change Response White Paper delves further and states that women are particularly vulnerable due to their traditional domestic roles (Nhamo, 2014).

Although the issue has been noticed, proper action has not been taken on a governmental level. Ghana's Poverty Reduction Strategy clarifies that the amount of female population in the agricultural industry has been recognized, but there is too little known about women's situations to develop useful policies (Glazebrook, 2011); Glazebrook suggests that this lack of knowledge originates from women's limited decision-making capacities. On the other hand, Akinseolu's report does not claim that the government is making any effort to reduce the effects of climate change on women. As one example where women are excluded from decision-making despite bearing the most consequences of climate change, only 6% of Ilaje, Nigeria women are represented in the community's politics (Akinsemolu, 2020).

Overall, climate change's impacts on women will only worsen in developing areas. Yet, there are currently no international laws to accommodate refugees after natural disasters to ensure women's safety (Wonders, 2018), effective laws to improve a woman's healthcare

(Rahman, 2013), or laws to prevent gender-based violence during disasters (Sheu, 2021). Women are underrepresented in politics, yet they are the most environmentally conscious and willing to support drastic measures to mitigate the effects of climate change (Arora-Jonnson, 2011). Due to the underrepresentation that they have received, women’s social locations and roles give them unique perspectives on environmental issues (Glazebrook, 2011).

Throughout history, gender inequality created by patriarchy has led to a system where women have little control over resources, production, and management compared to males, thus making them more marginalized and excluded in the fact of natural disasters (Wonders, 2018). If the cycle continues, the inaction and the effects of climate change will lower women’s status and increase their dependence on men, furthering gender inequality and intensifying climate change’s impacts on women (Onwutuebe, 2021). In areas where women and men have comparable statuses, natural disasters have been shown to affect the two genders almost equally (Goh, 2012), indicating that by adapting to women’s needs and reducing the gender gap, society will be able to curb the adverse impacts of climate change.

3 FRAMEWORK

Climate change disproportionately affects women and developing countries. Therefore, women in developing countries

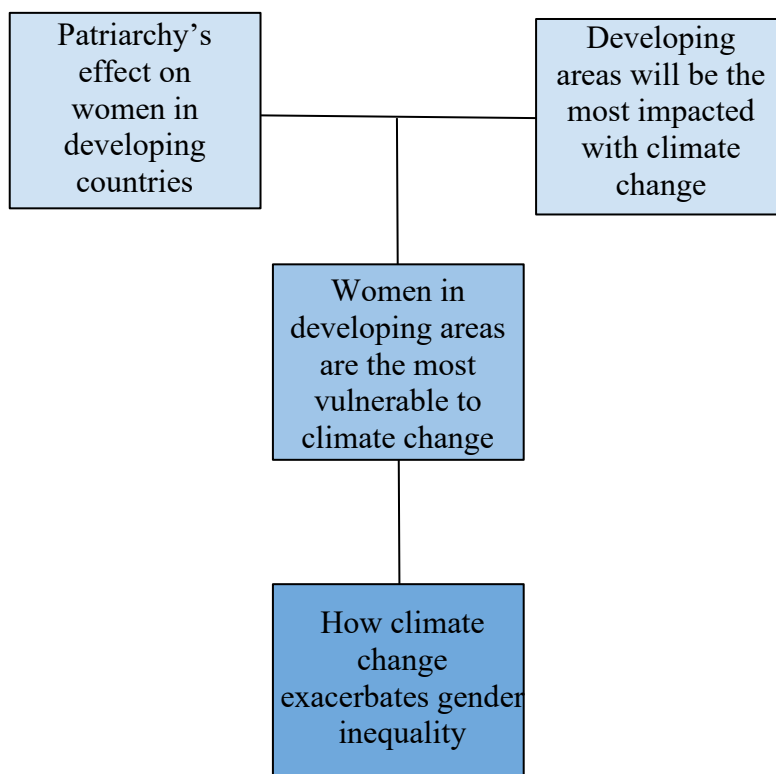


Figure 1

Patriarchy is the societal or governmental system in which men hold the most influence. This belief inherently excludes women and their potential, creating a power and equality imbalance between men and women. As a result, limited women’s rights and high levels of male dominance within regions are directly correlated. In 2009, the OECD created the Social Institutions and Gender Index (SIGI), a measure to track gender equality across 102 developing countries in the world. The results revealed that all developing countries

experienced a certain degree of gender inequality; the majority of the countries in Africa and the Middle East reported high or medium-high levels of inequality (OECD, 2009).

According to Onwutuebe (2019), “patriarchal beliefs are in most cases transmitted and sustained through diverse forms of cultural and religious fundamentalism, which rigidly define what is acceptable and what is offensive to a society in relation to gender beliefs and roles” (p. 2). With this, long-held traditions and religions have created and continued gender inequality to the extent that women receive little representation in decision-making policies (Nhamo, 2014). This prolonged issue has had profound consequences on women’s livelihoods in developing areas. Women are often designated as the caretakers of their households and are responsible for gathering food, water, and fuel (Onwutuebe, 2019; Goh 2012). To fulfill their domestic duties, they are typically expected to sacrifice their portions of food and their education; as a result, women typically have lower education levels compared to men (Wonders, 2018). The political system currently limits women’s property rights and mobility, with such freedoms typically being reserved for male figures in the family (Glazebrook, 2011; Wonders, 2018; Reggers, 2019). Inequality and cultural expectations have resulted in the agricultural and informal sectors in developing areas being largely composed of women. All these factors have contributed to women’s poverty levels—70% of the 1.3 billion poor people in developing areas are women, with poverty rates deepening as the subject continues to be disregarded (Arora-Jonsson, 2011).

Most developing countries heavily rely on the agricultural industry for income and food, yet climate change is expected to bring environmental disruptions that will hinder the growth of crops (Onwutuebe, 2019). For example, floods or droughts will be made more frequent as climate change worsens, yet these disasters could lessen, if not destroy, the agriculture in these regions. In addition, the lack of resources and the poor infrastructure in developing countries will make it difficult to survive and recover from extreme weather events (Sheu, 2021). These will set the process of poverty alleviation back (Reggers, 2021), making developing areas exceptionally susceptible to climate change.

Climate change’s adverse impacts on developing countries, women’s poverty rates, and women’s rights in these areas suggest that women in developing countries will be the most disproportionately affected by climate change. Women’s existing high poverty rates and their lack of mobility indicate that they will experience high mortality rates during disasters, as poor areas typically cannot access advanced information systems or well-constructed houses (Rahman, 2013; Arora-Jonsson, 2011). Shifts in agriculture will result in food and water scarcity, in addition to the deterioration of women’s economic and social standings. After extreme climate events, women will have heightened domestic responsibilities and will be forced to rely on their depleted surrounding resources to survive (Rahman, 2013; Wonders, 2019). In addition to the health and economic risks that women face, the lack of medical care in developing countries will aggravate their insecurity (Akinsemolu, 2020). Limited access to social networks, transportation, information, skills, economic resources, employment, and decision-making power will make it especially difficult for women to recover from these disasters (Rahman, 2013).

Women’s societal standings will likely worsen after climate-related disasters. Many girls are projected to sacrifice their schooling to care for their families, thereby restricting their abilities to seek out better future opportunities. Economic insecurity will spike, increase a woman’s already high dependence on men (Wonders, 2018), and exacerbate the social and political dominance that men have over women. Currently, climate change policies generally revolve around men due to the lack of representation of women in politics (Akinsemolu), but climate change’s impacts will ultimately continue to strengthen the long-held social standings around patriarchy (Desai, 2021).

4 CASE STUDY

In recent years, several efforts have been taken to mitigate the adverse effects of climate change on women. A few notable actions have been made by non-governmental organizations: Women Deliver, GenderCC, and Women Environmental Programme (WEP). I will discuss each of them in detail in this section to learn from their work in addressing gender equality in the face of climate change.

Women Deliver, founded in 2009, has been working to achieve gender equality, as well as sexual and reproductive health and rights. With women's health and unequal gender rights being exacerbated by climate change, the organization has been taking global initiatives to increase women's accessibility to financial and other resources needed to adapt to environmental changes. GenderCC, on the other hand, is an organization specifically dedicated to achieving gender and climate justice. Since 2008, it has worked in multiple fields related to climate change, from agriculture to waste, with many of its projects hosted in developing Middle-Eastern and African countries; in 2010, an independent branch was created in South Africa, an area critically impacted by climate events. Women Environmental Programme, the oldest of the three NGOs, was founded in 1997 in Nigeria. It aims to tackle gender injustices related to women's environmental, economic, and social rights, impacting over 20 million people since its creation. Much of WEP's initiatives are focused around Nigeria and other South African countries, as these areas have been proven to be severely damaged by climate events. The three organizations have made significant progress in promoting change to combat patriarchal regulations, assisting women's economic conditions in developing areas, and supervising women's health after natural disasters.

In consideration of climate change's financial and physical impacts on women, in addition to the lack of governmental action taken, I organize this section by dividing the organizations' efforts into three categories: policy change, economic development, and health advocacy. The first section will discuss general initiatives that address gender inequality and women in climate change regulations, the second will include actions specifically taken to assist women's monetary hardships, and the last section will focus solely on efforts that combat poor healthcare infrastructures and protect women's physical bodies. Instead of speaking of each organization separately— which can blur the relevance between the issue and the NGOs' projects— the sub-sections distinctly highlight how their efforts align in terms of alleviating the existing gender and climate injustice.

4.1 Policy Change

Currently, many developing nations' politics revolve around patriarchy, leaving women with little representation in policy-making, including those related to climate change alleviation. Yet, with women being disproportionately impacted in economical, physical, and social aspects, the lack of women and their needs in climate change regulations will have large implications in the future— furthering the gap between men and women and increasing the severity of the impacts women experience with climate change. Therefore, these three organizations drive gender and climate policy change through their projects.

Women Deliver currently has a strategic framework from 2021 to 2025 that will focus on championing the interlinkages between climate change, gender equality, and sexual and reproductive health and rights (SRHR) through high-impact global advocacy work around climate, health, and SRHR— they will influence decision-makers, drive collectivist feminist actions, and amplify the evidence base against gender inequality and climate change. Women Deliver has conducted annual reports on the matter, compounding information from previous years, and will continue to collect evidence. To further build evidence, the organization plans to engage with diverse climate action advocates and shift narrative through articles, storytelling, and leadership in online and offline platforms. As it did in prior years,

the organization plans to present the data to raise awareness and influence policymakers in the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP), the United Nations High-level Political Forum (HLPF), the United Nations General Assembly (UNGA), the United Nations High-Level Meeting on Universal Health Coverage, the World Health Assembly (WHA), and the Commission on the Status of Women (CSW). This will “build allies, raise awareness of the interlinkages between climate action and SRHR, influence norm-setting, and ensure that SRHR is positioned as integral to climate change adaptation and resilience measures through advocacy with global health and climate leaders” (Women Deliver). The results of this project have yet to be seen or updated, as it is still ongoing.

It has previously been revealed that policymakers have been unable to effectively include women in climate policies due to the lack of knowledge of women’s experiences. GenderCC is currently directly involved in international climate negotiations such as the UNFCCC, helping women and gender experts work on policy, research, and practical implementation at international and local levels. Notably, on November 24, 2011, GenderCC South Africa organized a conference where over 50 women from South Africa and other world regions gathered to brainstorm their climate change-related experiences and challenges. The participants then discussed key problems and solutions before presenting the statement at COP17, a United Nations conference with the supreme decision-making body responsible for addressing and regulating climate change. Women in developing areas severely lack property rights, access to reliable information, and education. To combat these matters, GenderCC was able to raise issues and demands for women’s access to funding, government transparency, access to information, education and capacity building, access to productive land and other resources, and participation and inclusion in policies. This method allowed women to raise awareness of their personal experiences, which directly gives policymakers insight into women’s needs. However, these were raised during an international conference, and local setbacks may be challenging to combat. COP meetings generally focus on widespread change and would generally disregard problems faced within narrow scopes.

In addition, starting in 2010, GenderCC and other South African gender organizations have been involved in altering the National Climate Change Response Policy, South Africa’s official climate change relief policy. The initial policy was a comprehensive plan in Africa to confront adaptation and mitigation in the short, medium, and long term by addressing the following areas: carbon pricing, water, agriculture, commercial forestry, health, biodiversity and ecosystems, human settlements, and disaster risk reduction and management. However, the policy did not account for women who did not have access to computers and the internet, largely excluding them from the decision-making process—the limited knowledge of women in poverty has made it historically difficult to cater to their needs, worsening their situations over time. In GenderCC’s “Gender Review of the National Climate Change Response Green Paper 2010,” the paper highlighted the criticisms regarding the policy: the participation of women has to be expressed in the policy principles, and the paper should not only recognize the social and economic consequences but also the gender sensitivity of the issue. After information-sharing sessions, strategy meetings, and conferences where the criticisms were presented, the recently revised response policy now incorporates gender into the paper. Nonetheless, it is important to note that merely recognizing the problem within the policy is not effective enough—the government has yet to implement strategic measures to assist women.

GenderCC has also launched projects in developing areas such as Bangladesh that are already experiencing the impacts of climate change. In Bangladesh, rising sea levels have caused storms and floods that have destroyed livelihoods in fishing communities, and unpredictable rain patterns have made cultivating lands unprofitable and poor. Although the

government launched a climate change strategy and an action plan and has begun to provide financial resources for adaptation, these policies have lacked gender sensitivity despite women facing the brunt of the adverse effects. This, combined with the weak position of the nation's Ministry of Women and Children Affairs, has made it difficult to address gender issues with the Ministry of Environment and Forest which is responsible for climate change mitigation. GenderCC, by partnering with the Center for Global Change (CGC), organized a conference in Bangladesh in April 2010, which held participants from the government, donors, NGOs, and civil societies. From the meeting, CGC initiated the topic of gender sensitivity, with participants urging policymakers to take action on gender-sensitive relief packages, gender-disaggregated data in areas of climate change, and alternative income-generating activities for women.

The Women Environmental Programme, similarly to GenderCC, has participated in COPs, with the organization making a significant effort during COP21 in 2015. Two months before the conference, WEP collaborated with Nigeria's Federal Ministry of Women Affairs and Social Development (FMWASD) to create an agenda-setting forum on sustainable development goals (SDGs) that consolidated and articulated the position of Nigerian women on climate change. The forum held first-hand stories of women and their negative experiences with climate change, especially with Nigerian women's lack of social rights and heavy reliance on the agricultural industry. Using the information, during COP21, WEP presented the "Nigerian Perspective on Water, Gender, and Climate Change" and demanded gender equality and human rights in all climate action policies. However, since this was presented during an international conference, it was difficult to see results, as this problem applied on a regional scale.

WEP and four other organizations have also been involved in The Women2030 Project, a 5-year strategic agreement created to build the capacities of women's and gender-focused civil society organizations on planning, monitoring, and implementing sustainable development goals to ensure more gender-responsive actions with the participation of women and women's organizations. The project is currently being implemented in 52 countries across the globe, with many being developing countries in Africa, Eastern Europe, Latin America, and Asia. Since 2016, the program reached out to more than 189 women's rights and feminist partner organizations, engaging them in climate-related policy processes. Reportedly, from the Women2030 Project, "754 feminists used their 'civil society seats' at policy tables, engaging with their country's high-level representatives;" "123 sub-grants are to document local women's challenges and priorities, and prepare good practices to present to policymakers;" "27 community-based assessments and 23 Women2030 shadow reports have been included in the UN policy process on SDGs to push for policy change at local levels;" and "17 countries have improved-gender responsive national plans, policies, and institutionalizations" (WEP).

In summary, the three NGOs all advocate for climate and gender justice by urging policymakers to create change. With the information on women being limited in climate change policies, these organizations serve as mediums that raise awareness of the issues faced by women. Women Deliver appears to have the most widespread approach out of the three organizations, as the 2021-2025 Strategic Framework focuses on gathering information on a global scale and seeking justice through international conferences. On the other hand, WEP and GenderCC appear to target gender issues at both international and regional levels. GenderCC works in various areas of the globe, with many of its projects previously being centered around South Africa, Bangladesh, and other areas disproportionately impacted by climate change. Most of their policy change methods also focus on raising awareness during meetings, but presenting the matters in both local and international settings may enhance the effectiveness of achieving their goal. WEP seeks improved conditions in Nigeria— through

their COP meetings— as well as globally. Unlike other organizations, WEP’s policy change methods do not only include participating in climate conferences but also inspiring women to become leaders within their communities.

4.2 Economics

It has previously been discussed that climate change will likely heighten women’s economic instabilities in developing areas. The combination of environmental destruction, increased domestic duties, inflated prices, and lack of gender equality all deepen women into poverty levels.

To lessen the issue, Women Deliver has been focusing on addressing girls’ and women’s disproportionate burden of unpaid care work and gender inequality in the health and care workforce. As a part of its 2021-2025 Strategic Framework, the organization aims to confront the impact of climate change on girls’ and women’s access to work and the burden at home. The organization has participated in events such as the United Nation’s 66th Commission of the Status of Women (CSW66), which discussed the crucial role of social, labor, environmental, and economic policies in ensuring gender equality. Women Deliver has also conducted an international survey that revealed that the “global public believes that the unequal distribution of unpaid care work and domestic responsibilities between men and women is one of the greatest barriers to gender equality around the world” (Women Deliver). The evidence was then presented at the UN Women’s Generation Equality Forum in 2021, which discussed gender investments and policies. The Forum ultimately launched a 5-year action journey to achieve gender equality, with economic justice and rights being one of the goals.

WEP has been making direct efforts to assist women in poverty situations after climate-related disasters. With a program called the Rural Women Energy Security (RUWES), the initiative aims to lower market entry barriers to the clean energy market. RUWES’s mission is to specifically empower women economically by making them the marketers and distributors of clean energy products. Since women are typically responsible for gathering wood or other fuels in developing areas, the program has introduced a substitute item: briquettes. Though briquettes can burn effectively like wood, they are densely compressed with cheap biomass wastes and burn slowly. WEP has installed a machine in Adikpo, Nigeria to produce briquettes, providing women with inexpensive cooking options while remaining sustainable.

Climate disasters are projected to cause land degradation, limiting the number of resources available in developing areas and deepening women into poverty levels. As a result, WEP has launched the Great Green Wall Project to tackle the social, economic, and environmental impacts of land degradation in northern Nigeria. The organization is building women’s capacities to efficiently use energy to conserve surrounding resources by teaching women to construct energy-efficient cook stoves from easily accessible materials. Given the critical damage that climate change will inflict on the agricultural industry and the economy, WEP is also teaching women about alternative sources of income, reducing their over-dependence on farming and empowering them financially.

Women in developing nations typically have lower educational and financial exposure, which contributes to their lower economic status compared to men. As a part of WEP’s “Connecting Women and Youth in Violent Extremist Prone Areas through Empowerment and Skills Acquisition in Benue State” program launched in 2016, young Nigerian women and men were trained on their vocational skills, also providing them with start-up grants to enable them to set up businesses in various areas. According to WEP, 134 women and 134 men were able to be trained, which has “improved the income and livelihood opportunities of these young women and young men.”

In summary, Women Deliver and WEP make great efforts in improving women's economic status through different methods. Women Deliver focuses on gathering and sharing information through surveys and displaying the unequal distribution of work between the two genders during conferences. WEP takes a more direct approach by working with women in developing areas. Given that the lack of education is one of the factors that causes economic inequality, WEP educates women in small communities on financial skills and sustainability. These two approaches are both important with one educating a global audience and another focusing on impacting at a local level. Both are necessary to create change, and the more these organizations can work in tandem, the more they can enhance the effect of the other.

4.3 Health

Climate change is expected to have detrimental effects on women's physical beings. Women in developing areas are more likely to die or contract diseases during disasters due to contaminated water, poor housing and health infrastructures, and food insecurity. In addition, women's likelihood of being victims of sexual assaults spikes after disasters, since many women are placed into gender-neutral refugee homes that lack privacy.

Women Deliver has been dedicating much of its climate action initiatives to combat the effects of gender-based violence. In 2019, the organization helped draft the Gender Equality Advisory Council's Biarritz Partnership on Gender Equality, which was made up of progressive gender laws and policy recommendations. These sought the inclusion of promoting women's health through access to safe abortion, contraception, and comprehensive sexual education. This opposes the social taboos around the female anatomy, which have not prioritized women's sexual and reproductive health throughout the years. Eleven nations have currently taken up these recommendations in their national policies. However, it is crucial to note that none of these countries are developing nations, which may limit the amount of influence that the adaptation will have.

In addition, from the Generation Equality Forum in 2021, Women Deliver served as one of the catalyzing founders of the SRHR and Climate Justice Coalition, a global network of over 25 civil society organizations committed to achieving gender equality and sexual and reproductive health and rights in the context of climate change. To achieve its purpose, the coalition aims to document "the impact of climate change in the access to SRHR, use their network to identify communities or groups where SRHR has been especially adversely impacted by the climate crisis and seek to provide platforms," (Women Deliver) and advocate for sexual and reproductive health and equitable access to health care.

WEP has also begun the Girls and Women Initiative in Nigeria (G-WIN) project to empower hard-to-reach Nigerian women and girls. During climate disasters, many women are forced to travel long distances to acquire water but often fall ill due to contamination. To specifically target this issue, WEP and Nigeria's Federal Ministry of Water Resources have made it their vision to make women leaders in water management. They are currently striving to provide water and sanitation facilities in public places, overall improving the hygienic conditions of rural populations and preventing them from contracting diseases. This would also help pregnant women, as pregnancy complications often arise from the consumption of contaminated water.

Overall, Women Deliver and WEP target various areas regarding women's physical conditions and utilize different methods to address the issues. Women Deliver strives to assist women in the aftermath of sexual and domestic violence by creating recommendations for in-depth sex education, safe abortions, and enhanced healthcare systems that accommodate women. In contrast, WEP aims to prevent scenarios that allow women to become ill since the organization is aiming to provide clean, local sources of water. Similar to the necessity of the

two organizations' methods in managing women's economic hardships, both approaches are crucial in minimizing the physical impacts that women will experience.

5 DISCUSSION

The three organizations mentioned during the case study function within various ranges of focus. Women Deliver, as an organization focused on women's sexual and reproductive health and rights, focuses mostly on women's health rather than climate and gender justice. However, with climate change rapidly becoming more urgent, its recent 2021-2025 Strategic Framework regards women's physical beings along with their domestic burdens. Its method of influence focuses on collecting data and presenting it to policymakers, in hopes to create a global change. On the other hand, the Women Environmental Programme and GenderCC are organizations whose missions specifically incorporate "women" and "climate change." Their initiatives explore a wide range of factors that worsen gender issues amidst climate change. WEP works on transitioning to sustainable energies, preventing land degradation, and stabilizing women's economic conditions. In addition to advocating during conferences, the organization has taken efforts to directly serve Nigerian women, providing education on sustainability and vocational and entrepreneurial skills. GenderCC's involvements mostly focus on directly tackling women in climate relief policies and the lack of women's rights in developing nations, which have been created by the patriarchy. Similar to Women Deliver and unlike WEP, GenderCC drives change through a collective process—by influencing policymakers— as opposed to launching projects that directly assist local areas.

The NGOs also appear to operate within various areas of the globe. WEP is an NGO founded in Nigeria, a developing country at the forefront of climate change and patriarchy's adverse impacts. This gives the organization a keen insight into the political, social, and economic conditions of the country, thus allowing it to launch several projects that directly assist local Nigerian communities. Since WEP is primarily focused on improving the climate and gender conditions in Nigeria, this can limit the extent of their influence, but it allows the organization to make significant regional changes. Recently, however, the organization has begun to assist other nations through its Women2030 Project, which makes the NGO operational on an international and regional scale. Women Deliver and GenderCC were founded in the United States and Germany, respectively, which are first-world nations that experience climate change less severely than developing ones. Women Deliver currently does not have offices in developing countries, potentially explaining why the NGO's initiatives typically regard gender and climate justice on an international level, as they lack the knowledge of local developing areas. This may also be why GenderCC developed a branch in South Africa. The subsidiary allows the organization to gather information on the area, cater its regional projects accordingly, and effectively target the most impacted areas.

All of the NGOs adopt a similar strategy in creating change: gathering data and presenting it during government conferences to alter climate policies. Though these efforts are not guaranteed to succeed, this may be the best method in influencing widespread change, since the adverse effects of climate change on women are rooted in the lack of representation of women in politics. The three organizations researched have all participated in high-level conferences regarding climate change, such as the UNFCCC Conference of the Parties, and have had their ideas incorporated within policies. It is evident that the NGOs are well-recognized and influential, yet the degree of influence that arose from their recommendations is unknown. For instance, GenderCC said that it raised awareness of climate and women-related issues during COP17 but fails to mention if benefits arose from their suggestions.

Given that the information about the NGOs was collected directly from the organizations' websites and reports, there is a possibility of bias and questionable credibility.

Although some NGOs claim to have had a part in creating change with other organizations, they do not mention the extent to which their organization assisted. Specifically, WEP's Women2030 Project and "Connecting Women and Youth in Violent Extremist Prone Areas through Empowerment and Skills Acquisition in Benue State" Project report the changes that the projects have made on regional and national scales. Other factors have been involved in the founding of these projects, WEP does not mention its level of involvement, making it difficult to assess the organization's influence and effectiveness. In addition, the NGO does not mention the method used to measure the effects of the programs, which may allow for inflated results.

5.1 Recommendations

5.1.1 Education System

Women's low education and literacy levels in developing areas have contributed to their reliance on the agricultural industry, limited mobility, and lack of decision-making power (Glazebrook, 2011; Wonders 2018). However, the agricultural industry will inevitably be impacted by climate change, which will only increase women's domestic burdens, food insecurity, and poverty levels (Onwutuebe, 2019). Therefore, it is important to economically empower women through proper education and expand their opportunities beyond the farming sector. Developing areas' budgets and women's domestic duties currently make it difficult to establish physical schools, but short, educational programs could be launched in developing towns to teach women of all ages skills regarding literacy and finances. Such teachings would give them the necessary skills to employ in formal sectors that provide more stability in the face of climate change. This enhances the current working generations' living standards and heightens the possibility of future working generations escaping the agricultural sector.

Women could also be taught on using efficient and sustainable materials to meet their daily needs, as over-exploiting limited resources can aggravate poverty levels and worsen environmental degradation (Glazebrook, 2011). WEP's Rural Women Energy Security Project and the Great Green Wall Project have both been effective in allowing rural Nigerian women to achieve their needed tasks while conserving the surrounding resources and the environment. If the government or more NGOs chose to implement similar education systems in developing towns across the world, this would lessen the amount of climate change while simultaneously assisting women.

Improved education could allow many women to escape from a cycle of resource depletion and poverty. Breaking such a cycle and improving their financial levels has large implications for women, including reduced trafficking, increased stability and property holdings, easier compensation from disasters, less reliance on male figures, and potential participation in politics.

5.1.2 Access to Information

In much of South Africa, compared to men who use radios as mediums of information, women typically use extension officers who serve as intermediaries between agricultural research and farmers. These officers assist women with their agricultural productivity and seasonal forecasts, but heeding emergency warnings regarding climate events is difficult; unexpected disasters and the lack of preparation correlate to women's high mortality rates in developing areas (Goh, 2012). Therefore, the government in these countries should improve the mediums of dissemination, especially for urgent events. This can either be achieved by placing town-wide emergency sound systems or providing each household

with radios similar to that of men's, which both allow women to be prepared for unpredicted weather events.

5.1.3 Refugee Homes

After climate disasters, many women and young girls face violence due to their migration to refugee homes and the lack of privacy they face there. However, there are currently no actions taken to alleviate such violence (Wonders, 2018). The government needs to establish regulations that increase security within these places to protect women. Local law enforcement officers should be positioned within these homes to oversee the conditions. The method would discourage troubles from arising and prevent violence, rape, and abduction against women.

5.1.4 Healthcare System

Poor health infrastructure is one of the leading causes of diseases and deaths post-disasters in developing areas. Similar to Women Deliver's initiatives, governments must regard women's health and hygienic needs, especially when there are existing stigmas regarding menstruation and contraceptives (Desai, 2021). The social taboos worsen conditions for women and increase their probability of falling ill or dying, with the problem being aggravated by communities failing to prioritize women's needs (Rahman, 2013). Given these and the high chances of women becoming sexually assaulted after disasters, healthcare systems need to prioritize women and assist with diseases, safe abortion, and contraceptives.

5.1.5 Clean Water Source

In developing nations, after disasters, much of women's health complications arise from water— women must often travel long distances to acquire water but come into contact with a contaminated source (Rahman, 2013). Therefore, WEP's G-WIN Project aims to provide clean water in public areas across scattered places in Nigeria. Inspired by this initiative, governments, and organizations should strive to provide clean water sources or water filters in developing towns. A clean supply within proximity prevents women from being in unsafe situations and consuming contaminated water, reducing the risk of contracting diseases that can result in complications in pregnancies or fatalities.

5.1.6 Local Women in Politics

National and international climate relief policies have not made effective progress in reducing climate change's effects on women. Although several countries have previously recognized that women face the brunt of climate change, they have claimed that there is too little known about their conditions to create or adjust regulations (Glazebrook, 2011); most of the regulations instead revolve around men. Therefore, gender and climate organizations should train local women about procedures in politics before bringing them into regional political settings. This allows them to vocalize the issues that they face from patriarchy and climate change, in addition to suggesting possible solutions to assist the problems; addressing these in national or international settings can prove to be ineffective since local matters cannot be applied to widespread policies. It has previously been discussed that women's marginalized positions have made them more environmentally conscious than men (Arora-Jonsson, 2011), which gives them a unique perspective on mitigating climate change's effects. Incorporating women in local politics would not only be effective in reducing climate change's overall impact on the environment and its people but also allow women to combat societal hindrances and have a more visible space amidst policymakers. The increased representation has the potential to bring more attention to issues disproportionately affecting women.

6 CONCLUSION

This paper concludes that climate change is especially detrimental to women in developing areas and will enlarge the existing gender inequality. The case studies demonstrate that the organizations are pursuing change by providing recommendations for climate and gender policies or directly assisting women in most impacted areas. Governments currently lack women in politics and climate regulations, which prevents women from receiving sufficient assistance. However, it is crucial to note that climate change's correlation to gender is a recently recognized matter that is rooted in centuries of patriarchy and gender inequality. Due to the longevity of the system, it is improbable to completely abolish patriarchy and the stereotypes against women within the near future. With the sources of the problem remaining to some degree, climate and gender initiatives by NGOs and governments— as well as the mentioned recommendations, if adopted— may take considerable years to be noticeably effective. Nonetheless, the urgency of climate change is heightened; if no action is taken, the adverse impacts of climate change and the gap between men and women will only continue to increase.

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