



Explaining Gendered Vulnerability to Climate Change: The Contextual Conditions

I INTRODUCTION

Climate change is an urgent and inescapable global concern. Rising temperatures are leading to changes in environmental processes, making rainfall and soil moisture content less predictable. Contemporary events have shown that a change in climate conditions poses a serious threat to the human race, particularly in the light of challenges to life and security. The poor, who frequently rely on ecosystem services, are significantly impacted. Climate change has varying effects on different demographics, such as age groups and genders, and it has important consequences for women due to differences in social responsibilities and access to economic resources.

The most vulnerable citizens of developing nations, women, in most cases, face enormous challenges due to climate change (UN Women, 2022). Women, particularly young girls, constitute one of Africa's most vulnerable populations, providing a regular supply of domestic labour similar to many contexts around the globe. Studies (Lambrou & Piana, 2006; Neumayer & Pluemper, 2007) have shown mounting evidence that climate change effects are gendered, and women are highly prone during and after climate events, especially in locations subject to climate variability and disasters. According to some of these studies (e.g., Neumayer & Pluemper, 2007), households react to the negative shocks of climate change by inequitably redistributing the available resources to women and girls.

The main justification for making distinctions between men and women in terms of climate change in this chapter is based on the different social roles of each gender and how these influence the impact of climate change. Despite the biological disparities between men and women, it is essential to specify these differences and consider them when developing and implementing response strategies to climate change in Africa. The disparities in gender roles suggest that men and women would be affected differently by climate change, depending on their respective social and professional positions. Therefore, it is necessary to explore gendered vulnerability to climate change in Africa. In this chapter, this exploration is accomplished by reviewing the emerging issues on the impact of climate change on gender differences.

2 GENDERED EFFECTS OF CLIMATE CHANGE

Climate change is a phenomenon unlike any other in recorded human history (Ajani et al., 2013). The macro-level effects of climate change are anticipated to raise proximate hazards from disease outbreaks, cyclones, droughts, floods, landslips, fires, and heat waves throughout most of the planet. Women frequently struggle more with adaptation when a climatic change affects revenue flow and food production or calls for modifications to water sources or crop distribution. Particularly, the gendered divisions of work in the home increase women's susceptibility to climate change. Both genders contribute to the maintenance of the household, with women typically in charge of managing the resources required to maintain family nourishment and health, and men often responsible for wage work or cash crops.

In Africa, climate change has peculiar consequences because of the differences between men and women, their societal responsibilities, and their access to socio-economic and physical resources. Inequalities caused by social class and women's roles in the family and community are made worse by climate change, as it affects important elements of livelihood (i.e., water, food, and energy supply) (African Development Bank, 2011). Onwutuebe (2019) cited African societal norms that place gender-based duties in different social categories as a reason for the dissimilarity in climate change effects between men and women. In addition, Dercon and Krishnan (2000) further stressed that women are still the most susceptible to negative shocks and frequently shoulder the consequences in many developing nations.

For example, a 2018 study by the United Nations Development Programme (UNDP) found that women in Africa are disproportionately affected by the impacts of climate change, including food and water insecurity, loss of livelihoods, and increased conflict. The study also highlights that women in Africa often have limited capacity to adapt to the impacts of climate change and limited access to resources, including education, finance, and technology, which exacerbates their vulnerability. These findings are consistent with other studies, such as a 2016 report by ActionAid, which found that women in Africa are often more vulnerable to the impacts of climate change due to existing gender inequalities and traditional gender roles, which limit their access to resources and decision-making power.

Beyond Africa, Gaalya (2015) stated that Cyclone Nargis, which struck Myanmar in 2008, highlighted the underlying climate change inequality, as 61% of the fatalities were females. These statistics support the findings of Aguilar et al. (2007) that gender disparities make women and children 14 times more susceptible to climate change than males. Gaard (2015) asserts that the exclusion of women from decision-making, lack of empowerment, and limited insights into the dangers of climate change account for a large number of natural disaster casualties.

3 CLIMATE CHANGE AND THE GENDERED EFFECTS ON HUMAN CAPITAL

Climate change has varied effects on human capital in terms of mortality, education, and physical and mental health (Eastin, 2018; Lawson et al., 2020). Women appear to be more negatively affected as a result of their physiological makeup, their duties as caregivers, and limited access to food and nourishment. These factors support the tendency for women's vulnerability to climate change. In emerging economies, girls' education is regarded as less important than boys' (Behrman & Knowles, 1999). Similarly, when faced with climate-related income shocks, parents may alter their investments in children's education in ways that are harmful to females. For example, using district-level data from Uganda between 1975 and 2003, Björkman-Nyqvist (2013) found that poor rainfall shocks significantly reduce female participation in primary school, particularly among older females. The study reveals that a 15% drop in rainfall decreases female enrolment by 5%, whereas a change in rainfall has

no impact on male enrolment. According to these findings, older females engage in labour to offset the damaging consequences of the rainstorm shock. This is a widespread phenomenon whereby a loss in income results in an increase in child labour and the engagement of children's assistance in managing consumption levels and freeing up hours for the elderly (Basu & Van, 1998). Households in the Kagera region of Tanzania had a 30% rise in child labour due to negative shocks that impaired agricultural production (Beegle et al., 2006). According to Bandara et al. (2015), agricultural shocks lead to an increase in the exploitation of children for work, especially for male children, while also increasing the likelihood that girls will drop out of school by 70%. Although rodents, insects, or other pests are the predominant source of agricultural shocks in these studies, their impact on yields is equivalent to the effects resulting from climate change.

The adverse effects of climate change, such as long-term changes in average temperature; changes in the intensity, timing, and geographic distribution of rainfall; an increase in the frequency of extreme events, that is, droughts and floods; and sea-level rise, have become more evident in recent times (IPCC, 2007; Verner, 2011). Women are frequently referred to in discussions about climate change as a "marginalised population." They are represented as "victims" of development due to their lack of resources, yet bear the hardship of existence as subsistence food producers, water and firewood carriers, and household food security guardians (Okali & Naess, 2013). They are also significantly more impacted because they are (climate) refugees. In addition to their social roles, women are primarily responsible for providing the utmost care for the sick, and in cases where the rate of illnesses increases, the most affected by the responsibility of care are women.

Different studies have demonstrated how gender inequality, resource access, and education can all intersect to sway judgements about the education of the female child (Alston et al., 2014; Ahmed et al., 2019). According to Alston et al. (2014), many families in Africa claim to have chosen to keep their kids home away from school as a means of coping with the effects of climate change. Others stress the connection between education and resource availability, noting that economic shocks caused by environmental catastrophes make it difficult for families to have enough financial resources to cover the cost of education (tuition, books, supplies, and transportation) (Ahmed et al., 2019). When resources are

limited, many families are likely to give preference to male-child education.

In addition, the impacts of environmental shocks on human capital may not only be felt immediately after the shock but can continue for a long time, affecting future income, health, and educational opportunities. Maccini and Yang (2009) investigated how early-life rainfall shocks influenced individuals born in Indonesia between 1953 and 1974. While early-life rainfall shocks had no effect on males, they discovered that older females who received positive weather shocks like rainfall as children had improved health. They grew taller, received more education, and this, in turn, enhanced their socioeconomic status in adulthood.

4 CLIMATE CHANGE, MARRIAGE, AND FERTILITY DECISIONS

Women's education is a significant predictor of fertility and labour market participation (e.g., Osili & Long, 2008). According to Bbaale and Mpuga (2011), any shock that has an impact on females' education might indirectly affect fertility. There is modest but rising evidence that climate change affects fertility and marriage. For the female gender, access to resources and educational opportunities is unequal, and climate change and other environmental challenges worsen the disparity. Importantly, the Intergovernmental Panel on Climate Change (IPCC) cautions that if global warming reaches 1.5 degrees Celsius, millions of citizens may be driven into severe poverty, with the effects being experienced predominantly in Africa and South Asia (IPCC, 2014), where early marriage and circumcision are widespread.

Equally, understanding the repercussions of environmental crises on child marriage is crucial in an unstable and changing environment so that human rights may be protected and steps can be taken to increase resilience to the effects of climate change. Interviews with families and members of civil society groups in Kenya, Uganda, Malawi, Ethiopia, Zimbabwe, and Namibia revealed that one of the leading causes of child marriage is the economic consequences of environmental problems (Chamberlain et al., 2017; Porter et al., 2011; Mudavanhu, 2014; Marchetta & Sahn, 2016). A coping mechanism for the loss of possessions and income during catastrophes like droughts and floods is child marriage. According to research, child marriage rates in Bangladesh rise following periods of

drought or intense heat that reduce household resources (Tsaneva, 2020; Asadullah et al., 2020). This finding is supported by interviews with families, who described limited finances as a major driving force in how environmental crises affect decisions about when their children get married (Glaser et al., 2019).

According to studies (Drèze & Murthi, 2001; Grimm, 2021; Corno et al., 2020), early marriage and procreation are strategies to reduce income instability. Hence, the economic effects of environmental crises are a lens through which child marriage decisions are shaped. When dowry payment is anticipated, child marriage rises (Corno et al., 2020). This has been demonstrated in sub-Saharan Africa, where studies reveal that in nations that practise bride price settlements, droughts increase the number of underage marriages. Similar tendencies have been seen in other regions around the world. Traditions like bridal payment play a significant role as people desire to balance consumption and decrease the impacts of climate change (Corno & Voena, 2016). Child marriage has become more prevalent among the Maasai due to climate change. Many families go through extreme starvation as a result of the protracted droughts, and young girls—as young as 12—are being given away as brides in return for livestock (Grimm, 2021).

There are conflicting views and data regarding whether and how climate change impacts reproduction. In many parts of Africa, there is a prevalent belief that having many children is an “insurance” mechanism for securing economic resources. As a result, people may have more children than they would like in the event that some of them do not survive (Finlay, 2009; de Sherbinin et al., 2008), increasing fertility shocks and subsequently raising the risks associated with large family sizes. Such regions will consider high and early fertility as a method of ensuring economic stability (Cain, 1981), lowering family or lifetime uncertainty, in accordance with the Malthusian-inspired “vicious circle model” (Dasgupta, 1995; de Sherbinin et al., 2008), or increasing the likelihood of having more children who live to adulthood and are successful financially (Guarcello et al., 2002). The surviving children can participate in family business ventures and contribute to household finances and intergenerational care (Finlay, 2009).

Both earlier and more recent empirical studies indicate that climate change has both positive and negative effects on fertility. Research in cultures with limited access to modern contraception or differing opinions on family planning might be a good place to start. Here, reproductive

patterns and long-term family size aspirations are addressed either overtly or inferentially—in harmony with external conditions and underlying population-resource balance. The variation in natural fertility patterns is one example (Leridon, 1977); the various fertility regimes are connected to regions at risk of drought and flooding, and family size and farm size are frequently correlated; this is known as the “Land-Labour Demand Theory” (Mueller et al., 1984).

Although a population’s stage of fertility tends to have a role in this impact, future environmental change might alter fertility behaviour in ways that correspond to the values deriving from that particular population-resource balance transition. For example, fertility is typically lower in regions where a protracted drought threatens children’s health and labour costs in rain-fed agricultural regions (Cain, 1981), where agricultural expansion has reached the limits of arable land, and when landowners have a strong title (the Land-Security Theory). Contrarily, fertility is higher in regions where child labour is pervasive despite environmental changes (Cain, 1981). The “Vicious Cycle Model” (VCM) holds that poverty drives fertility and, if unabated, will worsen the social, economic, and environmental circumstances of the family (Lutz & Scherbov, 2000; Filmer & Pritchett, 2002; Dasgupta, 1995). VCM is present among impoverished rural populations characterised by diminishing natural capital (Sasson & Weinreb, 2017), while child morbidity increases as a result of altered infectious disease patterns linked to climate change (Aksan, 2014).

Climate change impairs fertility, and by extension, this alters the dynamics of early marriages. As previously indicated, children are a possible source of labour in homes experiencing economic shocks, as their contributions may be effective in facilitating adjustments to economic changes. In the light of this, reproduction is viewed as a kind of risk mitigation. According to Grimm (2021), fertility rates in late nineteenth-century US counties differed between farm and non-farm families. It was found that whereas non-farm households did not see the need for an increase in fertility, agricultural households did. Increasing the rainfall variability distribution from the 10th to 19th percentile results in a 12% increase in the fertility gap between agricultural and non-agricultural families. Furthermore, the delayed demographic change occurring in Africa and dry regions may be explained by the findings of Grimm (2021), which imply that reproduction is a component of the response to hazards caused

by climate change. Interestingly, in another study by Abiona (2017), unpleasant adverse shocks boost the desire for birth control in Uganda, albeit with different consequences. At first glance, this finding appears to be at odds with that of Grimm (2021); however, it is complementary as it implies that, when given the option and control over their reproductive decisions, women may decide to put off having children due to experiences of negative shocks.

5 CLIMATE CHANGE AND VIOLENCE AGAINST WOMEN

Gender-based violence (GBV) is violence committed against a person based on their gender. It is also the worst example of discrimination against women and girls, as well as gender inequality. Since the 1990s, more research have shown how the catastrophic impacts of climate change, coupled with inadequate preventive measures, exacerbate gender inequality and violence against women and girls (VAWG). At all economic phases and in a number of geographic regions, there is evidence of sexual, physical, economic, psychological, partner-inflicted violence, trafficking, child marriage, and several other types of VAWG. In particular, sexual assault shows the continuity of pervasive inequality, cruelty, and discrimination and is seldom a “unique” outcome of climate change. Intimate partner violence (IPV) and abuse by relatives or individuals not in the immediate family are all factors that contribute to gender inequality.

For many women, the fight against climate change is a direct cause of many types of sexual and gender-based violence (SGBV), even though it has evolved into a campaign to protect our environment holistically. Different kinds of SGBV affect women and girls both within and outside of the family. Environmental changes brought on by external forces, like climate change, make them more exposed (Desai & Mandal, 2021). For instance, when disasters or emergencies like pandemics, tragedies, and wars occur, gender disparities become much more pronounced, especially when climate change has gender-specific effects. According to the UNICEF (2023) study, all types of gender-based violence against women and girls increase during disasters and conflicts, further exacerbating already existing inequities, vulnerabilities, and harmful gender norms. For instance, Darfur has seen frequent droughts and poor rainfall, both of which have worsened food security and resource shortages. These risks are catastrophic for girls and women who must travel long distances to obtain

drinking water. In a nation like Malawi, where food is scarce owing to climate change, young girls are compelled to get married (Curry, 2017).

During droughts and prolonged dry spells, Ugandan women experienced domestic abuse, child marriage, sexual assault, female genital mutilation (FGM), and other forms of violence. In 2016, UNESCO called attention to how climate change disproportionately impacts women, including through natural disasters, forced migration brought on by the consequences of climate change, sexual trafficking, and an increase in rape cases, as a result of their endless search for water and firewood. Therefore, during and after catastrophes or emergencies brought on by climate change, existing gender disparities increase, and new types of SGBV occur. Such impacts are both permanent and harmful and comparable to what happens in times of war.

Numerous factors that contribute to violence against women have been examined in past studies. Poverty, cultural standards, illiteracy, and lack of socio-economic empowerment are a few of them (Cools & Kotsadam, 2017). Gender inequality and the labour participation rate are only two instances of labour market variables (Aizer, 2010; Anderberg & Rainer, 2013; Bhalotra et al., 2018). According to Benson et al. (2003), another source of violence against women is the economic shock caused by climate change. A Tanzanian research found that shocks attributed to rainfall increase the frequency of domestic violence; the study shows that one variance in severe rainstorm shocks raises spousal abuse by 18.8%, which is more pronounced in lower-income households (Abiona et al., 2016). Another Tanzanian study, based on data from 67 communities between 1992 and 2002, discovered that homicides of women aged 50–60 suspected of witchcraft are twice as common during heavy rain years (Miguel, 2005). Although it might be challenging to distinguish the role of non-economic elements like social values, in this case, financial shocks are the leading causes of witchcraft charges.

6 CLIMATE CHANGE, GENDER ROLES, AND ECONOMIC DIFFERENTIALS

Gender roles imply that climate change would affect women and men differently, owing to their distinct roles and duties in their community, as well as their level of access to natural and other resources, including information. In this context, climate change-related issues include (but are not limited to) increased competition for water across sectors and population

groups, raising the risk of violent conflict over water resources; increased frequency and severity of droughts, floods, and other extreme weather events; crop productivity losses; sea inundation of low-lying regions; and changes in natural resource-based industries such as forestry, fisheries, and tourism. Almost all of these issues are prevalent on the African continent. For example, with global warming of about 28 degrees Celsius beyond pre-industrial levels, a net income loss to Africa's agricultural sector of about 5% of GDP is predicted (PACJA, 2009). Water stress is also expected to worsen, impacting between 350 and 600 million people and increasing the danger of extinction for up to 40% of species in sub-Saharan Africa. Climate change, according to the conclusions of several studies, would result in lower food yields (IPCC, 2014).

Gender discussions in southern Africa (Meena, 1992; Iiping & Williams, 2000; Wamukonya & Rukato, 2001) corroborate gender inequity, lack of empowerment, and restricted access to assets. For instance, women in southern Africa have subordinate legal positions; restricted access to resources such as land, technology, credit, education, formal employment, and training; and are vulnerable to HIV and AIDS (Lopi, 2004). These factors not only exacerbate gender disparities but also render women more vulnerable to poverty, catastrophes, and violence, as well as climate change. A framework for analysing climate change's effect on women's rights is vulnerabilities. Impoverished populations are more vulnerable because they rely more on ecosystem services for a living, are more likely to live in environmentally vulnerable areas such as flood plains or on degraded hill slopes, and have fewer resources to adapt to changing environmental conditions. The impoverished are not a homogeneous group; however, disproportionate domestic and familial duties, as well as a relative lack of control over economic assets, can make women more vulnerable than men (Goh, 2012).

Natural disasters can have a wide range of effects on women's occupations. Productive assets may be lost, forcing women to choose low-wage work. Women outnumber men in the informal and small business sectors. These sectors are frequently the worst affected by disasters and the least able to recover. Natural disasters disproportionately affect women's employment, working hours, and conditions. On the other hand, some women, particularly those in the middle class, may profit from increased access to work possibilities (Enarson, 2000). Hazards have a wide range of consequences, including death and morbidity. Gender relations are unlikely to improve, particularly when there are multiple risk factors. In

the aftermath of a disaster, there are gender components to what happens in the relief, coping, and recovery stages, as exemplified by significant inequity between men and women.

Inequalities in household asset ownership and control, as well as rising familial burdens due to male out-migration, declining access to food and water, and increased exposure to disaster, can undermine women's ability to achieve economic independence, improve human capital, and maintain overall well-being. Reduced intra-household bargaining power when women become less capable of obtaining independent funds is one of the consequences of gender equality. Outside the house, gender discrimination and socio-economic status disparities worsen as women become less able to participate in formal labour markets, join civil society groups, or mobilise collectively for political change. The upshot of these processes has the potential to diminish a society's degree of gender equality by creating barriers to the adoption of laws and practices that promote co-equal status.

Owning property can symbolise financial independence for women in marriage because it would provide an alternative source of income. The distribution of resources among households is also connected to risk-coping strategies. Men and women react to disasters separately, and joint ownership assets are harder to deal with since spouses may find it hard to share (Rakib & Matz, 2016). This helps to understand why women are more vulnerable to economic shocks caused by climate change. For example, Quisumbing et al. (2018) discovered that climate-induced shocks affect assets owned by men and women differently in Bangladesh and Uganda.

Women's propensity to adapt to the changing climate is limited by a lack of freedom and decision-making power. Often, women have little or no control over the family's finances. Women are frequently underrepresented in local politics, which limits their ability to influence laws that support women's goals and rights. Plans to replace agricultural production processes with ones more suited to the changing environment tend to only consider the needs of male farmers without taking into account the problems women experience as agricultural workers. Restrictions on cultural mobility may make it more difficult for women to acquire services and knowledge. In addition, women might be unable to relocate amid extreme weather conditions without a male relative's consent. Women's ability to run or swim may be hampered by traditional clothes, making it more difficult for them to flee disasters. As they are unable to access public locations, women who have lost clothes in catastrophes may be less likely to get food and medical treatment.

According to Yavinsky (2012), women constitute the bulk of the world's poor population and depend more on natural assets for survival than men. In comparison to men, women are more prone to being wholly dependent and earning lower incomes. For example, men could use their savings and financial independence to invest in other earnings or make other adjustments when a drought or exceptionally heavy rain harms agricultural production. In times of famine and drought, women usually put their spouses' nutritional needs ahead of their own. The lack of information and expertise that would allow them to manage weather risks to agriculture makes women more susceptible.

Growing livestock is important to women in improving their financial status. Globally, women are heavily involved in this sector. It is estimated that 400 million individuals, or two-thirds of poor livestock keepers, are women (FAO Working Paper, 2011). Women are at the forefront in taking care of daily animals, managing poultry, and caring for other animals. FAO reports that an estimated 45 million people were involved in the fish industries. Moreover, an estimated 135 million people are employed in the secondary sector. It is estimated that women comprise 30% of the fisheries labour force (FAO Working Paper, 2011).

Through increased competition for natural resources, decreased feed quality and quantity, an increase in livestock diseases, increased heat stress, and decreased biodiversity, global warming will influence livestock production. As temperature rises, cellular wall and lignin elements may increase, decreasing the pace of digestion and the amount of nutrients available in forage and diets (Thornton et al., 2009). It is projected that a decline in the supply of maize crop residue due to a reduction in maize yield by 2050 may have an indirect impact on animal production in quasi-mixed cropping regions of East Africa (Thornton, 2010). Climate change is anticipated to have an impact on the frequency and regional distribution of human geometric diseases, including malaria and Rift Valley fever (Cadot et al., 2011). Thus, initiatives to improve adaptation and resilience must take into account the gendered implications for pastoral families (Walker et al., 2022).

7 SOME INITIATIVES AND POLICY DEVELOPMENT EFFORTS FOR GENDER INCLUSIVITY IN AFRICA

Gender inclusion in Africa is supported by several programmes and policies. Due to their gender, women in Africa frequently suffer from abuse, exploitation, and discrimination. The feudal system is responsible for one

of the most serious acts of abuse towards women of all ages (Gaddis et al., 2018). A few instances of discrimination that African women routinely experience with impunity and that are often sanctioned by religion and culture include land ownership, labour exploitation, and others.

Initiatives and policy development attempts to promote gender inclusion have received much attention at the continental, regional, and national levels. Notably, the African Union (AU) is spearheading attempts to enhance gender parity and women's empowerment across the region. The AU's support highlights women's rights in several key continental treaties. The Maputo Protocol, which adds a broad range of basic rights safeguards for African women and girls, continues to be one of the most complex legal treaties. The Maputo Protocol guarantees complete and fundamental human rights for women, including all facets of political rights, socio-economic and cultural rights, as well as ecological rights, in contrast to past accords addressing the position of women (AU, 2022).

Africa has evolved as a result of substantial discussions about gender equality. Despite persistent waves of restrictions and antagonism, there have also been substantial advances towards gender equality as the African Women's Decade (AWD) started in 2010 (AU, 2022). The bulk of the topics discussed by the African Women's Decade is congruent with domestic and international accords such as the Beijing Platform for Action, the SDGs, the Joint Resolution on Gender Equality in Africa, and the Maputo Protocol (AU, 2022). Other efforts that African leaders have made to indicate their support for the advancement of women's rights include the Joint Proclamation for Gender Equality, the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, the Gender Parity Principle, the African Agenda 2063, and the Solemn Declaration on Gender Equality in Africa (Stefiszyn, 2005; Ntlama-Makhanya & Lubisi-Bizani, 2021).

Agenda 2063 is a plan tagged *the Africa We Want*, which was unanimously approved by heads of state and government in 2013 (AU, 2022). Aspiration 6 of Agenda 2063 calls for "An Africa whose growth is people-driven, dependent on the potential of African people, particularly its women and youth, and caring for children." Thus, Agenda 2063 calls for a more equitable society where everyone actively participates in decision-making and no child, woman, or man is left behind or discriminated against on the grounds of gender, party leanings, religion, ethnic affiliation, geography, age, or other considerations. Furthermore, women play a critical role in attaining inclusive development, and Article 3 of the African

Union Protocol on Amendments to the Constitutive Act calls on the AU to advance the active involvement of women in decision-making, especially in political, economic, and social areas (AU, 2022).

The AU considers gender equality a fundamental human right and a vital component of regional integration, growth, and social progress and has developed the Gender Equality and Women's Empowerment (GEWE) policy to ensure women's participation in Africa's development agenda (AU, 2022). The Women, Gender and Development Directorate was established to create the African Women's Decade 2010–2020, which focused on expanding initiatives towards gender equality and women's empowerment at the grassroots level. The GEWE method has six main pillars (AU, 2022). First, a development that is both sustainable and scalable requires the economic empowerment of women. Social justice, safety, and women's rights are all examples of human rights. The second pillar looks at leadership and government, where women must contribute equally and effectively to the government. The third is gender management systems, which will provide access and funds (financial and other technical resources) to assist women. The other pillars look at peace and security, promotion programmes, and the provision of ICT skills for women in Africa.

In addition, African strategic growth groups have contributed significantly to closing gender disparities. For instance, in 2015, the African Development Bank provided the Africa Gender Equality Index (AGEI) assessments for 52 of Africa's 54 countries (AFDB, 2015). The index aims to solve the impending bottlenecks to women's growth in Africa (AFDB, 2015). From a global view, all United Nations members agreed to the Sustainable Development Goals in 2015, based on criteria similar to some of the regional initiatives, action plans, and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (UNWOMEN, 2016).

8 CONCLUSIONS AND IMPLICATIONS

Climate change affects agricultural production negatively, resulting in decreased crop yield and a reduced amount of food available for consumption, indicating impoverishment. Poverty causes early marriage, poor health, and decreased life expectancy. For instance, it may force families to use the marriage bonus as a source of income for sustenance and also imply that there are fewer dependents to cater for. Additionally, it can also

result in a greater need for children's input to the household, increasing reproduction.

It is pertinent to emphasise that gender-differentiated consequences of climate-induced shocks also reflect gender disparity in access to healthcare and education, in decisions about marriage and having children, in the experience of or likelihood of violence, and in the range of economic prospects. The first step should be to rectify this inequity, completely consistent with SDG 5, which calls for attaining gender equality and the empowerment of women and girls. It is crucial to encourage positive trends that will increase female empowerment and gender equality, which will strengthen society and promote sustainable development. Furthermore, access to financial markets might both minimise consumption volatility and function as a shock absorber (Bandara et al., 2015; Corno et al., 2020). Women who have influence over alternate options and life decisions, such as fertility, can reduce the negative effects of climate shocks (Abiona, 2017).

Finding and implementing initiatives to support training and educational initiatives that would encourage vulnerable rural women to obtain the skills necessary for income generation should remain a top concern (Ajani et al., 2013). It is advised that women be given the power, at every stage, to make strategic decisions to withstand climate shocks. Steps must be taken to provide the essential structural foundations for women's long-term economic empowerment. In doing so, a comprehensive approach, including institutional and political players, is necessary. Meanwhile, policies for both adaptation and mitigation will need to incorporate measures to improve social protection and business growth and create jobs for women affected by climate shocks.

Finally, this study emphasises the need for more empirical research on the short- and long-term relationship between gendered vulnerabilities and climate change. More cross-country and microeconomic assessments that offer a broader perspective would be interesting. A deeper investigation of the gendered impacts of climate change on political involvement and other economic aspects, including labour market results, is necessary. Future studies might consider whether there are additional explanations for the consequences of climate change that transcend agricultural production or how the effects on crop returns interact with other critical variables.

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