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# Climate justice and adaptive capacities in Sub-Saharan Africa

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## Abstract

Sub-Saharan Africa is at an increased danger of climate change because of its meteorological composition as well as the underdevelopment of many of its countries. Many African nations do not have the resources and the infrastructure necessary to lessen the consequences of climate change, let alone adjust to the impacts of climate change. As such, most of the countries have low adaptive capacities, coupled with lack of economic, governance, and social readiness needed for adaptation and there is a dearth of literature on the role of climate justice in enhancing adaptive capacities. It is therefore essential to frame the issue of climate change within the broader context of justice and equality in pursuit of sustainable development in the region. The aim of this paper was to assess the role of climate justice in strengthening adaptive capacities in sub-Saharan Africa. The study found that adaptive capacity is influenced by a wide variety of factors such as availability of economic and natural resources, social networks, institutions, governance, and technology. As such, justice is important in determining who has and who does not have adaptive capacity. The paper also found that the financial muscle of climate adaptation is a component of justice because it determines who gets what, when and how.

**Keywords:** Adaptive Capacity; Climate Change; Climate Justice; Sub-Saharan Africa; Human Rights

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## 1. Introduction

Sub-Saharan Africa is one of the places where the largest number of people are anticipated to fall into poverty as a result of climate change if no significant climate and development measures are adopted (Jafino et al., 2020). Due to the socioeconomic implications of climate change, particularly how it affects communities' overall quality of life, climate justice is fundamental in climate change issues (Bhusal, 2009). Disruptions brought on by climate change have diverse effects on communities in the developing world. Due to a lack of sufficient adaptive capacity, Africa has been negatively impacted by the consequences of climate change over time. Anthropogenic climate change has provoked scholars and policy makers to rethink ideas about what constitutes justice (Mugambiwa, 2021a). There is a greater possibility for instability regarding means of subsistence in Africa. It is essential to keep in mind that individuals in certain occupations and geographic locations may be at a greater risk from the consequences of climate change because of human activity (Ncube et al., 2011). Women in Africa are already bearing the brunt of the effects of climate change, and if things continue to go the way they are, they will continue to do so in the foreseeable future (Ncube et al., 2011). Africa's fragile condition is caused in part by the several stressors that are related with the vulnerability of agriculture to changes in climate. This renders the circumstances of African rural communities extremely precarious, particularly when combined with their limited capacity for adaptation to the impacts of climate change (Zografos and Robbins, 2020). If these communities are able to successfully adjust to changes in their environments, it will be essential for their own health and development as individuals, as well as for the health of their families and the continuous existence of the communities in which they live. Therefore, this paper seeks to assess the role of climate justice in strengthening adaptive capacities in Sub-Saharan Africa.

At the beginning of 2015, a group of 18 countries came together to create what is known as the 'Geneva Pledge for Human Rights in Climate Action.' The goal of this initiative was to bring attention to the human rights ramifications of climate change and to make a commitment to upholding rights standards in climate-related activity (Mehta et al., 2021). The first principle of the climate agreement states that human rights and a fundamental commitment to climate justice are interrelated and inseparable. Nevertheless, the actions that have been taken up to this point have not been sufficient, and the global temperature as well as emissions of greenhouse gases continue to rise (Mugambiwa, 2021a). When it comes to resources, development paths, and carbon contributions, climate change reveals the fundamental disparities that still exist between wealthy nations and less developed ones, as well as between wealthy and less wealthy people living within the same nation. Hence, advocating for climate justice will curb the disparities caused by wealthy nations.

To achieve justice, it is required to first acknowledge the presence of injustice and then to take action to address the underlying problems that contribute to it. Doing things is the most important aspect of climate justice when it comes down to it. Critical climate justice praxis asks for systemic transformations to address structural inequities and dismantle power systems that generate numerous climate injustices (Mehta et al., 2021). The term 'praxis' refers to a way of operation that is characterized by the constant assimilation of new knowledge and changes to old theories and methodologies (Rice et al., 2015). To achieve climate justice, there is need for communities to make a commitment to political action and solidarity. A critical climate justice perspective examines how and why different groups of people face inequities in different ways as a result of climate change. This is done by integrating insights from a variety of academic theories such as feminist, anti-capitalist, post-colonial, and decolonial scholarship and insights from activist movements for climate justice (Whyte, K., 2020). Climate justice covers not only a body of knowledge from a variety of disciplines but also

movements for social justice and environmental protection. Climate justice guarantees fairness and equity in climate governance and the compensation of harm caused by climate change.

## 2. Climate justice and international protocols

The major international protocols such as the United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol have made particular emphasis on climate justice (Perry, 2020). UNFCCC has provided a forum for the discussion of fundamental issues related to justice and the issue of justice has always surfaced as a contentious topic in the context of climate change. There are many different dimensions of justice that are brought up during talks of climate change governance and policy; nevertheless, the predominant framework is that of contemporary and historical North-South interactions (Paul and Alice, 2013). Governments and other norm entrepreneurs have taken into consideration the achievements and setbacks that they have had in the past when negotiating on the subject. The emission profiles and wealth levels of countries are in a constant state of change, which has repercussions for both accountability and contribution (Perry, 2020). There has been a shift in the global economy and in public opinion in a variety of ways across the world, and there has been an improvement in the scientific knowledge of estimates of the effects of climate change (Acha, 2019). New concerns, such as loss and damage compensation, have evolved within the international climate change regime. The UN Framework Convention on Climate Change (UNFCCC), Kyoto Protocol, and the global treaty agreed in Paris in December 2015 have all been significantly shaped by contentions over justice (Mugambiwa, 2021a). The UNFCCC has provided a forum for key justice issues to be discussed alongside international climate policy and Justice has become a contentious topic in the climate change framework.

## 3. Understanding climate justice vis-à-vis adaptive capacities in the developing world

The vast majority of climate scientists are in agreement that mankind faces a serious risk of experiencing catastrophic climate change, and the Intergovernmental Panel on Climate Change (IPCC) has issued grim warnings about this very real threat (IPCC, 2021). Many different hypotheses regarding the equitable distribution of burdens have been developed and analysed. Specifically, the principles that those who have caused the problem should carry the burden, those who have the financial means to pay, and those who have benefited from the actions that cause climate change should bear the burden have been proposed as ways to distribute the responsibility for mitigating climate change. If achieving equitable load sharing is one of the primary goals of climate justice, then perhaps those who contribute more should be given the responsibility to address the impacts of climate change (Mugambiwa, 2021a). At the start of the 21st century, the global community is confronted with a climate emergency on a scale that has never been witnessed before. However, the factors that contribute to climate change and its consequences do not act in the same manner in every region of the world.

Although scientists have been sounding the alarm about the potentially catastrophic effects of climate change for decades, it wasn't until relatively recently that governments began to prioritise addressing the problem (Hickel, 2020). At this point in time, there is not the slightest shred of uncertainty in anyone's mind that human activities are contributing in some way to the shift in climate. Most significantly, the global

scientific community and those who make policy believe that it has already had and will continue to have enormous detrimental effects on both the economy and the environment (Agarwal and Narain, 2019). When discussing climate change, it is imperative that a greater amount of emphasis be placed on the topic of who bears the financial responsibility for addressing the climate calamity. Human rights campaigners have long been concerned that low-income nations and other groups that are vulnerable will suffer the burden of the worst effects that climate change will bring about.

### 3.1. Climate justice, equality, and adaptive capacity

There is a wide range of variations in the ways in which individuals and communities are impacted by climate change. These variations are caused by the interplay of multiple socioeconomic factors, including money and discrimination based on minority status, race or ethnicity, sex or gender, age, poor health, and impaired mobility (Mugambiwa, 2021a). As a consequence of this, these aspects determine where people decide to settle and the degree to which they are affected by the circumstances. Despite this, those who are most susceptible to harm are not the only ones who are impacted. Repeated negative events have the potential to degrade the resource basis of more resilient social groups over time, which can lead to a deterioration of urban poverty in terms of both its scope and depth (Holland, 2017). Inadequate resources and low levels of adaptability, as well as poor quality and poorly located infrastructure are frequently to blame for differential susceptibility (Taylor, 2013). The process of coping with the transition from one condition to another is referred to as adaptation, which is a more long-term strategy. The term adaptation refers to a wide range of responses, from large-scale government projects like building seawalls to the changes that people make on their own initiative, such as shifting the crops that they grow or discovering ways to make a living that are less susceptible to the weather (Taylor, 2013).

Over the course of the last century and a half, scientists have been sounding alarms about the unparalleled scale of the damage that the climate crisis has already had and will continue to have around the world. Intergovernmental Panel on Climate Change (IPCC) asserts that there is no doubt that human activity is the major contributor to the warming of the planet (IPCC, 2021; Mugambiwa, 2021b). There is the potential for more intense and prolonged droughts, heavy precipitation, as well as hot extremes and heat waves as a result of global warming (Mugambiwa and Tirivangasi, 2017). Communities that do not have the resources to adapt to climate change confront an immediate threat to their survival as they strive to lessen the consequences of this phenomenon and cope with it in the face of catastrophic conditions. Communities that have the fewest resources available to adapt to the effects of climate change face a particularly alarming prospect when considering the possibility of an unanticipated change in climate brought on by higher emissions of greenhouse gases.

The poor and other groups already on the margins of society will be the most negatively affected by climate change, which poses a challenge to human rights (Mugambiwa, 2021a). It is abundantly clear that the global climate change is already a problem in many different cultures and that it will only make matters worse when it comes to the promotion of human welfare through the application of economic and social rights (Paul and Alice, 2013). As a result of the ongoing climate crisis, it is becoming increasingly difficult to uphold and further the cause of certain human rights. Important socioeconomic factors that determine people's health and should be safeguarded include access to enough nourishment, clean water, adequate sanitation, and a safe place to

live. Some of the adverse effects of climate change on human health include heat-related illnesses, an increasing prevalence of water-related and vector-borne diseases, malnutrition, and mental health issues (Perry, 2020).

Members of minority and indigenous communities in Sub-Saharan Africa are some of the groups that are most at danger from climate change. As a result of climate change, gathering resources such as water, food, and fuel will become significantly more difficult for people who live in underdeveloped countries (Paul and Alice, 2013). Due to the fact that their way of existence is intricately connected with the natural world, indigenous people are particularly susceptible to the repercussions that are caused by the deterioration of the environment. Some of the groups of people who will be hit the hardest by the adverse effects of climate change on their health include low-income workers, members of minority groups and labourers who work in environments with high temperatures (Perry, 2020). Due to the fact that these locations are lacking in resources, the people who live there are not able to adapt to the effects of climate change or lessen their severity (Holland, 2017). Therefore, there is concern that the existing socioeconomic gaps within nations as a result of the effects of climate change will enter a self-reinforcing vicious circle, with the initial inequality causing the disadvantaged to suffer disproportionately.

The concept of climate justice has been the subject of a significant amount of writing, the majority of which is characterised by a lack of specificity. When considering climate justice, despite the haziness of the term, there are a few components that are consistent throughout (Mugambiwa, 2021a), for instance, the relational vision of justice, which is the comprehension that the realisation of justice requires the participation of a large number of actors. Hence, it is essential to establish who receives justice and who is responsible for its costs, as well as who can make claims against whom. There is a widespread belief that the effects of climate change would exacerbate existing socioeconomic disparities. Inequalities in economic and social conditions may have various causes, but they can be made worse by problems originating in the natural world (Perry, 2020). The term 'climate change injustice' refers to a situation in which those people who are least responsible for greenhouse gas emissions are also the most affected and vulnerable to the ramifications of climate change yet have the fewest means to respond to the issue.

Many underdeveloped nations are struck the worst by the implications of climate change, such as the amplification of extreme weather events like floods and droughts (Hickel, 2020). Therefore, there is a disparity between the amount of money spent on climate change by developed states, the amount of harm that it does, and the amount of money that is available to adapt to it in the developing world such as Sub-Saharan Africa. This facet of injustice may be traced back to the time of colonialism, and it has been supported by the processes of globalisation, as well as being represented in contemporary institutions (Agarwal and Narain, 2019). According to the normative claims made in international injustice debates, greenhouse gas emissions need to be reduced, adaptation and mitigation costs should be more evenly distributed and should relate to historic emission responsibilities, energy and other consumption patterns need to be altered, and fair institutions need to be established.

The nature of the relationships that exist between different social groupings lends relevance to the inequalities that exist not just between societies but also within societies. While certain parts of society are hit particularly hard by the effects of climate change, other parts of society, particularly those who have contributed relatively little to the problem, are spared the most severe consequences (Holland, 2017). The phenomenon referred to as environmental inequality occurs when individuals are subjected to not one, but two forms of discrimination based on their financial standing and the colour of their skin (Mugambiwa, 2021a).

Women, children, indigenous peoples, the elderly, and people with disabilities living in low-income countries were identified in a study by the United Nations Human Rights Council as being particularly vulnerable due to the fact that their socioeconomic condition places them at danger (Perry, 2020).

Intergenerational justice takes into account the connection that exists between the generations of the past, the present, and the future (Holland, 2017). The inequity lies in the fact that future generations may not be able to take pleasure in a clean and healthy environment because of lifestyles that are currently prevalent and have been prevalent in the past. These lifestyles are characterised by heavy usage of fossil fuels and high levels of greenhouse gas emissions. Future generations may not be able to take pleasure in such an environment. The current group of decision-makers ought to be held accountable for ensuring that they do not put the responsibility of preventing climate change on the shoulders of subsequent generations (Mugambiwa, 2021b). Rights pertaining to the environment and energy, as well as the establishment of institutions designed to protect these rights, are all on the table as potential solutions to the problem. The purpose of this line of thinking is to establish an indirect form of democratic representation through the establishment of constitutional environmental human rights.

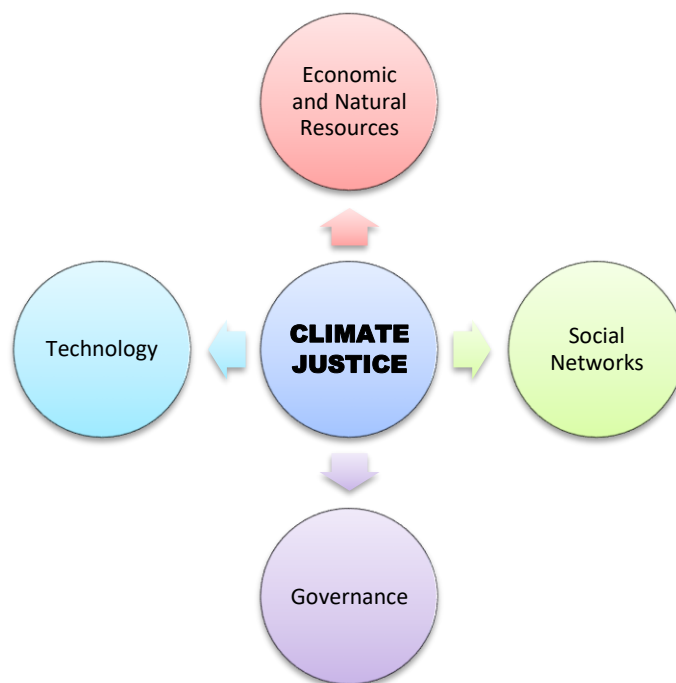
#### **4. Sub-Saharan Africa's vulnerability to climate change**

Rain-fed agriculture supports over two-thirds of Africa's economy; therefore, the continent is one of the most susceptible to the potentially devastating consequences of climate change (Perry, 2020). Rising sea levels have an influence on low-lying locations such as the Maldives, the Seychelles, and the delta region of Egypt. In addition, illnesses such as malaria are likely to spread to new areas, such as the highlands of Ethiopia and Tanzania. These are only some of the detrimental effects that sub-Saharan Africa may experience as a direct result of climate change (Perry, 2020). Africa is at an increased danger of climate change because of its meteorological composition as well as the underdevelopment of many of its countries. On the other hand, many African nations do not have the resources and the infrastructure necessary to even lessen the consequences of climate change, let alone adjust to the new normal. IPCC (2021) asserts that there are two ways in which non-climate pressures can increase vulnerability to climate change that is by lowering resilience and lowering adaptive capacity due to resource deployment to conflicting requirements. Both of these ways increase vulnerability to climate change and because of this, the foundations of African economies and the livelihoods of millions of people are in peril as a result of the unpredictability of the environment.

It is therefore essential to frame the issue of climate change within the broader context of the socioeconomic expansion of sub-Saharan Africa, and it is also essential to emphasise the interconnectedness of climate change and development. If resources are invested in improving socioeconomic conditions in vulnerable communities by implementing measures to increase health, education, and social welfare, these communities will be better able to adapt to the shifting conditions brought on by climate change. The African continent is subject to a variety of threats, yet there are strategies available to limit their impact and accommodate them. According to what was stated before, one of the most significant obstacles to compliance with the global carbon reduction system in sub-Saharan Africa is a lack of understanding of the issues surrounding climate change (Mugambiwa, 2021).

#### 4.1. Climate change adaptation and justice concerns in Sub-Saharan Africa

The fact that there are solutions to climate change that can be implemented in Africa is an illustration of the great degree of injustice that is posed by climate change. The purpose of any action performed as a response to a change in the environment is to take advantage of the opportunities that occur as a result of that shift, and this is particularly true with regards to adaptation strategies (Hisali et al., 2011). The process of adaptation can be used to increase a system's responsiveness to environmental disturbances and its ability to recover from the effects of those disturbances. Mugambiwa (2020) found that changes in the traditional varieties of maize and groundnuts farmed by farmers in rural Zimbabwe have been brought about by major insect attacks as well as a lack of sufficient water. Planting crops that can withstand high temperatures, such as cotton and sorghum, has allowed farmers to adapt to the rising frequency of temperature extremes at their highest levels (Mugambiwa, 2020). Growing crops that had not been grown before was another adaptive measure that was used to lessen the number of pests and bugs. Community-based adaptation has the potential to make people less vulnerable to the adverse consequences of climate change and raise their capacity to adapt to it (Mugambiwa, 2021b).



**Figure 1.** Determinants of adaptive capacity (Source: Author)

Figure 1 demonstrates the determinants of adaptive capacities in sub-Saharan Africa. The established determinants are governance, technology, social networks and availability of natural and economic resources. The aforementioned determinants are subject to climate justice. This implies that if the justice aspect is not addressed access to natural and economic resources by communities will be compromised and this applies to all other determinants as mentioned in figure 1. Due to the great vulnerability of their crops, farmers in developing nations will need to use an increased number of adaptation strategies as the climate continues to

change (Nhemachena & Hassan, 2007). Even if actions were taken to reduce greenhouse gas emissions, the reductions would not be adequate to stop climate change; therefore, the determinants of adaptive capacity as mentioned in figure 1 will be essential. For instance, in a study conducted in rural Zimbabwe by Mugambiwa (2020), small-scale farmers in rural Zimbabwe employed a number of the aforementioned determinants on a daily basis. They make use of social networks in exchanging ideas on climate change adaptation strategies such as the use of submersible solar-powered irrigation techniques among many other strategies exchanged by communities. Also, the community has a clear-cut Indigenous Knowledge Systems based governance structure (ibid).

Gbetibouo (2008:1) asserts that "...the level to which the unfavorable repercussions of climate change are felt depends on the extent to which adaptation has taken place". This implies that climate change would be detrimental in the absence of adaptation. If you are concerned about doing what is ethical with regards to climate change, you need to give some consideration to the concept of adaptive capability. Eriksen et al. (2008) asserts that 'adaptive capacity' refers to its capability of making adjustments in response to the effects of climate change. Adaptive capacity is influenced by a wide variety of factors, including economic and natural resources, as well as social networks, governance, and technology. There will always be members of a community who are perceived as being more adaptable than others, and there will also always be members of the community who are perceived as having a lower capacity for adaptation. To put this into perspective, it is easy to think of those who are wealthy as having a larger ability to adapt, while those who are impoverished as having a lesser ability.

Ziervogel et al. (2008: 21), asserts that "...agricultural adaptation occurring in Africa is responding more to perceived climate variability rather than climate change". This means that these responses are likely to be swamped by climate change and its longer-term effects. This is demonstrated by the wide variety of adaptation strategies that are implemented in agricultural practices. These strategies include, but are not limited to, modifying the crop and livestock composition, altering irrigation methods, collecting, and storing rainfall, and planting drought-resistant varieties of crops. Tambo (2016) found that farmers in Ghana have resorted to a wide range of coping and adaptation techniques in response to the increasing frequency of shocks and strains associated to climate change. These measures include permanent and seasonal migrations. Farmers in Ghana adopt tactics that are not as widespread in other parts of the region. These include the cultivation of crop varieties that are resistant to drought or that mature at an earlier age, the practice of mixed cropping and crop rotation, and the planting of trees to provide shade for livestock.

Common forms of adaptation for farmers in Zambia include the construction of contour ridges and ploughing across the hill (Hachileka and Vaatainen, 2011). Moreover, Nhemachena and Hassan (2007), opine that despite the fact that farmers have a limited capacity for adaptability, they have nonetheless been able to survive and adapt in a variety of different ways over the course of history. Despite this, it has become abundantly evident that the majority of farmers in the region are having a difficult time adjusting to the imperative of adapting to the changing climatic and rainfall conditions of the future. Farmers who grow cotton in the Gokwe Rural District of Zimbabwe believe that irrigation helps them respond to the changing weather patterns (Gwimbi, 2009). Unganai and Murwira (2010) found that farmers in Chiredzi, Zimbabwe had moved their emphasis away from rain-dependent crops such as maize, cowpeas, and cassava in favor of sorghum and groundnuts. The adaptive capacities of the sub-Saharan Africa countries mentioned in this paper are essentially enabled by the existence of justice in one form or the other. This is because the realisation of justice



requires the participation of a large number of actors as seen through the manner in which communities are engaging in finding solutions to the impacts of climate change. Inasmuch as there are signs of inequalities in economic and social conditions, communities are utilizing other means such as social networks to share methods of adapting to the impacts of climate change within the contexts of their culture and circumstances. This is also necessitated by the governance structures that enable the smooth execution of adaptation by providing certain needs essential for climate change adaptation.

## 5. Conclusion

As a result of anthropogenic climate change, many experts and policymakers have had to reconsider their conceptions of justice. In sub-Saharan Africa, there is a heightened potential for sustenance-related instability. The effects of climate change, which are mostly the result of human activities, are more likely to affect communities in numerous ways. As things are, sub-Saharan African communities are already facing the brunt of climate change's repercussions, and they will continue to do so for the foreseeable future. Due in part to the vulnerability of agriculture to climatic change, Africa is in a precarious state. As a result of limited ability to adjust to the effects of climate change, the situation of rural communities in Africa is exceedingly dangerous. Adapting to environmental shifts is crucial not just for the people living in these areas, but also for the wellbeing of their families and the sustainability of their communities as a whole. The purpose of this article was to highlight the issues of justice associated with climate change and to pledge to adhere to rights standards in climate-related narrative. Human rights and a fundamental commitment to climate justice are interconnected and indivisible. Sub-Saharan Africa has made some steps, but they haven't been enough, and both world temperatures and emissions of greenhouse gases are still rising. Climate change highlights the persistent gaps between the world's wealthiest and poorest countries and between the region's rich and poor citizens in terms of access to resources, development opportunities, and carbon contributions.

In order to achieve justice, it is required to first acknowledge the presence of injustice and then to take action to address the underlying problems that contribute to it. Doing things is the most important aspect of climate justice when it comes down to it. Critical climate justice praxis asks for systemic transformations in order to address structural inequities and dismantle power systems that generate numerous climate injustices. A critical climate justice perspective examines how and why different groups of people face inequities in different ways as a result of climate change. This is done by integrating insights from a variety of academic theories such as feminist, anti-capitalist, post-colonial, and decolonial scholarship and insights from activist movements for climate justice. Climate justice guarantees fairness and equity in climate governance and the compensation of harm caused by climate change. Moreover, advocating for policy changes that prioritize the needs of vulnerable communities and investing in renewable energy solutions should be prioritized in sub-Saharan Africa.

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