



**TECHNIUM**  
**SOCIAL SCIENCES JOURNAL**

**Vol. 26, 2021**

**A new decade  
for social changes**

[www.techniumscience.com](http://www.techniumscience.com)

ISSN 2668-7798



9 772668 779000

## **What Justice? Whose justice?: Rethinking climate justice through climate change impacts and options for adaptation in Africa**

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**Abstract.** Climate change is considered a justice issue based on the causes of the phenomenon, its impacts and policies designed to manage it. Previous studies have revealed that Africa and the entire developing world contribute less to Green House Gas emissions (GHG) which is the leading cause of climate change, but they suffer the most from its consequences, whereas the first world, whose contribution to GHG is immense but the impact of the phenomenon to them is minimal. In this article, I made use of climate change impacts and adaptation options to scrutinise the concept of climate justice in Africa. The article sought to establish whether or not climate justice has a place on the African continent. To achieve that objective, I critically assessed climate change impacts and options for adaptation in various African countries vis-à-vis climate justice. The study found that climate justice is a farce for Africa because climate disruptions affect nations differently and adaptive capacities differ as well. It also emerged that climate change-based impacts in Africa largely affect women and poor people. Lastly, the desire for profit among developed countries and climate-based organisations deters the urgency for climate justice across the globe.

**Keywords.** Climate justice, Climate change adaptation, Environmental law, Inequality, Greenhouse gas emissions

### **Introduction and background**

The concept of climate justice was first used in the Paris Agreement whereas considerations of justice can be traced back to Plato in *the Republic*<sup>1</sup>. New theories eventually developed and among them were distributive justice which focused on just distribution of wealth, property and opportunities. The major consideration in the spectrum of social justice was the notion of equality and rights to basic liberties. Rawls defines justice as the ‘first virtue of social institutions’. Climate justice finds residence in climate change matters as a result of the socio-economic effects of climate change, specifically on how climate change affects the general livelihood of communities (Bhusal, 2009). Communities in the third world are affected differently by climate change induced disruptions. The effects of climate change have placed Africa at a cumulative disadvantage due to lack of adequate adaptive capacity. As a result, Africa constitutes the highest population that bear the burden of climate disruption.

IPCC (2007: 35) suggests that “there is strong evidence of increasing air temperature near the earth surface by 0.74 °C from 1906 to 2005 and it is estimated to increase by 6.4 °C on average during the 21st century”. Some of the challenges associated with this increase in temperature include a rise in flooding in coastal areas, a decline in agricultural production, a threat to the productivity of natural resources. It is projected that there will be an increase in the prevalence of diseases such as waterborne diseases (Seo & Mendelsohn 2008). One of the major scientific consequence of climate change is anticipated to be a shift in rainfall patterns resulting in huge impacts on agriculture, food security, and numerous other socio-economic challenges. The availability of water is also at stake due to climate change.

Extreme weather events associated with floods and tropical storms are projected to increase in frequency in most parts of Africa (IPCC, 2007). Sub-Saharan Africa is one of the most vulnerable regions because of the high prevalence of poverty and limited coping capacity (Madzwamuse, 2010). Most communities in the region are reliant on the natural environment for their survival which increase their vulnerability (IPCC, 2013). Communities in Africa are also expected to be exposed to huge water stress due to climate change-induced shifts in water availability and as a result there will be an increased demand of water resources. Therefore, all the anticipated and current consequences of the changing climate require an equitable approach in terms of adaptation, resilience, and mitigation.

Climate justice has become one of the contemporary concepts of justice. The US Environmental Protection Agency (EPA) defines climate justice as “The fair treatment and meaningful involvement of all people regardless of race, colour, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies”. This suggests that climate justice is only achievable when everyone has the same amount of benefit with regards to protection from environmental and health hazards and equality in terms of access to decision-making processes pertaining to healthy environment. This suggests that climate justice can only be achieved if there is an equal participation and representation in terms of all factors pertaining to climate change among all nations in the world. Nevertheless, an assessment of climate change impacts and adaptation options in Africa reveals that climate justice is a farce because the depth of impacts and nature of adaptation strategies employed demonstrate the worst possibility of justice.

Climate change has become a social, political, economic and developmental crisis (Nyahunda & Tirivangasi, 2021) such that it is not surprising that ‘justice’ is a crucial aspect of the phenomenon. Climate change could also be one of the greatest injustices in the world. The

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<sup>1</sup> The Republic is a Socratic dialogue that was authored by Plato around 375 BC pertaining to justice, the order and character of the just city state and the just man.

first world nations and certain international organisations are said to have immensely benefited from climate change in terms of wealth and security at the expense of vulnerable poor people in the third world. The fact that the developed world has shown no intention to compensate for the damage caused is another signal of the injustices associated with that climate change. This implies that climate change has created an intergenerational justice issue wherein those responsible for the major cause of the phenomenon are the less likely to be affected whereas those who contribute less to the phenomenon suffer the most from its effects (Mugambiwa & Rukema, 2018). Moreover, the desire demonstrated by the 1<sup>st</sup> world countries in the initiation of mitigation of the harm in order to reduce emissions leaves a lot to be desired. It resonates the narrative that the third world is on its own and this is demonstrated by a plethora of methods employed by developing countries which are considerably desperate measures.

### **Climate change and the quest for profit**

One of the greatest sources of wealth among developed countries is the fossil fuel industry (Black, 2009). This implies that the 1<sup>st</sup> world is responsible for the emission of greenhouse gases and ultimately climate change through the process of industrialization whereas the third world suffers. Moreover, first world governments and international environmental organisations use their power and profits to perpetuate false solutions to resolve the climate crisis (Roberts & Parks, 2007). As such, those who are least responsible for the causes of climate change suffer the gravest consequences which is a sign that justice in climate or environmental justice is a travesty.

### **Climate change impacts: A travesty of justice**

Climate change impacts in Africa are a travesty of justice because as suggested by the IPCC (2013) the impacts of climate change are remarkable around the world and are widely noticed in the developing world (IPCC, 2013). Many African governments strongly feel that they have paid a heavier price for climate change (World Bank, 2006) because the most marginalized and vulnerable communities of Africa suffer the most from the rise in climate-related disasters (Roberts and Parks 2007). Until the beginning of the 21<sup>st</sup> century, climate change was considered an environmental issue (Nhamo, 2009). Knowledge of climate change has since evolved to such an extent that it is now considered to have developmental implications too. In essence, climate change is not only a threat to the environment, but it also affects the social, economic and political spheres. Africa's agricultural system is largely vulnerable to the impacts of climate change because it reduces agricultural productivity and affects weather-dependent livelihood systems (Ngigi, 2009). As a result of this injustice, Africa is projected to suffer the most from the impacts of climate change compared to first world countries. This is because the concept of climate justice was proposed to link human rights and development in pursuit of a multifaceted approach to safeguard the rights of communities that are most affected by the impacts of climate change. The concept of climate justice also acknowledges the international cooperation for a common cause and the dire need for equitable distribution of the world's resources.

Africa is one of the most affected continents in the world and the level of vulnerability to climate hazards is captivating (UNFCCC, 2007). This is because the continent accommodates some of the most climate variable areas in the world in terms of seasonal time scales. As a result, floods and droughts are bound to constantly occur (IPCC, 2007). The constant shifts in weather conditions result in low harvests by farmers which pose severe challenges on the livelihoods of communities. Sub-Saharan Africa is anticipated to experience intense food and water shortages. Floods are also likely to surge, and desertification will remain a major threat

in arid and semi-arid regions (Christensen et al. 2007). The consequences of climate change call for a need for sustainable methods to be employed for the purpose of adaptation

The effects of climate change in Africa are intensified by a plethora of factors such as illiteracy, poverty, lack of technology and information, lack of skills, limited infrastructure and poor access to resources (Eriksen et al., 2008). Between the years 1906 and 2005 global average surface temperatures have remarkably increased (IPCC, 2007). Numerous potential effects of climate change have been the centre of debate among social scientists. In a study conducted on 11 African counties it was revealed that global warming is harmful to crop production and the negative effects are not consequential to crop production sustained through irrigation (Hassan, 2010). Livestock production was found to be at risk due to global warming, hence, the impacts of climate change range from crop production to animal husbandry (Hassan, 2010).

Another study by Oseni and Bebe (2010) examined approaches and strategies employed to reduce vulnerability and the construction of resilience among farmers in Kenya. From the findings of the study, it emerged that the impacts of climate change pose risks of vulnerability to pastoral communities involved in livestock production systems. In Molua's (2008) study on climate change impacts on agriculture in Cameroon a rise in temperature and growth in precipitation was projected to damage agriculture. Mugambiwa and Tirivangasi (2017: 1) are of the view that "...there are numerous potential effects climate change could have on agriculture. It affects crop growth and quality and livestock health. Farming practices could also be affected as well as animals that could be raised in particular climatic areas." This suggests that poor communities are at higher risk due to the impacts of climate change. The effects will also be extended to the access to drinking water, health of the people and food security. Gbetibouo (2009) found that farmers in the Limpopo province of South Africa are severely affected by unpredictable rainfall.

### **The inequality in water supply and drought**

Water supply is largely determined by the state of temperature and precipitation whose impacts are also visible on the incidence of drought and floods. Freshwater resources are highly influenced by climate change (Bates et al., 2008). Climate change impacts on water significantly affects ecosystems and human activities. The effects of climate change on water supply also cause extreme stress on the environment due to effects on water availability and quality. This implies that the availability of water alone is not enough, the fact that its quality is likely to be impacted also matters the most.

Compromised water supply will result in drought and will have negative effects on food production (Liu et al., 2018). The reason for this is that the incidence of drought result in numerous effects that affect various structures of society and their functioning. Drought is a common phenomenon in countries many countries around the world and its consequences are quite common too. The severe consequences of drought negatively affect the livelihoods of communities. Climate change related drought severely impacts the livelihoods of people because the impacts are more more severe and consistent than those experienced under normal circumstances (Ault et al., 2016). This implies that drought as one of the major effects of climate change brings about huge socioeconomic consequences that severely affects the livelihoods of communities. The impact is largely felt in rural communities where a large number of community members are vulnerable from the consequence of lack of access to recent technology and poverty among other livelihoods related effects.

The phenomenon of climate change results from high or low rainfall which in either case there is high likelihood of drought. Drought is an extreme climate-based event that develops slowly, and it is a costly hazard (Mukherjee et al., 2018; Mugambiwa & Rudigi, 2019). The socioeconomic impacts of drought include loss of crops, increased risk of wildfire, water scarcity and livestock, indirect health effects and increased food prices. Shortage of water related to poor water management results in the incidence of drought (Mukherjee et al., 2018). This, however, cannot be largely blamed on climate change but rather poor management of resources by communities. Causes that are related to shortage of soil moisture, shortage of precipitation, shortage of water in lakes and streams are considered climate-related and they are the largest contributors (Mugambiwa & Tirivangasi, 2017). As a result, despite the existence of numerous causes of drought, poor management of water resources is regarded inconsequential. Droughts have always been a common phenomenon around the world. The probability of drought in the face of climate change is likely to cause extensive damage to the environment which suggests more damage to flora and fauna. The damage also has severe impact on smallholder farmers whose agriculture activities heavily rely on rainfall due to lack of sufficient resources to establish irrigation equipment.

### **Gender equality and equity**

The concept of climate justice also incorporates gender equality and equity. Climate change impacts are disproportionate among women and men, with women bearing a considerably huge burden (Nyahunda et al. 2021). In most parts of Africa, women constitute a majority of smallholder farmers which makes them directly affected by the impacts of climate change which suggests that they are directly faced with the reality of the injustices caused by climate change (Mugambiwa, 2018). Consequently, climate justice advocates for women's voices on climate matters to be heard so that there will be equality among men and women on all matters pertaining to climate change. A majority of smallholder farmers in many parts of Africa are women and climate change adversely impacts the ecosystem services which smallholder farmers heavily depend on (Mugambiwa, 2021). Many changes are expected in weather conditions and they are projected to affect the whole agricultural production system (Nhamo and Chilonda, 2012). Developmental programmes are also projected to be seriously impacted since their backbone in the developing world which constitute of agriculture would have been affected. The rise in temperature and decrease in precipitation is also projected to affect crop production and the quality of water will be compromised. Farmers are expected to face serious challenges in maintain their infrastructure which will eventually result in some of them moving to other areas (Nhamo & Chilonda, 2012)

### **The injustice in climate change adaptation**

Climate change adaptation options in Africa demonstrate the high level of injustice posed by climate change. Adaptation strategies to the impact of climate change constitute actions that in response to climatic stimuli and the action should be meant to exploit associated beneficial opportunities. Adaptation adjustments are categorised as either responses to current climate occurrences or long term planned climate change adaptation (Hisali et al., 2011). Adaptation paves way for adjustments in a system's behaviour and allows the enhancement in its ability to cope with external stresses. In a study by Mugambiwa (2020) farmers in rural Zimbabwe have experienced changes in traditional maize and groundnuts due to heavy pest attack and lack of sufficient water. As a result, the farmers have responded by using heat-tolerant crops such as cotton and sorghum in response to an increase in the frequency of extreme maximum temperature events. The use of different crop types from the previously used was employed as

another adaptive measure in order to minimise the incidence of pest and insect attack. Mugambiwa (2021) concurs that community-based adaptation has the capacity to reduce vulnerability and improve the resilience of the local people to climatic change.

The ongoing changes in climate conditions demonstrate that farmers need to employ more adaptation strategies largely in the developing world because of the high levels of vulnerability (Nhemachena and Hassan, 2007). Inasmuch as mitigation plans could be implemented, they are likely to be insufficient to avoid changes in the global climate hence the need for adaptation (Akoh et al., 2011). Gbetibouo (2008:1) states that the "...extent to which the adverse impacts of climate change are felt depends on the extent of adaptation; without adaptation, climate change would be detrimental". It is important to take into consideration the concept of adaptive capacity as critical in climate justice. Eriksen et al. (2008) asserts that adaptive capacity is the ability of a system to adapt to the effects or impacts of climate change. The capacity is dynamic and is influenced by economic and natural resources as well as social networks, institutions, governance, and technology. In every community there are groups or categories considered to have larger adaptive capacity whereas others are considered to have minimal adaptive capacity. To put this into perspective, the poor may be considered as a group that has minimal adaptive capacity and the rich are considered to have larger adaptive capacity.

Ziervogel et al. (2008: 21) attest that "...agricultural adaptation taking place in Africa is responding more to perceived climate variability rather than climate change, such that these responses are likely to be overwhelmed by climate change and its longer-term implications". This is demonstrated in the adaptation measures employed in agricultural practices which include crop and livestock variation, irrigation practices, rainwater harvesting, and use of drought-resistant crop varieties to mention a few. In Ghana, farmers adopt a wide range of coping and adaptation strategies which include permanent and seasonal migrations and crop varieties which are adopted as a result of increasing incidence of climate-related shocks and stresses (Tambo, 2016).

Wahaa et al. (2013) contends that adaptation strategies employed in many countries in the region show that most farmers use changing of planting dates as an adaptation measure. However, in Ghana other methods that differ from the generality of other farmers in the region are used in the form of drought-tolerant or early maturing crop varieties, mixed cropping and crop switching as well as tree planting practised by farmers to provide protection to their livestock during heat stress. In Zambia, the method of adaptation widely practiced by farmers is creation of contour ridges and ploughing across the slope (Hachileka and Vaatainen, 2011). Nhemachena and Hassan (2007) are of the view that despite having low adaptive capacity, farmers have survived and coped in various ways over time. It has however been established that most farmers in the region are grappling with the need to adapt to altered future climatic and rainfall conditions. Cotton farmers in Gokwe Rural District of Zimbabwe have revealed that in order to cope with climate change they depend on the use of irrigation (Gwimbi, 2009). Unganai and Murwira (2010) have revealed that in Chiredzi, Zimbabwe farmers have abandoned growing traditional crops such as maize, cowpeas and cassava to concentrate on sorghum and groundnuts which require little rains.

The options for adaptation employed in the aforementioned African countries reveals that Africa is on its own with regards to climate change adaptation. This is against a background of the provisions of climate justice which seeks to provide an international rights framework that promote climate and environmental legal imperatives that are rooted in equality and justice. The greatest source of climate injustice is the massive gulf in resources between the first world and third world countries. Due to lack of fairness in the distribution of resources millions of people in the developing world such as Africa cannot lead decent lives due to lack of sufficient

resources needed to effectively respond to climate change and boost agricultural production. In essence, climate change has become one of the greatest sources of injustice which subsequently calls for the urgent need to advocate for the transfer green technologies and other smart climate adaptation strategies to the third world. This implies that the countries that have benefited from emissions through economic development and increased wealth should take a leading role in sharing the benefits with the most vulnerable communities in the developing world.

### **Conclusion**

Climate change impacts and options for adaptation in Africa significantly expose the injustice created by climate change. In this article I have also used the impacts and adaptation options to expose the charade created by the concept of climate justice in Africa. That has ignited the posing of questions; what justice? and whose justice because the state of Africa's response system to climate change resonates vast injustices. This is largely because in order to find solutions to the climate-based disruptions in Africa, there is need to take into consideration the inequalities in human wealth, power, and privilege. Due to harsh economic conditions in many parts of the continent, a plethora of communities are exposed to persistent and entrenched structural inequalities which make them vulnerable to harm from the hazards unbridled by climate change. Indigenous peoples and women form a huge part of individuals that are disproportionately vulnerable to the enduring effects of extreme heat, food and water shortages, infectious disease and floods hence the high levels of inequality and the need for justice in climate change matters.

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