

THE STATE OF CLIMATE CHANGE IN AFRICA

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1. Background

Climate change is having a growing impact on the African continent, hitting the most vulnerable and contributing to food insecurity, population displacement and stress on water resources among other challenges¹. This is due to the fact that Africa is the most vulnerable continent to climate change impacts under all climate scenarios above 1.5 degrees Celsius. Increasing mean temperature trends across Africa are largely attributable to human-induced climate change. Despite having contributed the least to global warming and having the lowest emissions, Africa faces exponential collateral damage, posing systemic risks to its economies, infrastructure investments, water and food systems, public health, agriculture, and livelihoods. Thus, threatening to undo its modest development gains and slip into higher levels of extreme poverty. This vulnerability is exacerbated by the fact that Sub-Saharan Africa has 95% of rain-fed agriculture globally; a large share of agriculture in Gross Domestic Product (GDP) and employment adds to vulnerability, as do other weather-sensitive activities, such as herding and fishing, leading to income losses and increased food insecurity. Additionally, in 2019, Mozambique, Zimbabwe, Malawi, South Sudan and Niger were ranked among the 10 countries most affected by climate change globally². These effects led to deaths among the countries, destruction of infrastructure and a decrease in the GDP due to the fact that agriculture contributes a large share of GDP in African countries therefore destruction disrupts the economy.

Climate change represents a major threat to Africa achieving the Paris Agreement³, 2030 Sustainable Development Goals (SDGs)⁴, the Sendai Framework⁵ and Agenda 2063⁶ which

¹ World Meteorological Organization, (2021). The State of Climate Change in Africa. https://library.wmo.int/doc_num.php?explnum_id=11304

² Ecksten, D. *et al.*, (2021). Global Climate Risk Index. <https://www.germanwatch.org/en/19777>

³ UNFCCC 2015. The Paris Agreement. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

⁴ UN Sustainable Development Goals, 2015. <https://sdgs.un.org/goals>

⁵ UNISDR 2015. Sendai Framework for Disaster Risk Reduction 2015-2030 <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>

⁶ AU 2015. Agenda 2063. https://au.int/sites/default/files/documents/36204-doc-agenda2063_popular_version_en.pdf

emphasize interlinked aims to protect the planet, reduce disaster risk, end poverty and ensure all people enjoy peace and prosperity

2. Climate Change Impacts across Africa

Africa warmed at an average rate of around +0.3 °C/decade between 1991 and 2021, faster than the warming from 1961-1990, at +0.2°C/decade. This increase in temperature is the highest in history for the continent. Sea level rise is increasing along the African coastlines at a higher rate than the global mean rate, especially along the Red Sea and southwest Indian Ocean where the rate is close to 4 mm/year. This is likely to continue in the future, contributing to increased frequency and severity of coastal flooding in low-lying cities or small towns and increased salinity of groundwater due to sea water intrusion. By 2030, 108-116 million people in Africa are expected to be exposed to sea level rise risk. Drought in East Africa has worsened following consecutive failed rainy seasons. The situation is getting worse in the Horn of Africa⁷— especially in Ethiopia, Somalia and parts of Kenya where drought has been declared a state of emergency.

Severe floods have affected South Sudan, Nigeria, Republic of Congo, DRC and Burundi. South Sudan recorded the third straight year of extreme floods leading to elevated water levels of lakes and rivers, resulting from the intense rainfall in 2020 and 2021. On the other hand, many parts of Northern Africa experienced extreme heat, especially in Tunisia, Algeria, Morocco and Libya. This was accompanied by wildfires, sand and dust storms which posed a recurring problem in the area. Similarly, drought-related hazards have claimed the lives of over half a million people and led to economic losses of over USD 70 billion in the region. More than 1,000 flood-related disasters were reported involving more than 20,000 deaths in Africa over this period. It is estimated that by 2050, climate impacts could cost African nations USD 50 billion annually.

In West Africa, the long-term decline in river flow is attributed to increase in temperature, drought and increased water demand. For instance, the total surface area of Lake Chad, which is located close to the Sahara desert, bordering Chad, Cameroon, Nigeria, and Niger, has shrunk from 25,000km² in the 1960s to 1,350km² in the 2000s and remained stable since. Glaciers in

⁷ UNHCR, (2022). Drought Response Emergency Appeal for Emergency Appeal for the Horn of Africa. https://reporting.unhcr.org/document/2716#_ga=2.83720534.1772149991.1669194887-893744166.1669194887

equatorial East Africa: Mount Kenya (Kenya), Mount Kilimanjaro (Tanzania), and the Rwenzoris Mountains (Uganda) are retreating at a faster rate than the global mean.

3. Impact of Climate Change on Africans;

Increased temperature contributed to a 34% reduction in agricultural productivity growth in Africa since 1961 – more than any other region in the world. This trend is expected to continue in the future, increasing the risk of acute food insecurity and malnutrition. A global warming of 1.5 °C is projected to be accompanied by a decline of 9% of the maize yield in West Africa and 20% to 60% of the wheat yield in southern and northern Africa. Climate-related hazards continued to be a major driver of new displacement in Africa. Chronic floods and droughts, sea level rise, and extreme weather events all influence displacement patterns within borders and across international borders. In 2021, around 14.1 million people were internally displaced in Sub-Saharan Africa, including around 11.5 million due to conflict and violence and 2.5 million due to disasters. Increasing consumption combined with more frequent droughts and heat events will increase water demand and put additional pressure on already scarce water resources. Disruption in water availability will impede access to safe water and threatens to trigger conflicts between people who are already contending with economic challenges. Around 418 million people still lack even a basic level of drinking water and 779 million people lack basic sanitation services.

The increasing frequency of short-term climate change events have generated multifaceted implications for peace and levels of security within several countries in Africa. The variances and extremities of flooding and drought have largely impacted a massive agricultural-based and pastoralist population shifting grazing routes and harvest yields. Farmer-to-pastoralist tensions and sudden eruptions of violence have intensified in recent years, at times reigniting pre-existing resource-based intercommunal disputes over land, water and grazing in some regions. Environmental degradation, climate-related food and livestock losses has rapidly increased competition for already restricted resources adding complexities to security and humanitarian access, especially in conflict zones.

4. Adaptation Techniques

Climate-related research in Africa faces severe data constraints, as well as inequities in funding and research leadership which in turn leads to reduced adaptive capacity. The number of climate research publications with locally based authors are among the lowest globally and research led by external researchers may focus less on local priorities⁸. Climate information services that are demand driven and context specific (e.g., for agriculture or health) combined with climate change literacy can be the difference between coping and informed adaptation responses. Across 33 African countries, 23% to 66% of people are aware of human-caused climate change—with larger variation at sub-national scales (e.g., 5% to 71% among states in Nigeria). Climate change literacy increases with education level but is undermined by poverty, and literacy rates average 12.8% lower for women than men. Around 71% of Africans that are aware of climate change agree it should be stopped. Production of important and timely climate information in Africa is hindered by limited availability of and access to weather and climate data.

Cross-sectoral ‘nexus’ approaches provide significant opportunities for large co-benefits and/or avoided damages. Without cross-sectoral, trans-boundary and long-term planning, adaptation and mitigation response options in one sector can become response risks, exacerbating impacts in other sectors and causing maladaptation. For example, maintaining indigenous forest benefits biodiversity and reduces greenhouse gas emissions, but afforestation—or wrongly targeting ancient grasslands and savannas for reforestation—harms water security and biodiversity, and can increase carbon loss to fire and drought. Planned hydropower projects may increase risk as rainfall changes impact water, energy and food security, exacerbating trade-offs between users, including across countries⁸.

Robust legislative frameworks that develop or amend laws to mainstream climate change into their empowerment and planning provisions will facilitate effective design and implementation of climate change response options. Similarly, risk-sensitive infrastructure delivery and equitable provision of basic services can reduce climate risks and provide net financial savings. Ecosystem-based adaptation can reduce climate risk while providing social, economic and

⁸ IPCC 2022. Climate Change 2022: Impacts, Adaptation and Vulnerability Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change https://report.ipcc.ch/ar6/wg2/IPCC_AR6_WGII_FullReport.pdf

environmental benefits (high confidence). Direct human dependence on ecosystem services in Africa is high. Ecosystem protection and restoration, conservation agriculture practices, sustainable land management, and integrated catchment management can support climate resilience. Ecosystem- based adaptation can cost less than grey infrastructure in human settlements (e.g., using wetlands and mangroves as coastal protection)

Lastly, in Africa, the rate of implementation of the Multi-Hazard Early Warning System (MHEWS) is lower than in other regions, with only 4 out of 10 people covered. There is a need to fill the capacity gap in collecting data for basic hydro meteorological variables which underpin better climate services and early warning systems to save lives and livelihoods. There should be greater investment in end-to-end drought and flood early warning systems in at-risk Least developed countries (LDCs), especially for drought warning in Africa.

5. Conclusion

During the COP 27 held in Egypt in November 2022, developing countries achieved a breakthrough as the developed countries agreed to set up a ‘loss and damage’ fund that will greatly assist various countries in Africa in dealing with the aftershocks of climate related destructions. This breakthrough comes after decades of developing countries fighting for assistance in this area but the funds they have been receiving have been debts rather than grants. Though this is a monumental decision that will assist many countries in Africa, the journey ahead is still long as the fund has to be set up, policies and regulations relating to the fund have to be drafted, and finally money has to be availed to the fund so that it is accessible to the developing countries in need.

Africa still has a long journey ahead but through inclusion and teamwork, we will beat the climate crisis and mitigate the effects of climate change across all diverse communities in Africa and in the world in general.