



WEST AFRICA

IN THE THROES OF CLIMATE CRISIS

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This document is sponsored by Rosa Luxemburg Stiftung (RLS) with funds of the Federal Ministry for Economic cooperation and Department of the Federal Republic of Germany. This publication or parts of it can be used for free as long as they provide a proper reference to the original publication.
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December 2021

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FOREWORD

West Africa is one of the world's most vulnerable regions to climate change impacts especially in the areas of energy, agriculture and other livelihoods, health, water, sanitation, security, ecosystem resilience, migrations and populations shifts. Warming in West Africa is greater than the global average, and this trend is expected to continue into the near future. The 6th Report of the Intergovernmental Panel on Climate Change (IPCC) confirms that most part of Africa has already warmed by more than 1°C since 1901, with an increase in heatwaves and hot days¹. Impacts of climate change in West Africa will be severe in both the 1.5 degrees and 2.0 degrees Celsius temperature target scenarios. It is also projected that the West and Central Africa regions will see a high number of hot days within each of these scenarios.

African policy makers and governments have become adept at quickly adopting blueprints and false solutions like 'smart agriculture' Genetically Modified Organisms (GMOs), Reducing Emissions from Deforestation and Forest degradation (REDD+), carbon credit, which fall short of addressing the real problems in any meaningful way. Adopting these narrow responses impose bizarre policies on communities, farmers, and forest dependent people, while effectively alienating them from any real efforts at addressing the climate crisis, even when they are often the most impacted.

For West Africa, true climate justice means that those most impacted should have a voice in crafting the solutions. And for several of these frontline communities, those real solutions involve defending lands and water bodies from mindless 'extractivism' and pollution, mega-projects, and industrial agriculture; while at the same time supporting and promoting transformative economies through agroecology, building community owned and controlled energy democracies, food sovereignty and just transitions. It is pertinent that all these actors across the region work together towards building popular power, developing strategies, strengthening practices of communal solidarity across countries, sharing knowledge, creating formal and informal networks and alliances, and supporting climate justice actions based on a shared understanding of the connectedness of the climate crisis and the need for common concerted responses.

The outcome of COP26 held recently in Glasgow, United Kingdom, shows that help is not coming anytime soon for vulnerable communities in the region.

While there are strong continental climate justice movements, the contributions from the West African region to these continental struggles need to be improved on to ensure that her peculiarities are adequately fed into the wider struggles. It is our hope that this report provides an impetus for conversations around how organizations, networks and movements in the region can enrich their engagement and participation in existing pan African climate justice platforms.

Nnimmo Bassey
Director, HOMEF

1. <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa>

1.0 INTRODUCTION

Climate change remains one of the most discussed global environmental threats for more than three (3) centuries now. Scientists have affirmed that climate change is the long-term alteration in Earth's climate and weather patterns blaming the causes on human activities².

This scientific discovery began in the early 19th century when ice ages and other natural changes in paleoclimate were first assumed, and the natural greenhouse effect was first known. The argument by scientists that human emissions of greenhouse gases could change Earth's energy balance and climate first came in the late 19th century.

This was followed by many other theories of climate change, which include forces from volcanism to solar variation. In the 1960s, the evidence for the warming effect of carbon dioxide gas became increasingly convincing³. In a recent report released in August 2021 by Intergovernmental Panel on Climate Change (IPCC), it affirmed that many of the changes observed in the climate are unprecedented in thousands, if not hundreds of thousands of years, and some of the changes already set in motion such as continued sea level rise are irreversible over hundreds to thousands of years.

Noting, strong and sustained reductions in emissions of carbon dioxide (CO₂) and other greenhouse gases would limit climate change.⁴ It is very significant for researchers to continue to monitor regional changes in the earth's climate system.

Noticeably, a sharp increase in global temperatures was recorded in the early 1980s. The year 1988 was the revelation year when the world began to take the issues of climate change seriously after James Hansen, a National Aeronautics and Space Administration (NASA) scientist gave a proof and presented models to congress in June, saying he was "99 percent sure" that global warming was upon us⁵. This led to the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) the same year⁶. Going by its mandate, reports from IPCC are being used to support international climate policymaking.

In 1990 when the First IPCC Assessment Report (FAR) was published, the importance of climate change as a challenge with global consequences and requiring international cooperation became more revealing⁷. This necessitated further actions that led to the creation of the United Nations Framework Convention on Climate Change (UNFCCC), the significant international treaty to reduce global warming and cope with the consequences of climate change. The UNFCCC, signed in 1992 at the United Nations Conference on Environment and Development, constitutes the foundational climate agreement that has provided the platform for most subsequent international climate agreements. The UNFCCC, for example, birthed both the Kyoto Protocol and Paris Agreement.

2. History.com article (2017). "Climate Change History, Natural Disaster and Environment". A&E Television Network.
<https://www.history.com/topics/natural-disasters-and-environment/history-of-climate-change>

3. Spencer Weart (2011). "The Public and Climate Change". The Discovery of Global Warming.
https://en.wikipedia.org/wiki/History_of_climate_change_science

4. IPPC Report (August 9, 2021). Climate change widespread, rapid, and intensifying, Newsroom
<https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/>

5. Mitchell, J. Murray (1961). "Recent Secular Changes of Global Temperature". Annals of the New York Academy of Sciences.

6. https://www.history.com/topics/natural-disasters-and-environment/history-of-climate-change#section_8
<https://www.ipcc.ch/about/history/>

7. *ibid*

The ultimate objective of these agreements under the UNFCCC is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system, in a time frame which allows ecosystems to adapt naturally and enables sustainable development⁸.

To date, the UNFCCC has organized 26 whole negotiations without reaching a commitment to lowering carbon emissions.

The Paris Agreement was negotiated by 196 parties at the 21st COP of the United Nations Climate Change Conference in Paris, France and adopted as an international treaty on climate change in 2015. It covers climate change mitigation, adaptation, and finance⁹.

The Agreement sets long-term goals to guide all nations to substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 degrees Celsius while pursuing efforts to limit the increase even further to 1.5 degrees; review countries' commitments every five years, provide financing to developing countries to mitigate climate change, strengthen resilience and enhance abilities to adapt to climate impacts¹⁰.

For six years there had been a global push for government of nations to remain committed to the provisions of the agreement under the voluntary National Determinant Contributions (NDCs) but this has mostly resulted in pledges made by government rather than feedback on implemented strategies of action towards reducing their emissions. Friends of the Earth International (FoEI) argued that “the national pledges which form the backbone of the Paris Agreement are insufficient to keep global heating within these temperature thresholds, and they do not take into account nations' equitable share of responsibility.

Developed countries have fallen far short in both reducing their greenhouse gas emissions and providing developing countries with the agreed financing and technical assistance for mitigation, adaptation, and to attend to loss and damage”¹¹.

Many climate justice groups and indigenous people across the globe thought COP 26 would be used to address the deficiencies in the Paris Agreement but the outcome was very disappointing. FoEI's statement released on November 13, 2021 said a lot about the COP 26.

“The outcome of COP26 leaves developed countries free to keep polluting whilst giving the green light for massive land grabs for offsets in developing countries. The UK Presidency and their allies are patting themselves on the back but no deal at all would have been better. It is nothing less than a scandal. Just saying the words 1.5 degrees is meaningless if there is nothing in the agreement to deliver it. COP26 will be remembered as a betrayal of global South countries - abandoned to the climate crisis with no money for the energy transition, adaptation or loss and damage. Perhaps it is no surprise that this was the moment a deal was finally forced through on carbon markets - a free pass for rich countries reluctant to cut emissions.

Many Southern delegates struggled to attend or make their voices heard, but fossil fuel corporations were present in force. This deal could mean a rise in global emissions and - combined with a weak commitment to 'net zero' by mid-century and the inclusion of seductive sounding 'nature-based-solutions' (read massive tree planting in the global South) -will fuel a grabbing of Indigenous and developing countries' land for carbon offsets, not to mention a rush for unproven technofixes.

The 150,000 people out on the streets for climate justice in Glasgow know the solutions to the climate crisis: a just transition to a world without fossil fuels and climate finance flowing from developed to developing countries. Disgracefully, rich countries opted instead for the Glasgow 'get-out clause' while hanging developing countries out to dry.¹²”

8. *United Nation Framework Convention on Climate Change* <https://unfccc.int/about-us/about-the-secretariat>

9. https://en.wikipedia.org/wiki/Paris_Agreement

10. Taraska, Gwynne (15 December 2015). "The Paris Climate Agreement". Centre for American Progress. <https://www.un.org/en/climatechange/paris-agreement>

11. FOEI report (11 December 2020). "Five years on, the Paris Agreement is a reminder that the root causes of the climate crisis remain unaddressed." https://www.foei.org/press_releases/five-year-anniversary-paris-agreement-climate-cop

12. FOEI report (13 November 2021). *Scandalous outcome to COP26 as 1.5° hangs by a thread* <https://www.foei.org/features/scandalous-outcome-to-cop26-as-1-5-hangs-by-a-thread>



IMAGE FROM [HTTPS://WWW.AFRICANEWS.COM/2019/03/19/BEIRA-THE-MOZAMBIAN-CITY-BARRED-BEATEN-BATTERED-BY-CYCLONE-IDAI/](https://www.africanews.com/2019/03/19/beira-the-mozambican-city-barred-beaten-battered-by-cyclone-idai/)

Many experts have pointed out that the year 2020 has showed a record of one of the hottest years having close tie with year 2016, marking the end of the hottest decade in the books as the world grapples with climate change¹³.

A recent Cable Network News (CNN) report indicated the seven (7) most devastating climate disasters of the summer in 2021. According to CNN, “the United States experienced one of the worst climate disasters this summer just as the West struggled with unrelenting drought and dozens of wildfires. A deadly heat wave that heats up the Northwest in June and months later, there were high frequencies of the occurrence of hurricanes.¹⁴”

In Africa, similar climate crisis has been reported

in recent years which show a growing trend of more destructive climate disasters. As analysed by Save the Children, over 1200 people lost their lives due to the cyclones, floods and landslides in Mozambique, Somalia, Kenya, Sudan and Malawi¹⁵.

Two consecutive category-4 tropical cyclones hit Mozambique within intervals of six weeks in March and April 2019, causing extensive destruction and damage to Sofala, Tete, Zambezi, Cabo Delgado, and Nampula Provinces in the central and northern parts of the country affected 1.8 million people¹⁶.

13. Emma Newburger (2021). 2020 was one of the hottest years on record, tied with 2016. CNBC
<https://www.cnbc.com/2021/01/08/climate-change-2020-one-of-the-hottest-years-on-record-tied-with-2016.html>

14. Rachel Ramirez (October 2, 2021). The 7 most devastating climate disasters of summer 2021. CNN
<https://edition.cnn.com/2021/10/02/weather/climate-disasters-of-summer-2021/index.html>

15, 16. Save the Children (2019). Natural disasters claim more than 1200 lives across East and Southern Africa
<https://reliefweb.int/report/world/2019-natural-disasters-claim-more-1200-lives-across-east-and-southern-africa>

2.0 STATE OF CLIMATE CHANGE IN AFRICA ACCORDING TO IPCC¹⁷

In August 2021, the Intergovernmental Panel on Climate Change (IPCC) released its 6th assessment report on the state of the global climate. The report painted dire pictures of the crisis leading the Secretary General of the United Nations to describe the situation as Code Red for human driven global heating¹⁸.

The highlights of the report with reference to West Africa are captured in the sections below.

2.1 Common African regional changes

- Mean temperatures and hot extremes have emerged above natural variability, relative to 1850–1900, in all land regions in Africa (high confidence).
- The rate of surface temperature increase has generally been more rapid in Africa than the global average, with human-induced climate change being the dominant driver (high confidence).
- Observed increases in hot extremes (including heatwaves) and decreases in cold extremes (including cold waves) are projected to continue throughout the 21st century with additional global warming (high confidence).
- Marine heatwaves have become more frequent since the 20th century

and are projected to increase around Africa (high confidence).

- Relative sea level has increased at a higher rate than global mean sea level around Africa over the last 3 decades. Relative sea-level rise is likely to continue around Africa, contributing to increases in the frequency and severity of coastal flooding in low-lying areas to coastal erosion and along most sandy coasts (high confidence).

- The frequency and intensity of heavy precipitation events are projected to increase almost everywhere in Africa with additional global warming (high confidence).

2.2 In West Africa,

IPCC further observed increase in river flooding; increase in drying and agricultural and ecological droughts; increase in meteorological droughts at GWL 4°, mostly in seasonal timescales; projected increases in mean wind speed; and increase in heavy precipitation and pluvial flooding.

(a) Annual me at 1°C global

Warming at 1°C is generally larger oceans in both Across most regi simulated patter

(b) Annual me relative to 18



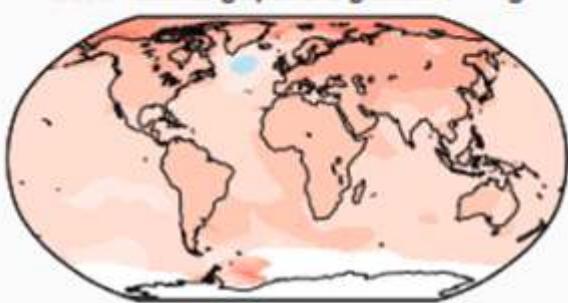
17. https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Africa.pdf

18. UN News (9 August 2021). IPCC Report: 'Code red' for human driven global heating warns UN chief. <https://news.un.org/en/story/2021/08/1097362>

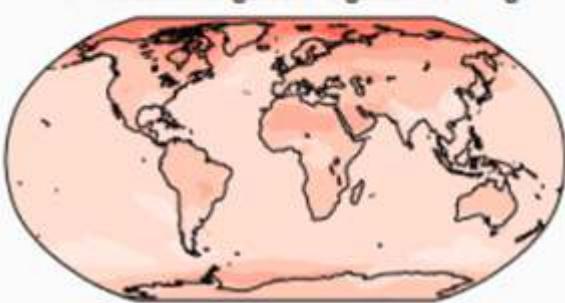
Mean temperature change ($^{\circ}\text{C}$) from warming

affects all continents and
warmer over land than over the
observations and models.
tions, observed and
models are consistent.

Observed change per 1°C global warming

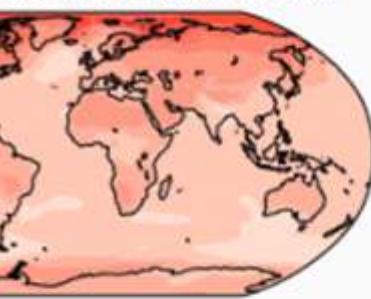


Simulated change at 1°C global warming

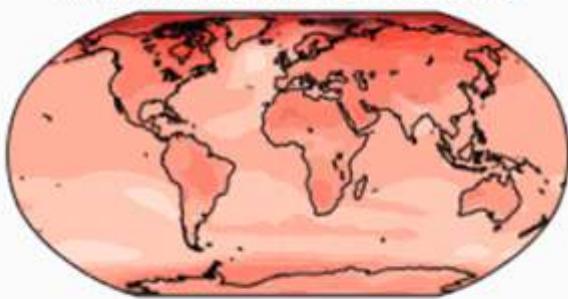


Mean temperature change ($^{\circ}\text{C}$) 1850–1900

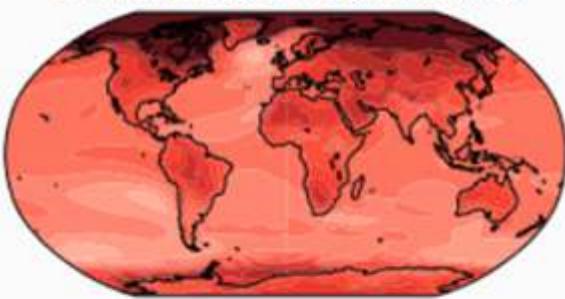
Change at 1.5°C global warming



Simulated change at 2°C global warming



Simulated change at 4°C global warming



Impact of temperature change¹⁹

19. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf

3.0 STATE OF CLIMATE CHANGE IN WEST AFRICA



Map of West Africa²⁰ showing the transition or Sahelian zone

West Africa lies between latitudes 4°N and 28°N and longitudes 15°E and 16°W. The West African region can be divided into four climatic sub-regions namely the Guinea Coast, Sudano-Sahel, Sahel (extending eastward to the Ethiopian border) and the Sahara, each with different climatic conditions.²¹ The seasonal cycle of rainfall is mainly driven by the south-north movement of the Inter-Tropical Convergence Zone (ITCZ) which is characterized by the confluence between moist south-westerly monsoon winds and the dry north-easterly harmattan²².

²¹Agyeman, Richard Yao Kuma; Quansah, Emmanuel; Lamptey, Benjamin; Annor, Thompson; Agyekum, Jacob (2018). "Evaluation of CMIP5 Global Climate Models over the Volta Basin: Precipitation". *Advances in Meteorology*. Retrieved 2019-08-08

²²Sultan, Benjamin; Janicot, Serge (2003-11-01). "The West African Monsoon Dynamics. Part II: The "Pre-onset" and "Onset" of the Summer Monsoon". *Journal of Climate*. 16 (21): 3407–3427

S/N	Sector	Drivers	Peculiar country in West Africa
1	Energy	<p><i>The energy sector is a key contributor to climate change, accounting for more than two -thirds of global greenhouse gas emissions²³.</i></p> <ul style="list-style-type: none"> ● Exploration/burning of Oil and Gas, ● Mining/burning of coal and the extraction of other solid minerals ● Construction of Big Dams 	All West African countries burn fossil fuels but there are some countries like Ghana, Mali and Nigeria that produce oil and gas and the extraction of solid minerals in West Africa
2	Agriculture	<p><i>Agriculture also contributes a significant share of the greenhouse gas emissions that cause climate change – 17% directly through agricultural activities and an additional 7 14% through land use changes²⁴ .</i></p> <ul style="list-style-type: none"> ● Large scale agriculture from oil palm and rubber plantations results to massive deforestation which releases large quantity of CO₂ into the atmosphere, ● Use of agro -chemicals also contributes to the emission of nitrate oxide and methane gases. 	All West African countries. The rate of land conversion for agro - commodities is at an alarming rate in Nigeria, Ghana, Cote D'Ivoire etc.
3	Transportation	The environmental impact of transport is very significant because it is a major user of energy that burns most of the world's petroleum products responsible for a lot of air pollution such as carbon dioxide emission, nitrous oxides and other particulates which is a significant contributor to global warming. Shipping currently accounts for about 3% globally anthropogenic CO ₂ emissions ²⁵ .	All West African countries.

Drivers of Climate Change in West Africa

Over the past decades, West Africa has experienced more frequent and more intense climate extremes which make the region a climate-change hotspot, with climate change likely to lessen crop yields and production, with resultant impacts on food security if the world warms more than 1.5° C²⁶. West Africa's coastal communities are faced with disturbing risks from climate change. Demographers predict that as many as 85 million people could inhabit the region's coastal cities by 2050.

The World Bank likewise estimates that around 6,500 square kilometres of the region's coastal areas could be severely degraded by rising sea levels²⁷. Recent events show that countries the region are already experiencing rising temperatures, shifting precipitation patterns, and increasing extreme events as highlighted below.

²³Molly Walton (23 March 2020). *If the energy sector is to tackle climate change, it must also think about water*. IEA. <https://www.iea.org/commentaries/if-the-energy-sector-is-to-tackle-climate-change-it-must-also-think-about-water>

²⁴ OECD Report (2016). *Agriculture and Climate Change: Towards Sustainable, Productive and Climate Friendly Agricultural Systems*.

https://www.oecd.org/agriculture/ministerial/background/notes/4_background_note.pdf

²⁵ Festus Okotie (2019). *Adaptation of Nigeria's Transportation Sector to Climate Change*. <https://www.proshareng.com/news/TRANSPORTATION/Adaptation-of-Nigeria-s-Transportation-Sector-to-Climate-Change/48471>

²⁶. Global warming: severe consequences for Africa - <https://www.un.org/africarenewal/magazine/december-2018-march-2019/global-warming-severe-consequences-africa>

²⁷. Robert Muggah (2021). *West Africa, Climate Change Equals Conflict: The region is the poster child for insecurities already brought on by global warming*. *Foreign Policy inside report*

Mauritania: The country spreads across 1,030,700 square kilometres of West Africa and more than seventy five percent of Mauritania's territory of about 1 million square kilometres is desert, and only about 10 percent is arable.²⁸ It is one of the Sahelian countries that have been badly hit by successive droughts over the past 30 years²⁹.

The effects of climate change including rising temperature, reduced water availability and the occurrence of floods and other extreme weather events are currently visible in the country. Most agriculture and crops are predominantly rain fed and their yields highly depend on water availability from precipitation. Smallholder farmers in Mauritania are increasingly challenged by the uncertainty and variability of weather caused by climate change and are prone to drought³⁰.

Mali: The Sahelian landlocked country is highly vulnerable to climate change because it is already experiencing frequent droughts, variability in annual rainfall, increased local temperatures, and the magnitude of extreme weather events³¹. The climate change scenario is fuelling the crisis in Mali, and this has created a lot of struggles over shrinking natural resources and people's sources of livelihoods which put families in critical condition of being unable to sustain themselves via their own crops as yields drop dramatically.

Second, people depend on their animals for their livelihoods. If they don't have food and water, the animals become weak and their value drops, or worse, they die. The monthly climatology of mean temperature and precipitation in Mali from 1991 - 2020 showed the reason why Mali is one of the most impacted places by climate change. Between April to July of each year, the country is usually at an elevated

temperature of above 35oC with a very low annual mean rainfall of 35.78 mm. This is one of the reasons why the country is experiencing worse drought and the encroachment of desert³².

Increasing desertification, partly due to climate change, means the animals people depend on for their livelihoods also struggle to feed due to the gradual disappearance of green grass. In order not to allow the animals to lose economic value or die, herdsmen have to move in search of natural resources. They tend to migrate towards the south where there is pasture for animals to graze, but this is also the land that farmers depend on. This in-turn creates tensions and competition between communities – who controls the water points or the fertile lands. These tensions can quickly escalate into localised violence – an example of climate change being a driver of violence³³.

Niger: In Niger just like other Sahel countries, the inhabitants are exposed daily to the threat of climate change. Temperatures are rising 1.5 times faster than in the rest of the world, leading to worsening droughts, regular floods and soil degradation which directly result in a decline in agricultural productivity and increased food crisis³⁴. As was earlier established by the climate change situation in Mali, violence in Niger Republic is linked to the scarcity of natural resources, which has soared in recent years, displacing over thousands of people in their own communities and negatively impacting small-scale farmers³⁵.

28 <https://www.ifad.org/en/web/operations/w/country/mauritania>

29 Government of Mauritania, National Action Plan – Combat against Desertification (PAN-LCD)

30 Sissoko K. van Keulen H., Verhagen J., Tekken V., and Battaglini A (2011). "Agriculture, Livelihoods and Climate Change in the West African Sahel," Reg. Environ. Chang., vol. 11, no. 1, pp. 119–125.

<https://reliefweb.int/report/mali/climate-change-profile-mali>

31. Climate Change Knowledge Portal <https://climateknowledgeportal.worldbank.org/country/mali>

32. ICRC Article Report (2021). Mali's invisible front line: [climate change in a conflict zone](https://www.icrc.org/en/document/mali-invisible-front-line-climate-change-conflict-zone) <https://www.icrc.org/en/document/mali-invisible-front-line-climate-change-conflict-zone>

33. The World Bank (October 2021). [This is How Niger Acts Against Climate Change](#).

34 <https://www.worldbank.org/en/news/feature/2021/10/20/this-is-how-niger-is-battling-climate-change>

35. *ibid*

Senegal: Senegal's economy is 'highly vulnerable' to the effects of global warming, and has a limited capacity to adapt. Sixty-seven percent of Senegalese reside in urban coastal zones where 90% of the country's industrial activities take place.

These industrial activities as well as population expansion put the coastal-urban areas at risk from flooding and erosion. In addition, other forecasts show that there are incidences of increasing temperature and reductions in rainfall by an additional 20%³⁶.which has resulted in crop failures and food scarcities in farming areas, intensified by increased desertification in the east of the country as the Sahara expands³⁷. Also, the sea level is expected to rise faster in Senegal and other West African countries than the global average.³⁸

Burkina Faso: A 2019 press release by Reliefweb stressed that climate change triggers rural exodus in Burkina Faso. The report stated that crop production had begun failing as desertification and drought took their toll on the land turning half of the farmland soil into sand and has negatively affected 80% of the population relying on agriculture and livestock³⁹. Similar to other West African countries sharing borders with the other countries, there have been an increase in climate induced armed conflict and terrorism which is fuelling increased food insecurity and climate refugees⁴⁰.

Nigeria: Nigeria experiences dry and wet seasons. The wet season (summer) is normally from April to October while the dry season (winter) is from

November to March⁴¹. As a result of climate change it has become difficult to separate dry and wet seasons from each other and farmers are the major victims of these variations. Climate change in Nigeria threatens the growth of the economy in the agriculture, fishery, and forestry sectors because of their dependent on climatic conditions⁴².

There is further evidence in Nigeria that the climate has been changing because of the documented cases of increasing temperature; rainfall variability; rise in sea level and flooding; drought and desertification; land degradation; and more frequent extreme weather events which affect freshwater resources and lead to the loss of biodiversity⁴³.

Gambia: The Gambia is one of the most vulnerable countries to sea level rise⁴⁴. For about six (6) decades now the Gambia has witnessed declining precipitation , increased frequency and length of drought spells, periodic cold spells and heat waves, sometimes catastrophic flash floods, which are directly linked to the impacts of climate change⁴⁵. More than 98% of agricultural lands in the Gambia are rain-fed, making the sector highly vulnerable to rainfall variability with a 100% fluctuation from year to year in the yield of some major crops⁴⁶.

Climate links (2017). At a Glance: [Climate Projections and Impacts](https://www.climatelinks.org/countries/senegal)
<https://www.climatelinks.org/countries/senegal>

<https://www.adaptation-undp.org/explore/western-africa/senegal>

Croitoru, Lelia; Miranda, Juan José; Sarraf, Maria (2019-03-13). The Cost of Coastal Zone Degradation in West Africa. World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/31428>

<https://reliefweb.int/report/burkina-faso/burkina-faso-climate-change-triggers-rural-exodus>

Climate and Environment (2019). [Migration and the climate crisis: the UN's search for solutions](https://news.un.org/en/story/2019/07/1043551). UN News
<https://news.un.org/en/story/2019/07/1043551>

S&P Global. The Weather and Climate in Nigeria. <https://www.studycountry.com/guide/NG-climate.html>

Future learn (August 3rd, 2021). [What are the impacts of climate change in Nigeria?](https://www.futurelearn.com/info/futurelearn-international/impacts-climate-change-in-nigeria)

<https://www.futurelearn.com/info/futurelearn-international/impacts-climate-change-in-nigeria>

Ikpe E, Sawa; Ejeh (2017). Evidence of Climate Change and Adaptation Strategies among Grain Farmers in Sokoto State, Nigeria. Iosrjournals. Volume 11

<https://www.iosrjournals.org/iosr-jestft/papers/vol11-issue%203/Version-2/A1103020107.pdf>

http://www.columbia.edu/~msj42/pdfs/ClimateChangeDevelopmentGambia_small.pdf

ibid

ibid

Ghana: Climate change is predicted to affect vital water resources, energy supplies, crop production and food security systems in Ghana. With its three northern regions especially reportedly noted as being the most vulnerable, Ghana is already experiencing increased extreme weather conditions with higher incidences and more prolonged periods of flooding and droughts⁴⁷.

The average annual temperature has increased 1°C in the last 30 years in Ghana as a result of climate change which more revealing through: (i) increase temperatures, (ii) diminishing in the amount of rainfall and increased variability, (iii) rising sea levels and (iv) high incidence of weather extremes and disasters that decreases the production of crops that are sensitive to climate change, including cassava and cocoa, and by a lack of agricultural diversification⁴⁸.

Benin Republic: In Benin there is a complete decline of rain, rising temperatures, especially in the northern part of the country, as well as droughts, floods, and late and violent rain. These major climatic hazards affect livelihoods and patterns in the agriculture, water resources, coastal and forestry sectors.

This has led to unprecedented impacts over the last three decades, in this case, the drop in agricultural yields, the alteration of agricultural timelines, the drop in water levels in dams for drinking water supply, the elongation of the low-water period, the submersion of water banks, etc. In addition, Benin is a coastal country. If nothing is done a third of the coastline could disappear as a result of the rise in sea level⁴⁹.

Guinea Bissau: Climate change is now recognized to have a significant impact on disaster management efforts and pose a significant threat to the efforts to meet the growing needs of the most vulnerable populations in Guinea Bissau. Along the coast of the country, floods are a

recurring natural hazard; this is the same with drought having devastating effects on agricultural lands. The coast will continue to receive shock and negative impacts in the future because of heavier rainfall events⁵⁰. Sea level rise continues to affect Guinea-Bissau's coastal region and is a serious threat to 70% of the population who reside along the coast. Increased salinization from the ocean has harmed rice production, caused coastal erosion, and inundated coastal aquifers. Increased temperatures and humidity is increasing malaria transmission, flooding will incite the spread of waterborne diseases, drought will escalate the risk of meningitis which can cause the emergence of infections and epidemics, and increased temperatures will worsen air pollution and increase the threat of acute respiratory illnesses⁵¹.

Guinea: Guinea is both exposed and sensitive to climate change and has very little capacity to adapt. Guinea's primary economic activities (except for mining) are highly vulnerable to the impacts of climate change. The drought that affected the country during 1961 to 1990 has strongly influenced the hydrological model of 23 watersheds, including the Gambia, Niger, and Senegal⁵².

The severe droughts experienced by Guinea in 2002, and floods in 2015, contributed significantly to a decline in cereal crop yields. Projected climate trends will likely exacerbate climate change impacts⁵³. The mean annual temperature is projected to increase by 1.1° to 3.0°C and 5.3°C by 2060 and 2090 respectively. These changes could result in precipitation drops deviating 36.4 percent from the current norm in 2050 to 40.4 percent by 2100⁵⁴. This decrease in precipitation will have significant impacts on economic activities, particularly affecting agriculture, livestock, water resources (surface water and groundwater),

47. Cameron, C. (2011): Climate change finance and aid effectiveness: Ghana Case Study. OECD <http://www.oecd.org/dac/environmentdevelopment/48458430.pdf>

48. https://www.adaptation-undp.org/sites/default/files/downloads/ghana_national_climate_change_adaptation_strategy_nccas.pdf

49. Benin adopts national legislation on climate change - <https://www.adaptation-undp.org/benin-adopts-national-legislation-climate-change>

50. Climate Knowledge Portal. <https://climateknowledgeportal.worldbank.org/country/guinea-bissau/vulnerability>

51. ibid

52. USAID (2020). Climate Risk Profile Guinea. https://www.climatelinks.org/sites/default/files/asset/document/Guinea_CRP_Final_0.pdf

53. The joint UNDP-UN Environment National Adaptation Plan Global Support Programme (NAP-GSP) [country brief 2020](https://www.globalsupportprogramme.org/sites/default/files/resources/nap-gsp_guinea_countrybrief_2020.pdf). https://www.globalsupportprogramme.org/sites/default/files/resources/nap-gsp_guinea_countrybrief_2020.pdf

54 ibid

forestry, and coastal zones. Climate change may also have a direct impact on the transmission of diseases from animals, such as that of Ebola in 2014⁵⁵.

Sierra Leone: Records shows rising sea levels on the coastal zone in rural communities in the country which further exacerbates shoreline recession, increases flood frequency probabilities, inundates coastal lands and wetlands, and the salinizes surface waters and ground-waters.⁵⁶ There is evidence of a significant reduction in annual rainfall in the northwest. There is only limited support for the widely held belief that the start of the rainy season is becoming more erratic and that extreme events are becoming more common. El-Niño was significant in the southeast. If these trends continue, they will exacerbate the consequences of temperature increase⁵⁷. Other impacts are damaged infrastructure, reduced agricultural production, undernourishment, economic instability, loss of livelihoods, social disturbances, high mortality rates, interrupted hydropower supply, displacement of communities, relocation to unplanned settlements, and seaweed emergence along the coast and saline water invasion⁵⁸.

Liberia: Liberia is vulnerable to the impacts of climate variability and change, such as warmer temperatures, increases in annual rainfall, and increases in the frequency of heavy rainfall event⁵⁹. The country is vulnerable to extreme weather, the coastal effects of sea level rise, and changing water systems and water availability. In terms of agriculture, major climate-related risks are linked to seasonal changes of rainfall pattern

and an increase in rainfall during critical moments in the growing season, leading to reduced crop yields⁶⁰.

Togo: Togo is currently experiencing climate disruption that is characterized by irregularity in onset as well as overall shortening of the rainy season, delay of the arrival of potentially useful rains, poor distribution of rainfall over the year, high temperatures, and drought spells and floods⁶¹. In northern Togo, especially , crop yields are usually low because of irregular rainfall, increase in the temperature, low soil fertility, reduced-quality seeds and inadequate land preparation instruments, among others⁶². Furthermore, changing climatic conditions facilitate the spread of infectious diseases taking an increasing toll on food security and human health.⁶³

Cote D'Ivoire: The consequences of climate change are becoming increasingly pronounced in this country as rainfall is becoming more frequent in the dry season with elongated dry periods being experienced in the rainy season. At the same time, uncharacteristically heavy downpours are causing flooding and soil erosion and the disruption to agricultural production cycles⁶⁴.

The projected impacts of climate change include extended periods of drought, loss of soil fertility and shorter growing season⁶⁵. Similarly, the World Bank has affirmed that “there will be more flooded areas, leading in turn to heavy loss of life and the forced relocation of numerous families and affecting economic activities and critical infrastructures in the country.”⁶⁶

55. *ibid*

56. National Adaptation programme of Action Final Report (2007). <https://unfccc.int/resource/docs/napa/sle01.pdf>

57. Richard W. Jalloh, Ajah L. (2019). Changes in Rainfall in Sierra Leone: 1981–2018. ResearchGate https://www.researchgate.net/publication/337977473_Changes_in_Rainfall_in_Sierra_Leone_1981-2018

58. Environment Protection Agency of Sierra Leone (June 2020). <https://napglobalnetwork.org/wp-content/uploads/2020/10/napgn-en-2020-Sierra-Leone-Climate-Change-Communications-Strategy-under-the-NAP.pdf>

59. USAID (2021). Climate Change Adaptation in LIBERIA https://www.climatelinks.org/sites/default/files/asset/document/liberia_adaptation_fact_sheet_jan2012.pdf

60. https://en.wikipedia.org/wiki/Climate_change_in_Liberia

61. Sarr, B. Present and future climate change in the semi-arid region of West Africa: A crucial input for practical adaptation in agriculture. *Atmos. Sci. Lett.* 2012, 13, 108–112. <https://rmet.sagepub.com/doi/full/10.1002/asl.368>

62. Gadedjiso-Tossou, A.; Avellán, T.; Schütze, N. Potential of Deficit and Supplemental Irrigation under Climate Variability in Northern Togo, West Africa. *Water* 2018, 10, 1803. <https://www.mdpi.com/2073-4441/10/12/1803>

63. WASCAL (2021). Combating Climate Change: Improving Livelihoods <https://wascal.org/wp-content/uploads/2021/10/climate-change-and-food-security-in-west-africa-1.pdf>

64. Michael Dreyer (2016). Adapting to climate change and increasing the resilience of the population in south-west Côte d'Ivoire. GIZ Press <https://www.giz.de/en/worldwide/19301.html>

65. Samuel T, Dansira D (Dec.2018). Climate-Smart Agriculture in Côte D'ivoire: What are the Entry Points for Investment? <https://ccafs.cgiar.org/news/climate-smart-agriculture-cote-divoire-what-are-entry-points-investment>

66. Understanding Côte d'Ivoire's Sustainable Development Issues in Five Charts, World Bank full report (2018) <https://www.worldbank.org/en/country/cotedivoire/publication/cote-d-ivoire-economic-update-understanding-cote-d-ivoire-sustainable-development-issues-in-five-charts>

4.0 EFFECTS OF CLIMATE CHANGE ON MIGRATION, DISPLACEMENTS, AND CONFLICTS IN WEST AFRICA

West Africa is widely recognized as one of the most mobile regions in the world, accounting for over 50% of global migration flows.⁶⁷ According to the Platform on Disaster Displacement, “millions of people are compelled to leave their homes because of floods, tropical storms, droughts, melting glaciers, earthquakes and other natural hazards every year.

Many find refuge within their own country, but some have to move abroad. While some movement is well documented, the total number is unknown.”⁶⁸ This illustrates that there is a strong correlation between climate, conflict, poverty, and persecution forced migration that increases the complexity of refugee emergencies.

The UN Refugee Agency has described climate crisis as a human crisis because it is driving displacement and makes life harder for those already forced to flee. But further argued that most climate change displacement is internal, not cross-border⁶⁹. A World Bank report warns that Climate change could start forcing millions of Africans out of their homes within the next 9 years, and without any concrete climate and development action, West Africa could see as many as 32 million people forced to move within their own countries by 2050⁷⁰.

A 2019 Africa report on internal displacement by internal displacement monitoring centre was able to establish the trends in internal displacement across the region.

According to the report,⁷¹ “over the past decade, it was revealed that Africa has continued to lead as the region most affected by displacement associated with conflict and violence and that each year high numbers of cases are recorded, and average figures have increased. In 2014 and 2017 there were peaks in countries such as CAR, DRC, Nigeria and Somalia as a result of intercommunal clashes, armed conflict and indiscriminate attacks on civilians. In the Africa region, around 7.5 million new cases of internal displacements were recorded in 2018 alone, accounting for more than two-thirds of the global total of displacements. The report further revealed that most of the countries with high levels of new displacements also have the largest number of people living in internal displacement camps at the end of the year. This suggests that protracted conflict and instability both trigger new displacements and contribute to prolonging them.”

Climate change is widely described as a "threat multiplier" because of the role it plays worsening the traditional cause of conflict because of the way climate change increase the competition over increasingly scarce resources.

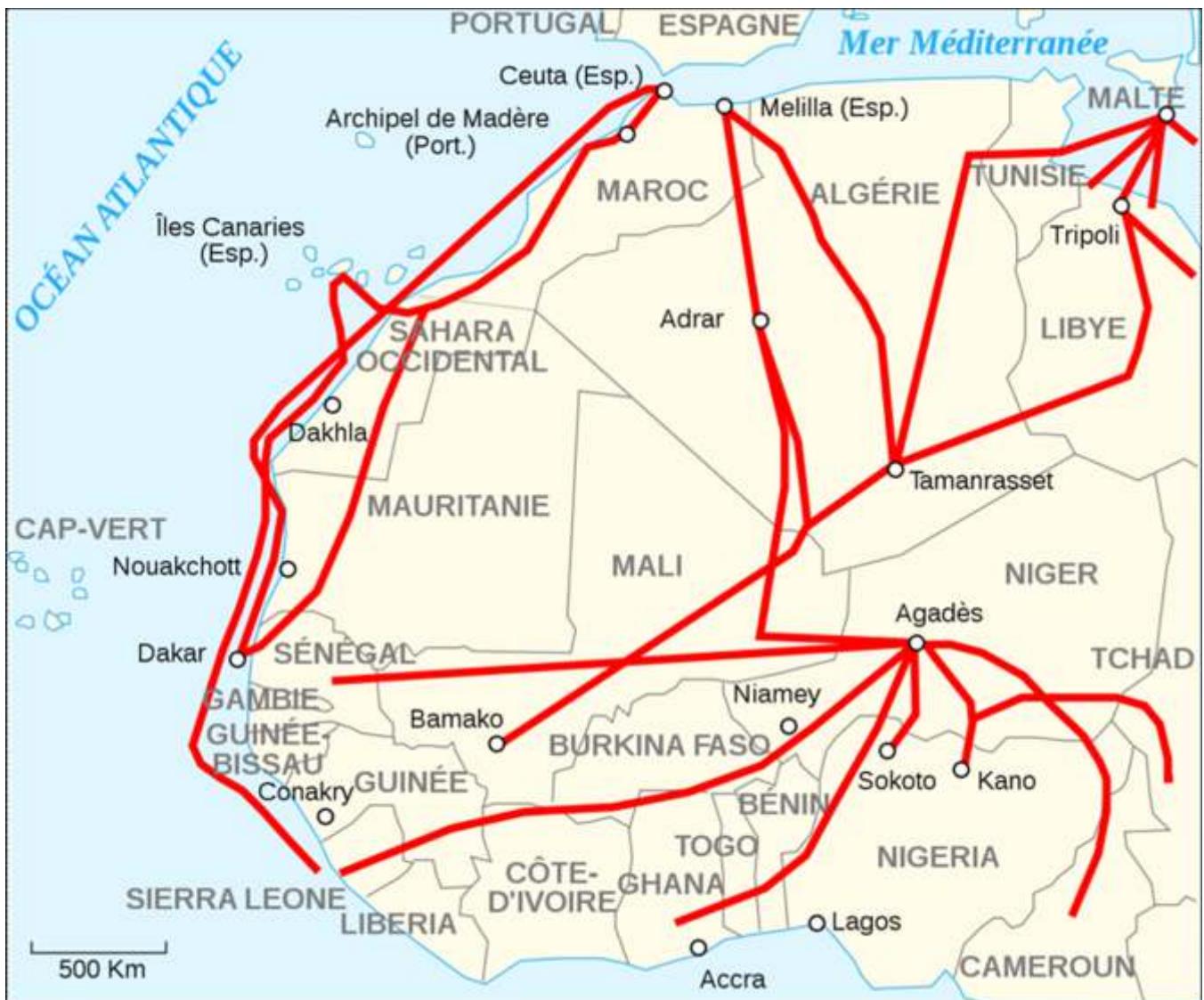
67. *Linking migration and climate change in West Africa with MIEUX* (Nov 2018). <https://disasterdisplacement.org/linking-migration-and-climate-change-in-west-africa-with-mieux>

68. *A State-Led Process Working Towards Better Protection for People Displaced Across Borders in the Context of Disasters and Climate Change*. <https://disasterdisplacement.org/wp-content/uploads/2018/10/Platform-on-Disaster-Displacement-leaflet-EN-for-website.pdf>

69 <https://www.unhcr.org/climate-change-and-disasters.html>

70. Li Cohen (2021). Climate change could start forcing millions of Africans out of their homes within the next 9 years, World Bank report warns. CBS News <https://www.cbsnews.com/news/climate-change-africa-migration-survival-world-bank-report/>

71. *Africa Report on Internal Displacement* (2019). <https://www.internal-displacement.org/sites/default/files/publications/documents/201912-Africa-report.pdf>



Map of migrant's routes in West Africa. Source: Wikipedia

Research on the so-called 'heat-aggression relationship' suggests there is a 10- 20% increase in the risk of armed conflict associated with each 0.5°C increase in local temperatures⁷².

It was further revealed that when temperature increases, the number of terrorist attacks and deaths due to terrorist attacks tend to increase because of the multiplier effects of a change in global temperature on livelihoods that push people to struggle over little available resources. This revelation is consistent with most research on the effect of climate on conflict and is of practical concern given increasing average global temperatures⁷³. Another important example to note here is the increased crisis between migrating

herders and farmers across West Africa caused by the impact of climate change on Lake Chad Basin.

72. Jake Husson (2021). How is climate change driving conflict in Africa? ReliefWeb <https://reliefweb.int/report/world/how-climate-change-driving-conflict-africa>

73 ibid

5.0 CLIMATE CHANGE AND FISHERIES IN WEST AFRICA

According to the World Bank, more than 12 million people are engaged in the fisheries sector in sub-Saharan Africa, , with remarkable employment multiplier effects: for every fisherman's job, 1.04 additional onshore jobs are created in Mauritania and 3.15 in Guinea. But in recent times, climate change has led to rising sea temperatures, making fish stocks migrate toward colder waters away from equatorial latitudes, thus contributing to shrinking fish sizes and the mortality rates of wild fish stocks⁷⁴.

Under a high CO2 emissions scenario globally, it is predicted that climate change will reduce fish catches by 7.7 percent and revenues from it by 10.4 percent by 2050⁷⁵. This decrease in the catch may be as much of a drop as 26 percent in some parts of West Africa and could be even higher for West Africa countries closer to the equator, a 53 percent drop in Nigeria, 56 percent in Cote d'Ivoire, and 60 percent in Ghana greatly impacting the small-scale fisheries sector in the region⁷⁶. This fact sheet highlights some of the economic as well as non-economic losses and damages associated with these effects for the region of West Africa.

Policy driven innovative strategies need to be evolved to combat the observable and projected impacts of climate change on fisheries and aquaculture to protect the livelihoods of the fishing communities and food security in West Africa.

⁷⁴ Magda Lovei (11 November 2017). *Climate Impacts on African Fisheries: The Imperative to Understand and Act* <https://blogs.worldbank.org/nasikiliza/climate-impacts-on-african-fisheries-the-imperative-to-understand-and-act>

⁷⁵ Projected change in global fisheries revenues under climate change. <https://www.nature.com/articles/srep32607>

⁷⁶ *ibid*

6.0 FINDINGS

1. The impacts of climate change in West Africa follow similar trends especially with the widespread cases of desertification in the region.
2. Climate change has made a huge number of Africans to seek refugee status and become emergency immigrants,
3. West Africa is currently experiencing armed conflicts and violence extremisms which can be linked to climate change..
4. There are documented cases of flooding events in most parts of the region which are connected to sea level rise, poor urban planning and overflow from big dam projects.
5. Another significant impact of climate change that must be put into urgent consideration- is the impact of climate change on agriculture and crop production, if this is not properly investigated there will be great incidence of food shortages across Africa.
6. The Agricultural systems in most African countries are mainly small-scale and are dependent on rainfall, making them particularly vulnerable to climate variability. The heavy reliance on rainfall subsistence farming and low adoption to sustainable agricultural practices have contributed to the sector's high levels of vulnerability. The situation is worsened by poor access to climate information and data to support adaptation actions⁷⁷.
7. Changes in the level of greenhouse gases in the atmosphere resulting to Climate change has also been identified as a major driver of pathogens across Africa. Hot weather gives room for various bacteria and viruses to thrive- it also helps the survival of malaria induced organisms such as mosquitoes and other disease carriers leading to an increased spread of malaria, lyme diseases, amongst others. Infectious diseases such as malaria, schistosomiasis, dengue fever, meningitis, which are sensitive to climate impacts, are highest in the sub-Saharan African region. For example, over 90 percent of annual global malaria cases are in Africa. Changes in climate will affect the spread of infectious agents as well as alter people's disposition to these infections⁷⁸.

77. Tufa Dinku (24 May 2018). Overcoming challenges in the availability and use of climate data in Africa <https://ictupdate.cta.int/en/article/overcoming-challenges-in-the-availability-and-use-of-climate-data-in-africa-sid06fd8a811-e179-4fa5-9c8f-806bd2f27c3e>

78. Vector-Borne Diseases <https://health2016.globalchange.gov/vectorborne-diseases>

7.0 CONCLUSION AND RECOMMENDATIONS



The impacts of the climate crisis on the West African sub-region are multiple and interconnected. Issues such as sea level rise and related coastal erosion are common to the littoral nations while desertification and droughts are common in the Sahelian belt. The loss of land has serious implications for habitability, land productivity as well as food security. Water stress due to salinisation and scarcity add to the pressures. These pressures have brought about forced displacements internally and externally. Added to these are other stressors including rising surface and ocean temperatures.

The harsh conditions and resultant stresses are also believed to aid violent conflicts in the region. The UNFCCC set up Task Force on Displacement at COP21 in Paris in 2015 seeking to avert and minimise displacement through

sharing of information, tools and guidance among parties, the provision of financial, technological, and capacity building.

It however did not pay much attention to the development of protection mechanisms for displaced people. The Task Force was to promote “orderly, safe, regular and responsible migration and mobility of people [...] by enhancing opportunities for regular migration pathways, including through labour mobility.”⁷⁹

The point to note here is that climate change is not an orderly phenomenon that would promote “responsible” migration. Climate change is an emergency and vulnerable unprotected people simply fight for survival. As one of the most impacted continents in the world, every African region must provide strong contributions to the overall continental push for climate action.

79. UNFCCC 2018

The peculiarities in terms of climate impacts and vulnerabilities of each region provide opportunities for robust ideas and sharing on the continent.

Energised networks and movements in the region can contribute to continental and global efforts by:

- Harnessing, upscaling and sharing peculiar climate responses rooted in local knowledge and circumstances.
- Promoting indigenous knowledge including on how to build ecological resilience through agricultural modes such as agroecology.

These endogenous solutions are routinely overlooked in official circles where attention is focused largely on externally generated ideas.

- Bringing together climate justice networks and movements in the West African sub-region currently operating in silos and providing the space for learning and integration into existing continental platforms.
- Promoting a 100% just transition process that will be totally centred on the people's needs and its directed towards a sustained development devoid of causing more harm to the people than good.
- Pushing for all fossil fuels extractive activities must be halted to give room for a fossil free dependent African nation - although it can be difficult but it's attainable
- Increasing regional advocacy through the regional political bloc, Economic Community of West African States (ECOWAS).
- Building a West African climate justice movement and linking this to existing regional networks and movements.

