Fact sheet - Africa

Climate Change Impacts and Risks

Africa has contributed among the least to greenhouse gas emissions, yet key development sectors have already experienced widespread losses and damages attributable to anthropogenic climate change, including biodiversity loss, water shortages, reduced food production, loss of lives and reduced economic growth *(high confidence)*. Limiting global warming to 1.5°C is expected to substantially reduce damages to African economies, agriculture, human health, and ecosystems compared to higher levels of global warming *(high confidence)*. {ES-Ch9}.

Ecosystems

African biodiversity loss is projected to be widespread and escalating with every 0.5°C increase above present-day global warming *(high confidence)*. Above 1.5°C, half of assessed species are projected to lose over 30% of their population or area of suitable habitat. At 2°C, 7–18% of species assessed are at risk of extinction, and over 90% of East African coral reefs are projected to be severely degraded by bleaching. {ES-Ch9; 9.6}

Food

In Africa, agricultural productivity growth has been reduced by 34% since 1961 due to climate change, more than any other region. Future warming will negatively affect food systems in Africa by shortening growing seasons and increasing water stress *(high confidence)*. Global warming above 2°C will result in yield reductions for staple crops across most of Africa compared to 2005 yields. Climate change poses a significant threat to African marine and freshwater fisheries *(high confidence)*. Under 1.7°C global warming, reduced fish harvests could leave 1.2–70 million people in Africa vulnerable to iron deficiencies, up to 188 million for vitamin A deficiencies, and 285 million for vitamin B12 and omega-3 fatty acids by mid-century. {ES-Ch9; 9.4; 9.8}

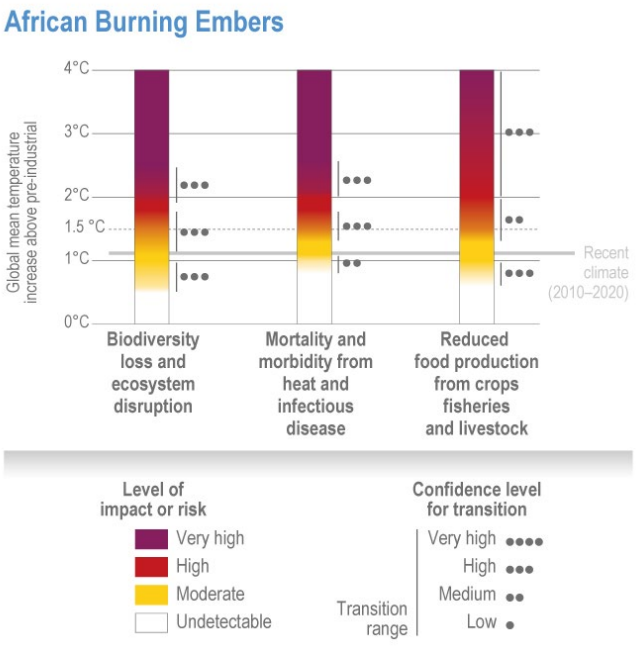

Figure 1: Burning Embers showing increasing risk due to climate change for selected key risks in Africa. Projected increase is assessed for global warming increasing above pre-industrial levels (1850–1900). All three risks are assessed to have already transitioned to moderate risk by the recent level of global warming 2010–2020 (1.09°C), and are expected to complete the transition to high risk before 2°C. Supplementary Material Table SM 9.1. {Figure 9.6}

Water

Recent extreme variability in rainfall and river discharge across Africa have had largely negative and multi-sector impacts across water-dependent sectors *(high confidence)*. Projected changes present heightened cross-cutting risks to water-dependent sectors, and require planning under deep uncertainty for the wide range of extremes expected in future *(high confidence)*. {ES-Ch9; 9.7}

Cities and Settlements

Exposure of people, assets and infrastructure to climate hazards is increasing in Africa compounded by rapid urbanisation, infrastructure deficit, and growing population in informal settlements *(high confidence)*. High population growth and urbanisation in low-elevation coastal zones will be a major driver of exposure to sea level rise in the next 50 years *(high confidence)*. By 2030, 108–116 million people will be exposed to sea level rise in Africa (compared to 54 million in 2000), increasing to 190–245 million by 2060. Under relatively low population growth scenarios, the sensitive population (people under 5 or over 64 years old) exposed to heat waves of at least 15 days above 42°C in African cities is projected to increase from around 27 million in 2010 to 360 million by 2100 for 1.8°C global warming and 440 million for >4°C global warming. {ES-Ch9; 9.9}

Economy

Climate change has reduced economic growth across Africa, increasing income inequality between African countries and those in temperate, Northern Hemisphere climates *(high confidence)*. Across nearly all African countries, GDP per capita is projected to be at least 5% higher by 2050 and 10–20% higher by 2100 if global warming is held to 1.5°C versus 2°C. {ES-Ch9; 9.6; 9.11}

Heritage

African cultural heritage is already at risk from climate hazards, including sea level rise and coastal erosion and most African heritage sites are neither prepared for, nor adapted to, future climate change *(high confidence)*. {ES-Ch9; 9.12}

Health

Mortality and morbidity will escalate with further global warming, placing additional strain on health and economic systems *(high confidence)*. At 1.5°C of global warming, distribution and seasonal transmission of vector-borne diseases is expected to increase, exposing tens of millions more people, mostly in East and Southern Africa *(high confidence)*. Above 1.5°C global warming the risk of heat-related deaths rises sharply*(high confidence)*, with at least 15 additional deaths per 100,000 annually across large parts of Africa. {ES-Ch9; 9.10}

Migration

Most climate-related migration in Africa occurred within countries or between neighbouring countries *(high confidence)*. Over 2.6 million and 3.4 million new weather-related displacements occurred in sub-Saharan Africa in 2018 and 2019. Climate change is projected to increase *migration (high agreement, medium evidence)*. With 1.7°C global warming by 2050, 17–40 million people could migrate internally in sub-Saharan Africa, increasing to 56–86 million for 2.5°C (>60% in West Africa) {ES-Ch9; Box 9.8}

Adaptation Options and Barriers

Barriers

Technological, institutional, and financing factors are major barriers to climate adaptation feasibility in Africa *(high confidence)*. Adaptation generally is cost effective, but annual finance flows targeting adaptation for Africa are billions of USD less than the lowest adaptation cost estimates for near-term climate change *(high confidence)*. {ES-Ch9; 9.3; 9.4}

Climate-related research in Africa faces severe data constraints, as well as inequities in funding and research leadership that reduce adaptive capacity *(very high confidence)*. From 1990–2019 research on Africa received just 3.8% of climate-related research funding globally. {ES-Ch9; 9.1}

Adaptation options

Adaptation costs will rise rapidly with global warming *(very high confidence)*. Increasing public and private finance flows by billions of dollars per year, increasing direct access to multilateral funds, strengthening project pipeline development, and shifting finance from readiness activities to project implementation would help realise transformative adaptation in Africa *(high confidence)*. Concessional finance will be required for adaptation in low-income settings. {ES-Ch9; 9.4}

Integrating climate adaptation into social protection programs, such as cash transfers, public works programmes and healthcare access, can increase resilience to climate change *(high confidence)*. {ES-Ch9; 9.10; 9.11} Gender-sensitive and equity-based adaptation approaches reduce vulnerability for marginalised groups across multiple sectors in Africa, including water, health, food systems and livelihoods *(high confidence)*. {ES-Ch9; Box 9.1}

Early warning systems based on targeted climate services can be effective for disaster risk reduction, social protection programmes, and managing risks to health and food systems) *(high confidence)*. {ES-Ch9; 9.4}

Innovative index-based insurance schemes can help transfer risk and aid recovery, including in food systems *(medium confidence)*. {ES-Ch9; 9.8; 9.11}

Agricultural and livelihood diversification, agroecological and conservation agriculture practices, aquaculture, on-farm engineering, and agroforestry can increase resilience and sustainability of food systems in Africa under climate change *(medium confidence)*. {ES-Ch9; 9.8}

Ecosystem-based adaptation can reduce climate risk while providing social, economic and environmental benefits *(high confidence)*. Maintaining indigenous forest benefits biodiversity and reduces emissions, but afforestation can harm water security and biodiversity. {ES-Ch9; 9.6; Box 9.3}

The diversity of African indigenous knowledge and local knowledge systems provide a rich foundation for adaptation actions at local scales *(high confidence)*. { ES-Ch9; 9.4; Box 9.1; Box 9.2}

Climate Resilient Development

Governance for climate resilient development includes: cross-sectoral and transboundary solutions, long-term planning, all-of-government approaches, transboundary cooperation and benefit-sharing, development pathways that increase adaptation and mitigation and reduce inequality, and NDC implementation *(high confidence)*. Development of robust legislative frameworks will facilitate effective design and implementation of climate change response options *(high confidence)*. {ES-Ch9; 9.4}

Climate information services that are demand-driven and context-specific, combined with climate change literacy, can help make the difference between coping and informed adaptation responses *(high confidence)*. {ES-Ch9; 9.4}