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State of Climate in Africa highlights water stress and hazards

Climate Action in Africa gains momentum, but more is needed

8 September 2022, Maputo, Mozambique/Geneva (WMO) - Water stress and hazards like withering droughts and devastating floods are hitting African communities, economies and ecosystems hard. Rainfall patterns are disrupted, glaciers are disappearing and key lakes are shrinking. Rising water demand combined with limited and unpredictable supplies threatens to aggravate conflict and displacement, according to a new report from the World Meteorological Organization (WMO).

The State of the Climate in Africa 2021 report provides authoritative scientific information on temperature trends and other climate indicators. It shows how extreme weather and climate change are undermining human health and safety, food and water security and socio-economic development. Africa only accounts for about 2% to 3% of global greenhouse gas emissions but suffers disproportionately from the results.

The State of the Climate in Africa 2021 report has a special focus on water. High water stress is estimated to affect about 250 million people in Africa and is expected to displace up to 700 million people by 2030. Four out of five African countries are unlikely to have sustainably managed water resources by 2030.

"The worsening crisis and looming famine in the drought-stricken Horn of Africa shows how climate change can exacerbate water shocks, threatening the lives of hundreds of thousands of people and destabilizing communities, countries and entire regions," says WMO Secretary-General Prof. Petteri Taalas.

"Africa's climate has warmed more than the global average since pre-industrial times (1850-1900). In parallel, the sea level rise along African coastlines is faster than the global mean, contributing to increases in the frequency and severity of coastal flooding and erosion, and salinity in low-lying cities. Changes in continental water bodies have major impacts on the agriculture sector, ecosystems, biodiversity," said Prof. Taalas.

"Temperature increase, heat waves, extensive floods, tropical cyclones, prolonged droughts, and sea level rise resulting in loss of lives, property damage, and population displacement, undermine Africa's ability to achieve its commitments to meet the targets of the United Nations Sustainable Development Goals (SDGs) and the African Union Agenda 2063: The Africa We Want, which outlines Africa's

path for attaining inclusive and sustainable economic growth and development,” says H.E. Ambassador Josefa Leonel Correia Sacko, Commissioner for Agriculture, Rural Development, Blue Economy and Sustainable Environment at the African Union Commission.

The report, the third in a series, is a joint initiative between WMO and the African Union Commission and includes input from a wide range of UN organizations, National Meteorological and Hydrological Services, development partners and climate experts. The report and an accompanying digital story map is being launched at a Ministerial Meeting on Integrated Early Warning and Early Action System initiative in Maputo, Mozambique.

Currently only 40 percent of the African population have access to early warning systems to protect them against extreme weather and climate change impacts. Africa is therefore a top priority in the campaign spearheaded by WMO, at the request of UN Secretary-General António Guterres, to ensure universal access to early warnings in the next five years.

However, climate action is gaining momentum. More than 40 African countries have revised their national climate plans (Nationally Determined Contributions) to make them more ambitious and add greater commitments to climate adaptation and mitigation. Although Africa contributes only 2-3% of global greenhouse gas emissions, more than 83% of national climate plans include greenhouse gas reduction targets, with focus areas including energy, agriculture, waste, land use and forestry.

The State of the Climate in Africa report makes a number of recommendations, including to strengthen early warning systems, increase transboundary cooperation, data exchange and knowledge sharing. The need for more investment in adaptation is crucial, as is a concerted drive towards more integrated water resource management.

Key messages

Temperatures: 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. The year 2021 was either the third or fourth warmest years on record for Africa.

Sea level rise is increasing along the African coastlines is 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 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 combined with heightened conflict, related population displacement, and COVID-19 restrictions. High food prices impeded food availability and access, leaving more than 58 million people in conditions of acute food insecurity. The situation is worsening this year – especially in Ethiopia, Somalia and parts of Kenya. Southern Madagascar is also suffering from acute drought.

Extreme Weather: Severe Floods 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.

Many parts of Northern Africa experienced extreme heat, especially in Tunisia, Algeria, Morocco and Libya. This was accompanied by wildfires. Sand and dust storms were a recurring problem.

Hazards: Droughts and floods are the top concern. In the past 50 years, drought-related hazards have claimed the lives of over half a million people and led to economic losses of over 70 billion USD 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.

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

Glaciers in equatorial East Africa: Mount Kenya (Kenya), Mount Kilimanjaro (Tanzania), and the Rwenzoris Mountains (Uganda) are retreating at a faster rate than the global mean. Whether or not glaciers fully disappear in East Africa depends on the amount of future precipitation that falls in the East Africa region.

Food insecurity: 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%-60% of the wheat yield in southern and northern Africa.

Displacement: 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.

Early Warning Systems: In Africa, the rate of implementation of Multi-Hazard Early Warning System (MHEWS) is lower than in other regions, with only 4 out of 10 people covered. There is need to fill the capacity gap in collecting data for basic hydrometeorological 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 LDCs, especially for drought warning in Africa.

Climate services: There is an urgent need to improve climate services provision in Africa. Currently, 28 countries provide climate services from basic to essential level and only 9 provide those services at a full level. Only four countries are providing end-to-end drought forecasting or warning services at a full/advanced capacity level.

Water stress: 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.

Water resource management: 27 out of 51 African countries for which data are available have inadequate capacity to implement Integrated Water Resource Management and in 2020, many activities were undertaken on an ad hoc basis with unsustainable financing.

The World Meteorological Organization is the United Nations System's authoritative voice on Weather, Climate and Water

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