

# Main climate risks in the West Africa region by the 2050s

## Water security and resources

- Water resource quality and quantity are projected to decrease.
- Rising water demand and falling supply will further deplete reducing groundwater levels.
- The frequency and intensity of droughts will increase, with an increase in consecutive dry days between rainfall events with resulting impacts on agriculture and water resources.
- Flood risk will increase, resulting in loss of life, loss of crops, contamination of water supplies, and damage to housing and infrastructure.
- Deforestation has already changed local rainfall patterns, and further loss of forest cover will compound vulnerabilities related to water availability.



## Agriculture and pastoralism

- Agro-ecology is defined as sustainable farming that works with nature. Climate change will alter agro-ecology, favouring crops that can tolerate higher temperatures and are less sensitive to fluctuations in rainfall. It will reduce yields in less adaptable crops, such as maize.
- Competition for water will increase in areas where irrigated farming occurs, exacerbated by increasing demand from growing populations.
- Ecological degradation and biodiversity loss will reduce crop yields due to reduced pollination.
- Pastoralism and livestock are at risk from higher temperatures that cause heat stress, reduced pasture, and increased evaporation of water sources. This will exacerbate existing land pressures and potentially raise farmer-herder tensions.



## Urban and infrastructure

- The greatest impacts of high temperatures will be in urban areas which are already warmer than the surrounding countryside and where large populations live in poverty.
- Increased frequency of heavy rainfall, coupled with less absorbent urban environments and inadequate drainage, will place urban areas at increased risk of flooding.
- Rising sea levels will expose coastal areas to sea water inundation, increased risk of flooding and infrastructure damage from storm surges.
- As urban populations grow, access to clean water will be challenged by a combination of growth in demand and contamination from flooding and sea level rise.



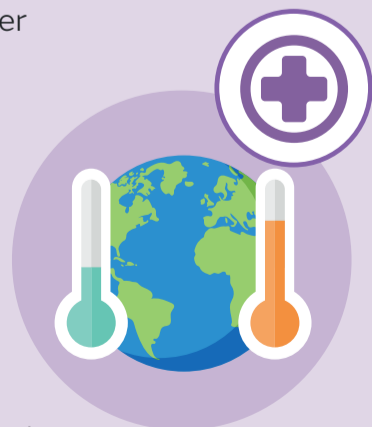
## Coasts

- Sea level rise along the West African coast will severely impact coastal settlements where one third of the West African population lives.
- Water quality and availability from coastal aquifers may be affected by saltwater intrusion due to sea level rise.
- Fisheries are already under threat due to overexploitation. Climate change will further negatively impact fish stocks as ocean temperature, acidity and deoxygenation all increase.
- Considerable socio-economic and ecological damage is possible from erosion of sandy beaches and coastline, and damage to coastal ecosystems.



## Human health and mortality

- Rising temperatures will increase the risk of heat stress and heat stroke, with heatwaves becoming more dangerous when combined with water shortages.
- Working outside during the day in the hotter months may become impossible, especially in the north of West Africa.
- Incidence of vector-borne diseases may be reduced as increased evaporation reduces areas of stagnant water. However, increases in flood incidence will increase risk from diseases such as cholera.
- Health-related risks from poor air quality will increase as drier conditions increase dust content in the atmosphere, especially during the Harmattan winds that blow down from the Sahara.



## Biodiversity and ecology

- Climate change is altering the conditions of West Africa's habitats at an unprecedented rate, which is beyond the adaptive capacity of many natural systems, reducing biodiversity.
- Deforestation has already depleted much of West Africa's tropical and savannah forests and many plant and animal species are endangered. This makes these habitats and their endemic species more vulnerable to climate change.
- Changes in rainfall and temperature will alter the distribution of some of West Africa's flora and fauna, with limited opportunity for species to take hold in new geographies because of existing pressure on habitats and ecosystems.
- Careful management of forests, national parks and marine protected areas is essential for sustaining and increasing the resilience of ecosystems and wildlife in West Africa.

