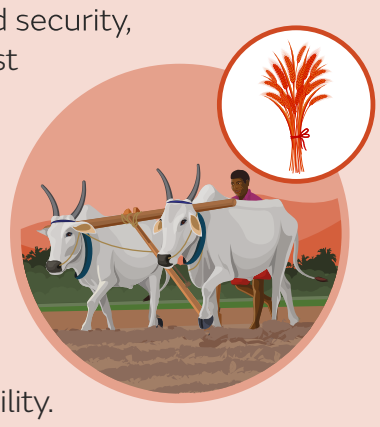
Main climate risks in the Southern Africa region by the 2050s

Agriculture and food security

- Greater rainfall variability, more extremes and rising temperatures will have broadly negative impacts on Southern African agricultural yields including important staples such as maize and wheat, effecting output variability, prices and food security, including via disease vectors and rising pest populations.
- Pastoral and agropastoral systems throughout Southern Africa will be negatively affected by warming temperatures and heat extremes, through heat stress to animals, impacts on pasture and fodder, water needs and access, disease vectors and livestock mobility.



- Productivity of Southern African inland fisheries will be reduced by rising water temperatures and changing seasonal flood patterns. Vulnerabilities will be intensified by other pressures on lakes and rivers such as deforestation, agricultural and urban development and pollution.

Water resources and water dependent services

- Rising temperatures, declining rainfall in the south-west, and greater rainfall variability across all of Southern Africa will increase periodic water scarcity and flooding, with the same areas experiencing wet and dry extremes at different times. This makes water management more difficult.
- Rising temperatures and more frequent and intense rainfall events will have negative impacts on water quality, increasing pollution and sediment loads, and increasing threats to health in rural and urban areas of Southern Africa.

- Greater rainfall variability will further disrupt Southern African hydropower generation, with periods of low rainfall and river flow reducing electricity production and potentially affecting multiple countries at the same time.

Environment – terrestrial forests, ecosystems and biodiversity

- Ecosystem loss and degradation threatens Southern African food security, flood control and carbon storage among other key services.
- Southern African forests and their ecosystem services will be negatively affected by rising temperatures, increasing aridity and increasing risk of fire weather, though most forest loss will continue to be driven by other pressures.
- Rising levels of CO_2 and higher temperatures have been linked with the spread of woody vegetation in savannas and grasslands, and decreases in bird, reptile and mammal species that require grassy habitats.

- Wetland systems will be negatively affected by rising temperatures and changing rainfall patterns throughout Southern Africa. Where wetlands dry out, permanently or more frequently, they turn from carbon sinks to emission sources.

Infrastructure and settlements

- Climate risk and poverty will increasingly coincide in urban areas, particularly in Southern Africa's rapidly growing informal settlements where poorer households are pushed into more exposed areas, increasing competition for water resources.
- Floods are the leading cause of damage to housing and transport in Southern Africa, while floods, rising temperatures and high winds threaten power and communication networks. Risks can cascade across sectors and areas where networks are fragile and backup options limited.

- More intense tropical cyclones and storm surges, plus rising sea levels, threaten Southern Africa's coasts where people and economic assets are concentrated, particularly in the southeast.

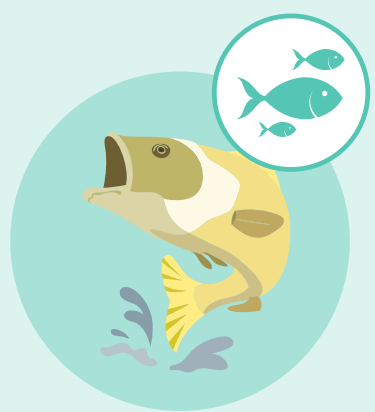
Health

- Rising temperatures and changing rainfall patterns, as well as increased flooding, will increase the overall geographical range and incidence of vector borne diseases such as malaria across Southern Africa.
- Increases in extreme rainfall events and floods, combined with rising temperatures, may contribute to spread of communicable waterborne diseases such as cholera, typhoid, diarrhoea, and leptospirosis across Southern Africa, with short-term and longer-term threats to health and nutrition.

- Poor air quality and days of heat stress (combination of heat and humidity) are expected to occur more often in Southern Africa, and pose risks to health and reduce labour productivity, with those living in poverty, the elderly, pregnant women, children, outdoor workers and those with pre-existing health conditions most exposed.

Coastal fisheries and the marine environment

- Increases in marine temperatures, marine heatwaves, sea level rise, intense tropical cyclones and ocean acidity are likely to change the distribution, function, and productivity of marine ecosystems presenting risks to food security, employment, and exports from fishing and tourism.
- Marine heatwaves may pose an existential threat to Southern African coral reefs that provide an ecosystem for life underwater, protect coastlines and support fishing and tourism.
- Climate change will act with, and amplify pressures on, Southern African fisheries from overfishing, pollution, and habitat destruction from coastal urbanisation and industrial development.



View the full report here: https://www.metoffice.gov.uk/services/government/international-development/southern-africa-climate-risk-report