

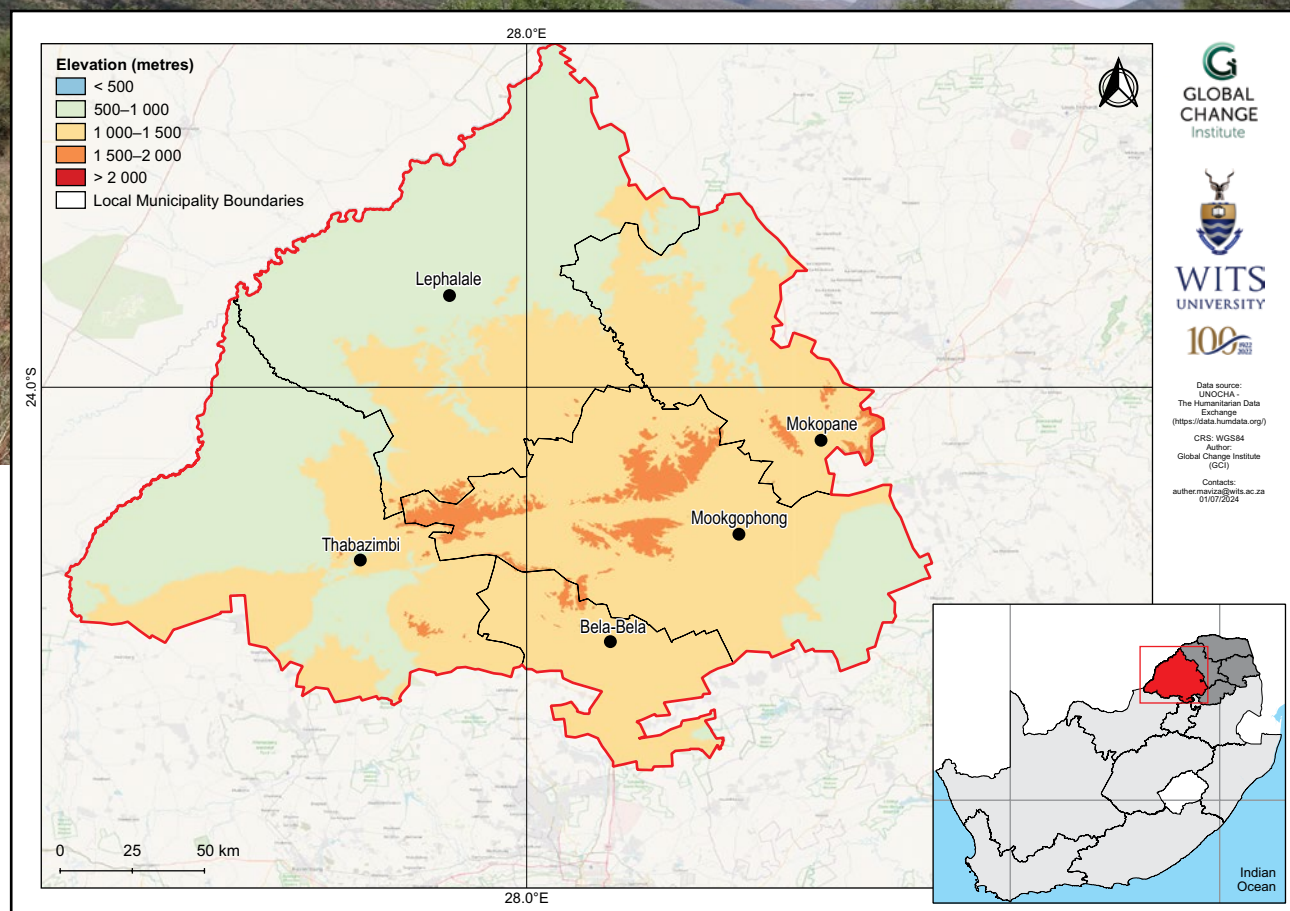
Waterberg District Municipality climate change fact sheet

Limpopo, South Africa

MUNICIPAL

Introduction

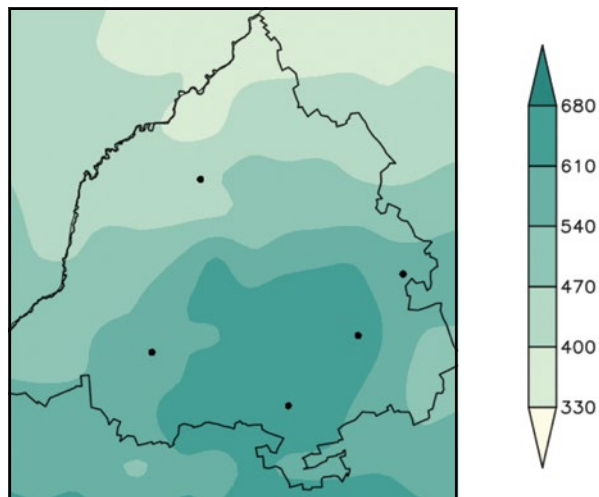
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- The Waterberg District Municipality covers an area of approximately 44 914 km², with elevation ranging from 500 m above sea level in the northwestern lowlands, to over 1 500 m above sea level in the central, eastern and southern regions along the Waterberg escarpment.
- The district experiences a warm, semi-arid climate, with a distinct dry season in winter and rainy season in summer. Rainfall increases with increasing altitude across the district.



Observed climate: rainfall (1981–2000)

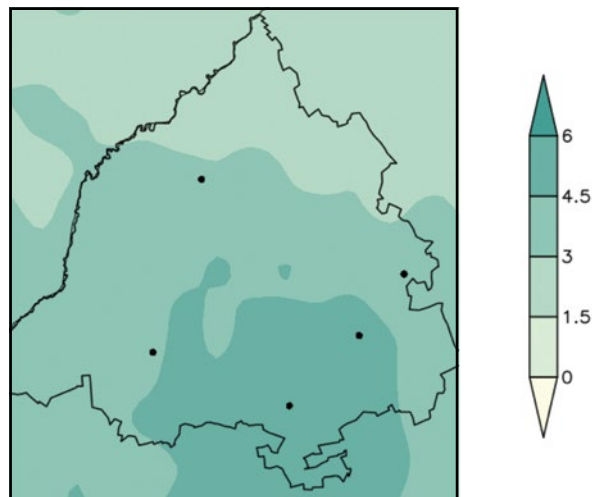
Mean annual rainfall

Mean annual rainfall ranges from 330 mm over the northern lowlands to 680 mm over the Waterberg highlands.



Extreme rainfall days

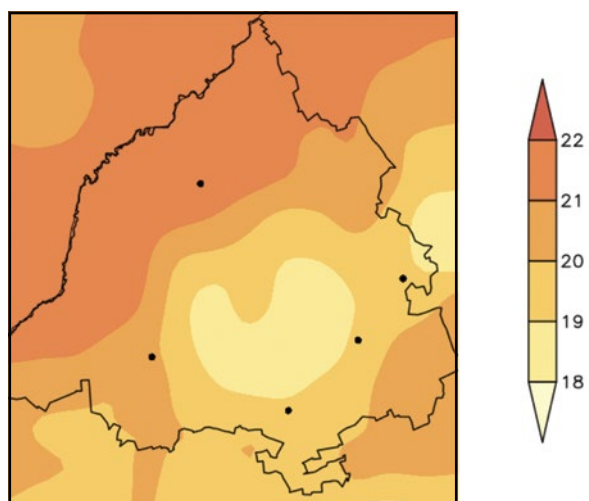
Mean annual number of extreme rainfall days range from 3 days in the northern parts to 6 days in the southern parts of the district.



Observed climate: temperature (1981–2000)

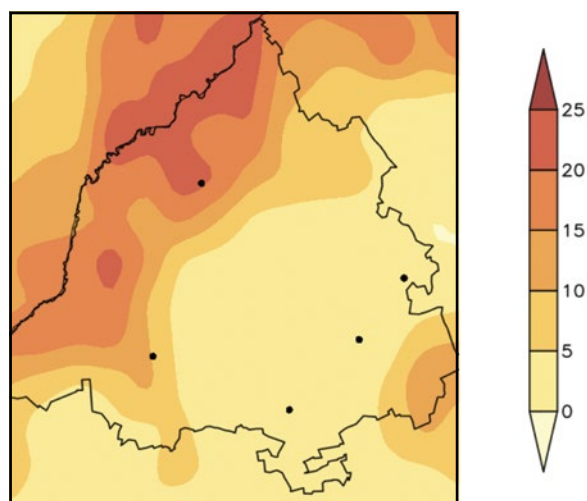
Mean annual temperature

Mean annual temperature ranges from 18 °C in the central to southern highlands to 22 °C in the northwestern lowland areas.



Very hot days

Mean annual number of very hot days range from less than 5 days over most of the southern parts to 25 days over the northern parts of the district.

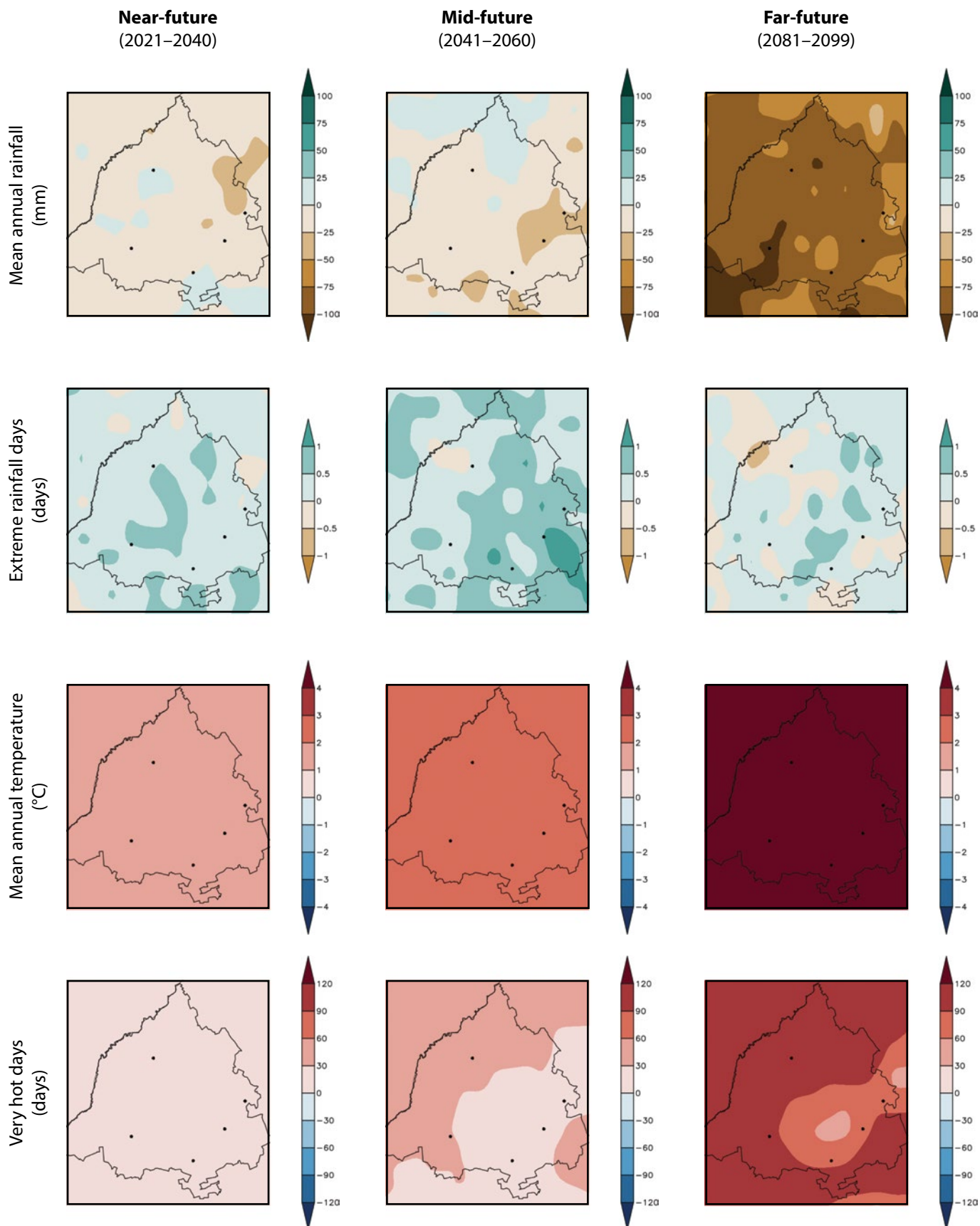


Observed climate trends (overview)

- Observed decrease in mean annual rainfall (*low confidence*).
- Observed increase in the frequency of heavy rainfall events (*high confidence*).
- Observed increase in mean annual temperature and warm extremes (*virtually certain*).
- Observed increases in meteorological and agricultural drought (*low confidence*).

Projected future climate change (overview)

- Projected decrease in mean annual rainfall (*high confidence*).
- Projected increase in the frequency of extreme rainfall events (*high confidence*).
- Projected increase in mean annual temperature and warm extremes (*virtually certain*).
- Projected increase in agricultural and meteorological drought (*high confidence*).



Projected future climate change (*detailed*)

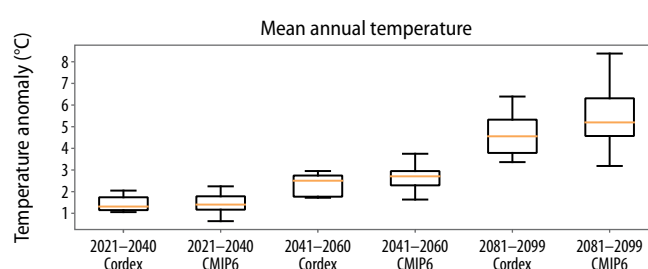
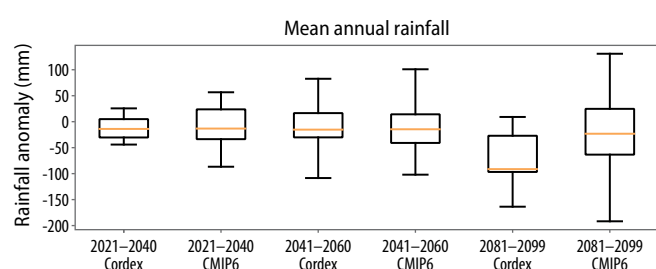
Near- and mid-future

- Projected decrease in mean annual rainfall (*likely*).
- Projected general increase in extreme rainfall events (*likely*).
- Projected increase in temperature and warm extremes over the entire district (*virtually certain*).
- Projected increase in agricultural and meteorological drought (*likely*).

Far-future

- Projected decrease in mean annual rainfall over the entire district (*very likely*).
- Projected increase in extreme rainfall events (*likely*).
- Projected increase in temperature and warm extremes (*virtually certain*).
- Projected increase in agricultural and meteorological drought (*very likely*).

Climate model projections: model agreement and uncertainties



Mean annual rainfall

- Averaged across the district, rainfall is projected to decrease in the near- and mid-future (*likely*).
- Further rainfall decreases are projected in the far-future under low mitigation scenarios (*very likely*).
- Partially in response to *virtually certain* temperature increases, agricultural drought is to occur more frequently in the near- and mid-future (*likely*) and far-future (*very likely*).

Mean annual temperature

- Temperature increases averaged across the district in the near-future are *virtually certain* and may be as high as 2.0 °C.
- Under low mitigation, further temperature increases are *virtually certain* and may approach 3.0 °C in the mid-future and 6.0 °C in the far-future.
- Increases in average temperature will be accompanied by increases in warm temperature extremes such as heatwaves and high fire danger days (*virtually certain*).

Citation:

Engelbrecht, F.A., Maviza, A., Steinkopf, J., Vogel, C., Von Maltitz, G., Yose, P. & Barnett, M. 2025. *Sub-national climate change fact sheets for South Africa*. © South African National Biodiversity Institute (SANBI) and University of the Witwatersrand – Global Change Institute (WITS-GCI). DOI: <https://doi.org/10.5281/zenodo.16962181>.

This work is licensed under CC BY-NC-ND 4.0 (Attribution-NonCommercial-NoDerivatives 4.0 International).

<https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>.

Contact

- Global Change Institute (GCI), University of the Witwatersrand, Johannesburg, South Africa. Website: www.wits.ac.za/gci
- South African National Biodiversity Institute (SANBI). Website: www.sanbi.org