



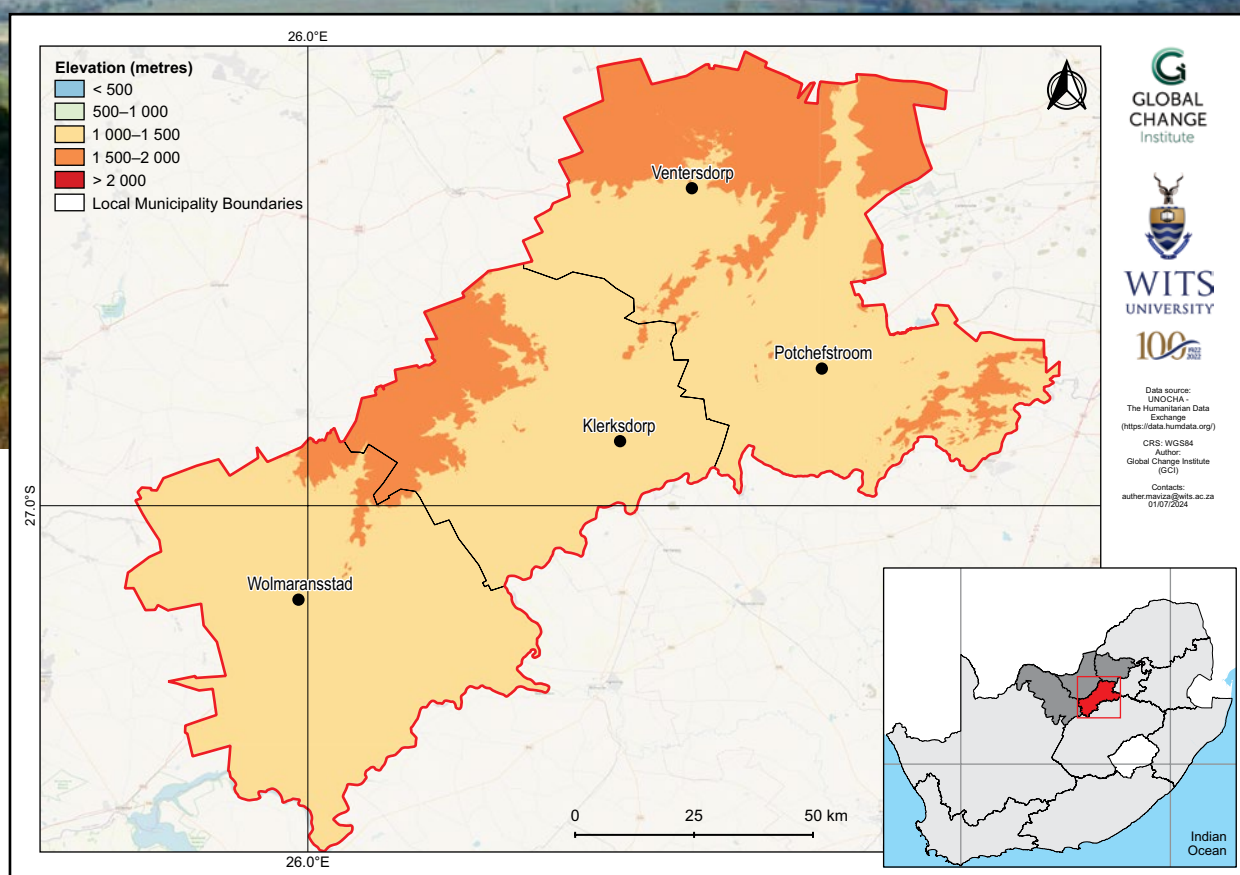
Dr Kenneth Kaunda District Municipality climate change fact sheet

North West, South Africa

MUNICIPAL

Introduction

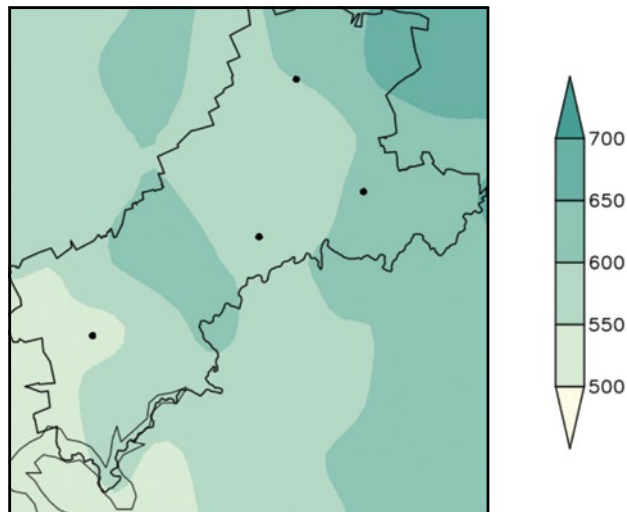
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Dr Kenneth Kaunda District Municipality covers an area of approximately 14 671 km² with elevation ranging from 1 200 m above sea level in the low-lying flat plains to 1 700 m above sea level over parts of the Magaliesberg in the north.
- The district has a subtropical climate, characterised by hot summers and mild to cool winters. Rainfall is sporadic and predominantly occurs as thunderstorms during the summer months.



Observed climate: rainfall (1981–2000)

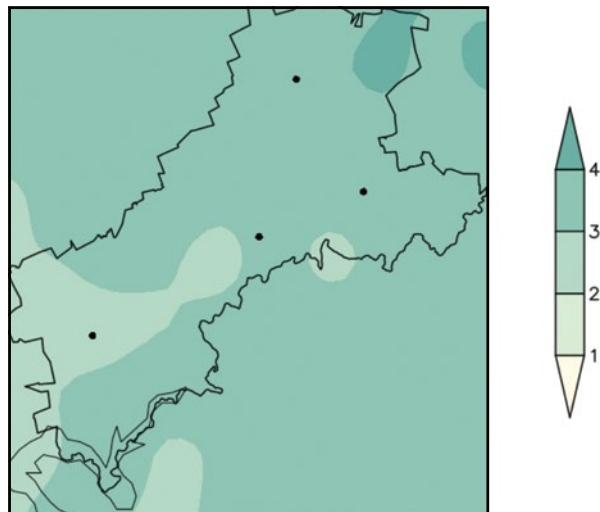
Mean annual rainfall

Mean annual mean rainfall ranges from 500 mm over the southwestern parts to 700 mm over the northeastern tip.



Extreme rainfall days

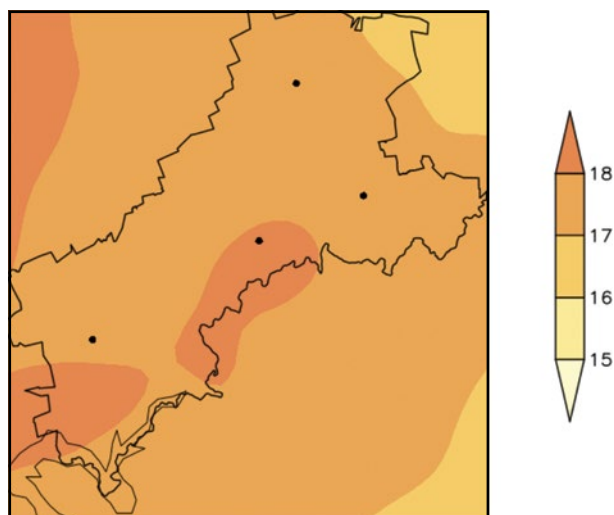
Observed annual average number of extreme rainfall days range from 2 to 4 days over the district.



Observed climate: temperature (1981–2000)

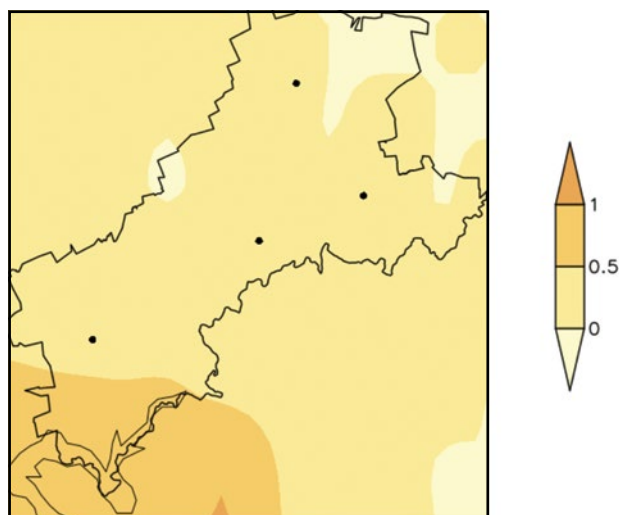
Mean annual temperature

Mean annual temperature is predominantly around 17 °C over the greater part of the district, with some border regions in the south exceeding 18 °C.



Very hot days

Mean annual number of very hot days range from 0 days over the northern mountainous regions to 1 day over the southwestern parts.

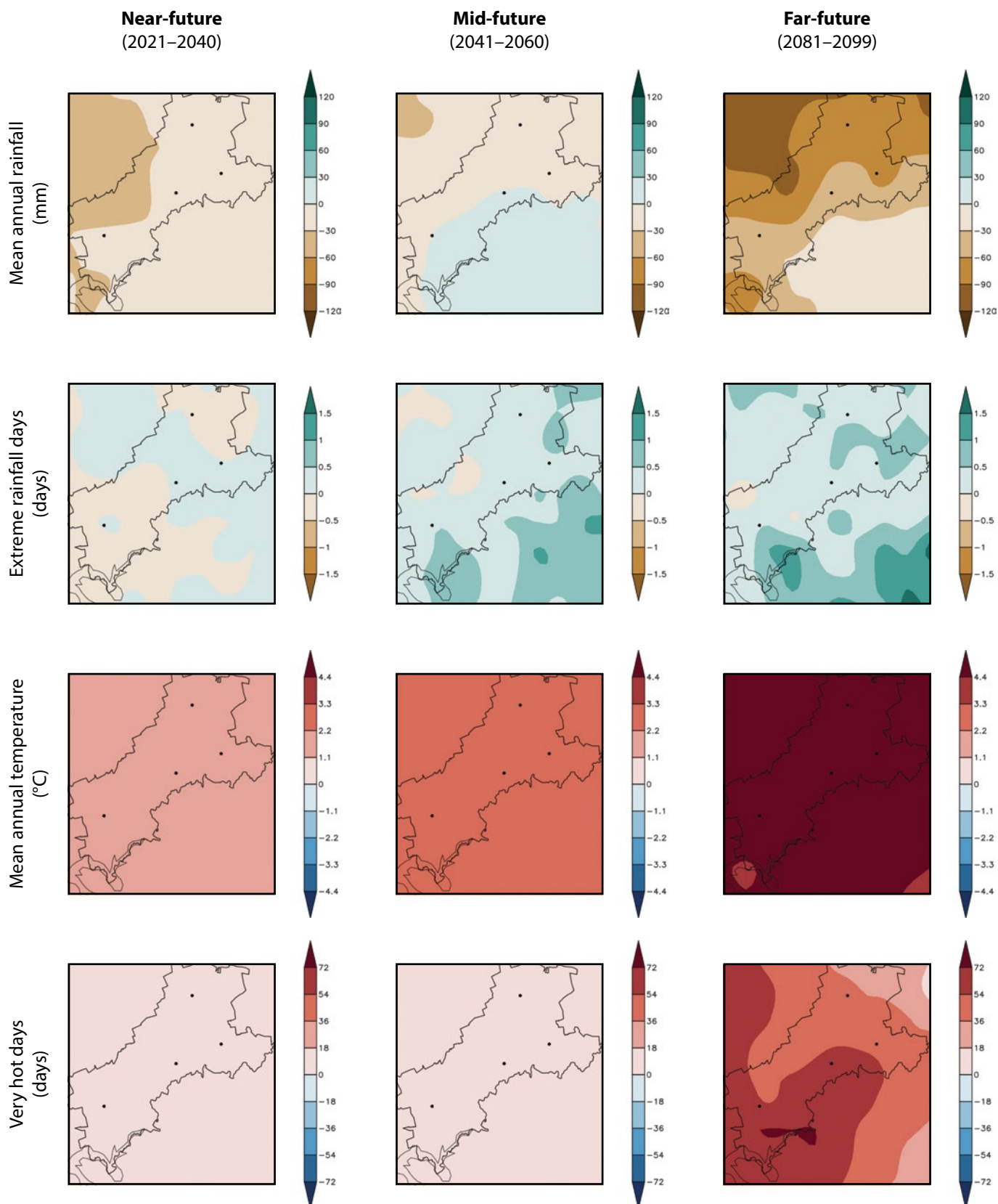


Observed climate trends (overview)

- Observed decrease in mean annual rainfall (*low confidence*).
- Observed increase in the frequency of extreme 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 in the near-future (*low confidence*), and in the mid- and far-future (*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 in the near-future (*low confidence*), and in the mid- and far-future (*high confidence*).



Projected future climate change (detailed)

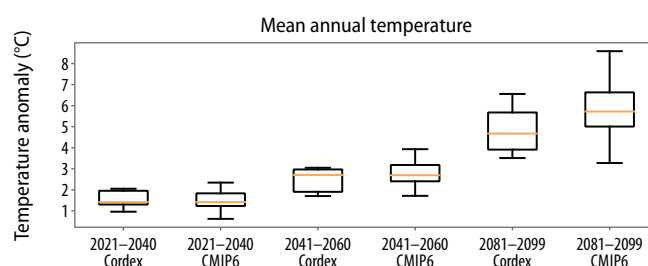
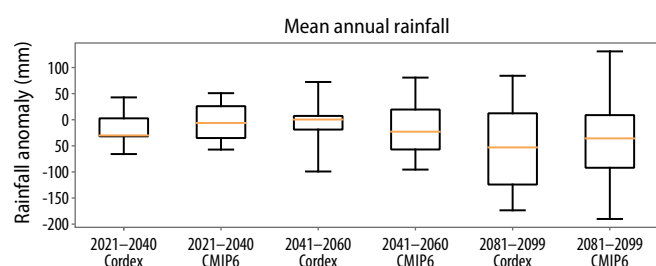
Near- and mid-future

- Projected decrease in rainfall in the near-future (*low confidence*) and mid-future (*likely*).
- Projected increase in extreme rainfall events in the near-future (*likely*) and mid-future (*very likely*).
- Projected increase in temperature and warm extremes over the entire district (*virtually certain*).
- Projected increase in agricultural and meteorological drought in the near-future (*low confidence*) and mid-future (*likely*).

Far-future

- Projected decrease in rainfall over the entire district (*very likely*).
- Projected increase in extreme rainfall events (*likely*).
- Projected increase in temperature and warm extremes (*virtually certain*), with drastic increases in warm extremes over the southwestern parts.
- Projected increase in agricultural and meteorological drought (*very likely*).

Climate model projections: model agreement and uncertainties



Mean annual rainfall

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

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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