

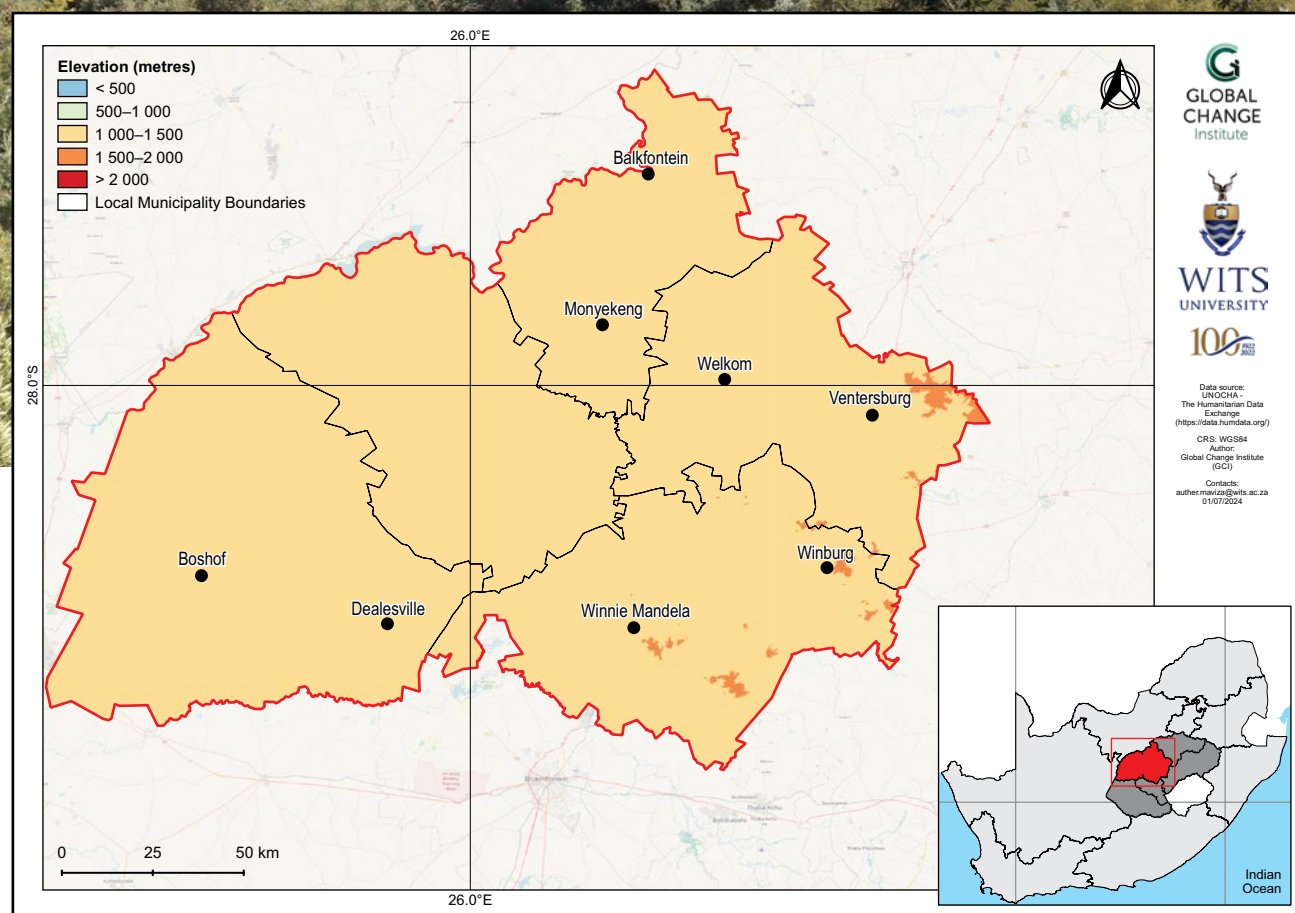
Lejweleputswa District Municipality climate change fact sheet

Free State, South Africa

MUNICIPAL

Introduction

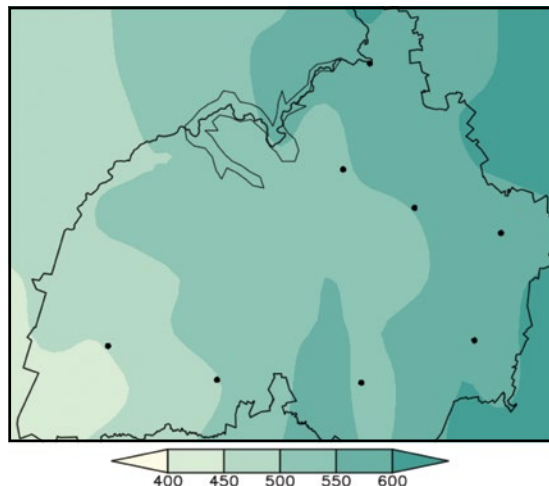
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Lejweleputswa District Municipality covers an area of approximately 31 930 km² and lies on the Highveld plateau. Elevation ranges from 1 200 m to 1 500 m above sea level, and the flat topography consists of gently undulating plains.
- The district experiences a semi-arid climate, characterised by hot summers and cool, dry winters. Rainfall is highly seasonal, occurring mostly in the summer months.



Observed climate: rainfall (1981–2000)

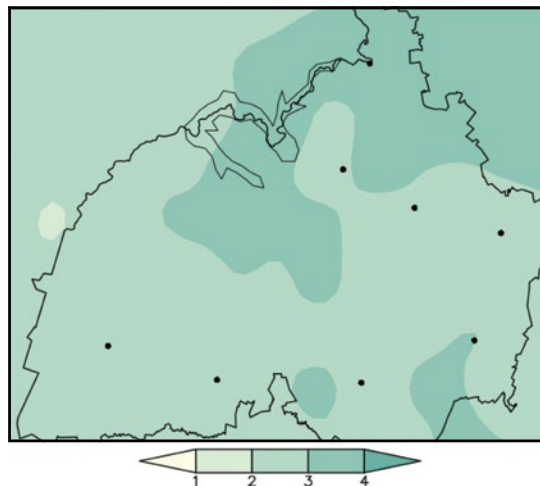
Mean annual rainfall

Mean annual rainfall ranges from 400 mm over southwest-ern parts to 600 mm over eastern parts.



Extreme rainfall days

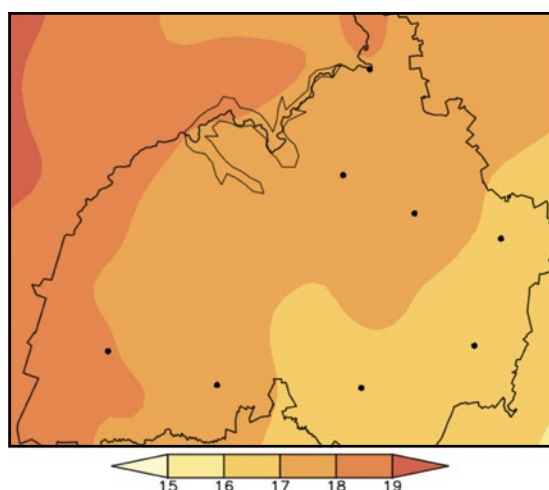
Mean annual number of extreme rainfall days range from 2 days over the greater part of the district to 4 days over the northern interior parts.



Observed climate: temperature (1981–2000)

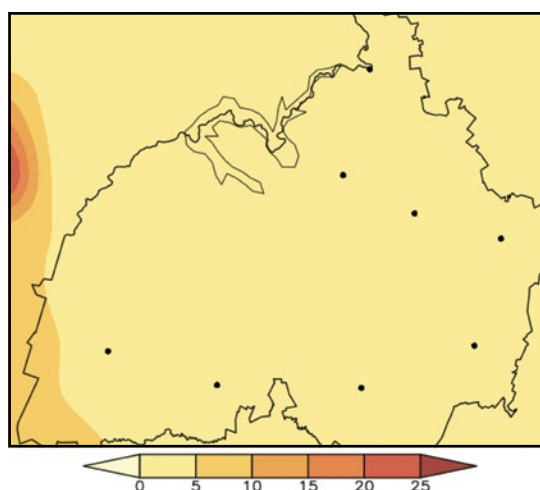
Mean annual temperature

Mean annual temperature ranges from 16 °C over the southeastern region to 19 °C over the westernmost region.



Very hot days

Less than 5 very hot days occur on average per year over the district, but with up to 10 days occurring in the south-western tip.

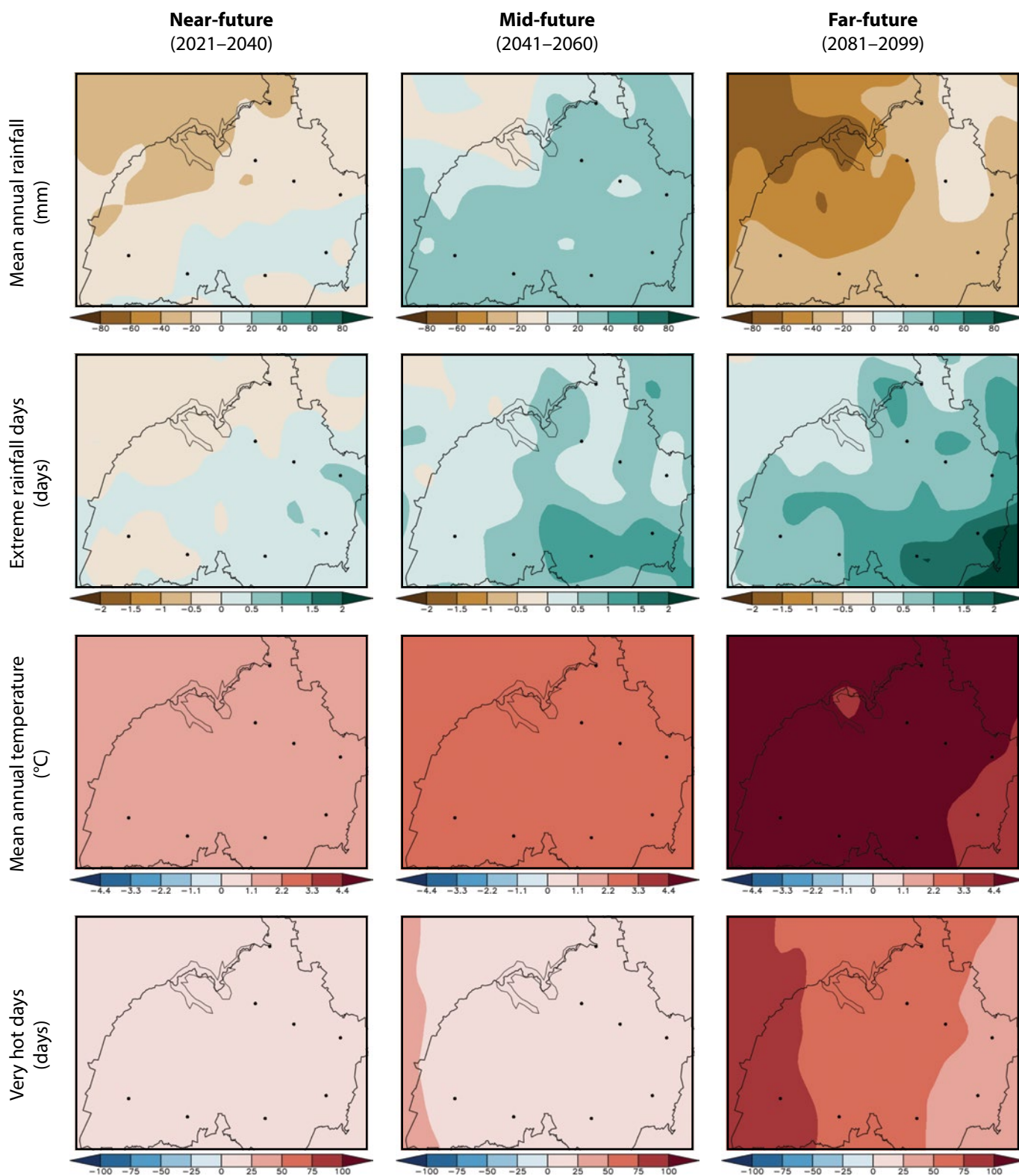


Observed climate trends (overview)

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

Projected future climate change (overview)

- Projected changes in mean annual rainfall are *uncertain* in the near- and mid-future, but with projected decreases in the 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*); decrease in cold extremes (*high confidence*).
- Projected increase in agricultural and meteorological drought in the far-future (*high confidence*).



Projected future climate change (*detailed*)

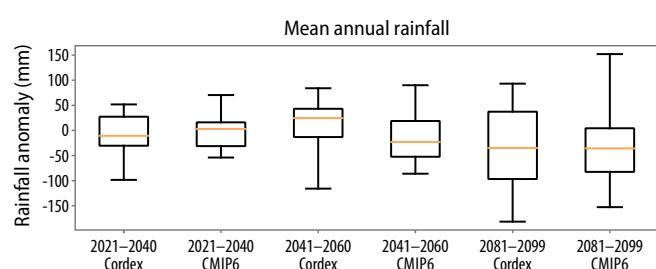
Near- and mid-future

- Projected changes in rainfall in the near- and mid-future are *uncertain*.
- Projected increase in extreme rainfall events (*likely*).
- Projected increase in temperature and warm extremes over the entire district (*virtually certain*); decrease in cold extremes (*very likely*).
- Projected increase in agricultural and meteorological drought (*more likely than not*).

Far-future

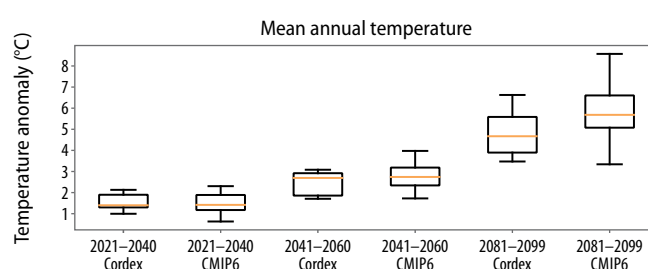
- Projected decrease in rainfall in over entire district (*likely*).
- Projected increase in extreme rainfall events (*likely*).
- Projected increase in temperature and warm extremes (*virtually certain*); decrease in cold extremes (*very likely*).
- Projected increase in agricultural and meteorological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

Climate model projections: model agreement and uncertainties



Mean annual rainfall

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



Mean annual temperature

- Temperature increases averaged across the district are *virtually certain* in the near-future 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 (*likely*).

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