

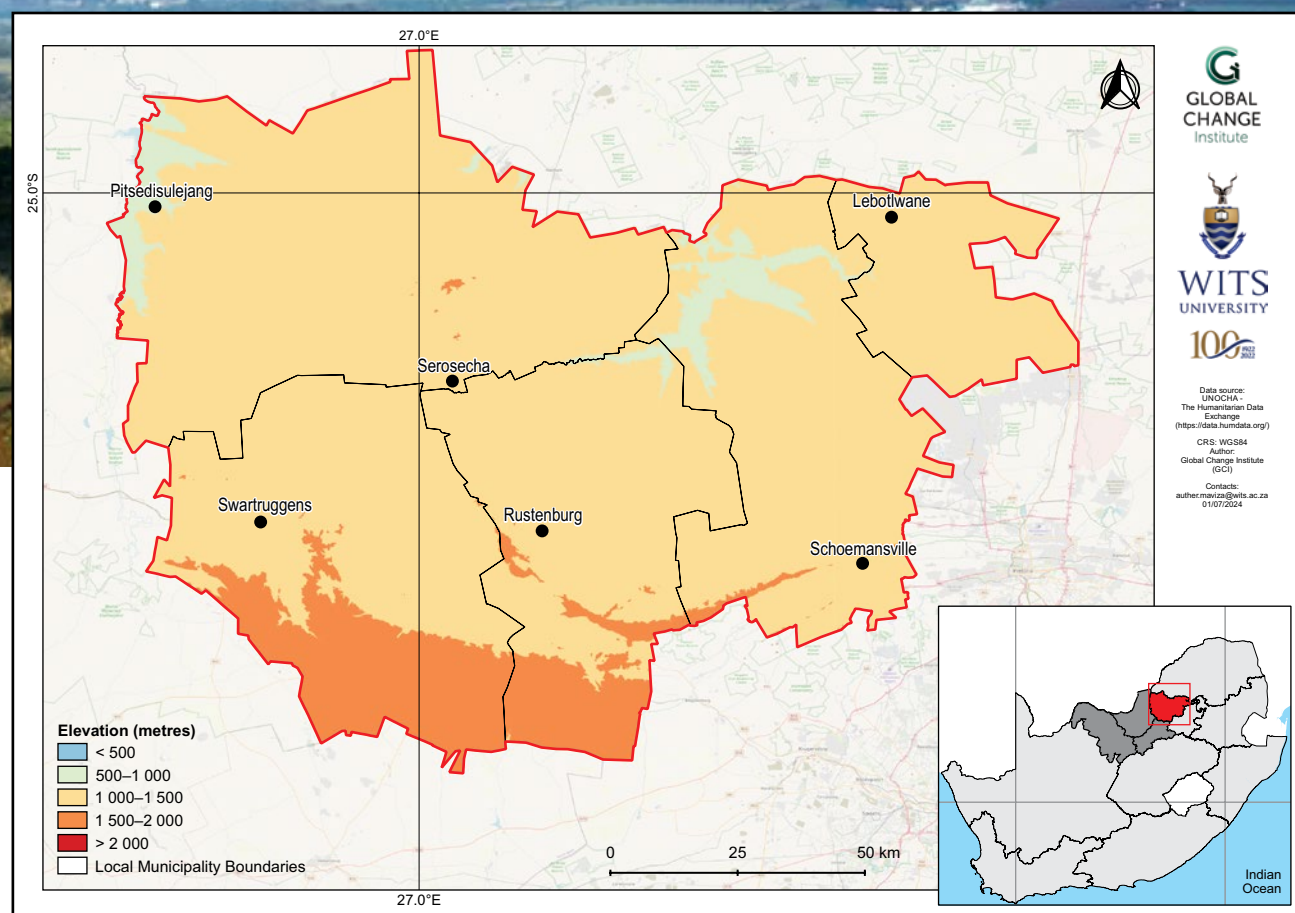
Bojanala District Municipality climate change fact sheet

North West, South Africa

MUNICIPAL

Introduction

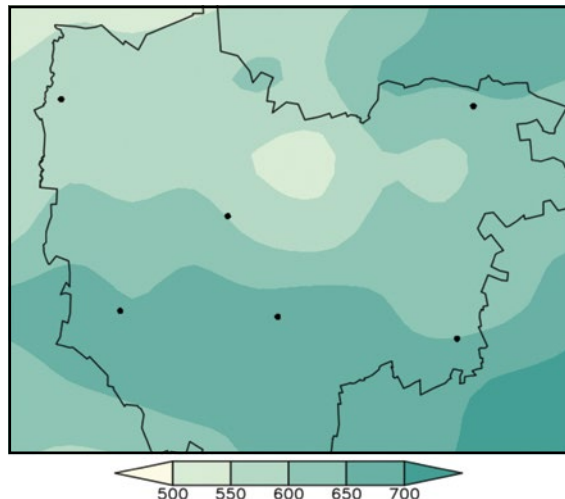
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Bojanala District Municipality covers an area of approximately 18 333 km² with elevation ranging from 900 m above sea level in the lowland river valleys to 1 500 m above sea level in the large plains, rising to 1 800 m above sea level in the Magaliesberg along the southern region.
- The district has a subtropical climate, characterised by hot, humid summers and mild to cool, dry winters. The district predominantly receives rainfall in the summer through thunderstorms.



Observed climate: rainfall (1981–2000)

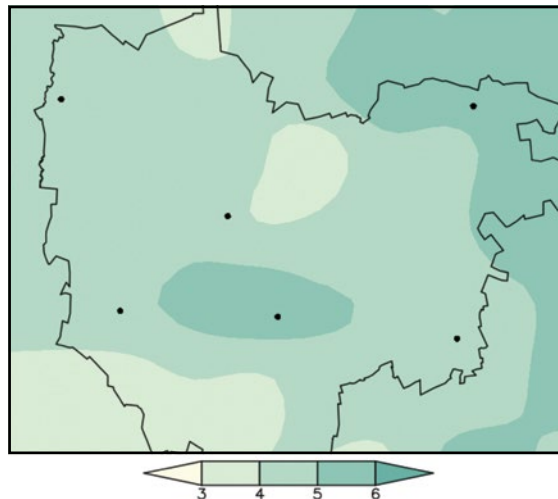
Mean annual rainfall

Mean annual rainfall ranges from 550 mm over the northern lowlands to just over 650 mm over the southern highland parts.



Extreme rainfall days

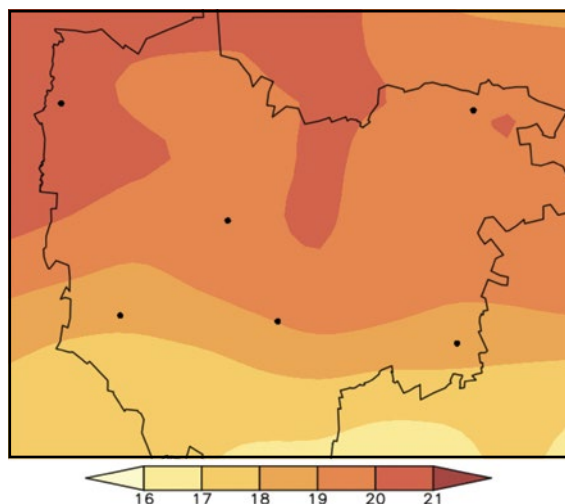
Observed average annual number of extreme rainfall days range from 3 to 5 days over the district.



Observed climate: temperature (1981–2000)

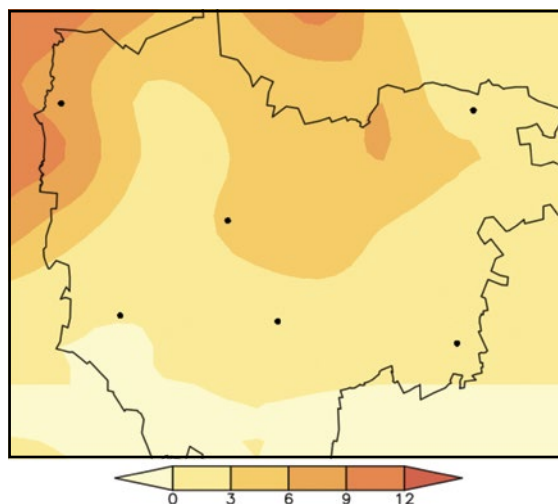
Mean annual temperature

Mean annual temperature ranges from 16 °C in the southern highlands up to 21 °C in the northwestern lowlands.



Very hot days

Mean annual number of very hot days range from 0 days in the southern highland areas up to 9 days over northern lowland areas.

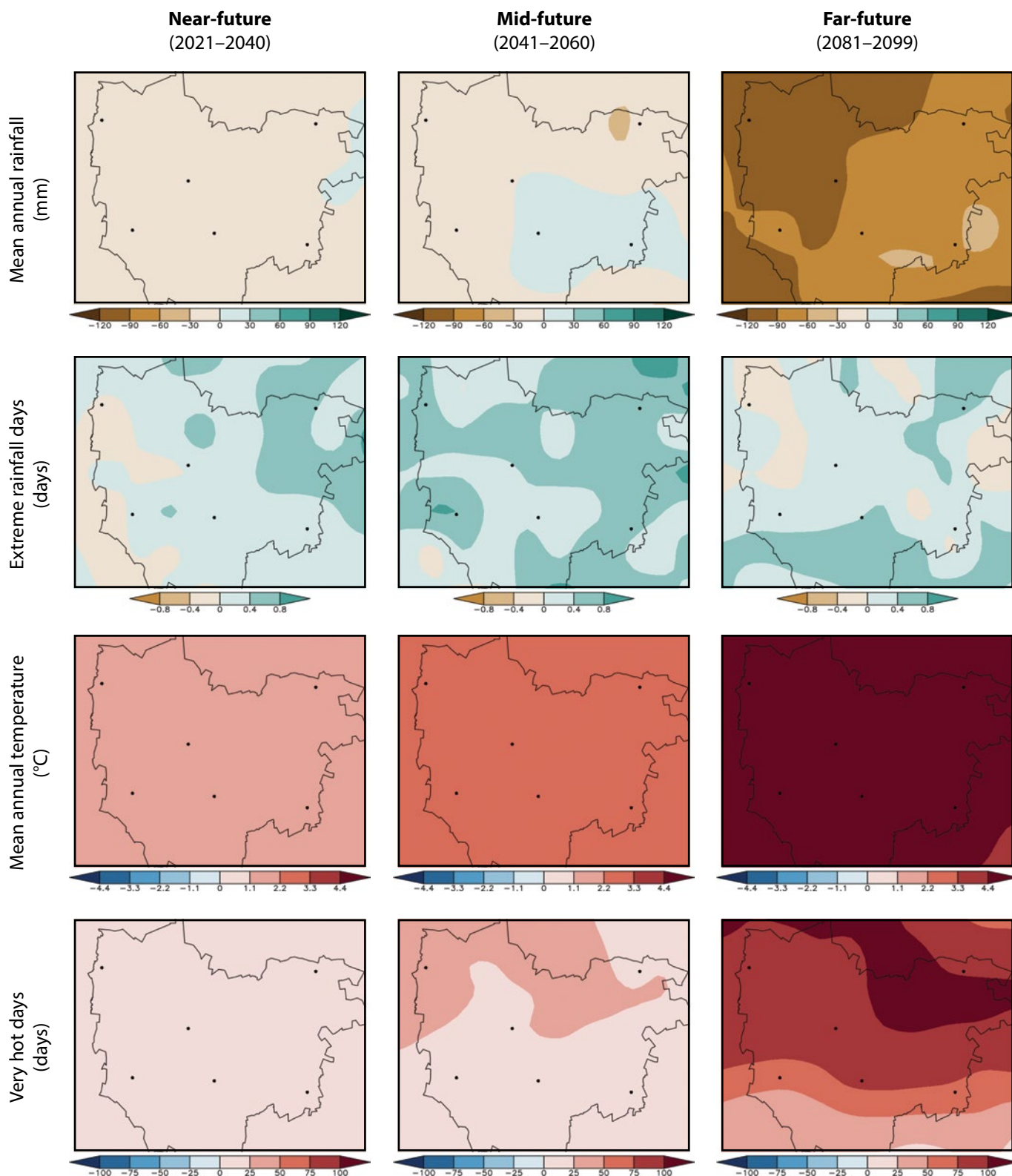


Observed climate trends (overview)

- Observed general 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 rainfall in the near-future (*low confidence*), mid-future (*medium confidence*) 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- and mid-future (*low confidence*) and far-future (*high confidence*).



Projected future climate change (*detailed*)

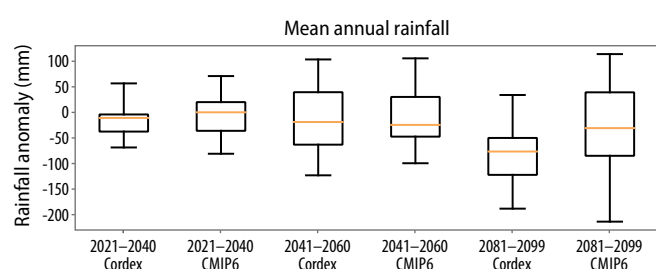
Near- and mid-future

- *Low confidence* in the projected decrease in rainfall and corresponding increase in agricultural and meteorological drought.
- Projected increase in extreme rainfall events (*very likely*).
- Projected increase in temperature and warm extremes (*virtually certain*), with higher increase over the northern parts of the district.

Far-future

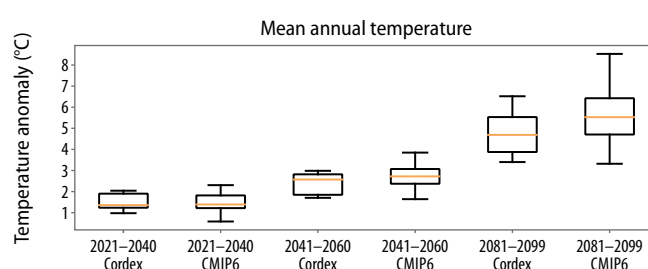
- Projected decrease in rainfall (*very likely*).
- Projected increase in extreme rainfall events (*very likely*).
- Projected increase in temperature and warm extremes (*virtually certain*).
- Projected increase in hydrological and meteorological drought (*very likely*).

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*).
- Rainfall decreases are projected for 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 future (*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 (*virtually certain*).

Citation:

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