

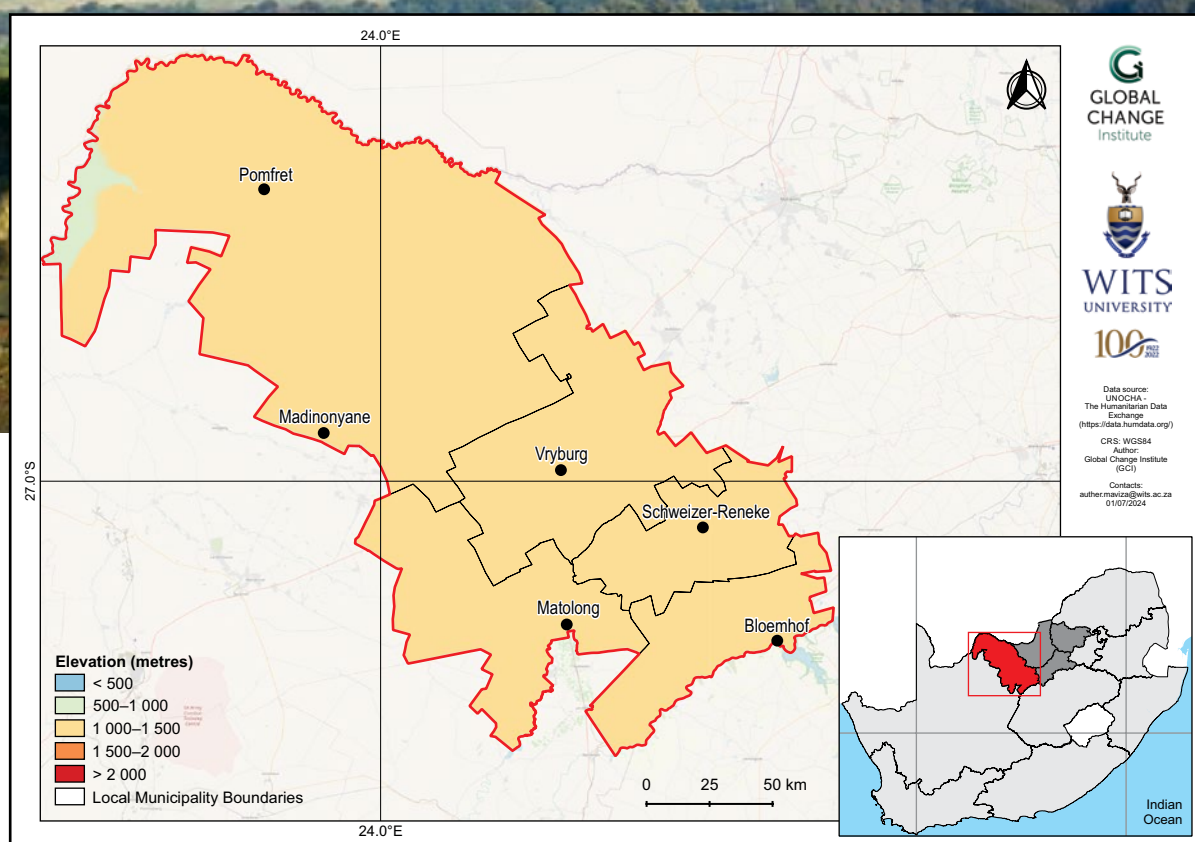
Dr Ruth Segomotsi Mompoti District Municipality climate change fact sheet

North West, South Africa

MUNICIPAL

Introduction

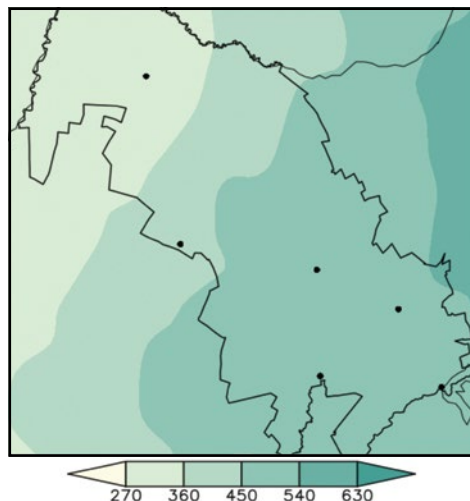
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Dr Ruth Segomotsi Mompoti District Municipality covers an area of approximately 43 753 km², with very flat topography and elevation ranging from 900 m above sea level in the far western lowlands to 1 500 m above sea level over most of the district.
- The district has a semi-arid climate, characterised by hot summers and cold, dry winters, and pronounced dry-wet seasonality with rainfall mainly occurring in the summer in the form of thunderstorms.



Observed climate: rainfall (1981–2000)

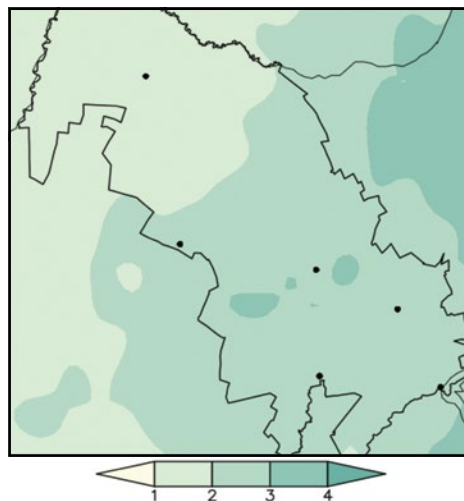
Mean annual rainfall

Mean annual rainfall ranges from 270 mm over the north-western parts to 540 mm over the southeastern parts.



Extreme rainfall days

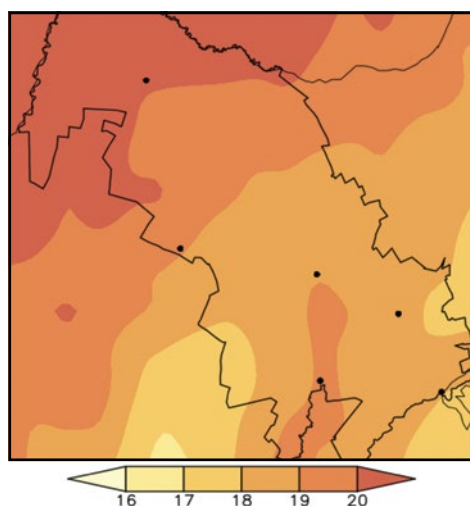
Observed average annual number of extreme rainfall days range from 1 day over northern parts to 3 days over southern parts.



Observed climate: temperature (1981–2000)

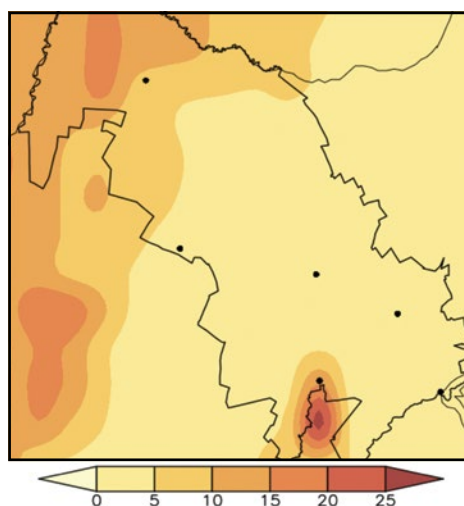
Mean annual temperature

Mean annual temperature ranges from 17 °C over the southern parts to higher than 20 °C over the northern parts.



Very hot days

Mean annual number of very hot days range from 0 days over most of the district to as many as 20 days over the northern parts.

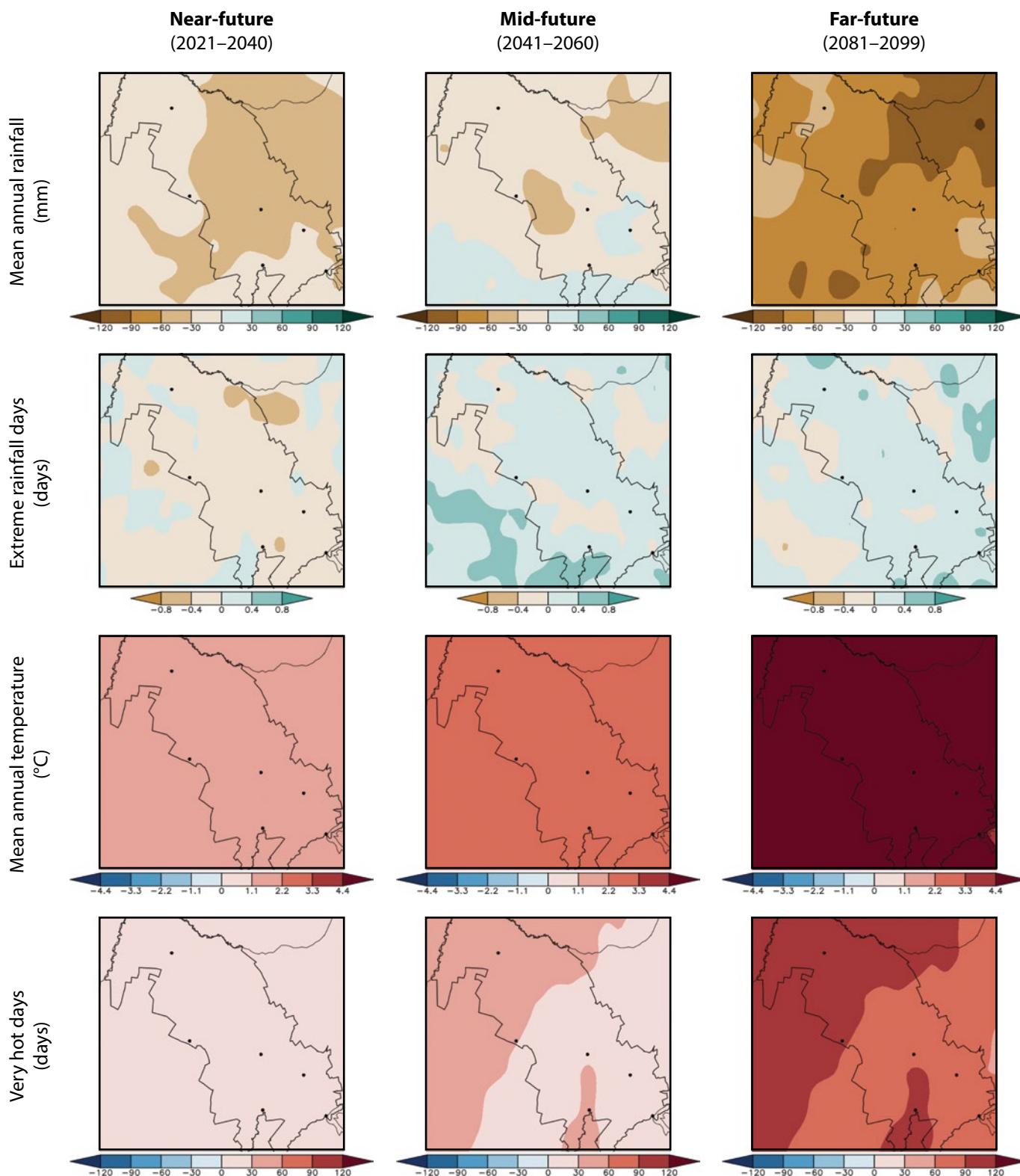


Observed climate trends (overview)

- 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 mid- to far-future (*high confidence*).



Projected future climate change (detailed)

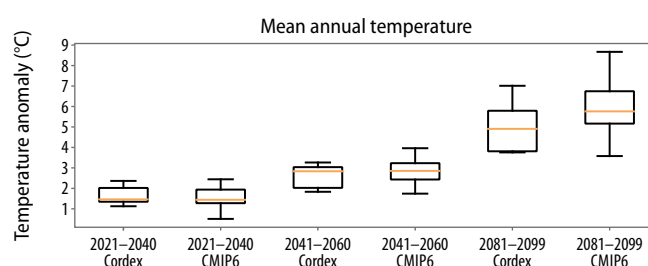
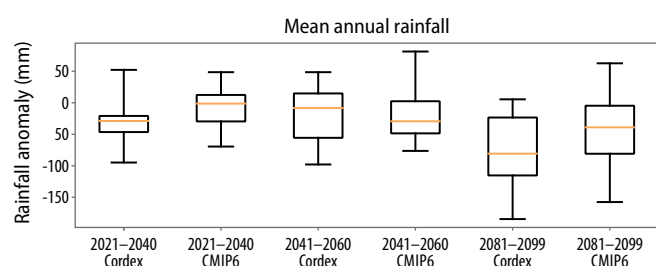
Near- and mid-future

- Projected decrease in rainfall in the near-future (*low confidence*) and mid-future (*likely*).
- Projected general increase in extreme rainfall events in the near-future (*likely*) and mid-future (*very likely*).
- Projected increase in temperature and warm extremes (*virtual certain*), with higher increases over the north-western parts of the district.
- Projected increase in agricultural and meteorological drought in the near- (*low confidence*) and mid-future (*likely*).

Far-future

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

Climate model projections: model agreement and uncertainties



Mean annual rainfall

- Averaged across the district, rainfall is projected to decrease in the near-future (*low confidence*) and mid-future (*likely*).
- Rainfall is projected to further decrease 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 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 (*virtually certain*).

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