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WITWATERSRAND,
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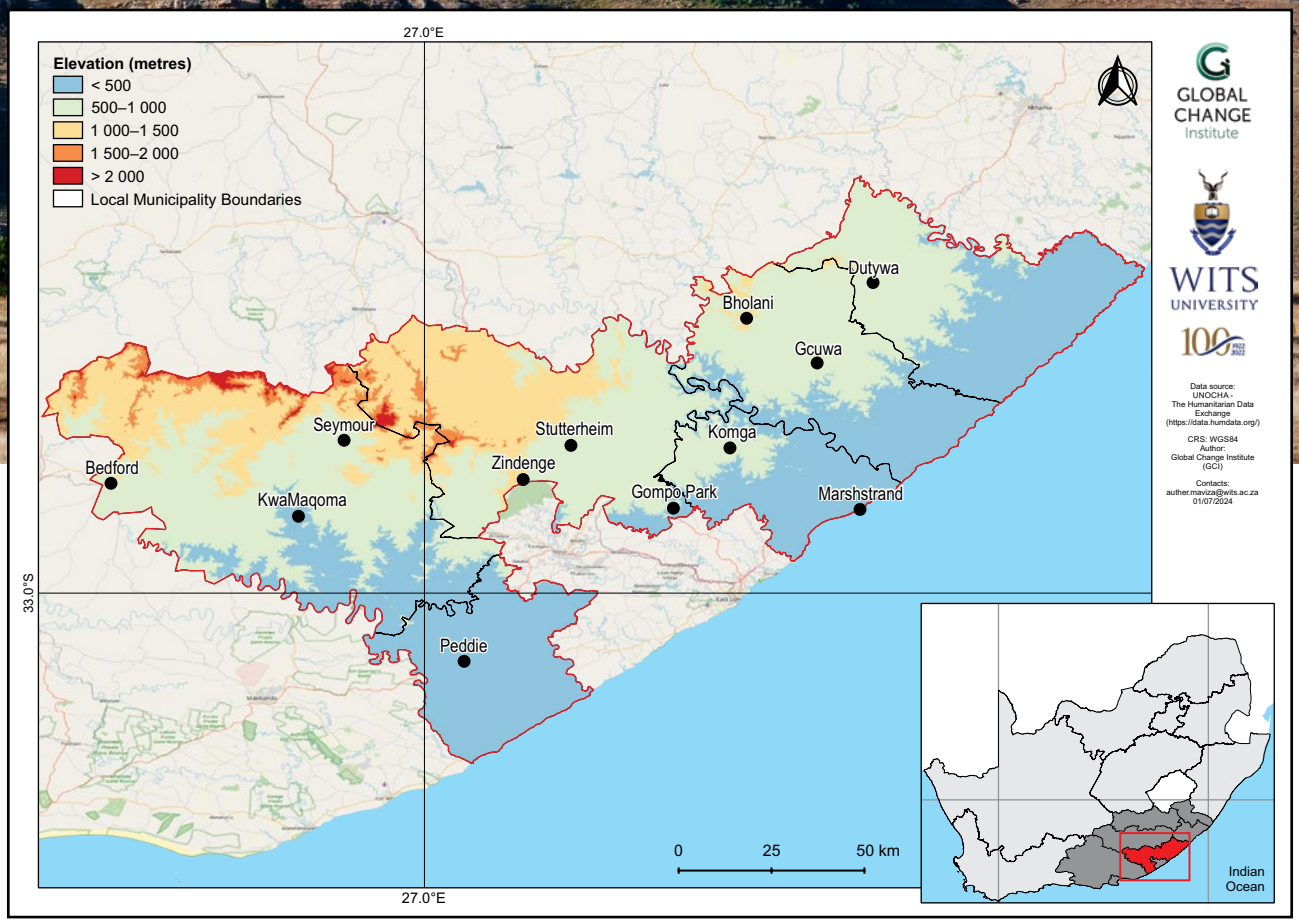
Amathole District Municipality climate change fact sheet

Eastern Cape, 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.
- Amathole District Municipality covers an area of approximately 23 577 km^2, with elevation ranging from sea level along the Indian Ocean coastline to 2 332 m above sea level in the Amathole Mountains in the north.
- Climate varies greatly across Amathole, from semi-arid in the west, to wet and subtropical along the Amathole Mountains and northern coast. The district falls in the summer-rainfall region of South Africa.

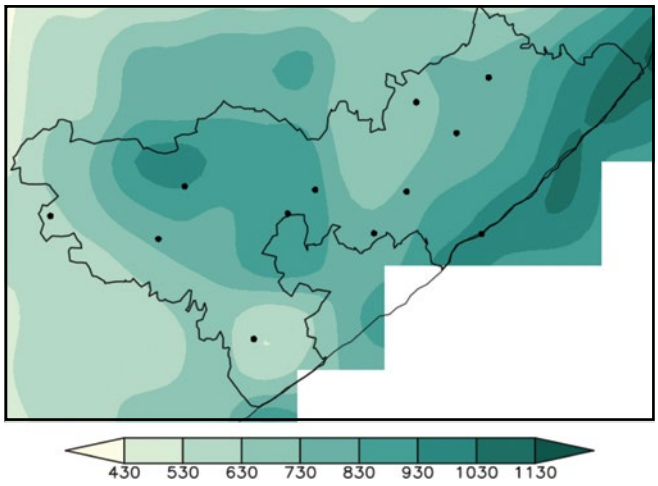


Flanders
State of the Art

Observed climate: rainfall (1981–2000)

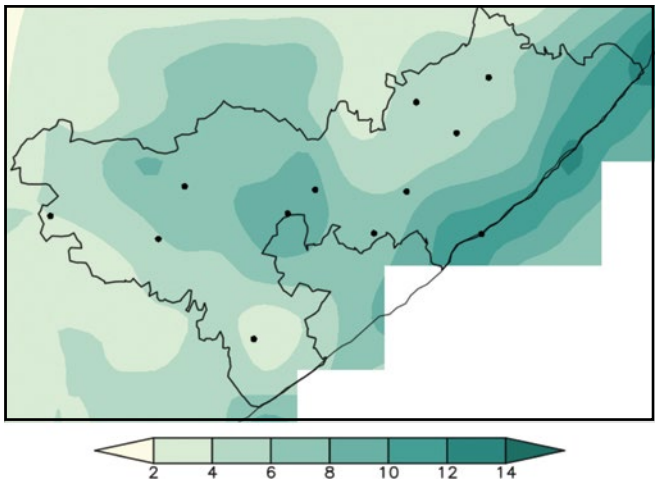
Mean annual rainfall

Mean annual rainfall ranges from 430 mm over the semi-arid western interior to more than 1 100 mm over parts of the Amathole Mountains and northern coast.



Extreme rainfall days

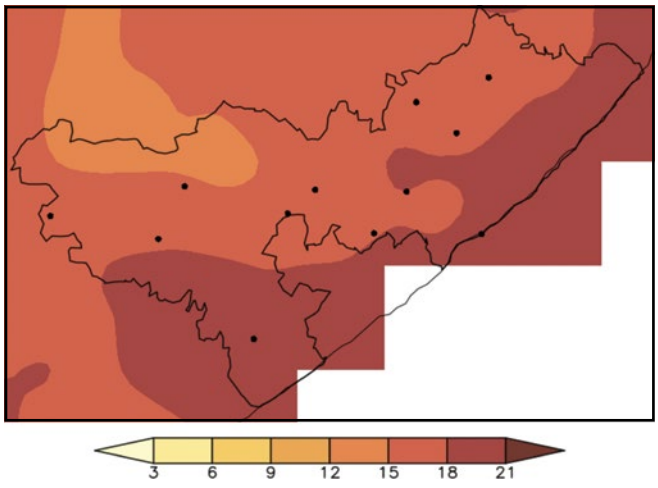
Mean annual number of extreme rainfall days range from 2 days in the semi-arid western parts to 12 days over the northern coast.



Observed climate: temperature (1981–2000)

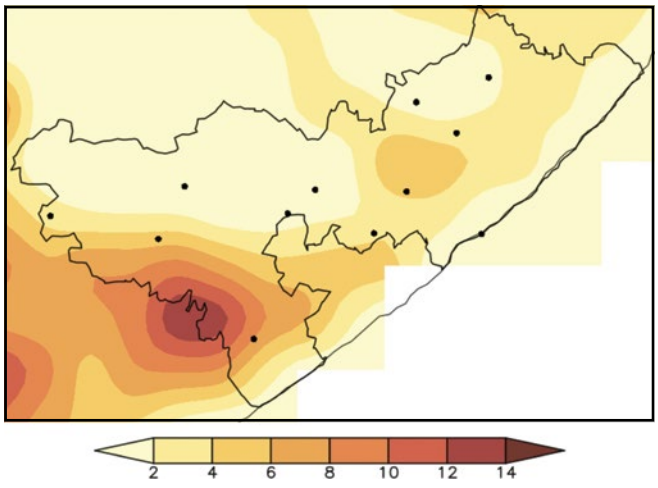
Mean annual temperature

Mean annual temperature ranges from 12 °C in the Amathole Mountains to 21 °C along the coastal areas.



Very hot days

Mean annual number of very hot days range from 2 days over the Amathole Mountains to 14 days over the semi-arid western interior.

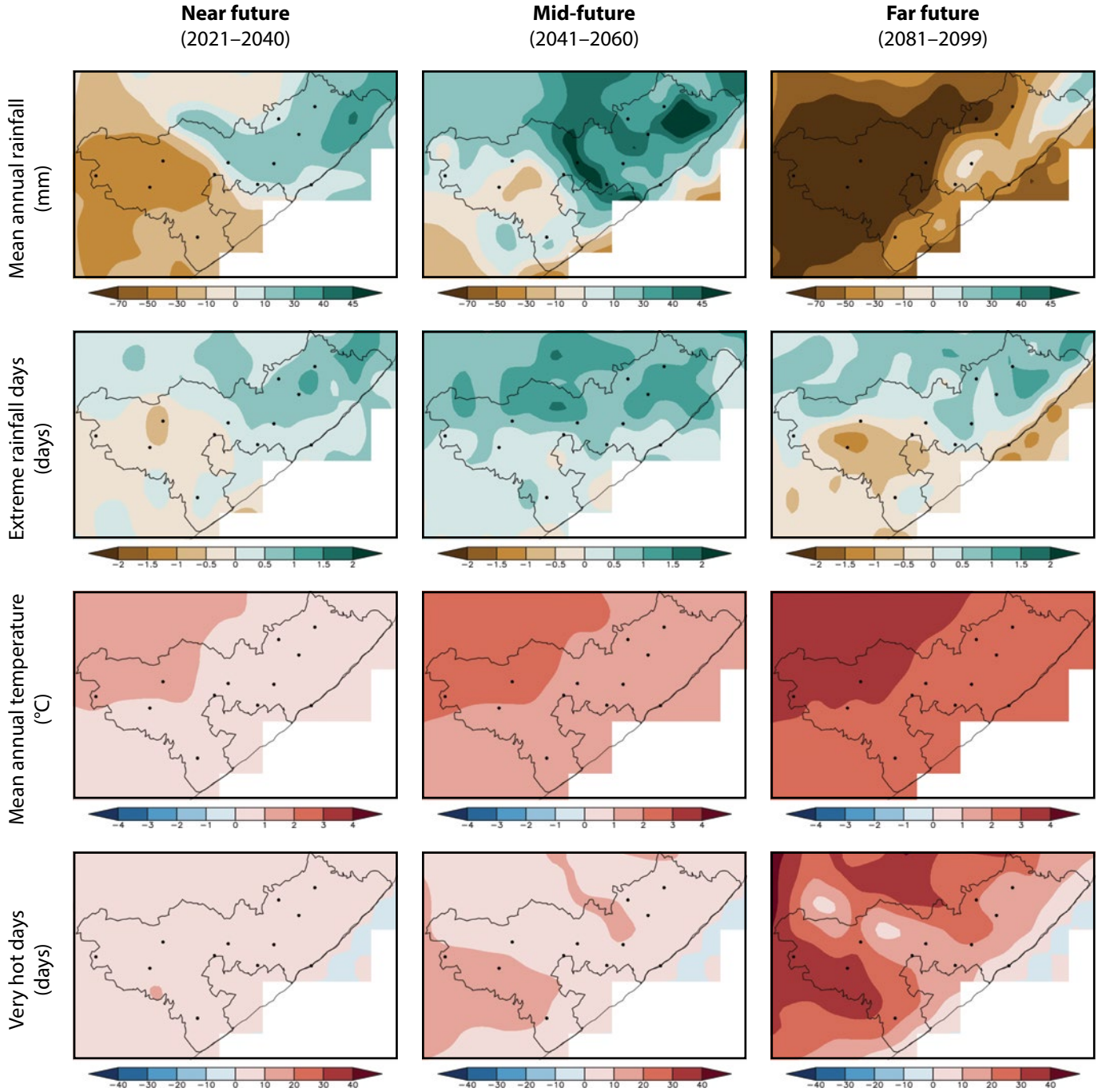


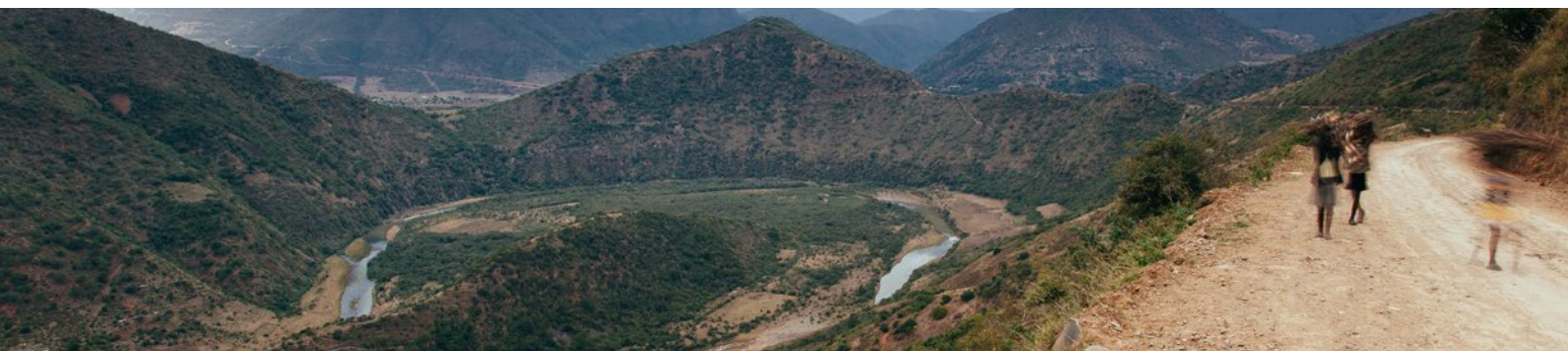
Observed climate trends (*overview*)

- Observed decrease in mean annual rainfall (*low confidence*).
- Observed increase in the frequency of extreme rainfall events (*medium 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 changes in mean annual rainfall are *uncertain* in the near- and mid-future, but there is *high confidence* in decreases in the far-future.
- Projected increase in the frequency of extreme rainfall events (*medium 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*)

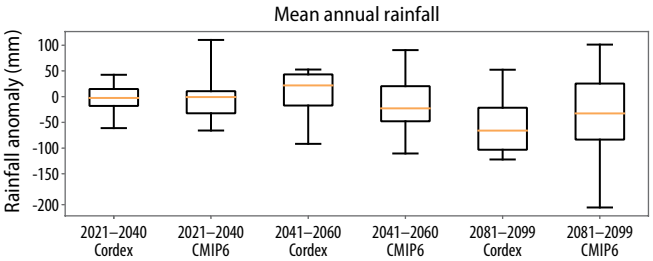
Near- and mid-future

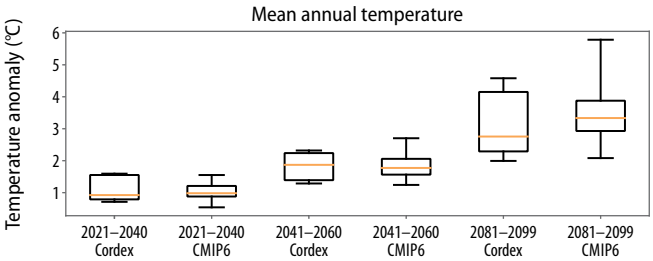
- Projected decrease in rainfall over the western parts, but increases in the east (*low confidence*).
- Projected increase in extreme rainfall events (*medium confidence*), particularly over the northern mountainous regions.
- Projected increase in temperature and warm extremes (*virtually certain*); decrease in cold extremes (*very likely*).
- Projected increase in agricultural and meteorological drought (*low confidence*).

Far-future

- Projected decrease in rainfall (*likely*) and corresponding increase in agricultural and meteorological drought (*likely*).
- Projected increase in extreme rainfall events (*likely*), particularly over the eastern parts and northern interior regions.
- Projected increase in temperature and warm extremes (*virtually certain*); decrease in cold extremes (*very likely*).

Climate model projections: model agreement and uncertainties





Mean annual rainfall

- Averaged across the district, projected changes in rainfall 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- and mid-future (*low confidence*) and far-future (*likely*).

Mean annual temperature

- Temperature increases averaged across the district in the near-future are *virtually certain* and may be as high as 1.5 °C.
- Under low mitigation, further temperature increases are *virtually certain* and may approach 2.0 °C in the mid-future and 4.0 °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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