



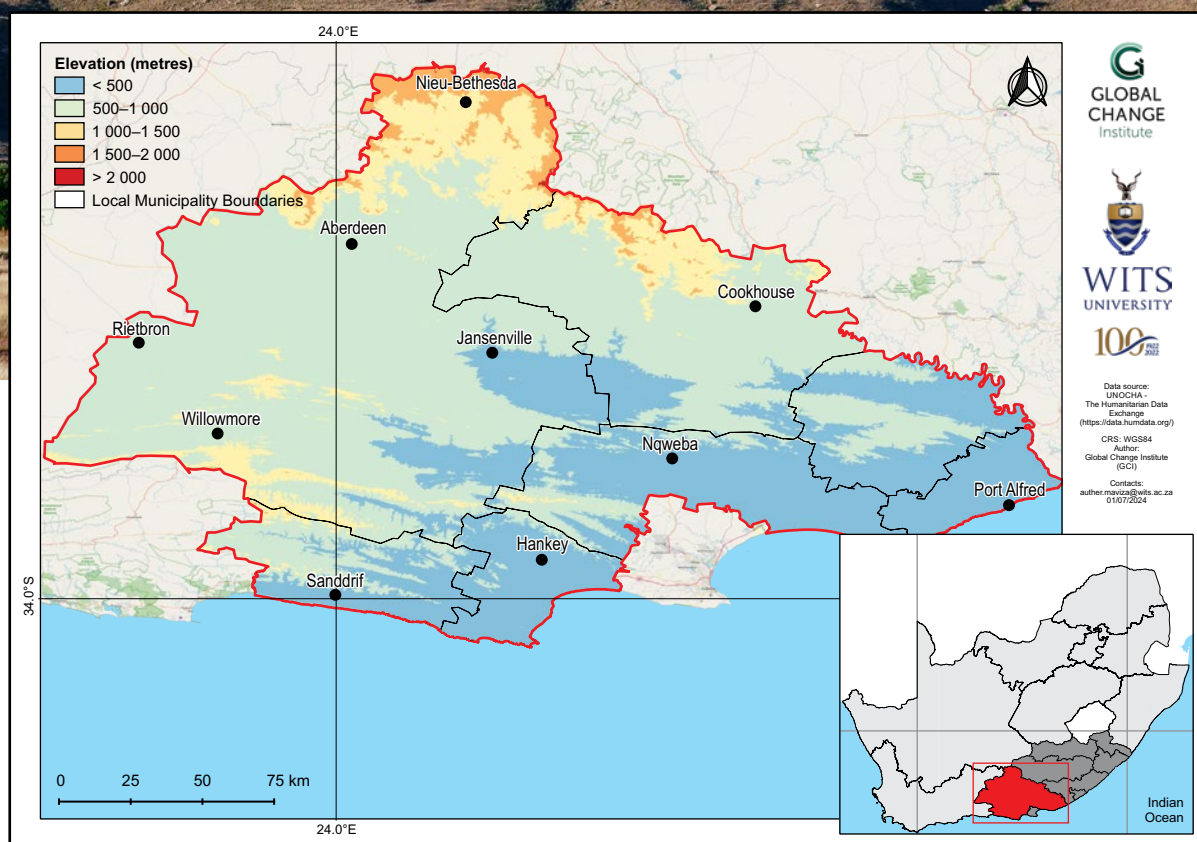
# Sarah Baartman District Municipality climate change fact sheet

## Eastern Cape, South Africa

## MUNICIPAL

### Introduction

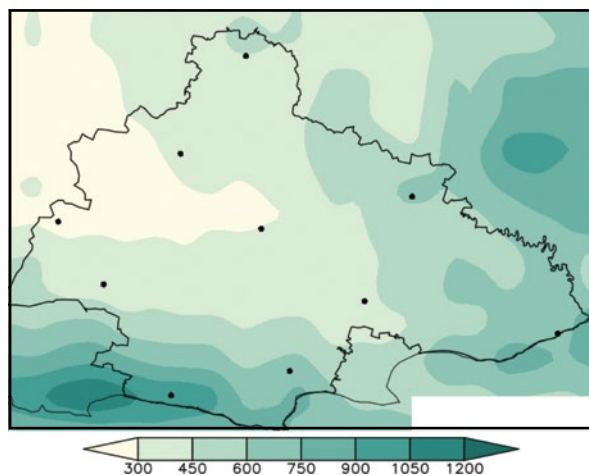
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Sarah Baartman District Municipality covers an area of approximately 58 243 km<sup>2</sup>, with elevation ranging from sea level along the Indian Ocean coastline to about 1 500 m above sea level in the northern mountainous region.
- The coastal strip and adjacent interior of the district falls in South Africa's all-year-rainfall region. Rainfall totals are low in the northern, semi-arid Karoo part of the district, but increase towards the coastline.



## Observed climate: rainfall (1981–2000)

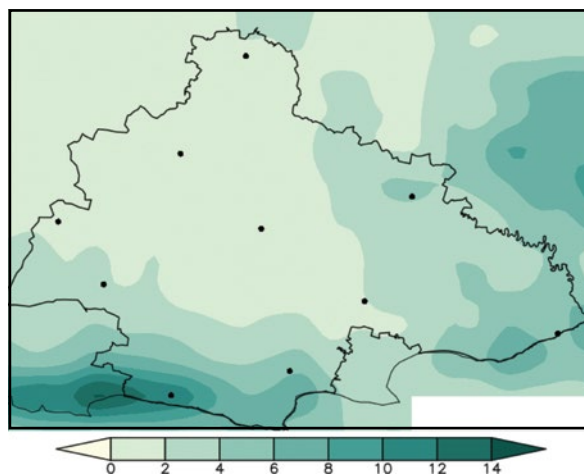
### Mean annual rainfall

Mean annual rainfall ranges from less than 300 mm in the northwestern Karoo to 1 000 mm over the western coastal strip, which falls in the all-year-rainfall region.



### Extreme rainfall days

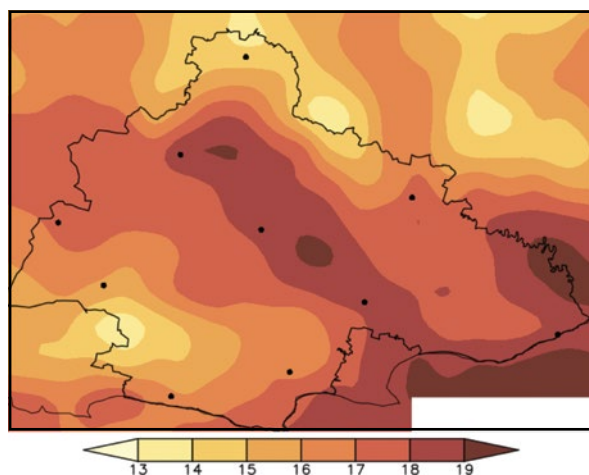
Mean annual number of extreme rainfall days range from less than 2 days over the northwestern interior to 12 days along the western coastal strip, where cut-off low pressure systems occasionally cause devastating flooding.



## Observed climate: temperature (1981–2000)

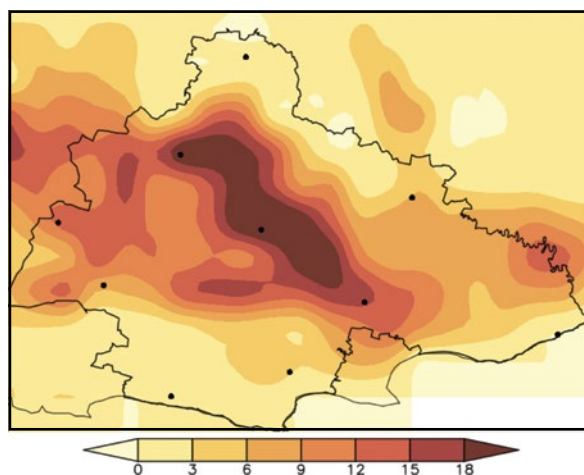
### Mean annual temperature

Mean annual temperature ranges from 13 °C over the southwestern and far northern mountains to 20 °C over parts of the Karoo and coastal strip.



### Very hot days

The central and western Karoo regions are prone to oppressive temperatures with more than 18 very hot days occurring on average per year. The ocean moderates extremes along the coast.

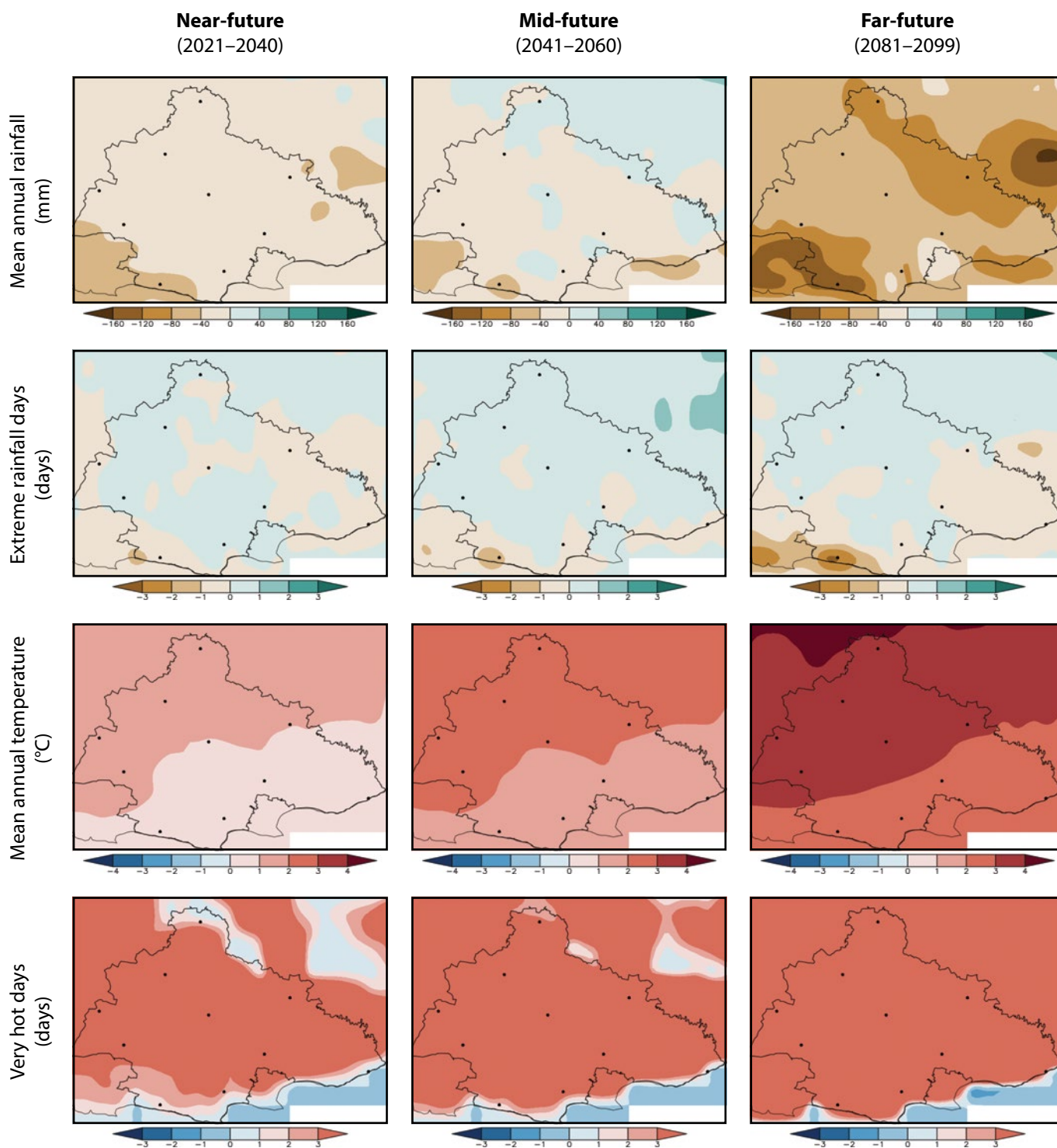


## Observed climate trends (overview)

- 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 (*high confidence*).
- 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 (*high confidence*).



## Projected future climate change (*detailed*)

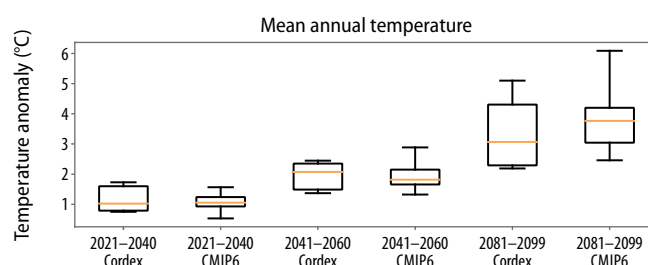
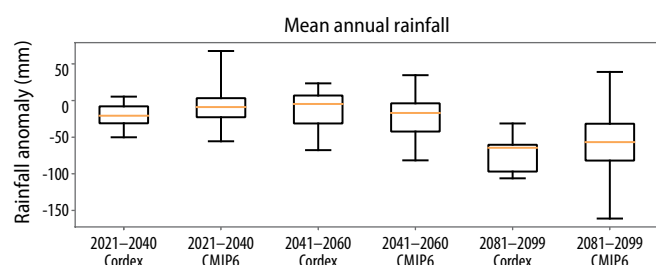
### Near- and mid-future

- Projected decrease in rainfall (*likely*).
- Projected increase in extreme rainfall events over the interior (*medium confidence*), but with decreases projected for the coastal strip (*low confidence*).
- Projected increase in temperature and warm extremes (*virtually certain*), especially in the Karoo; decrease in cold extremes (*likely*).
- Projected increase in meteorological and agricultural drought (*likely*).

### Far-future

- Projected decrease in rainfall (*very likely*) and associated increase in meteorological and agricultural drought (*very likely*).
- Projected increase in extreme rainfall events over the interior (*likely*), but with decreases projected for the coastal strip (*low confidence*).
- Projected increase in temperature and warm extremes (*virtually certain*), especially in the Karoo; decrease in cold extremes (*very likely*).

## Climate model projections: model agreement and uncertainties



### Mean annual rainfall

- Averaged across the district, rainfall decreases are projected for the near- and mid-future (*likely*).
- Further rainfall decreases are projected for the district 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 near- and mid-future (*likely*) and far-future (*very likely*), with multi-year droughts occurring more frequently (*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*).

#### Citation:

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## Contact

- Global Change Institute (GCI), University of the Witwatersrand, Johannesburg, South Africa. Website: [www.wits.ac.za/gci](http://www.wits.ac.za/gci)
- South African National Biodiversity Institute (SANBI). Website: [www.sanbi.org](http://www.sanbi.org)