

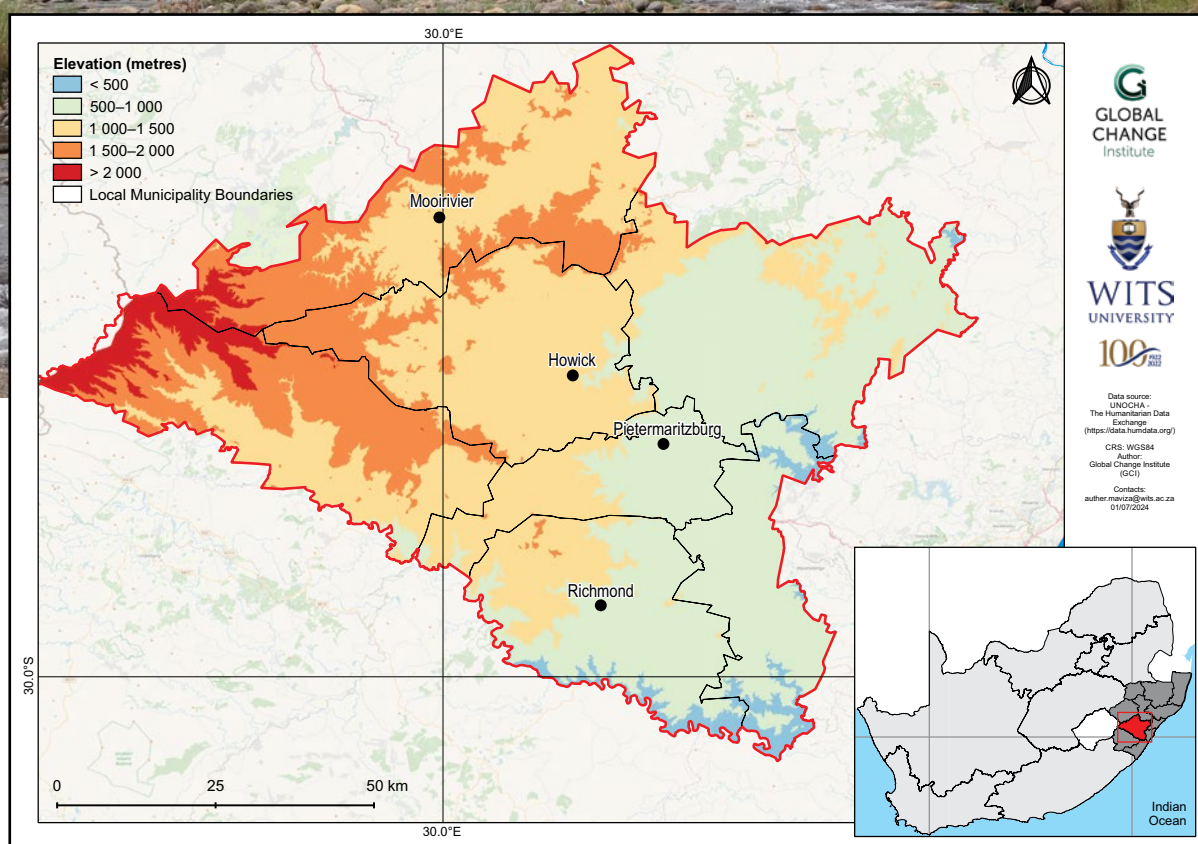
# Umgungundlovu District Municipality climate change fact sheet

## KwaZulu-Natal, South Africa

## MUNICIPAL

### Introduction

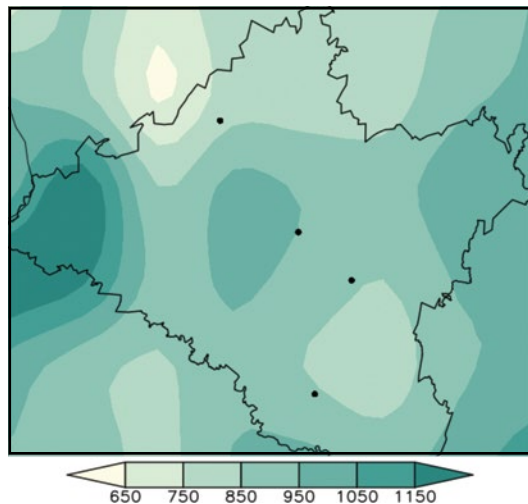
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Umgungundlovu District Municipality covers an area of 9 513 km<sup>2</sup>, with elevation ranging from 500 m above sea level in the east to 2 000 m above sea level in the Drakensberg to the west.
- The district experiences a varied climate; the eastern region is temperate with warm summers and cooler winters, while the western highlands have a cool to alpine climate with higher summer rainfall. Snowfall can occur in the mountainous regions in winter.



## Observed climate: rainfall (1981–2000)

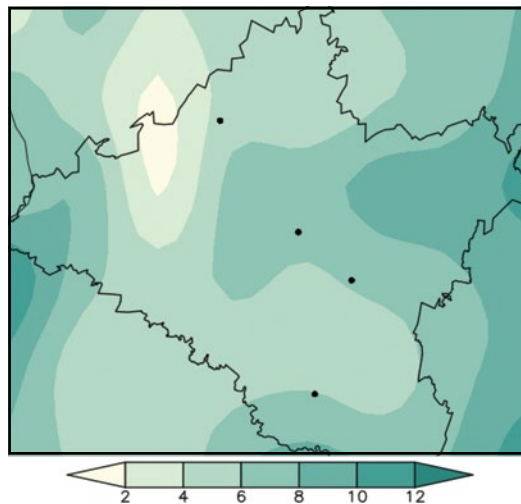
### Mean annual rainfall

Mean annual rainfall ranges from 650 mm over the south-eastern interior parts to 1 150 mm over the Drakensberg in the west.



### Extreme rainfall days

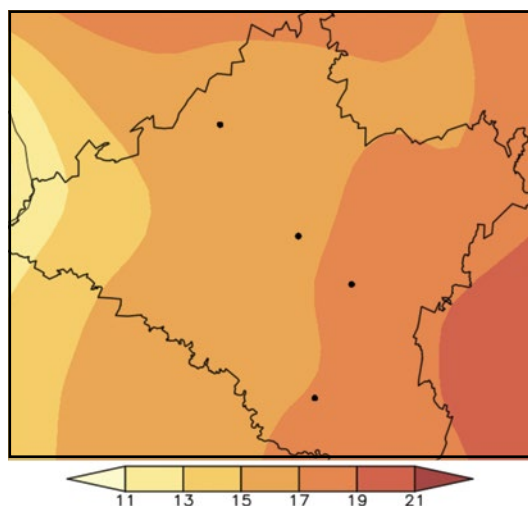
Observed mean annual number of extreme rainfall days range from less than 2 days over the northern border parts to 10 days over the highlands in the west and lowlands.



## Observed climate: temperature (1981–2000)

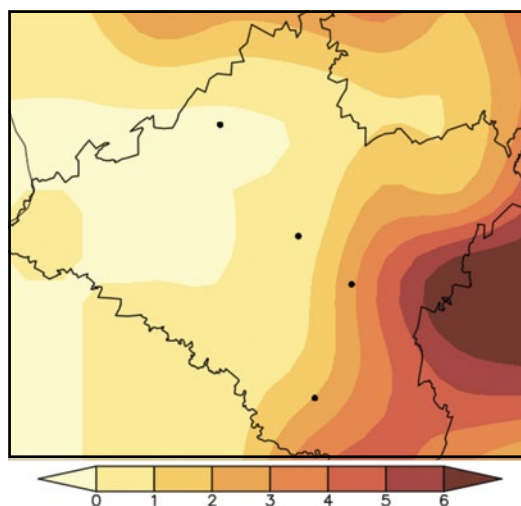
### Mean annual temperature

Mean annual temperature ranges from 11 °C in the western highlands of the Drakensberg to 19 °C over the eastern lower-lying region.



### Very hot days

Observed mean annual number of very hot days range from 0 days over western interior parts to 6 days in the eastern low-lying parts.

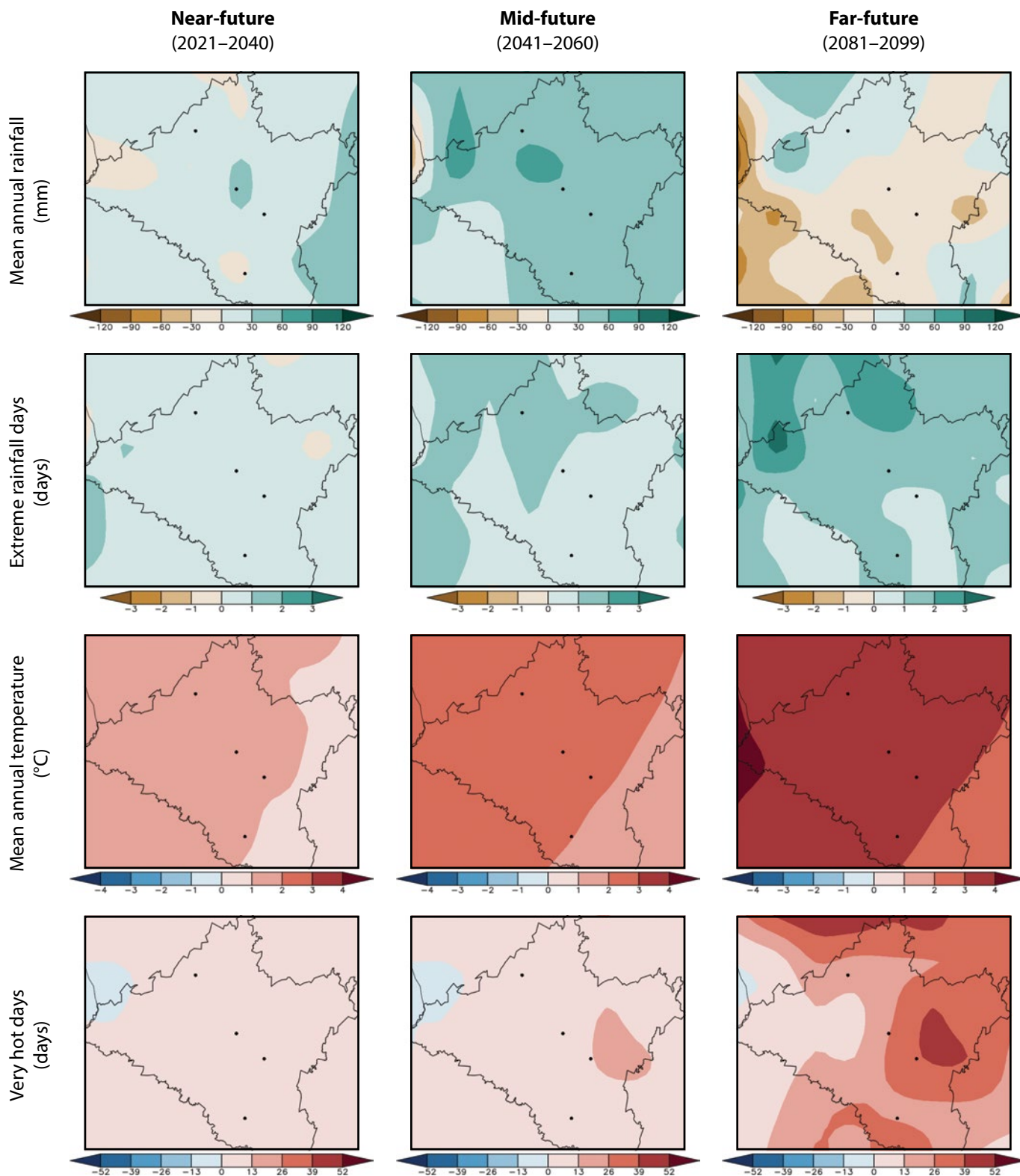


## Observed climate trends (overview)

- 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 increase in mean annual rainfall in the near- and mid-future (*low 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 (*low confidence*).



## Projected future climate change (*detailed*)

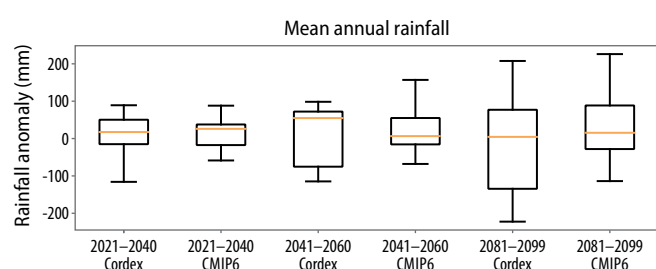
### Near- and mid-future

- Projected increase in mean annual rainfall (*more likely than not*).
- 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 (*low confidence*).

### Far-future

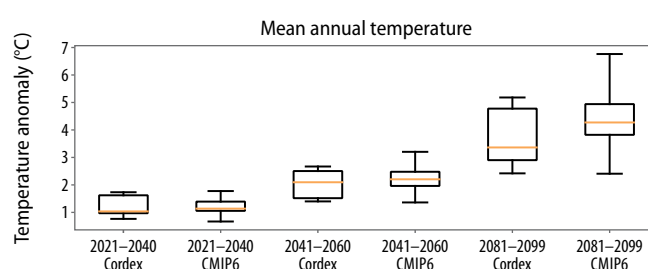
- Projected changes in rainfall in the far-future are *uncertain*.
- Projected increase in extreme rainfall events (*very likely*).
- Projected increase in temperature and warm extremes (*virtually certain*); decrease in cold extremes (*very likely*).
- Projected increase in agricultural and meteorological drought (*low confidence*).

## Climate model projections: model agreement and uncertainties



### Mean annual rainfall

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



### 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 2.5 °C in the mid-future and 5.0 °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:

Engelbrecht, F.A., Maviza, A., Steinkopf, J., Vogel, C., Von Maltitz, G., Yose, P. & Barnett, M. 2025. *Sub-national climate change fact sheets for South Africa*. © South African National Biodiversity Institute (SANBI) and University of the Witwatersrand – Global Change Institute (WITS-GCI). DOI: <https://doi.org/10.5281/zenodo.16962181>.

This work is licensed under CC BY-NC-ND 4.0 (Attribution-NonCommercial-NoDerivatives 4.0 International).

<https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>.

## 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)