

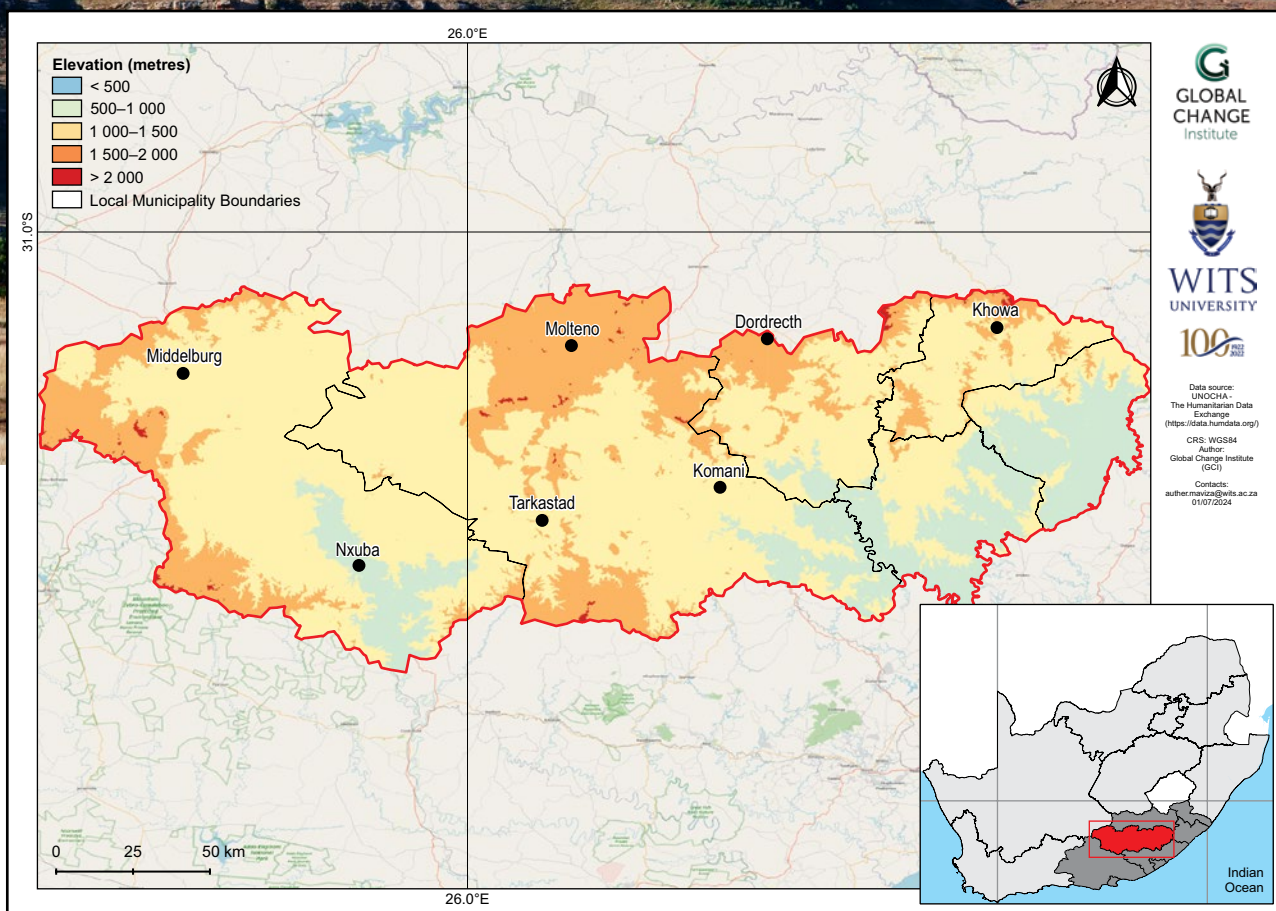
Chris Hani District Municipality climate change fact sheet

Eastern Cape, South Africa

MUNICIPAL

Introduction

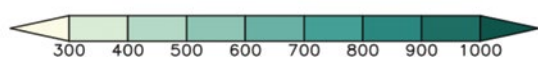
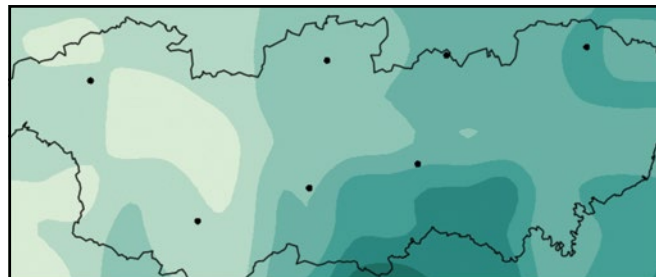
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Chris Hani District Municipality covers an area of approximately 36 558 km², with elevations ranging from 700 m above sea level in the southern plains and valleys, to 2 000 m above sea level in the northern mountainous regions of the Drakensberg.
- The district is in South Africa's summer-rainfall region, with a strong rainfall gradient from the semi-arid Karoo in the west to wetter regions in the east. Occasional snowfall may occur in winter in the mountainous regions.



Observed climate: rainfall (1981–2000)

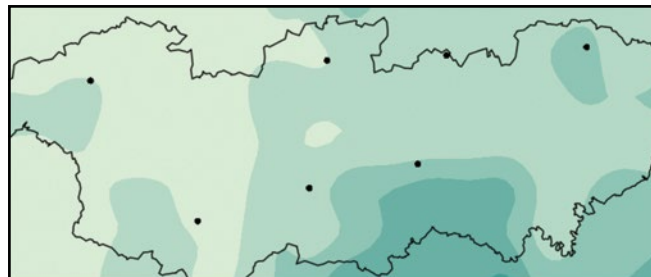
Mean annual rainfall

Mean annual rainfall is from as low as 300 mm in the semi-arid Karoo regions in the west, to higher than 700 mm in the east of the district.



Extreme rainfall days

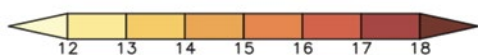
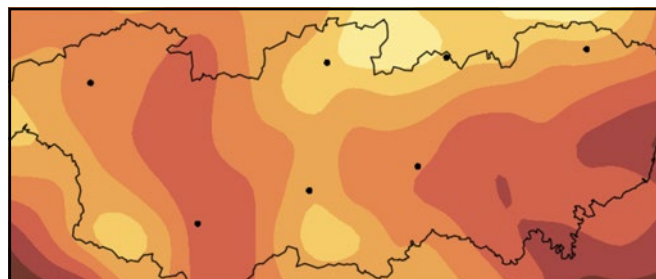
The mean annual number of extreme rainfall days range from less than 2 days in the western Karoo regions, to about 6 days over parts of the southern border.



Observed climate: temperature (1981–2000)

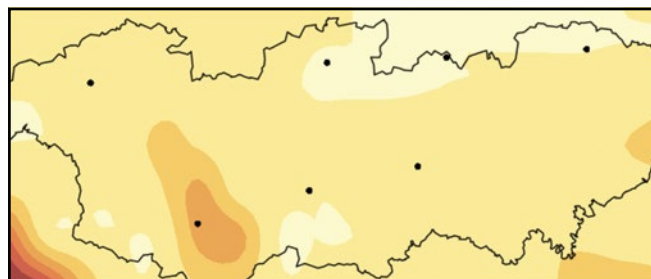
Mean annual temperature

Mean annual temperature ranges from about 12 °C over the mountainous regions to 18 °C in the eastern valleys.



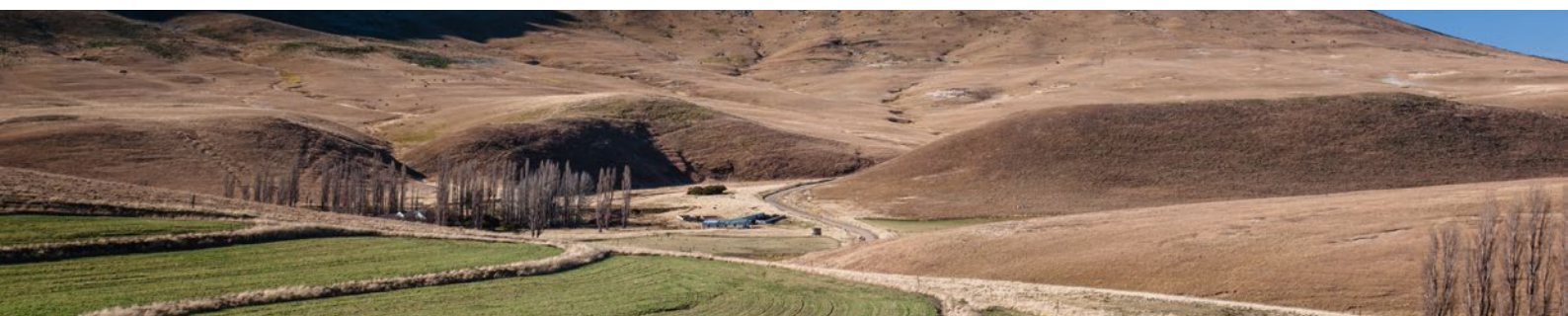
Very hot days

The mean annual number of very hot days range from less than 3 days over much of the district, to higher than 6 days in the upper valley of the Great Fish River.



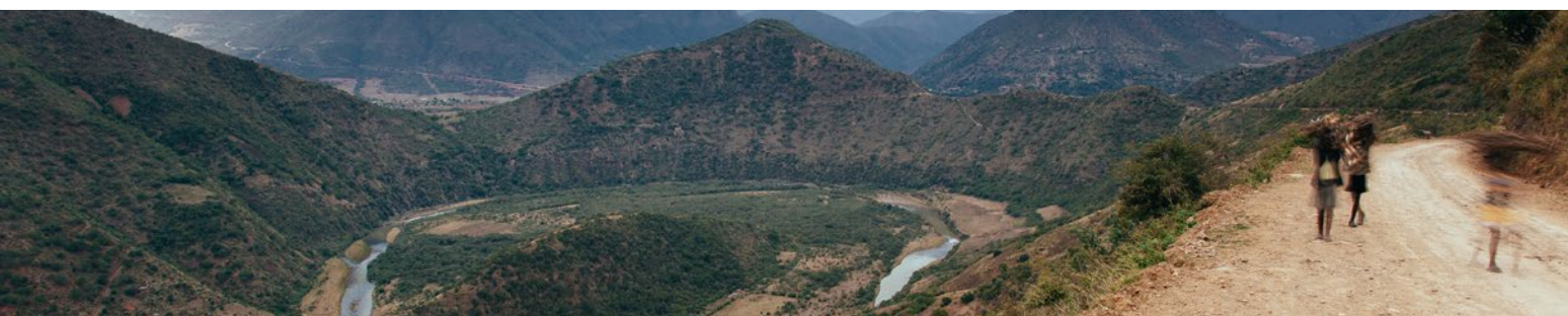
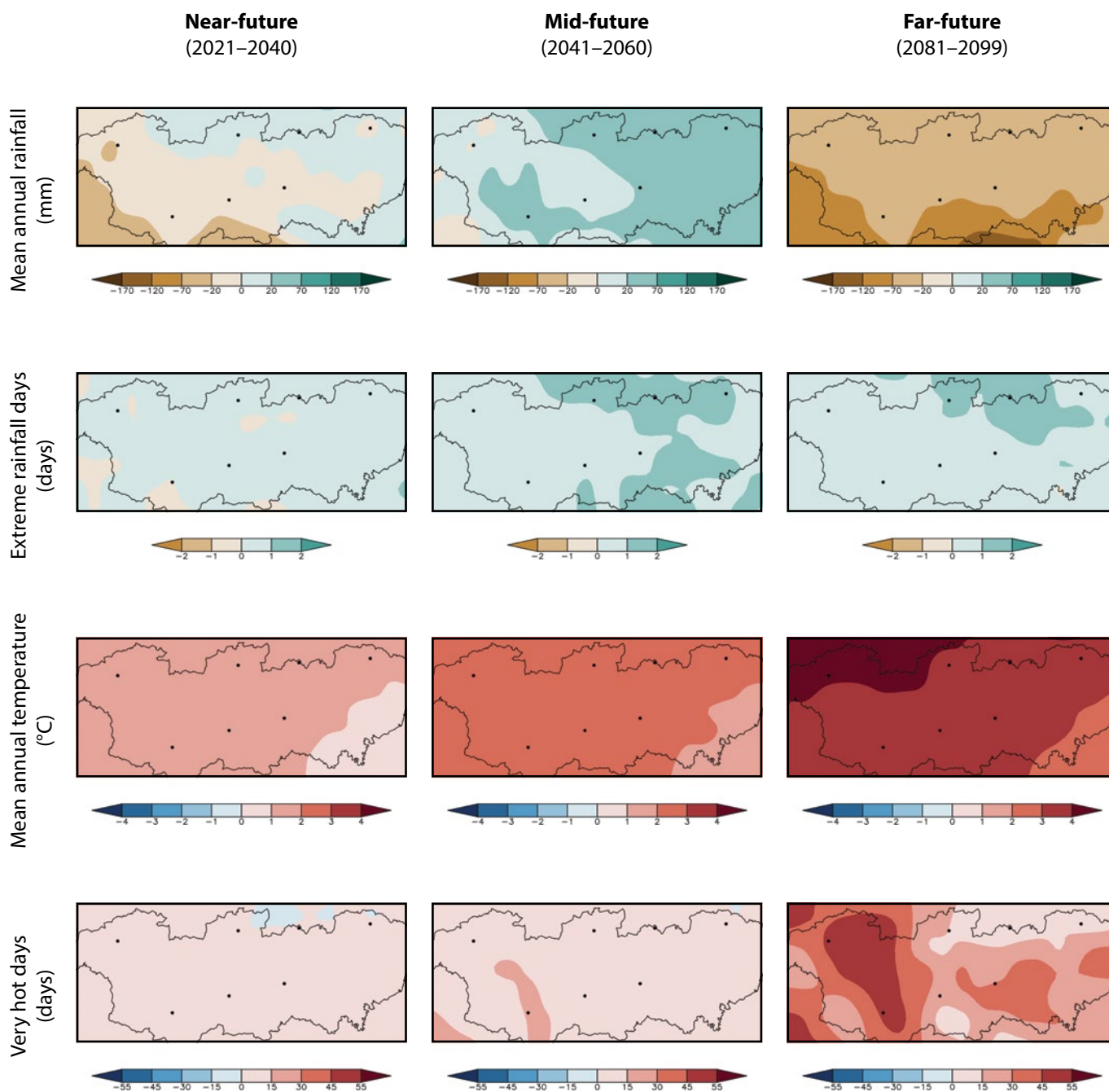
Observed climate trends (overview)

- 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*. Rainfall reductions are *likely* in the far-future.
- Projected increase in the frequency of extreme rainfall events (*medium confidence*).
- Projected increase in annual average 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*)

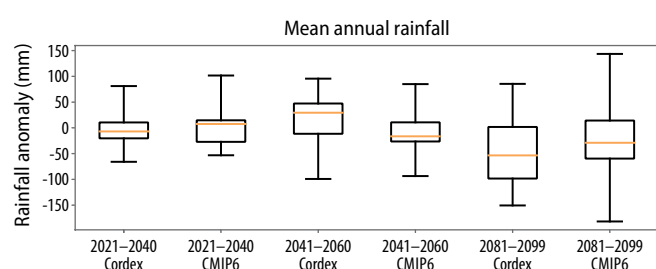
Near- and mid-future

- Projected changes in rainfall in the near- and mid-future are *uncertain*.
- Projected increase in the frequency of 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

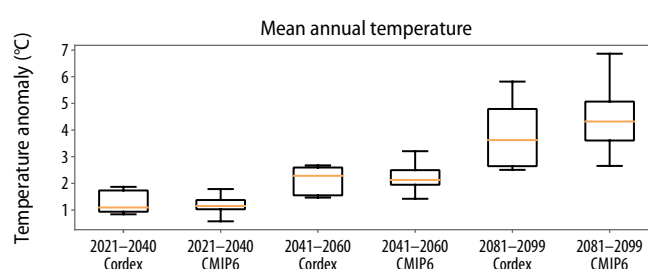
- Projected decrease in rainfall (*likely*).
- Projected increase in the frequency of extreme rainfall events (*likely*).
- Projected increase in temperature and warm extremes (*virtually certain*); decrease in cold extremes (*very likely*).
- Projected increase in agricultural and meteorological drought (*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 *likely* in the far-future under low mitigation scenarios.
- 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 2.5 °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:

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