

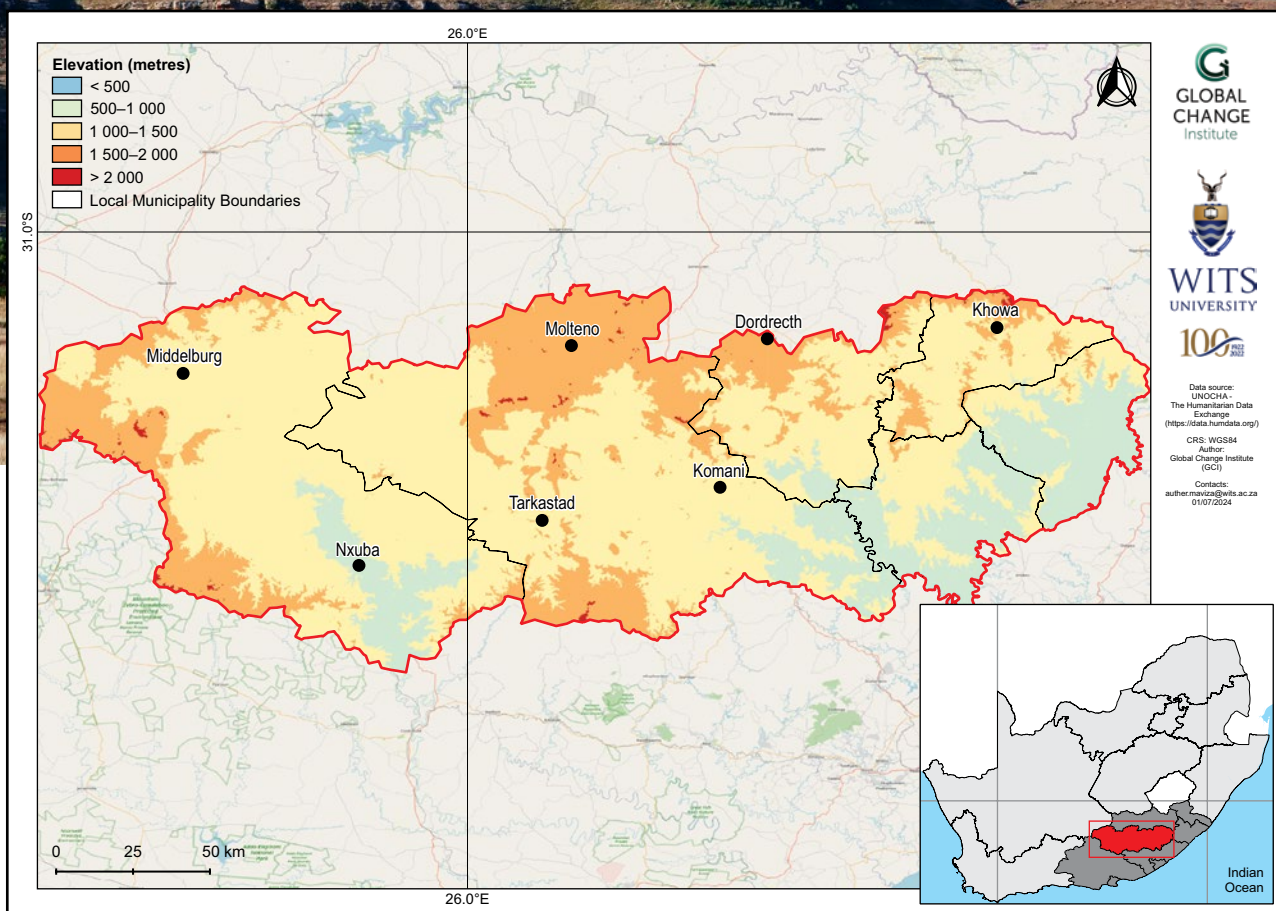
# Chris Hani District Municipality climate change fact sheet

## Eastern Cape, South Africa

### MUNICIPAL

### Introduction

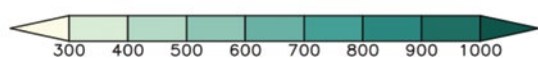
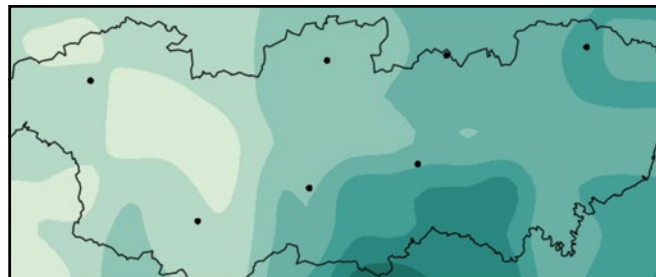
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Chris Hani District Municipality covers an area of approximately 36 558 km<sup>2</sup>, 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)

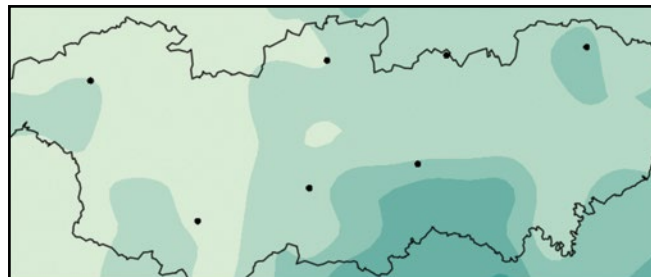
### Mean annual rainfall

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

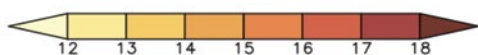
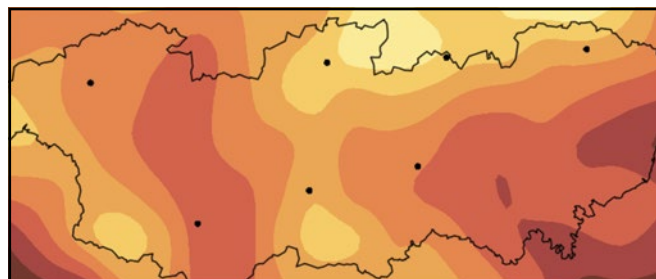
The mean annual number of extreme rainfall days range from less than 2 days in the western Karoo regions, to about 6 days over parts of the southern border.



## Observed climate: temperature (1981–2000)

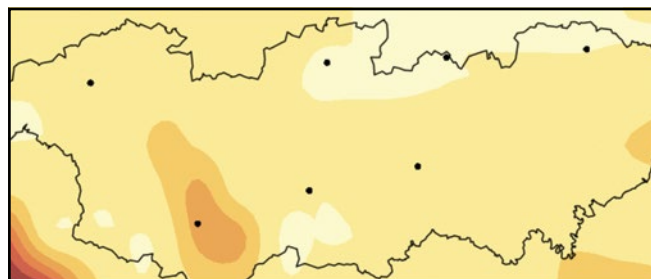
### Mean annual temperature

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



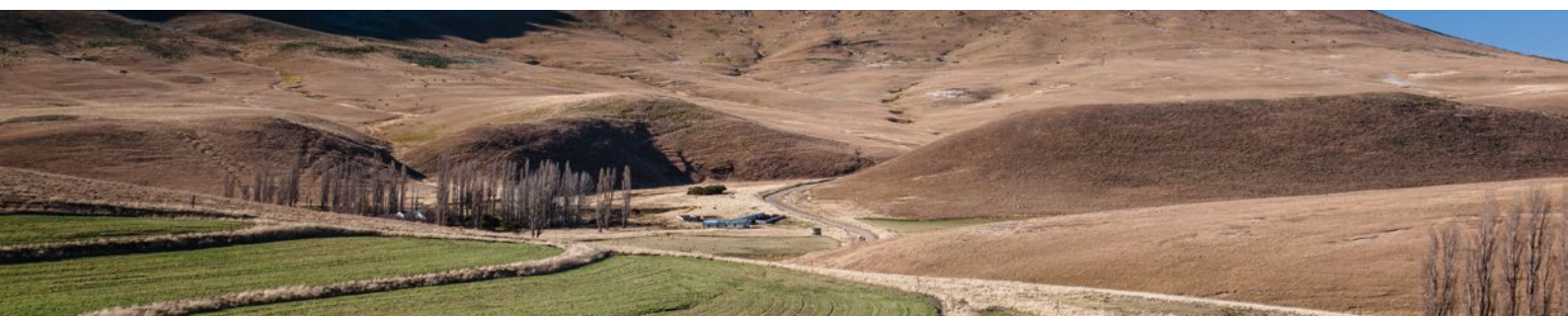
### Very hot days

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.



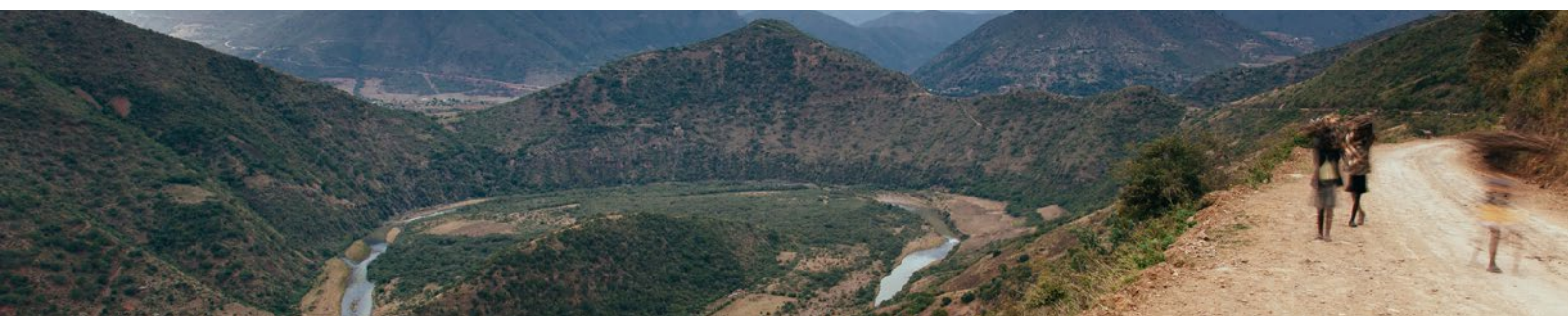
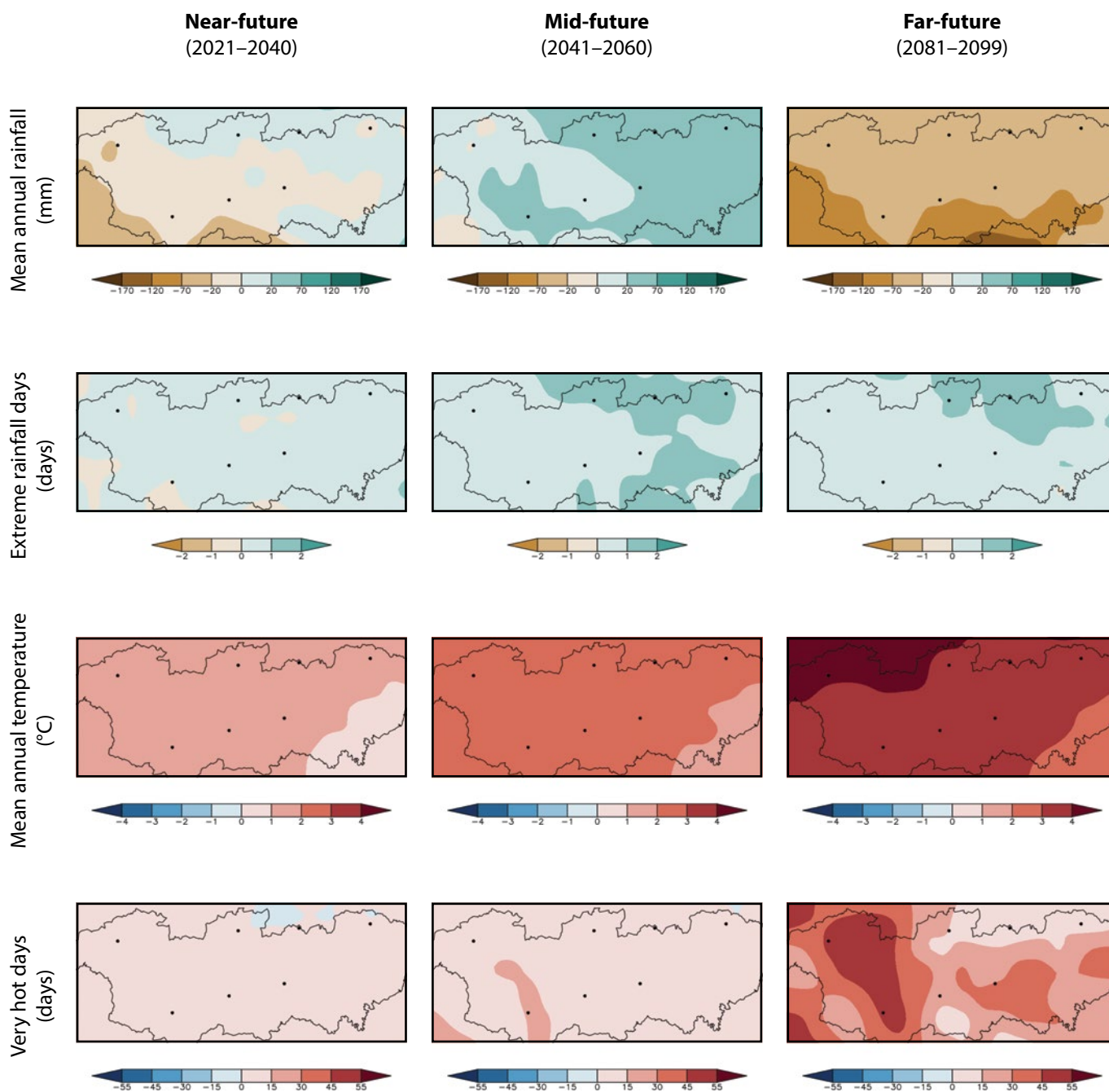
## Observed climate trends (overview)

- 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*)

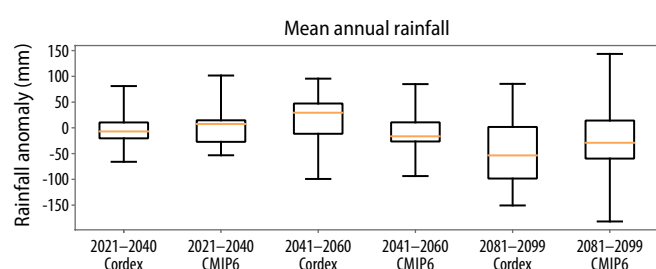
### Near- and mid-future

- 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

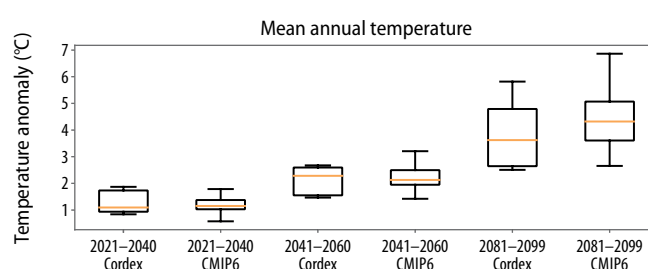
- Projected decrease in rainfall (*likely*).
- Projected increase in the frequency of extreme rainfall events (*likely*).
- Projected increase in temperature and warm extremes (*virtually certain*); decrease in cold extremes (*very likely*).
- Projected increase in agricultural and meteorological drought (*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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## Contact

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