



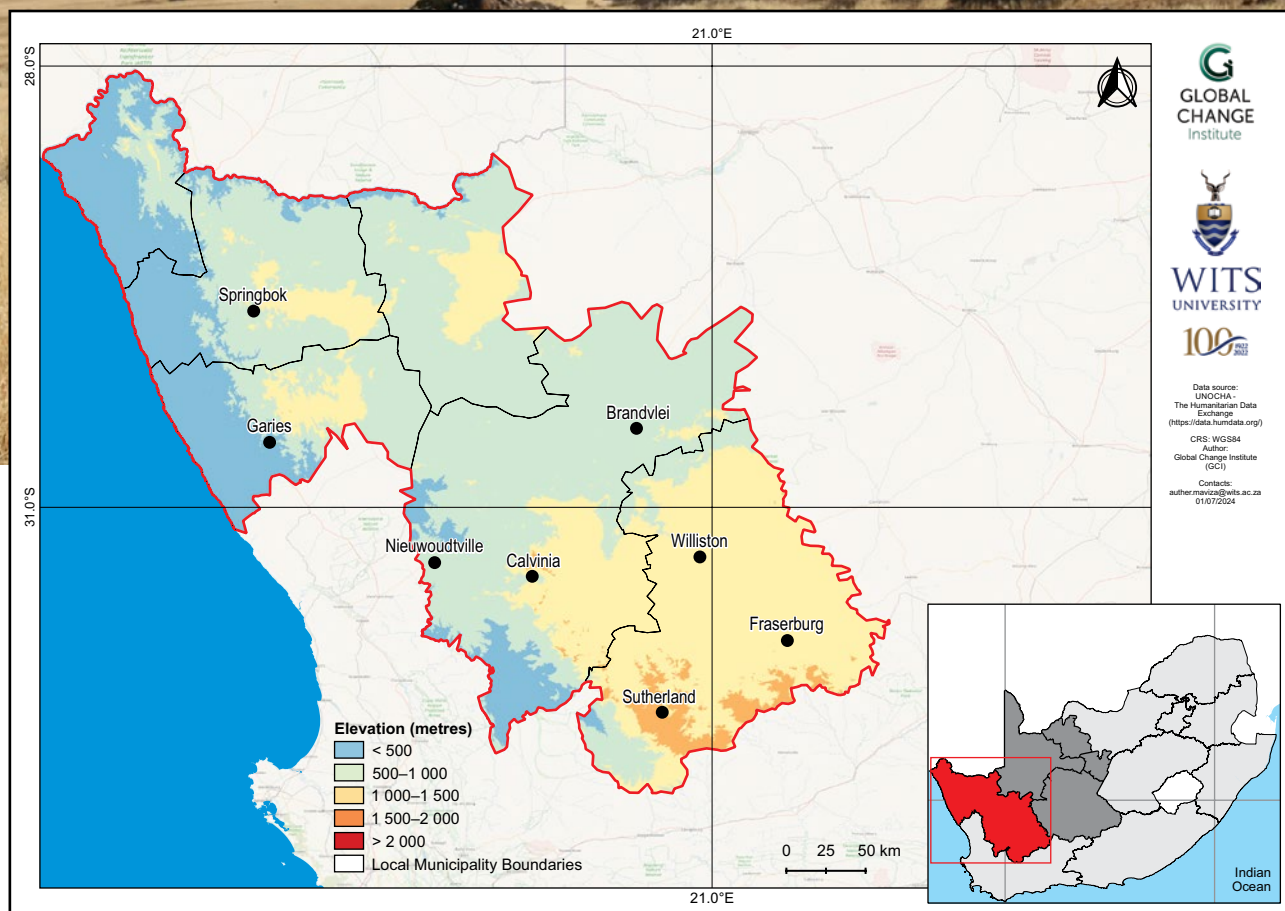
# Namakwa District Municipality climate change fact sheet

## Northern Cape, South Africa

### MUNICIPAL

### Introduction

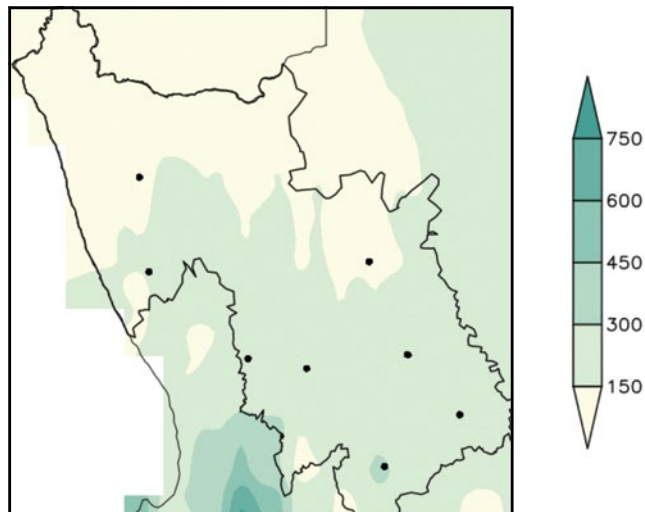
- This fact sheet is part of a series of district municipality fact sheets developed by the Wits GCI and SANBI. The fact sheets present a summary of observed and projected changes in climate over district municipalities in South Africa. They should be used together with the guidelines presented in the cover page.
- Namakwa District Municipality covers an area of approximately 126 836 km<sup>2</sup>, with elevation ranging from sea level along the Atlantic Ocean coastline to 1 600 m above sea level in the Namakwa Highlands in the southeast.
- The district has a semi-arid to arid climate, with average annual rainfall totals of less than 150 mm in the north. The southern parts of the district fall in the winter-rainfall region, receiving frontal rain in winter. Summers are hot and winters are cold.



## Observed climate: rainfall (1981–2000)

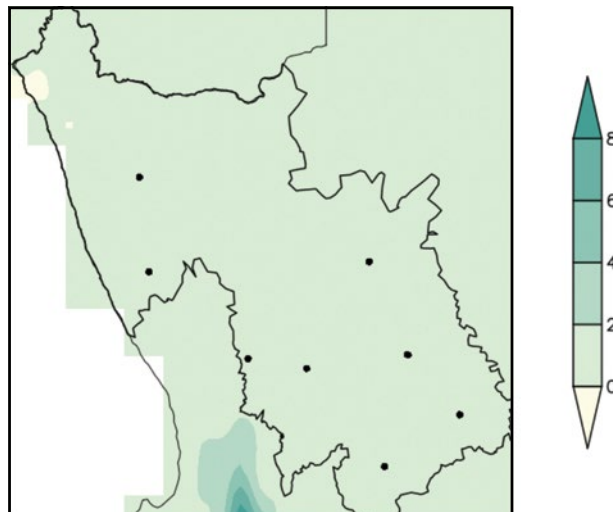
### Mean annual rainfall

Mean annual rainfall ranges from 150 mm in the arid north to 300 mm in the semi-arid south.



### Extreme rainfall days

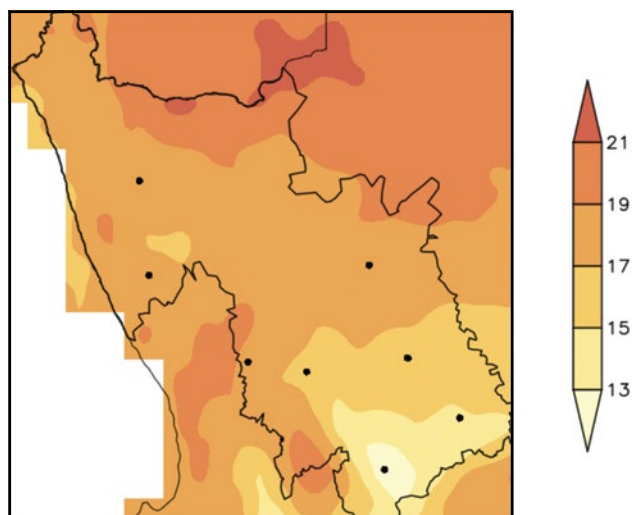
Annual average number of extreme rainfall days are less than 2 days across the district.



## Observed climate: temperature (1981–2000)

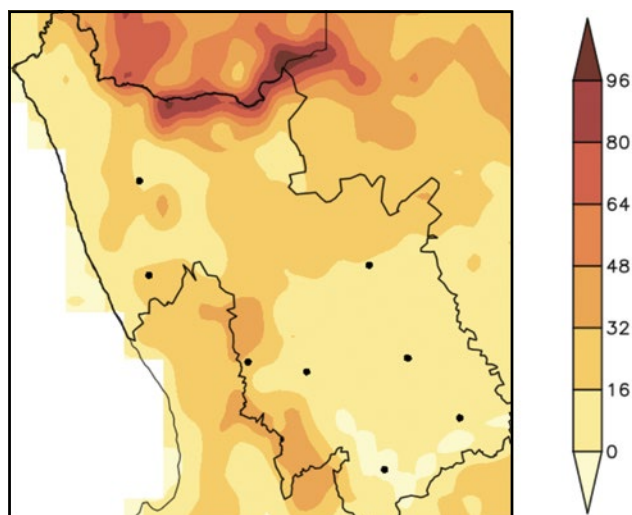
### Mean annual temperature

Mean annual temperature ranges from 13 °C over the Namakwa Highlands in the southeast to 21 °C over the northernmost parts.



### Very hot days

Mean annual number of very hot days range from 0 days in the southeast to as many as 80 days within the Orange River valley along the northern border.

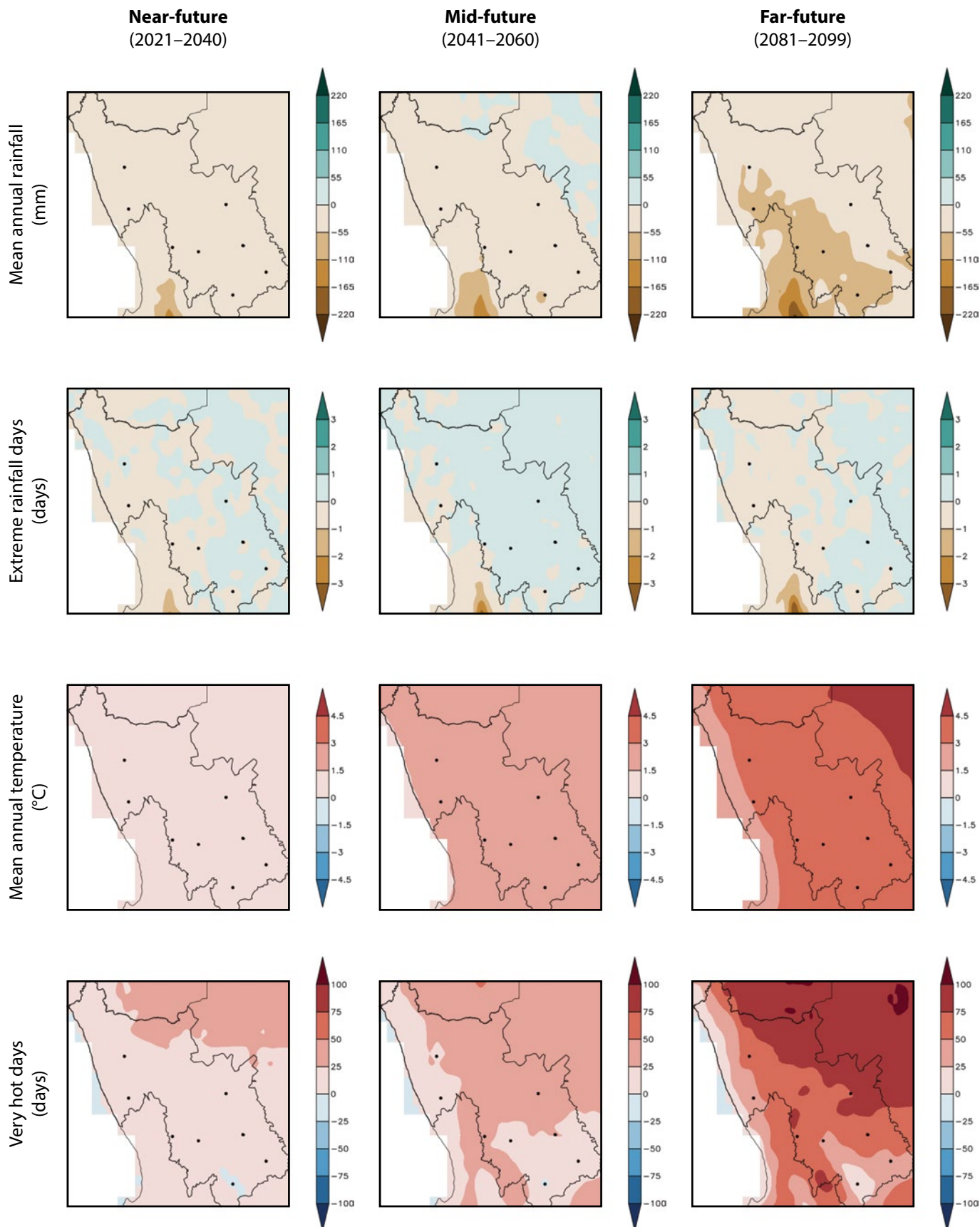


## Observed climate trends (overview)

- Observed decrease in mean annual rainfall (*low confidence*).
- Observed decrease in the frequency of extreme rainfall events (*low 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 (*low confidence*).
- Projected increase in mean annual temperature and warm extremes (*virtually certain*).
- Projected increase in agricultural and meteorological drought (*high confidence*).



## Projected future climate change (*detailed*)

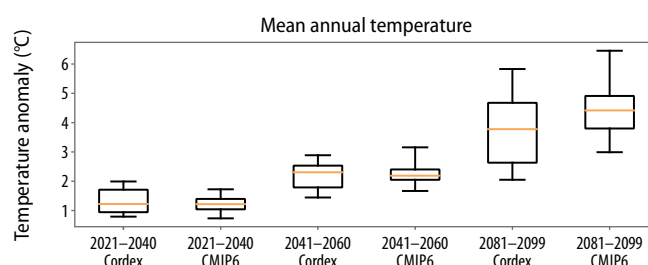
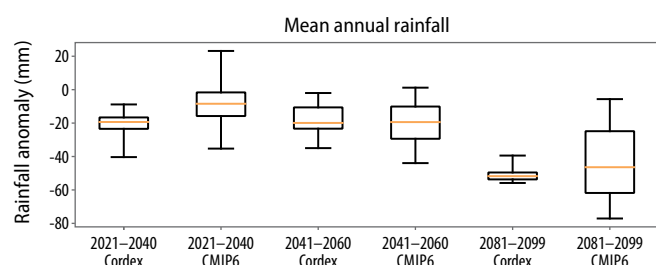
### Near- and mid-future

- Projected decrease in rainfall in the near-future (*likely*) and mid-future (*very likely*).
- Projected increase in extreme rainfall events (*low confidence*).
- Projected increase in temperature and warm extremes (*virtually certain*).
- Projected increase in agricultural and meteorological drought (*very likely*).

### Far-future

- Projected decrease in rainfall (*very likely*), larger decreases over the southern parts of the district.
- Projected increase in extreme rainfall events (*low confidence*).
- Projected increase in temperature and warm extremes (*virtually certain*), with drastic increases over the northern to northeastern parts.
- Projected increase in agricultural and meteorological drought (*very likely*).

## Climate model projections: model agreement and uncertainties



### Mean annual rainfall

- Averaged across the district, rainfall is projected to decrease already in the near-future (*likely*), with further decreases projected for the mid- and far-future (*very likely*) under low mitigation scenarios.
- Partially in response to *virtually certain* temperature increases, agricultural drought is to occur more frequently in the future (*very 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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