Mashare - Climate

Mashare is located after the confluence of the Cuito and Cubango Rivers at the Angolan-Namibian border and has an altitude of 1,068 m. The climate at this site is characterized by semi-arid conditions with a rainy season during the austral summer and a dry period from May to September (Fig. 1). During the period 1971 to 2000, the annual mean rainfall was determined to be 571 mm (Tab. 1). Over the period 1950 to 2009, the annual rainfall in Mashare shows a high interannual variability without any obvious trend (Fig. 2). Mashare has an annual mean temperature of 22.3 °C with October and July being the hottest and the coldest months with average mean temperature of 26.2 °C and 16.2 °C respectively. The long-term annual mean temperature shows a moderate interannual variability with an increase in temperature since the late 1970s (Fig. 3). On average 21 frost days per year were recorded in the dry season from May to September.

Table 1: General information and key figures.

Climate	Time period
semi-arid	1971-2000
Annual mean temperature	**Mean diurnal temperature range**
22.3 °C	15.9 °C
Mean number of frost days per year	**Annual mean rainfall**
21	571 mm
Dry season	**Vegetation period**
May to September	November to March

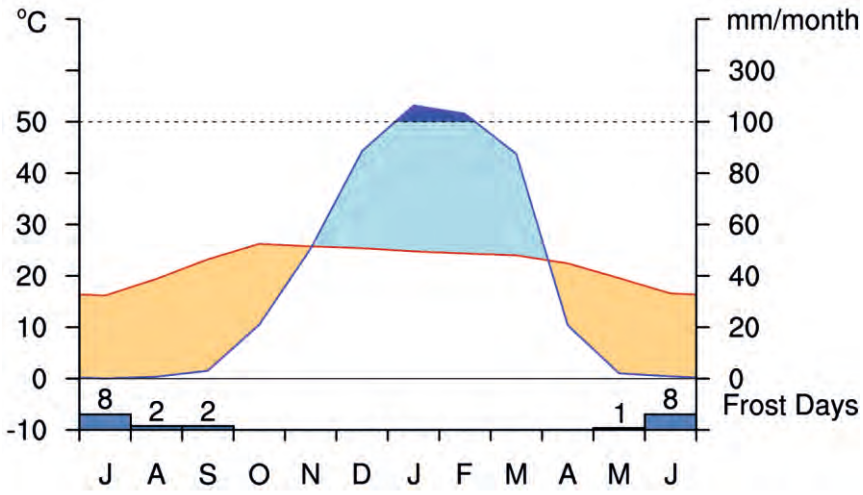

Fig. 1: Walter-Lieth climate diagram of Mashare (data source: Temperature from the Climatic Research Unit (CRU), rainfall from the Global Precipitation Climatology Centre (GPCC)).

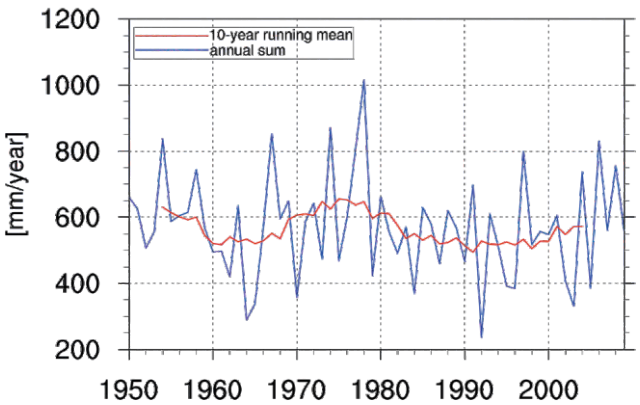

Fig. 2: Annual sum of rainfall in Mashare between 1950 and 2009 (data source: Global Precipitation Climatology Centre (GPCC)).

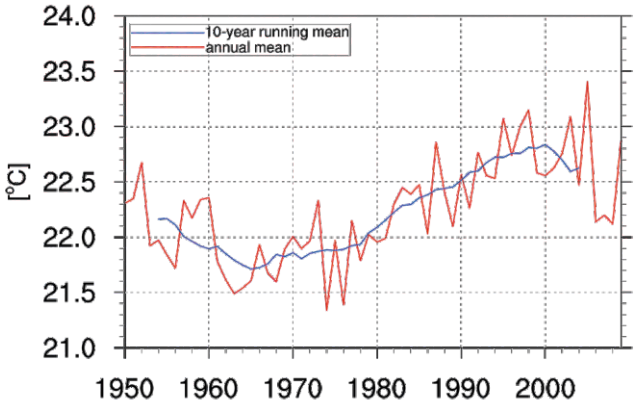

Fig. 3: Annual mean temperature in Mashare between 1950 and 2009 (data source: Climatic Research Unit (CRU)).

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Data source

Temperature data, frost days, diurnal temperature range were taken from the Climatic Research Unit (CRU) (Mitchell & Jones 2005). Rainfall data were taken from the Global Precipitation Climatology Centre (GPCC) (Becker et al. 2013). Both gridded observational data sets have a horizontal resolution of 0.5° x 0.5° (about 55 km x 55 km). Altitude was taken from the NASA Shuttle Radar Topographic Mission (SRTM) 90 m Digital Elevation Database, (Jarvis, A., Reuter, H. I., Nelson, A., Guevara, E., (2008): Hole-filled SRTM for the globe Version 4, available from the CGIAR-CSI SRTM 90 m Database (http://srtm.csi.cgiar.org)).

References

Becker, A., Finger, P., Meyer-Christoffer, A., Rudolf, B., Schamm, K., Schneider, U., and Ziese, M. (2013): A description of the global land-surface precipitation data products of the Global Precipitation Climatology Centre with sample applications including centennial (trend) analysis from 1901–present. – Earth System Science Data **5**: 71–99. CrossRef

Mitchell, T.D., Jones, P.D. (2005): An improved method of constructing a database of monthly climate observations and associated high-resolution grids. – International Journal of Climatology **25**: 693–712. CrossRef

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