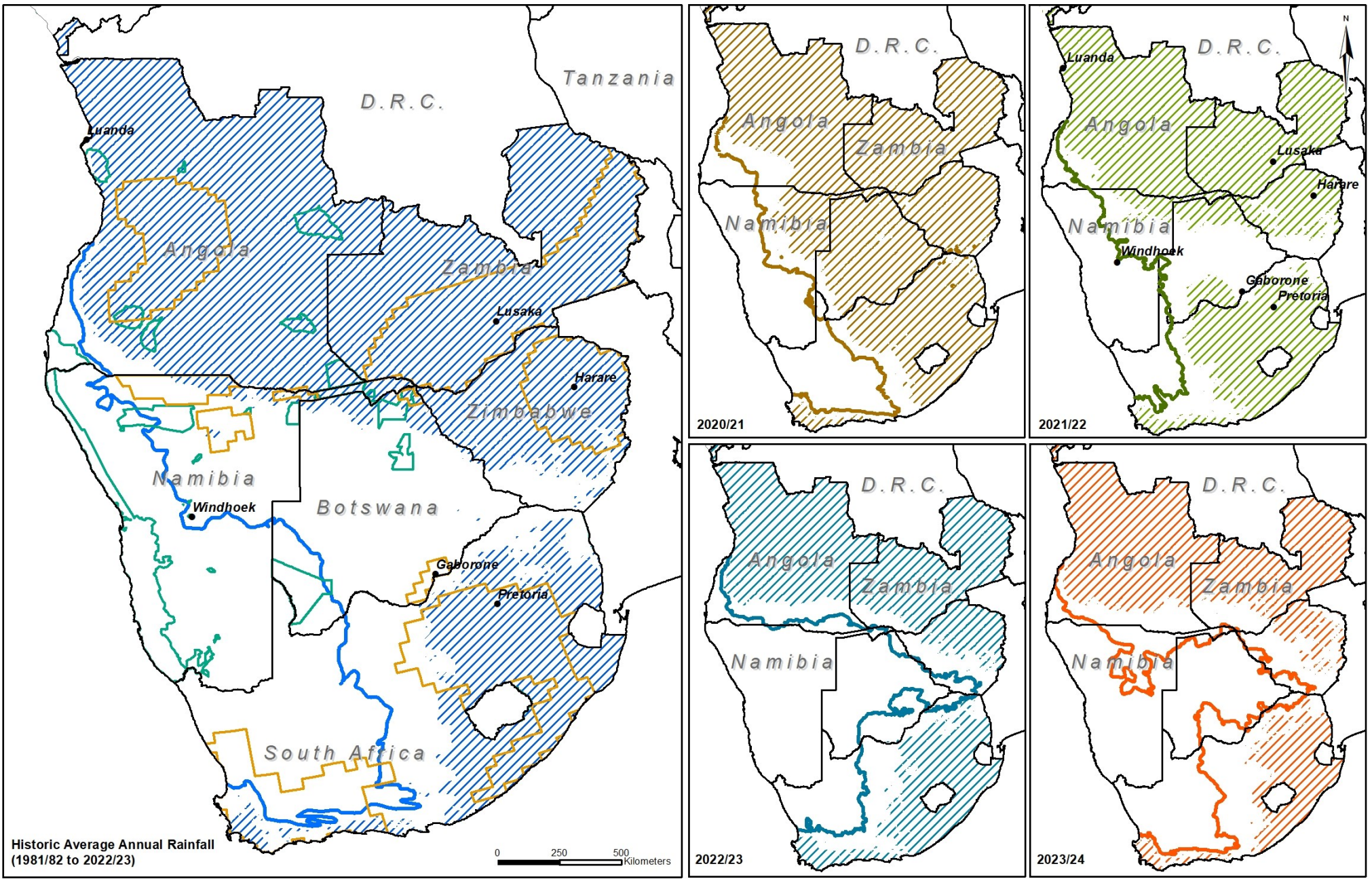


SASSCAL Info Map

Drought impact on rainfed agriculture (2020/21 to 2023/24)

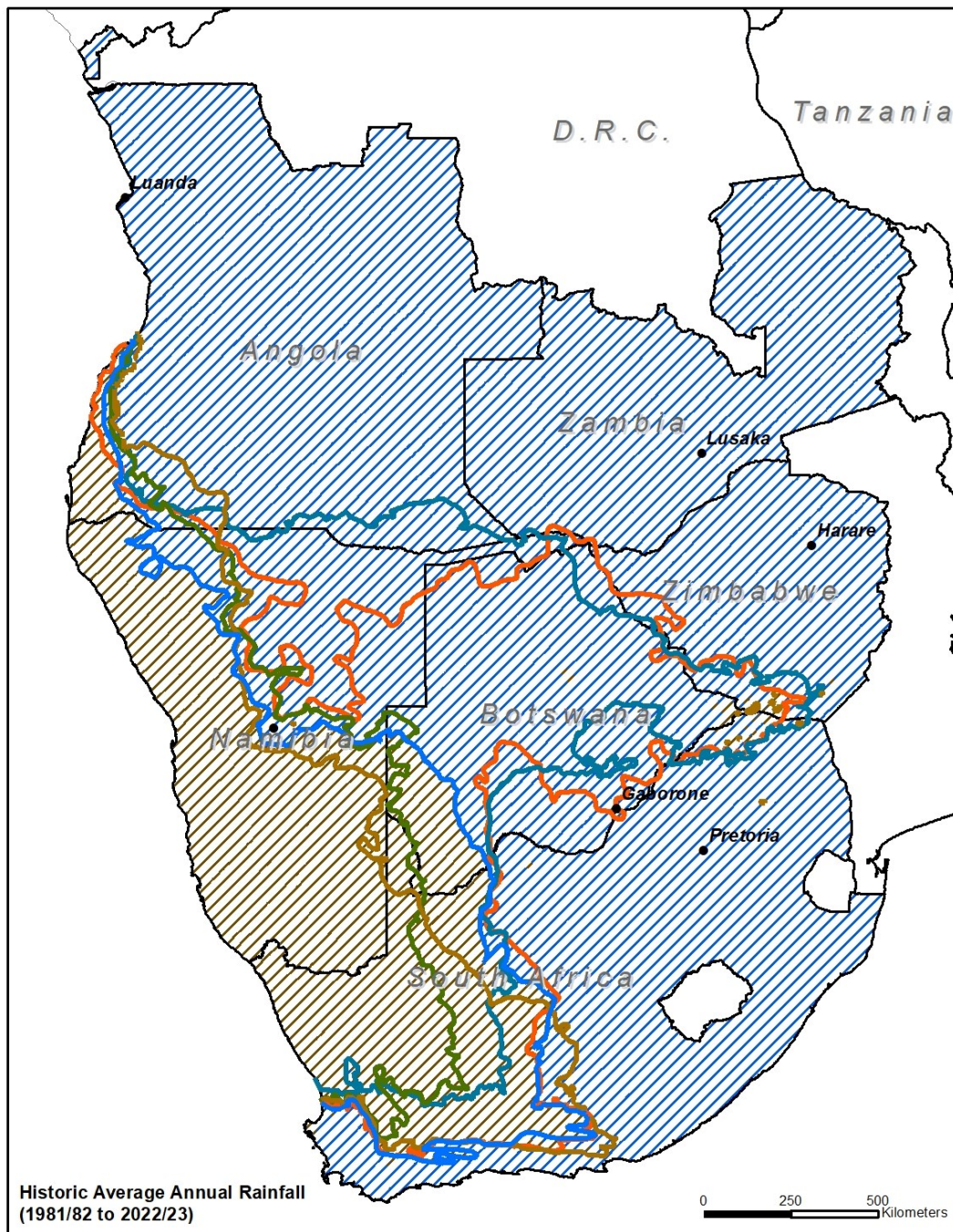


Historic Average Annual Rainfall (1981/82 to 2022/23)

0 250 500 Kilometers

- Average Annual Rainfall Isohyet of 300 mm separating suitability of cattle from sheep farming
- //// Average Annual Rainfall >= 500 mm corresponding to water requirement of rainfed maize crop
- ▭ Major Crop Zones
- ▭ National Park

Drought impact on rainfed agriculture (2020/21 to 2023/24)



Much of southern Africa relies on rainfed agriculture. In 2005, FAOSTAT estimated that 95 % of all farmland in sub-Saharan Africa is rainfed (Wani et al 2009). The average annual rainfall consequently greatly influences and dictates the areas suitable for specific rainfed agriculture.

In this line, maize is a staple annual crop for most southern Africa and requires an average annual rainfall of between 500 to 800 mm (FAO 1986), depending on the specific climate of the farmland. Whilst maize is, amongst others, grown under rainfed agriculture in the north-eastern parts of Namibia, south-eastern parts of Angola, southern parts of Zambia and western part of Zimbabwe, for primarily subsistence farming, the maps on the first page, derived by CHIRPS 2.0 precipitation data (Funk et al 2025), suggest that the rainfall in the past two years has not been sufficient for this.

Cattle farming is of cultural and economic significance to many cultures of southern Africa and relies on rainfed grazing. The 300 mm rainfall isohyet separates the minimum suitability of land for cattle farming, with lower rainfall deemed more appropriate for sheep farming (Coetzee & Werger 1975). While the maps suggest that in 2020/21 and 2021/22, the potential area suitable for cattle farming increased in parts of Namibia, Botswana and South Africa, the maps show that there was a drastic increase in the suitable area in the past two rainfall years. In 2022/23, almost none of Namibia's land area received the suitable rainfall, while in 2023/24, most of Namibia and Botswana didn't receive the suitable rainfall.

- Average Annual Historic 300 mm Isohyet (1981/82 to 2022/23)
- 300 mm Isohyet in 2020/21
- 300 mm Isohyet in 2021/22
- 300 mm Isohyet in 2022/23
- 300 mm Isohyet in 2023/24
- ▨ Suitable for rainfed grazed cattle production
- ▨ Annual average rainfall not suitable for rainfed grazed cattle production

References:

1. Funk et al. 2015. The climate hazards infrared precipitation with stations—a new environmental record for monitoring extremes.
2. FAO. 1986. Irrigation Water Management: Irrigation Water Needs.
3. Coetzee & Werger. 1975. Multivariate Analysis in Community Ecology .
4. Wani et al. 2009. Rainfed agriculture—past trends and future prospects. In Rainfed Agriculture Unlocking Potential.

Data Source: CHC CHIRPS 2.0 precipitation data from 1981 to September 2024