



## Factsheet # 10

# Village-level strategies pushing back desertification in Namibian communal areas



## Challenge

- Desertification threatens livelihoods in many communal areas of Namibia, yet knowledge of local measures to combat it is limited. Understanding these grassroots efforts is crucial for effective land management strategies.

## Approach

- We assessed desertification in rangelands of three settlements in Okakarara constituency (Fig. 1) by examining the population density of five perennial grasses and the soil seed bank's density and composition using a grazing gradient approach.
- We compared this data with information on historical settlement processes, land-use dynamics, and infrastructure in all three settlements, gathered through detailed mapping, interviews with local residents, and literature research.

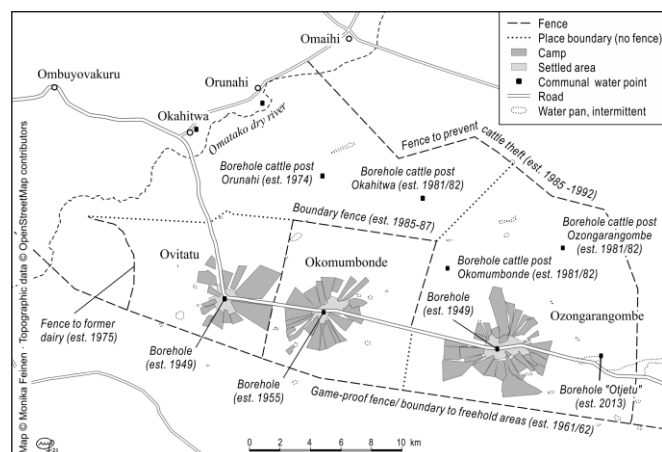


Fig.1. Detailed map of the three settlements based on own georeferenced data.

## State of desertification

- Aboveground vegetation and soil seed bank indicators showed generally poor rangeland conditions (see factsheet #6), but with important differences in the degree of desertification between settlements.
- Rangeland condition deteriorated westward, Ovifat (west) being the most desertified, with:
  - Few perennial grass species aboveground and in the soil seed bank.
  - Dominance by species that show poor rangeland condition: *Eragrostis lehmanniana*, *Eragrostis trichophora*, and *Aristida congesta*.
- Ozongarangombe (east) was least desertified, with:
  - A high aboveground abundance of species found on healthier rangelands (*Aristida stipitata*, *Stipagrostis uniplumis*).
  - Greater diversity of perennial grass species in the soil seed bank (Fig. 2).

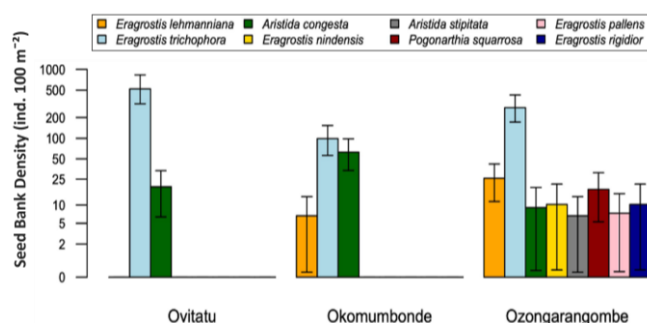


Fig. 2. Average abundance of perennial grass species in the soil seed bank across the rangelands of the three studied settlements. Note: "ind." refers to individuals. Density is presented on a logarithmic scale.

## Causes and strategies

- Poor rangeland conditions in the settlements stem from colonial resettlement policies, population growth, reduced grazing areas due to camps, inadequate infrastructure, high stocking rates, and challenges in regulating local rangeland access.
- Ovifat and Okomumbonde have smaller grazing areas and limited cattle post access, leading to worse rangeland conditions
- In contrast, Ozongararombe, which had better grazing conditions, benefited from a nearby cattle post with a borehole (Fig. 1). The effective regulation of this infrastructure by residents enabled the expansion of nearby grazing areas, reducing pressure on perennial grasses over time.

## Key Findings

- Despite generally poor rangeland conditions across settlements, significant differences exist due to varying historical developments and management practices at the village level.
- The creation and effective social regulation of environmental conditions and key physical infrastructures (i.e., cattle posts and extensive pastures) is an essential prerequisite for keeping desertification processes at bay.
- Rangelands seem not to have yet reached a desertification tipping point characterized by bare soil conditions and depleted seed banks, suggesting a window of opportunity for intervention.

## Practical and Policy Implications

- Communities have the potential to take action in order to mitigate desertification in their villages:
  - Active restoration measures could include de-bushing, reseeding with palatable perennial grasses, and adopting rotational grazing practices, such as using seasonal cattle posts and/or split grazing.
- The state could be more supportive and encourage such actions, e.g., by securing group rights to local grazing land, providing infrastructure, and addressing structural inequalities in land distribution.
- Although desertification affects communities to varying degrees, most rangelands are in poor condition and intervention is needed to prevent them from reaching a desertification tipping point.

## References

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## Acknowledgements

We thank the communities of Ovifat, Okomumbonde, and Ozongararombe for allowing us to conduct fieldwork in their localities and generously providing information for this study.

### The NamTip Project

The collaborative German-Namibian research project “NamTip – A Namibian Perspective on Desertification Tipping Points in the Face of Climate Change” aims to better understand the development of ecological tipping points in dryland rangelands by assessing desertification and woody plant encroachment processes. It also explores management options for preventing such tipping points and restoring degraded rangeland ecosystems.

[www.uni-potsdam.de/en/namtip](http://www.uni-potsdam.de/en/namtip)

The NamTip project is part of the GlobalTip research program and is funded by the German Federal Ministry of Research, Technology and Space (BMFTR, former BMBF) under the grant numbers 01LC1821A-E & 01LC2321A-F.

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**Published by:** NamTip consortium  
Potsdam, Bonn, Tübingen, Cologne, Leipzig, Frankfurt am Main, Windhoek

June 2025



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