

Research question: To what extent have development projects had an impact on rangeland management to reduce desertification?

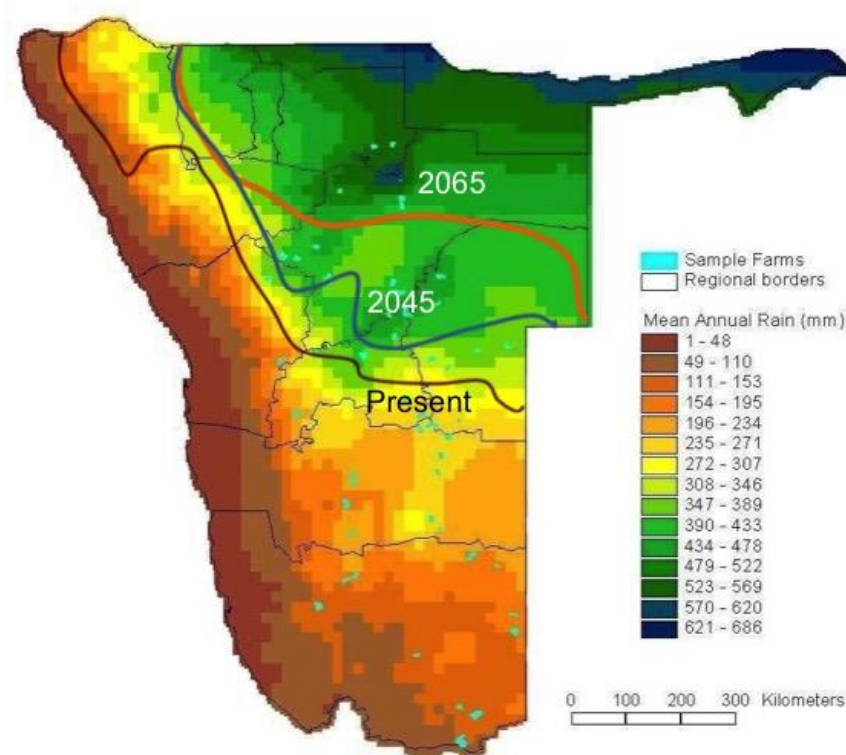
Farming, desertification and climate change

Climate change projections for Namibia: Business-as-usual scenario

	Temperature	Precipitation
2020-2039	+0,6 °C to +1,8 °C	-11,8 mm to +10,2 mm
2040-2059	+1,5 °C to +2,9 °C	-15,7 mm to +6,9 mm
2060-2079	+2,5 °C to +4,5 °C	-17,7 mm to +5,9 mm
2080-2099	+3,3 °C to +6,0 °C	-21,3 mm to +5,2 mm

- Projected temperature increase is higher than world average.
- Projected precipitation patterns show decrease in dry season and increase in wet season. Higher rainfall variability projected.

Fig. 1: Space for cattle farming is shrinking - Possibility of cattle farming North of the differently colored lines from present to 2065 (based on rainfall)

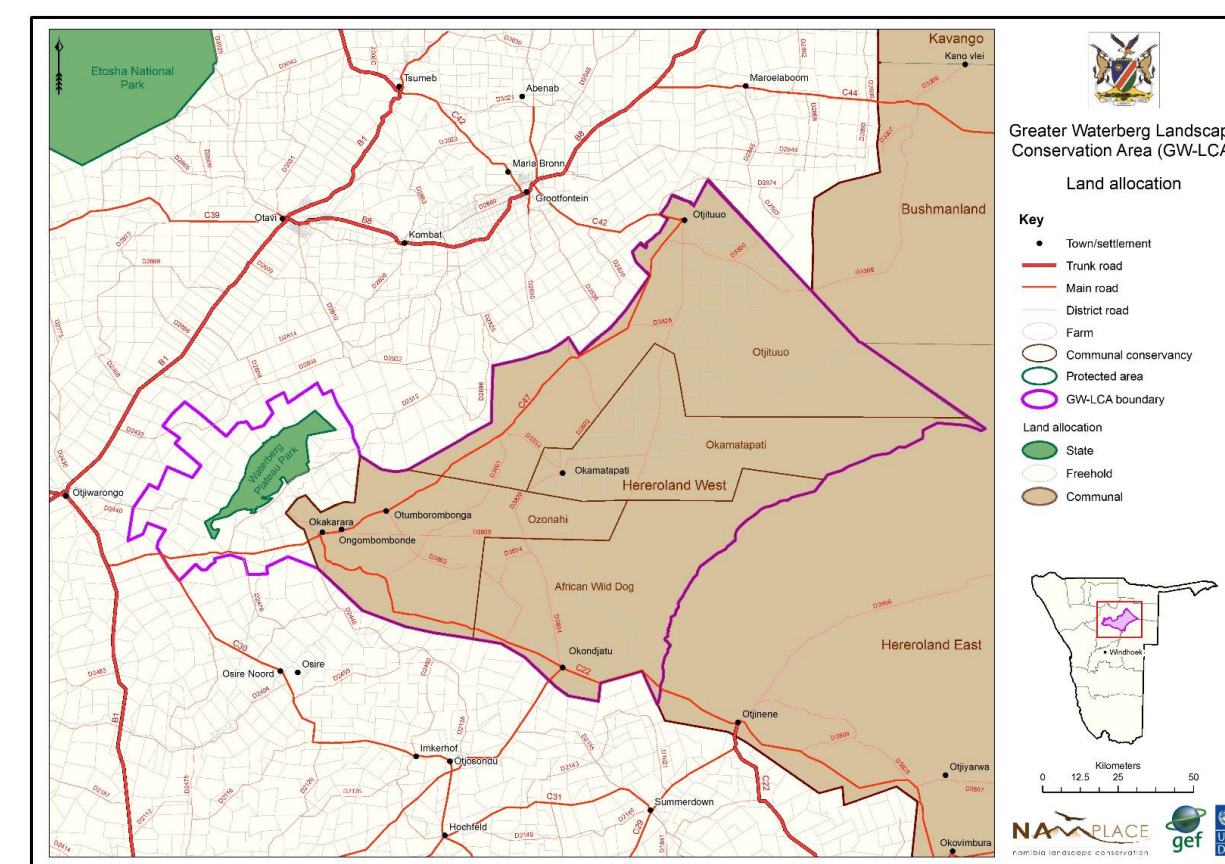


Source: Thomson 2021

Study Region

- Annual precipitation: between 350 and 450 mm
- Sandy soils with limited water- and nutrient-holding capacity, and proneness to erosion
- Significant signs of desertification: High shrub density, low grass availability and bare soil
- Colonial legacy: Territorial encapsulation and reduction of pastoral mobility
- Major farming activity: cattle and small stock farming
- Assumption: No cattle farming after 2065

Fig 2: Waterberg region in Namibia (brown area = communal land)



Data and Methods

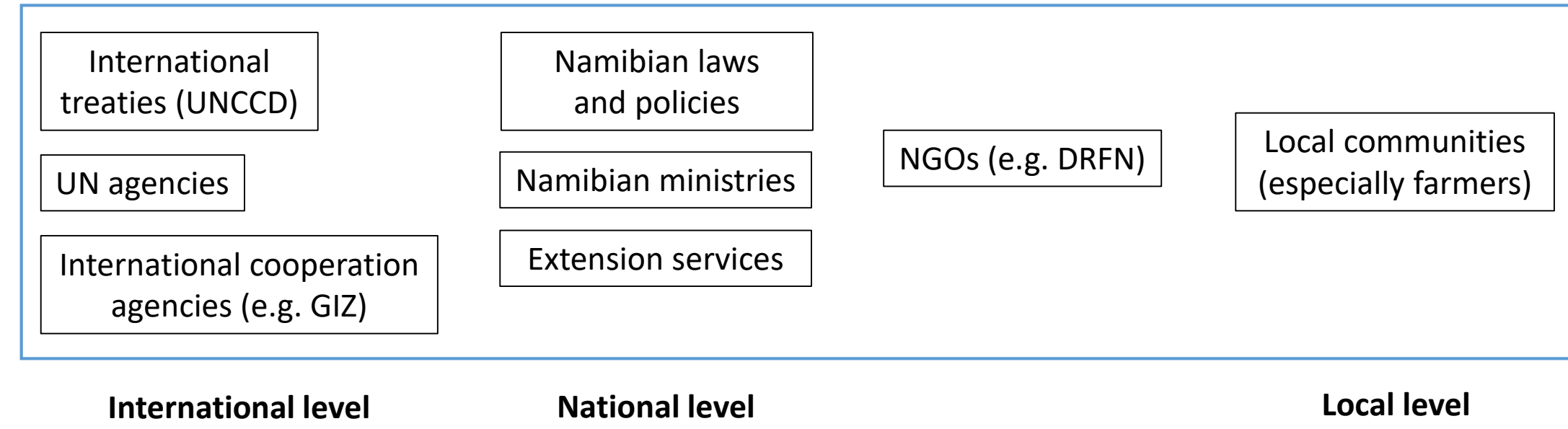
- Material for development project analysis: 12 qualitative interviews with project participants and experts and 105 project documents (20 documents selected for analysis)
- Material for analysis of local impact of development projects: 12 qualitative interviews with communal farmers and local authorities
- Material analysis: Qualitative Content Analysis



Source: Markus Rauchecker

Fig. 3: Development projects as nexus between international, national and local level

Development project to combat desertification

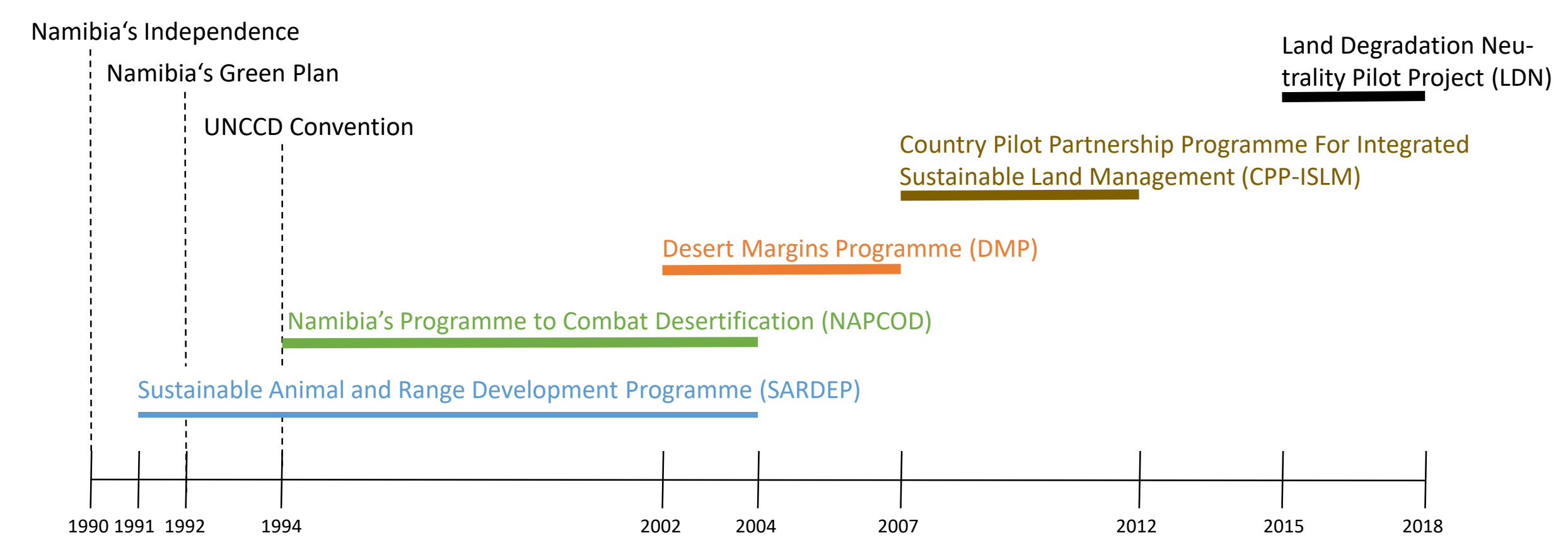


Source: Own elaboration

Why development projects?

- Development projects to combat desertification build a nexus between the international, national and local level (Fig. 3) and are therefore interesting to understand the implementation gap.
- We identified 5 development projects to combat desertification in the Otjozondjupa region from 1991 until 2018 after Namibia's independence (Fig. 4).

Fig. 4: Development projects in communal areas of Otjozondjupa region from 1991 until 2018



Source: Own elaboration

Results

Measures to combat desertification (proposed by minimum 3 projects)

- Input for policies and plans (all 5 projects)
- Technical recommendations for rangeland management (all 5 projects)
- Education and trainings for different target groups on different levels (all 5 projects)
- Local and national monitoring of land degradation (all 5 projects)
- Farmers' income diversification (4 projects)
- Support stakeholder exchange (3 projects)
- Local institution building (3 projects)
- Cross-sectoral integration of service providers and state entities (3 projects)

Outcome of development projects

Positive outcome:

- Several policy improvements are documented.
 - Former personnel of the development projects achieved key positions in state entities, NGOs and consulting firms.
- State-building as well as strengthening of consulting and NGO sector, which was necessary after independence

Shortcomings:

- Local institution building was only successful through the CBNRM program and not the analyzed development programs.
- No national land degradation monitoring in use.
- Cross-sectoral integration of institutions was only done in few cases.
- There was no upscaling of management improvements, because development projects focused on few pilot areas.
- The development projects are not known in the communal areas (except for SARDEP, the first project).
- Nowadays, we could not find changes in rangeland management, which were proposed by the projects. Furthermore, rangeland conditions did not improve.

Conclusion

- Climate change already threatens livestock farming in communal areas and will worsen the conditions in the future.
 - Development projects to combat desertification function as a nexus tackling the implementation gap.
 - The development projects' impact on rangeland management of communal farmers is low.
 - The projects made key contributions to policies regarding rangeland management and to capacity building for people working in state entities, NGOs and consulting firms nowadays.
- Capacity building strengthened the consulting and NGO sector, which took over government tasks in the 1990s. Beginning in the 2000s the government assumed more responsibility for these tasks, when government capacities were more developed.
- The strengthening of the consulting and NGO sector in the 1990s, policy improvements and capacity building through the development projects contributed to state-building after Namibia's independence
- State building instead of desertification reduction



Source: Vistorina Amputu

Acknowledgements

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Project Information

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.

Pre-phase: 06/2017 – 05/2018
 First main phase: 04/2019 – 07/2023
 Second main phase: 09/2023 – 08/2025

For further reading

- Geißler, Katja/.../Meed Mbidzo/Markus Rauchecker/... (2024): Biodiversity and Ecosystem Functions in Southern African Savanna Rangelands: Threats, Impacts and Solutions. In: Maltitz, Graham P.von/Guy F. Midgley/Jennifer Veitch/Christian Brümmer/Reimund P. Rötter (Eds.): Sustainability of Southern African Ecosystems under Global Change. Ecological Studies, 248. Cham: Springer, 407-438.
- Brinkmann, Katja/Diego A. Menestrey Schwieger/Lena Grieger/Sara Heshmati/Markus Rauchecker (2023): How and why do rangeland changes and their underlying drivers differ across Namibia's two major land-tenure systems? The Rangeland Journal 45 (3), 123-139.
- Menestrey Schwieger, Diego A. (2022): Exploring pastoralists' perceptions of desertification tipping points in Namibia's communal drylands: An ethnographic case study from Okakarara constituency. Pastoralism Research Policy and Practice 12(3):1-15.