



Deutscher Tropentag, October 8-10, 2003, Göttingen

“Technological and Institutional Innovations
for Sustainable Rural Development”

Environmental Impact and Socio-economic Incentives of Contrasting Land Management Systems in Southern Namibia

MARIAM AKHTAR-SCHUSTER¹, BERNADETTE BOCK², THOMAS FALK², MICHAEL KIRK², UTE
SCHMIEDEL¹, CHRISTINA WOLKENHAUER¹

¹*University of Hamburg, BIOTA-Southern Africa Project, Germany*

²*Philipps-Universität Marburg, Institute for Co-operation in Developing Countries, Germany*

Abstract

Marked fence-line contrasts are ocular outcomes of the effects of different natural resource managements in the dryland rangeland of southern Namibia. Within the framework of the interdisciplinary BIOTA Southern Africa project, comparative investigations were carried out on a pair of permanently marked Biodiversity Observatories at the Gellap Ost Research Station and the neighbouring Nuwefontein Communal Land. Results show that on the historically more intensively used communal farm there is an overall decline in perennial vegetation, especially within low-growing life-forms. Short-term annual growth in the rainy season is followed by extensively barren surfaces during the dry season. In direct vicinity, the site on the governmental Research Station looks intact. The access of livestock to the camp is timely restricted and indicator plants are regularly monitored in order to prevent overgrazing. Overall stocking rates are low also because of missing economic incentives due to fixed budgeting. These circumstances ensure a dense grass-cover throughout the year. The state of the natural resources on both sites is strongly influenced by present and past motives, actions and constraints of land users as well as other stakeholders, population pressure and the change in incentives set by institutions, such as the (re-)distribution of property rights. In particular, the shift of rights and governance away from local users to government authorities as an outcome of apartheid-related policies and incomplete reforms has led to a situation where practised communal resource management is unable to rehabilitate degraded rangeland and to maintain biodiversity. Apart from the human impact on changing biodiversity the effects of degradation on farmers livelihoods have been investigated. The general decline in self-generating natural capital and the increase in the seasonal fluctuation in available biomass increases the risk for farming making additional sources of income indispensable. In the observed communities, multifunctionality of livestock keeping lost importance resulting in decreased pressure on resources as well as reduced incentives to maintain them. Based on a participatory approach, and firmly embedded in local realities, interdisciplinary investigations into the socio-economic processes and ecological effects of various land use systems will form the basis for proposing biodiversity maintenance strategies.

Keywords: Biodiversity, biomass, fence-line contrast, governance, land use, Namibia, property rights