

Knowing the Landscape: Science, people and power relations in Namaqualand, South Africa

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Summary

In this thesis I explore the links and co-production between science and politics in Namaqualand through answering three research questions: 1. To what extent have landscapes in Namaqualand changed during the last 66 years (1939-2005), and how have different land uses contributed to the state of present landscapes? 2. How have science and policy influenced each other in the formation of local planning initiatives during the land reform process in Namaqualand? 3. In what ways do politics and land tenure models influence ecological science concerning communal land management in southern African dryland areas?

Land degradation has been a recurrent theme in environmental research. Widespread erosion, overgrazing and desertification presumably caused by African smallholders have been a key concern by policymakers and development agencies for more than a century. This degradation orthodoxy is partly based on equilibrium models in ecological science and partly on modernization theories of land tenure and commercialization of agriculture. Both the equilibrium model and the focus on private land tenure have met considerable critique in Southern Africa and in Africa in general. Critics argue that dryland areas are ecologically unstable and unpredictable and therefore do not fit the equilibrium model. Further, they argue that privatization of land and limitations of grazing animals will marginalize the poorer farmers and lead to more poverty in rural areas, without contributing to more sustainable grazing areas. Still however, equilibrium-based thinking continues to influence African land and environmental policies.

This project was carried out in Namaqualand, South Africa where, like in the rest of South Africa, apartheid policy brought about segregation between colored and white farmers, creating a dual agricultural system. The colored population was enclosed in small reserves, while white farmers gradually formed large farms that were later fenced. This unequal distribution of land and resources has continued until today and forms the background for the land reform process that started in 1994.

The thesis is a case study of the development of knowledge about environmental change in Namaqualand. It discusses the politicized production and application of science and in doing so the thesis combines the approaches of Political Ecology and Science and Technology Studies. This thesis contributes to the existing body of literature in the following ways: The first paper combines data on land cover changes in Concordia (a communal area in Namaqualand), in a neighboring private farm and in a neighboring nature reserve, with data on the history of land use in the area. The article combines repeat photography covering a period of 66 years with interviews with local farmers on land use history and the authors find

that vegetation has changed negligibly in the communal area studied over the 66-year period. While cultivation in the communal areas probably changed the landscape considerably, this change happened prior to the time period studied. In the neighboring private farm, as well as in the nature reserve, vegetation cover and species composition have recovered considerably since 1939. Thus rather than a degradation process in the communal area, we uncover a regeneration in the private farm and the nature reserve, following destocking subsidies and subsequent conservation.

The second paper documents how the notion of carrying capacity was employed in a management plan developed as part of the land reform policy process in Concordia. Initially, the notion of carrying capacity was used by communal farmers to challenge the current distribution of land and the dominating idea that communal farming inherently led to degradation. Eventually, however, the concept contributed to depoliticize rangeland policy by rendering the relationship between land and livestock a question of numbers and not a question of how much land communal farmers have access to.

The third paper discusses the use of photography in fenceline contrast studies within ecological science. Fence-line contrast study is a methodology used in ecology to compare to areas (divided by a fence). This way one may assume that other conditions are equal and that difference in management practice can explain visible differences found. Based on two cases from Namibia and Southern Africa, the article substantiates that fenceline contrast photographs are more than an objective representation of landscape difference. Rather, they function as models that relate ecological dynamics to presumptions of land tenure and management. The message implied in using such photographs is that communal tenure inherently leads to overgrazing and, hence, to the degradation of pastures, while private tenure results in healthy rangelands. This is a message that echoes the degradation orthodoxy, and the fenceline contrast photographs thus contribute to the current pressure on communal land tenure, even though the data as such do not support such a pessimistic view.

The overall argument of this thesis is that science and politics are intrinsically linked and co-produced, both in political processes and in the production of scientific knowledge. While the findings of the first article question general assumptions of the validity of the degradation orthodoxy in Namaqualand, the second and the third articles show how degradation orthodoxy still influences both policy processes and science production. Thus, in order to open up for other influences and new and more fitting ecological models in policy and science, change must happen at different levels of the process of knowledge production and policy formation.