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Timeline

2010-2017

Sample Size

1,250 cattle-owning households

Research Implemented by IPA

Yes

The Impact of Community Natural Resource Management on Farmers' Livelihoods and Land Quality in Namibia

Abstract

In parts of southern Africa, environmental pressure on the land from over-grazing has contributed to land and water shortages and made communities more vulnerable to drought. In Namibia, researchers are measuring the impact of a community-based natural resource management program on livestock assets, income, social cohesion and land quality.

Policy Issue

In much of southern Africa, livestock grazing land is communally owned.^[1] This type of rangeland is often in danger of desertification due to overgrazing by farmers who are motivated to use the land in competition with their neighbors. Though they know reducing their herds' grazing would be beneficial for the soil, individual farmers may be hesitant to do so because they fear others will not follow suit. The resulting land degradation and water shortages make communities more vulnerable to drought.

Some conventional ways to address this issue are to allow common rangeland to be fenced off as private land, or to encourage farmers to cull their herds, reducing the number of old and unproductive animals in the herd. However, these solutions are sometimes regarded as disruptive to traditional practices of pastoral land sharing and maintaining large herds.^[2] An alternative approach^[3] is a program of community-based natural resource management in which farmers combine their herds and rotate where they graze according to a plan. However, there is little rigorous evidence on the actual effectiveness of this community-based approach. In Namibia, researchers are investigating the impact of a community-based natural resource management program on farmers' livelihoods, social cohesion and the long-term sustainability of the land.

Context of the Evaluation

The study is being carried out across the Northern Communal Areas (NCAs) of Namibia, a sparsely populated rural area in which 27 percent of the population lived below the global poverty line in 1994.^[1] Participants in this study are cattle farmers who own at least ten animals, around the average cattle ownership for the region.^[2] In 1994, it was estimated that desertification cost rural Namibians about US\$13.3 million a year in lost income^[3].

The project divided the NCAs into broad informal districts termed Rangeland Intervention Areas (RIAs). Each RIA is comprised of a number of Grazing Areas (GAs), communities of about 20-30 farmers that graze on the same land and recognize the same local headman as their traditional authority.

The study was funded by Millennium Challenge Corporation's Namibia compact, which contracted a German consulting firm called GOPA to implement the project. Oversight of the project was shared between GOPA, MCC and the Namibian Ministry of Agriculture, Water and Fisheries.

Details of the Intervention

Innovations for Poverty Action is working with researchers to conduct a randomized evaluation measuring the impact of a communal rangeland management program on farmer incomes, livestock assets, and land quality. Among 41 RIAs in the evaluation, the research team randomly assigned half to the treatment group, which received training from GOPA on Community-Based Rangeland and Livestock Management (CBRLM), as well as matching funds for program activities and borehole well construction for cattle. The remaining RIAs formed the comparison group and did not participate in the program.

In each treatment community, GOPA conducted CBRLM trainings for farmers over the course of 2012 through 2014. Training topics included planned grazing, combined herding, and best practices for raising cattle for commercial production. GOPA also helped formalize existing farmers associations to adjudicate disputes over natural resources and manage financial contributions for common goods by strengthening bookkeeping practices, creating shared bank accounts, and developing a clear structure for dispute settlement. GOPA matched

farmers' financial contributions for common goods for the first year of the program, and constructed new borehole wells in 39 communities where water access was limited.

Two years after the conclusion of the program, researchers collected data on farmer incomes, social cohesion, cattle health and herd structure to measure the program's impacts on farmer incomes and productivity. They also collected grass samples and high-resolution satellite imagery to measure land quality and preservation.

Results and Policy Lessons

Study on-going; results forthcoming

Sources

- [1] Adams, Martin, Sipho Sibanda, and Stephen D. Turner. 1999. *Land tenure reform and rural livelihoods in Southern Africa*. London: Overseas Development Institute.
- [2] Savory, Allan, and Jody Butterfield. 1998. *Holistic management: a new framework for decision making*. Island Press.
- [3] Savory, Allan, and Jody Butterfield. 1998. *Holistic management: a new framework for decision making*. Island Press.
- [4] Namibia National Statistics Agency. 2010. *Namibia – National Household Income and Expenditure Survey, 2009-2010*.
- [5] Quan, J., D. Barton, and C. Conroy. 1994. *A Preliminary Assessment of the Economic Impact of Desertification in Namibia*. DEA Research Discussion Paper No. 3. Directorate of Environmental Affairs.
- [6] Quan, J., D. Barton, and C. Conroy. 1994. *A Preliminary Assessment of the Economic Impact of Desertification in Namibia*. DEA Research Discussion Paper No. 3. Directorate of Environmental Affairs.

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