



RESEARCH BRIEF

The **Environment for Development initiative** is a capacity building program in environmental economics focused on international research collaboration, policy advice, and academic training. It consists of centers in Central America, Chile, China, Ethiopia, Kenya, South Africa, Sweden, Tanzania, and the US (Resources for the Future in Washington, DC). Financial support is provided by the Swedish International Development Cooperation Agency (Sida). www.efdinitiative.org

The economic valuation of dryland ecosystem services in the South African Kgalagadi by the local communities

BY JOHANE DIKGANG AND EDWIN MUCHAPONDWA
DRB 13-15, MARCH 25, 2014

Our results show that a preservation initiative that is aimed at increasing grazing and hunting opportunities would be supported by dryland communities. Although the Khomani San indigenous people are traditionally hunters and gatherers, over time a significant number have switched to livestock farming. Given that livestock farming is one of the main livelihood sources in the Kgalagadi dryland area, the Khomani San place a value on the ecosystem services that support their livelihood. The willingness of local people to pay to preserve the services they depend on is lower, in monetary terms, than the willingness to pay of park visitors to see the features of the ecosystem that attract tourists. That means one group can pay for conservation goals that would support the livelihood of the other.

This study seeks to value ecosystem services in the Kgalagadi area in South Africa by conducting experiments. Instead of finding the value of the whole ecosystem, this study seeks to value selected ecosystem services from the point of view of local communities. The results show that local communities would prefer getting increased grazing, firewood collection, hunting opportunities and harvesting of medicinal plants.

Our study area is located in the Siyanda District Municipality (comprising six local municipalities) of the Northern Cape province of South Africa, bordering Botswana and Namibia. The district is approximately 120,000 square kilometres and includes large areas in the Kgalagadi Desert. The Mier Local Municipality (one of the six local municipalities) is located next to the Kgalagadi Transfrontier Park.

Despite the harsh Kgalagadi dryland ecosystem environment, this area harbours a wide variety of animals and plants. Thus, like many other dryland areas, the Kgalagadi area produces ecosystem services which benefit the broader society. In fact, the area provides a wide variety of ecosystem services, including medicinal plants, wild fruits, fuel wood, water, grazing erosion control, climate regulation, camel thorn trees, and eco-tourism, cultural and spiritual benefits. While most visitors to the area mostly enjoy the recreational amenities, the Kgalagadi dryland ecosystem

Key Points

- This study seeks to value specific attributes of ecosystems in the Kgalagadi area in South Africa.
- The values placed on dryland ecosystems by indigenous communities are estimated.
- The results show that local communities would be willing to pay for increased grazing, firewood collection, hunting opportunities and harvesting of medicinal plants.
- The amount of money that local people are willing to pay for these services of the ecosystem is lower than the amount that visitors are willing to pay for the attributes of the ecosystem that they want to see. This means that visitors could pay for conservation initiatives that would benefit the local community.

The economic valuation of dryland ecosystem services in the South African Kgalagadi by the local communities

enables local communities, especially the Khomani San, to practice their culture and heritage. The Khomani San and Mier communities are located in the Mier Municipality. Livelihood strategies in this area traditionally combine pastoralism, hunting and gathering. The status of the dryland ecosystem affects the well-being of local communities.

Valuation of ecosystem services is not only of economic interest, but also has social and political implications, particularly in cases of land restitution in South Africa, where policy makers ought to keep track of whether the intended outcomes have been achieved. This is particularly true in the case where public investment is needed to uplift rural communities and where additional sources of income for the local communities are urgently required. This suggests that the economic valuation of ecosystem services can demonstrate to decision-makers how maintaining public conservation investments can benefit the local people who have received land restitution rights.

This study assesses the economic value of ecosystem services in the Kgalagadi area in an attempt to establish the economic importance of conservation in the area. Computing the economic value of ecosystem services for local communities can complement the value of resource extraction, as calculated by other studies, to demonstrate the full value of services provided by ecosystems.

Conclusions

Our results show that a preservation initiative that is aimed at increasing grazing and hunting opportunities would be supported by the dryland communities. Although the Khomani San indigenous people are traditionally hunters and gatherers, over time a significant number have switched to livestock farming. Given that livestock farming is one of the main livelihood sources in the Kgalagadi dryland area, the ecosystem service that supports such a livelihood source is important to them. Furthermore, there are considerable differences in preferences within the local communities. The willingness to pay of the local people is lower than the willingness to pay of park visitors. That means that one group can pay for conservation measures that the other group wants.

ABOUT THIS BRIEF

This brief is based on "The economic valuation of dryland ecosystem services in the South African Kgalagadi by the local communities," by Johane Dikgang and Edwin Muchapondwa, December 2013, EfD Discussion Paper 13-15. (The DRB series of research briefs is associated with the EfD Discussion Paper Series.)

FURTHER READING

Alpizar, F., Carlsson, F and Martinsson, P. 2001. Using Choice Experiments for Non-Market Valuation. Working Papers in Economics No. 52. Department of Economics, Göteborg University.

Dikgang, J., and E. Muchapondwa. 2012. "The Valuation of Biodiversity Conservation by the South African Khomani San 'Bushmen' Community," *Ecological Economics* 84: 7-14.

Dikgang, Johane and Edwin Muchapondwa, 2013. "The Economic Valuation of Dryland Ecosystem Services in the South African Kgalagadi Area and Implications for PES Involving the Khomani San," EfD Discussion Paper 13-16.

Thondhlana, G., S. Shackleton, and E. Muchapondwa. 2011. "Kgalagadi Transfrontie Park and its Land Claimants: Pre- and Post-land Claim Conservation and Development History," *Environmental Research Letters* 6: 1-12.

CONTACT

Dr. Johane Dikgang, (email) DKGJOH001@myuct.ac.za, +27 11 559 2017

Dr. Edwin Muchapondwa, (email) edwin.muchapondwa@uct.ac.za, +27 21 650 5242

RESEARCH BRIEF

The economic valuation of dryland ecosystem services in the South African Kgalagadi by the local communities



EfD Center in South Africa, www.efdinitiative.org/centers/south-africa
TBSBYE001@uct.ac.za; Phone.+27-21-6505981, Fax.+27-21-6502854
[Environmental Policy Research Unit \(EPRU\)](#)
EPRU, Southern Africa Labour & Development Research Unit (SALDRU), School of Economics, University of Cape Town (UCT), Private Bag, Rondebosch 7701, South Africa



EfD, Environment for Development initiative, www.environmentfordevelopment.org
EfD Secretariat: info@efdinitiative.org, Phone: +46-31-786 2595, Fax +46-31-786 10 43,
www.efdinitiative.org/efd-initiative/organisation/secretariat, Department of Economics,
University of Gothenburg , PO Box 640, SE 405 30 Gothenburg, Sweden