LINKING PERCEPTIONS OF WELL-BEING TO LAND COVER CHANGE: Lessons from the Great Limpopo Transfrontier Park, Mozambique

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Introduction
Economically underdeveloped regions in Africa have become a key focus of environmental conservation. In large part, this reflects high levels of deforestation in these areas. Transboundary natural resource management (TBNRM) approaches have been used as an alternative to national approaches to addressing these problems. The primary advantage is the ability to develop a shared vision and agreed-upon economic development goals. Specifically, they are expected to: 1) reduce dependence of subsistence agriculture on local forests, thus reducing deforestation, 2) improve tourism infrastructure within the park and in supporting industries, 3) facilitate community development projects and improved transportation infrastructure, 4) advance conservation goals in expanding the wildlife habitat and preserving natural biodiversity. However, the success of the Peace Parks approach relies largely on the ability of economic incentives to induce local residents to participate in land use practices consistent with tourism. These incentives would include preserving wildlife species for tourist viewing and reaping benefits from improved tourism infrastructure. The Great Limpopo Transfrontier Park (GLTP) was established in November 2000 to develop a contiguous wildlife corridor linking protected areas across Mozambique (including Kruger in South Africa and Zimbabwe). South-African and Zimbabwean components of the GLTP have functioned as protected areas prior to the GLTP establishment. In contrast, the Mozambican section of the GLTP still has ~250000 residents within its borders distributed among ~60 villages ranging in size from 150 to 2000 people and ~1000 heads of cattle (Spenerer 2004). In this study we compare spatial patterns of land use with local residents’ evaluations of the benefits associated with tourism-based development in three communities at the border of the GLTP. Two of the communities, Canhane and Machaule, are located within the GLTP borders and one (Canhane) outside. Our research findings, based on a socioecosystemic census of 350 households and in-depth interviews with 150 residents living in and near those villages, indicate that people associate tourism with decreased food security.

Land cover change detection methods

In this qualitative study, the Canhane (outside GLTP) residents demonstrate a much stronger capacity to aspire. They discuss the ability to better themselves more frequently than those villagers inside the park. They also devote more time to speculating, discussing community development more frequently, and describe the need for personal goals. We infer that people have a good life if they feel that the person works. And that is how change happens... When a person works this is what gives him ideas to change his life. "Male, truck driver, 34 years old, Canhane (DQ1 2001).

In contrast, Machaule residents seem to have very limited ability to aspire and express a lack of awareness on how to improve their situation. Here is an illustrative quote from a 45 year old male former temporary park employee in Machaule: "What I would like is, that it should be possible to work... what I would like to work, that I am able to work and to go to school." Male, 2001.

People in all sites say that farming is becoming less viable as a livelihood strategy as food security becomes increasingly income dependent (due to human-wildlife conflicts, extreme weather, etc.)... But households in Machaule seem to have fewer notions of development and less about their past; the 45 year-old male former temporary park employee describes the experience with e.g., farming and could potentially lead to more forest clearance. Male, 2001.

Next steps
With the research has uncovered a potential new theoretical understanding of human drivers of land cover and land use change in poor rural African communities. In our next steps we intend to undertake more field surveys with two major aims: 1) Interview previously sampled communities of Canhane, Machaule, and Chibotane to confirm the satellite-detected patterns of land cover and land use change and discuss the residents’ perceptions of drivers of these changes. 2) Use satellite imagery to find similar patterns of land cover and land use across other populated areas within and outside the park and interview residents within a subset of those areas to determine a broader applicability of these findings.

Perceptions of well-being as a driver of land cover change
In qualitative interviews, the Canhane (outside GLTP) residents demonstrate a much stronger capacity to aspire. They discuss the ability to better themselves more frequently than those villagers inside the park. They also devote more time to speculating, discussing community development more frequently, and describe the need for personal goals. We infer that people have a good life if they feel that the person works. And that is how change happens... When a person works this is what gives him ideas to change his life. Male, truck driver, 34 years old, Canhane (DQ1 2001).

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