Livelihoods and Land Use in Southern Africa

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Background

The driving forces of land cover include both physical and socioeconomic factors (Geid and Lambert 2001). Keys and McConnel (2005) in the study, we assess the relative strength of these driving factors and describe how well conservation efforts are working in Botswana, Namibia, and Zambia. As part of NASA project NNESS14525X, we seek to leverage how social factors influence land use which in turn condition biocultural processes (Kwon et al. 2013). Our research team believes that institutions are the key instruments of human adaptation to climate variability and change and that the observable outcomes of these adaptations are expressed as land use and land cover change. In some of biophysical variability, people confront precipitation variability, crop and animal disease, and health failures.

State and non-state institutions play an increasingly more important role. Institutions of central importance to people include conservation areas (Botswana) and conservation (Namibia), which provide income to community members. The distribution of this income is mediated through local power structures. Some communities distribute conservation funds relatively equally while others seem to internalize the income at the level of the chief and other elite households. State policies regarding borehole restriction influence the degree to which a community may be engaged in and benefit from these activities.

Our research links people to the land and describes adaptive and local strategies. To date 400 surveys have been carried out in Botswana and Namibia in a range of communities with differing livelihood strategies. Another 1,000 surveys have been collected across southern Africa through a cooperative agreement with the World Wildlife Fund. Other than livelihoods based on wild food gathering and cultivation, we find that tourism and conservation based livelihoods are increasingly important in both countries. An individual’s ability to obtain these jobs is linked to the location of his or her village relative to tourist sites, as well as education level and English proficiency. Most households still engage in field agriculture and consume wild foods.

Conceptual Framework (Figure 3)

- Decreased precipitation
- Floods
- Habitation alteration
- Risk to cultivation
- Vegetation shifts
- Resource transformation

Labor markets
- State
- Village
- Institutions
- Subsidy
- Economic equity

Household capacity
- Education, age structure, ethnicity, location, labor resources, migration, access to labor and to government assistance

Wildlife employment
- Safeguard
- Restaurn
- Management

Cultivation and food gathering
- Hunting/Fishing
- Field agriculture
- Wildfood harvests

Outcomes
- Cultiivated landscapes
- Non-cultivated landscape
- Livelihoods

Background

Study Site

The study area (Figure 1) is dominated by the savanna biome. African savannas by nature are highly heterogeneous mixed systems which are capable of existing in multiple states (Walker & Rauh 1993).

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The data area (Figure 1) is dominated by the savanna biome. African savannas by nature are highly heterogeneous mixed systems which are capable of existing in multiple states (Walker & Rauh 1993). Assessors likely have high vegetation cover and heterogeneity and when considering shifts from one state to another, both vegetation amount and heterogeneity ought to be considered (Schlesch & Walker 1993). The study area (Figure 2) features five national parks and multiple conservation areas that are designed to protect the flora and fauna of the region. Outside of the parks are other conservation areas that are organized from the village to the district level.

The amount of land in use for field agriculture is lowest at the lowest and highest income categories. This suggests that the highest income group is able to forego the opportunity cost of agriculture for more lucrative activities in off farm employment, largely related to tourism, conservation, and related jobs. This implies that conservation with development goals are being met.

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Data & Methods

Survey Design:

- Research assistants from each village were hired, trained, and monitored to help with data collection.
- During the trianing process, each survey question was reviewed with the research team. After that, the research assistants understood each question and to achieve consensus on the translation of each question from English into the native language of the village.
- Data were collected in each village using semi-structured interviews and focus groups.

Overall we conducted personal interviews with the head of the household and that person was available, or a close family member if not, to record the activities of the entire household.

To try to get as close to random as possible sampling was done by doing research team members into geographic areas of the villages. Convenience sampling was then employed in these quadrants to gather surveys. All three were lasted between 30 and 120 minutes. In order to maintain the confidentiality of participants, each questionnaire was coded by village and number.

The prepared questions were on household size and structure; livelihood strategies including access to technologies and tools; jobs, farming, subsistence activities, subsidies; changes in environment over the past five years; and perceived threats and challenges to household livelihood and property.

Preliminary Results: Livelihood Assessment

There is significant variation in household economies related primarily to the availability of tourism and conservation-related employment. Consequently, expenditures are highly variable.

Relative amounts of land used and cattle owned vary across the sample. Sankwe, which has the longest history with tourism and is the wealthiest community has the lowest land used and relatively low numbers of cattle. Mabola, also relatively wealthy, has the highest number of cattle, numbers most likely due to the temporary nature of employment.

Cattle is widely held, most likely as economic security although there is much variability in number of cattle owned, and size.