

(A draft document under preparation)

Introduction

Zambia's CBNRM program, commonly referred to as ADMADE, represents an approach to wildlife conservation that relies on rural communities protecting wildlife and other natural resources found on communal lands. Over its 12 year history, a rich set of experiences and results have helped facilitate understanding on how to further develop and improve Zambia's CBNRM program. During its initial phase, ADMADE was strongly influenced by perceptions favoring the need for engaging communities in wildlife policing through locally employed but well trained village scouts. While reductions in illegal hunting were noted in many areas, numerous land use conflicts persisted, and in many areas, wildlife populations remained vulnerable to local and often difficult to control illegal hunting practices, such as the use of wire snares. Efforts to understand these threats resulted in a reorganization of community leadership structures that gave community members greater power over the selection of their CBNRM leaders and the identification of projects funded from CBNRM-generated revenues. This change in leadership structure moved the power-base away from the community elite and decentralized it to local level units that afforded ordinary households greater opportunity to express their views regarding how wildlife and other natural resource could best support their needs. For a number of selected game management areas (GMAs), this second generation approach to ADMADE has been in existence for approximately two years. In one such area, Mwanza GMA, the African College for CBNRM has monitored closely its progress in achieving this leadership reorganization, changes in the way households benefit from their CBNRM revenues and how they respond through improved land management practices.

This paper is a preliminary review of these results. It was prepared to provoke broader interest in the phenomenal changes currently being witnessed by external observers and facilitators of the CBNRM process in Mwanza area. The underlying result that appears to be unfolding in Mwanza's ADMADE experience is that democratically elected community-based organizations (CBOs) driven by bottom-up participation by households having adequate skills in poverty reduction and food security will encourage better use of CBNRM funds that promote increased support for conservation. In the Mwanza case, this has led to dramatic reductions in snaring and other land use disturbances considered serious liabilities promoting wildlife tourism on communal lands. It is most significant to point out these changes occur when law enforcement efforts were weakest, due to reductions in village scout manpower required by the Zambia Wildlife Authority. Furthermore, such reductions in snaring have never been documented before during the history of ADMADE.

Results

1) Food security

In 1998, intensive survey studies of Yakobe Village showed farming practices produced low yields and necessitated a high rate of land clearing to obtain more favorable crop production. Many households had insufficient stocks of bulk food (maize and sorghum) in their granaries to support them through the farming year and were forced to work in fields of farmers with a food surplus to receive food as payment. In other cases, household heads spent much time obtaining fish, game meat or honey to barter for food.

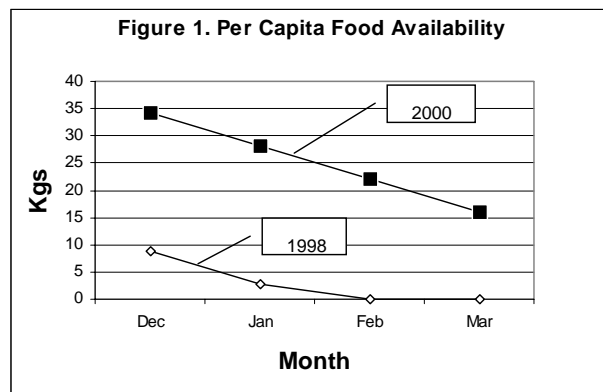


The need to clear more land because of soil infertility increased farmer exposure to crop damage from wild animals. These surveys portrayed communities who were failing as farmers and were exploiting renewable resources to compensate for food shortfalls. Actual food availability per household was measured by inspecting each household granary during the months of October/November and estimating quantities of both maize and sorghum.

During 1999 and 2000 the African College for CBNRM provided skills training in improved farming methods that increased protection of granaries from elephants, water retention for crops, fertility of soil and quality of seeds. In 1999 Yakobe used its CBNRM revenues to purchase 120 x 90kg bags of maize to reduce household food shortages. This also allowed more households to concentrate on their own fields the next farming season. Table 1 shows the increase in food produced from local farms by comparing food quantities measured in granaries for the months October/November in 1998 and 2000.

Table 1. Food security statistics			
	Number of HHs	Population	Food stock (Total kg)
2000	180	859	34478
1998	183	896	7940

The significance of these data is reflected in Figure 1, which shows the projected amount of food per person for 1998 and 2000 during the months from December to March. These are farming months as farmers begin to harvest their first crops in March or early April.



These results revealed a major improvement in food production from 1998 to 2000, resulting in a net surplus. Part of the explanation of the poor yield in 1998 is attributed to late and irregular rainfall, which is a problem farmers can mitigate against with improved farming practices. Such practices were introduced by the College and are referred to as conservation farming.

The deficit of food in 1998 contributed to poor school attendance as children were required to search for food or help weed gardens while parents searched elsewhere for food to help feed family members. School attendance in 1998 was below 10% whereas in 1999 attendance rose to above 80%. School



teachers were interviewed and revealed a high incidence of game meat in the village during these months, whereas in 1999-2000 farming season, incidence of game meat in the village was not reported.

While these results pertain only to Yakobe Village, similar problems of food security were expressed by members of the community for the other four major village groupings in Mwanya, especially Lukusuz, Mukusanga and Chizela. Household food levels were not monitored but each of these villages purchased comparable quantities of food relief as Yakobe, and conservation farming skills were also introduced in these villages.

2) Poverty reduction through a decentralized CBO structure

Prior to 1999, CBNRM revenues for Mwanya area were controlled by a single committee that was not representative of the community as a whole. As a result, projects were usually located in areas where committee members resided and left other villages excluded from CBNRM benefits. In addition, projects tended to be public facilities like schools, teacher houses, courthouse and clinics. When the CBNRM leadership structure was reorganized to allow lower level village institutions to represent household needs, project priorities shifted dramatically to activities that supported household livelihood needs. These emphasized small group business, investments in food security, and increased number of qualified teachers.

The new structure has been in existence for about 16 months. During this period and with external facilitation by the College to enhance skills in participatory leadership, financial accountability, and income generating activities, Mwanya residents have begun to form small groups to pursue activities they feel can help reduce their problems of poverty. Through such groups, it is becoming possible to have large numbers of households represented on the CBO elected structures through their own group representatives. As a result, many of these groups are now seeking ways to have their livelihood-support projects funded with CBNRM revenues through loans or grants. To date, approximately 15 such groups have formed, and based on routine PRA interviews with groups from different villages in Mwanya, participants' attitudes are changing in terms of increased understanding for the need to protect wildlife to sustain CBNRM revenues.

3) Effects on land use disturbances and illegal hunting

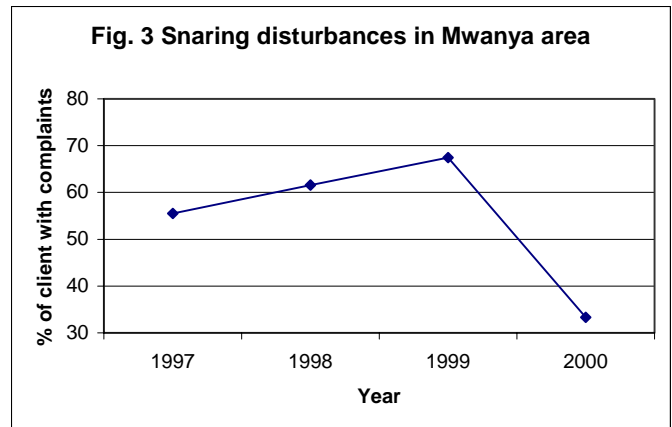
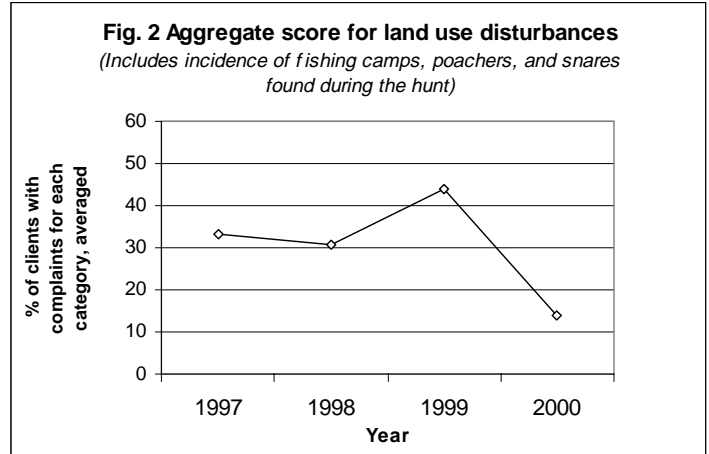
Measuring CBNRM influence on land use disturbances requires a neutral, third-party observer who can remain in the communal area long enough to assess community commitment to natural resource conservation. This study relied on standardized scores provided by safari hunting clients. Mwanya typically receives 10 to 15 clients annually and they actively hunt significant portions of the area during the hunting season, which lasts from June to November. Duration for a hunt varies from seven to twenty-one days. Professional hunting guides escort their clients around the GMA to different hunting areas in a 4-wheel drive vehicle and in this way exposes the client to possible land use conflicts over a large portion of the GMA.

On the final day of hunting, the client receives a questionnaire to complete. As part of the questionnaire the client is asked to indicate the particular land use disturbances encountered during the hunt. The questionnaire provides a choice of the common problems typical to most GMAs, such as snaring, bush fires, unlicensed hunters, too many licensed hunters, and so forth. Space is also provided for land use disturbances not listed. Clients take the form seriously and often provide detailed comments to their scorings.

For the past four years this questionnaire was administered in Mwanya area. Despite efforts to improve community awareness about land use disturbances and the adverse effect they have on CBNRM revenues, client assessments suggested that disturbances were not diminishing. As a barometer for



CBNRM success, client scores provided a relatively low rating for Mwanya area from 1997 through 1999 (see Fig. 2). In 2000, however, land use disturbances declined three-fold. Of particular interest was two-fold decrease in snaring (see Fig. 3). This is because snaring is not easily controlled by any act form of law enforcement but is best controlled through voluntary efforts of the community. The result therefore suggest that community members made a conscious decision not to use snares in 2000. This is further reinforced by the fact that the manpower levels of law enforcement officers in the same year was reduced by more than half due to employment lay-offs imposed by Zambia Wildlife Authority.



Discussion

Results of this study provide a strong correlation between improved food security and increased opportunities for household livelihood benefits with reductions in land use disturbances in a CBNRM. Given that snaring is a form of illegal hunting that is extremely difficult to control by conventional law enforcement, the two-fold decrease in snaring is considered most significant. Additional evidence that reduction in snaring was real came from the resident professional hunting guide of the area. In consecutive past years he reported snaring as a serious threat to wildlife, but in 2000, he confirmed noticeable decline in snaring. Another source of evidence for this was the incidence of scarring caused by snares among the lions hunted by his clients. In 1999 three out of five lions hunted in the area were scarred whereas in 2000 only one out of four lions hunted were scarred.

If the reduction in snaring is attributed to increased food security and increased household income, then CBNRM as an approach to wildlife management should link its activities to improving or sustaining household livelihoods. CBNRM-funded projects, despite their good intentions or scale of investment, may have little if any effect on reducing land use disturbances if significant portions of the population remain poor and hungry. CBNRM success will depend, therefore, on processes that allow community expressed needs to be the basis for project identification. The actual funding levels invested in livelihood needs are also an important factor. Unless communities perceive wildlife as valuable and can derive a fair share from the legal markets, residents may not attach enough importance to wildlife to support its continued production. In the case of Mwanya, considerable efforts were made through the training of elected leaders and community facilitators to help provide grass-roots education of wildlife as an economic resource to support rural development. There still remains a problem in Zambia, however, because communities receive only a 35% share of its total revenues collected from fees and there remains a relatively uneven playing field in promoting community ownership of wildlife-based enterprises.

Given that these results in reduced land use conflicts were achieved with relatively little investment in law enforcement, a compelling argument is made that CBNRM, if implemented in the right way, can significantly reduce recurrent costs of managing wildlife on communal lands surrounding national parks. Furthermore, relatively modest investments in the appropriate skills to support CBNRM can have disproportionately high returns in terms of increased wildlife production and future growth of wildlife-based markets.

Prepared by:

Dale Lewis
Nemiah Tembo
Phillip Ngulube
Josias Zulu

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African College for CBNRM, Box 82, Mfuwe, Zambia
Fax: 260-62-45077 e-mail: admade@compuserve.com