

Executive Summary

Rural communities residing in game management areas are discovering the economic importance of wildlife under such programs as ADMADE, but they are also discovering the trade-offs between the rewards the wildlife commercial sector can bring versus the opportunity costs of sustaining these rewards. As a result communities are increasingly trying to think and act as wildlife managers for their private sector interests while also trying to satisfy community needs as land use managers. The outcome of these decisions will likely shape the success of community-based natural resource management (CBNRM) in Zambia and the success of wildlife conservation in this country for years to come.

Throughout most of ADMADE's 10 year history considerable effort has been made to monitor the various processes and variables that influence how communities participate in resource management to increase household benefits. The ADMADE Sustainability Project has undertaken this special study to use these monitoring results to examine possible factors that influence CBNRM success in Zambia and to formulate these results into practical guidelines for enhancing its future success.

This study identified 5 broad 'environmental variables' that contribute to a community's capacity to generate and use revenue derived through ADMADE for enhancing natural resource conservation and community development needs. The variables included were bio-geophysical features, demographic and cultural factors, private sector interests, ADMADE policy variables and donor support to CBNRM development. Each was composed of numerous sub-variables, giving rise to a potentially complex set of interactions. Developing any single unifying model that might predict CBNRM success would have been an unrealistic objective for this study. Instead, the study chose to look at specific relationships, either analytically with relatively few variables involved or in a more discursive way using case studies, as layers of influence relevant to all GMAs in Zambia practicing CBNRM. What became very clear during this study was the importance of how these different layers can interact and influence the significance of other variables with a cascading set of effects. It was therefore necessary to also analyze these layers of variables in a hierarchical way to better understand their possible linkages.

Summarized here are the most important relationships and lessons identified in this study for strengthening CBNRM in Zambia.

A. Bio-geophysical factors

1. CBNRM areas isolated from protected areas are more easily over-hunted and less able to recover from the effects of over-hunting because of restrictions in the free movement of animals between the two areas. Species most likely affected will be the larger species of greater economic value with relatively low numbers on quota and in high demand by both legal and illegal hunters. Roan, buffalo, lion, sable, and eland are examples of species that fit this category.
2. Capacity to absorb hunting pressure in the GMA by restocking from national parks is diminishing in most areas of Kafue National Park, due to high loss of wildlife in the park from poaching. Similar effects are noted for Lukusuzi and Lunga National Parks. CBNRM efforts should therefore assume increased responsibility for park security, especially along its border where illegal hunters may enter the park.
3. Proximity to main highways, large urban centers, and line of rail increase the threat of illegal wildlife trade due to urban demand for game meat and other wildlife products. CBNRM benefits need to be especially directed at those villages that might have contact with such illegal traffickers to encourage them to be vigilante and participate actively in CBNRM.
4. Protected forest areas adjacent to GMAs represent an important way of extending protection of wildlife resources, given that human settlements are not allowed in national forests. Extending the GMA boundary to include such protected areas would be an important way of increasing population range and reducing risks of local population extinction, especially where such GMAs are isolated or relatively small.
5. Higher maize producing areas both within and outside GMAs capable of producing a surplus should be specifically linked to balancing food shortages among communities living on less arable land in a GMA. Households often meet food shortfalls by exchanging fish or game meat with maize. Methods for improving food production, restricting settlements on poor soils, and providing family health services to families in need of family planning are alternative options for CBNRM.

6. Road access into a GMA for field staff support and facilitating community development needs is an important factor for CBNRM success. As such roads are improved, risks of illegal trafficking of wildlife meat in these areas also increase, thus requiring CBNRM vigilance of these roads. Hence, planning and development of roads in a CBNRM area should be undertaken with these concerns in mind.
7. GMAs approaching or exceeding 5000km² are likely to be too large to manage effectively as a single CBNRM area. Furthermore, safari operators are not able to utilize the full extent of such concessions, resulting in lowered income per km² as size of the CBNRM area increases. This results in a declining efficiency in maintaining acceptable standards for resource management. GMAs in this size class should preferably be divided into two hunting concessions corresponding to two separate CBNRM units. Alternatively, hunting leases for such areas to a given lease holder should be based on two hunting blocks with separate quotas and minimum kms of safari road distances.

B. Demographic and cultural factors

Population effects

1. CBNRM as an approach to natural resource management is likely to be non-viable for areas exceeding population densities approaching 5 – 10 people/km² due to land use pressures and disturbances that are difficult to regulate at a community level. In such cases, external interventions will be a more appropriate approach and may require greater reliance on national (or district) authorities if the particular area represents particular importance for the country's wildlife industry.
2. Population pressures on the natural resource base in a CBNRM area need pro-active planning by the community, as many of the changes that population increases bring are extremely difficult and expensive to reverse. One of the best ways for communities to do this is to build into the CBNRM program an annual land use planning process that engages a wide distribution of community leaders and stakeholders from each Village Area Group (VAG).
3. Where communities reside outside the boundary of the GMA, community vigilance of natural resources will be reduced and more exposed to external interferences. In such cases, CBNRM management should budget and plan for more strategically located camps or outposts for village scouts to operate from. Scout rotation at these camps will be necessary since schools and other social facilities will not allow families to live there.
4. Several key factors in reducing population conflicts on the resource base are 1) start land use planning discussions early in the CBNRM process, 2) build consensus at an early stage on what vision the community has for their wildlife and other natural resources, and 3) increase opportunities of employment from the resource sectors the community is helping to manage and protect. In this regard, safari hunting has serious limitations for job creation, given its specialized skills and low volume of tourists. Options for non-hunting tourism owned and managed can create a more positive attitude for communities to value their wildlife and the habitat requirements needed to sustain the resource.

Cultural relationships to CBNRM leadership

5. Positive response by members in a community to resource protection require effective CBNRM leadership in distributing resource derived benefits fairly among resident households according to needs identified by households living in a given VAG.
6. CBNRM leaders at the community level will be less susceptible to mismanaging funds and diverting benefits to their own village area if there are regular unit inspections and audits with executive authority by an external 'parent' institution to withhold community funds when irregularities do occur. Such visits should be done annually, or more often if done for training purposes, and costed in as a fixed CBNRM expense.
7. Accountability of projects identified at the VAG level should be reconciled with projects funded by the CRB to avoid projects that tie up community funds for projects that benefiting few (chief's palaces, vehicles, etc.). Guidelines on capital equipment purchased by the community should be reflected in the ADMADE Community Constitution.
8. Vehicles have become perceived as a status of ADMADE success without fully appreciating the inherent costs of maintaining and operating one. Less costly forms of transportation, particularly

for resource management support, should be considered, such truck hiring for bulk transport of patrol supplies and bicycles for intra-unit movement by scouts.

Settlement patterns

9. Spatial patterns of settlements that encourage fewer and larger settlements will favor CBNRM success. This is because wildlife habitats will be less fragmented and exposed to perimeter effects of land clearings and other human disturbances.
10. As traditional landowners and patrons of Community Resource Boards, local chiefs play and should be encouraged to play an important role in educating and influencing their subjects to reduce settlements in wildlife sensitive areas and help enforce land use plans that adopt zoning for settlements.
11. CBNRM-practicing communities having small, numerous, and highly scattered settlements will be less likely to coordinate CBNRM activities than communities occupying larger, few settlements. Compensatory steps should include regular visits and information exchanges among the VAGs.
12. Well designed development projects funded by CBNRM can reduce the effects of habitat fragmentation and habitat disturbances, especially if such projects are linked to community land use plans that reduce the need for local residents to degrade their resource base. Key variables in most GMAs that should be considered in this regard are water security and reduced conflict at waterholes, food security needs, and alternative sources of income to reduce pressures on game meat.

Number of traditional rulers in a CBNRM area

13. As the number of local chiefs in a given CBNRM area increase, the likelihood of certain problems affecting CBNRM success will also increase. These problems relate to decision-making, costs and coordination of activities. In these cases it may be necessary to develop a higher CBNRM authority to deal with land management issues while providing greater autonomy to individual chief's areas in meeting development needs.

Community skills and education

14. By having elevated educational standards and a genuine democratic selection process for members of the Community Resource Board, this statutory body will be more capable of applying CBNRM methods and skills to support resource management, financial management and community development in their area.
15. Women's roles on the Community Resource Board will likely be under-represented due to lower educational levels and not having qualified women to contest in the CRB elections. Absence of women on the Board for this reason may require ex-officio status and an increased effort to formally educate women in the community for them to effectively participate in CBNRM.
16. CBNRM success will be directly dependent on the level of training that participants receive to administer CBNRM in their areas. Curriculum for this training will necessarily have to adapt to changing needs and priorities communities have. This requires an integrated approach to linking curriculum development to CBNRM program monitoring.
17. The primary objective of village scouts is to balance the need for local employment to discourage poaching with the need to attract more educated people to learn and apply advanced wildlife management skills. A secondary role is to disseminate information and understanding about CBNRM to members in the community. It is therefore important to sustain the largest number of village scouts possible to maximize their overall impact on CBNRM success.
18. Village scouts have provided a 2.7-fold increase in scout manpower to GMAs at .3 to .5 the salary cost of GRZ scouts as well as a lower rate of absenteeism and replacement than GRZ scouts. CBNRM success is critically dependent on the further development and support of expanding village scout numbers in GMAs.
19. A continued advanced training program for village scouts has broadened the technical capacity of the community to manage their natural resources. Having advanced trained village scouts to perform certain tasks has greatly reduced the cost of data acquisition for such management functions as quota setting, land use planning and community education.
20. Village scouts provide a culturally acceptable route for dissemination of civic education to improve CBNRM understanding.

21. Substantial revenue loss to CBNRM is being avoided by having village scouts guard against fraud in licensing and under-reporting wounded animals.
22. Unit Leaders and their deputies provide a critically important source of CBNRM leadership throughout the year as resident CBNRM practitioners in the community. Annual training courses in CBNRM methodologies have enabled unit leaders to broaden public support and understanding in ADMADE. Key to their success is financial support from WCRF for the wildlife management budget approved by the community and a supportive relationship with their Command Wardens.

C. Private sector

1. Development of hunting roads is a necessary investment by the private sector to increase hunting opportunities for safari clients and encourage community efforts to police wildlife depleted areas to increase wildlife revenues on their lands.
2. Safari operators will be less likely to develop hunting roads if the concession area exceeds a certain size, approximately 1500 – 2500 km² for lease periods that are less than 5 years. For this reason, size of concession areas and lease periods are important considerations when developing lease requirements for improving industry performance in a hunting concession.
3. To avoid illegal trafficking of wildlife products, hunting roads should not encourage access into the hunting area, especially from nearby urban areas.
4. The basis for a strong and profitable partnership between the operator and the local community is for each to complement the other with their respective strengths and capacities to produce more wildlife 'products' for the commercial markets. A key constraint for communities to play this role has been revenues to support these efforts have not been flowing effectively to communities in a manner that allows such funds to support budgets and annual workplans.
5. Failure to support CBNRM efforts within the limits of revenues earned has caused staff morale to suffer, patrol days to reduce, and groups size on patrols to decline. Such problems may have increased the incidence of corrupt practices by scouts and their unit leaders in certain areas.
6. As private sector partners to the wildlife industry, the community through a CBNRM process can provide a reliable and cost-effective way of protecting wildlife resources. This is possible if funds are returned to the local CBNRM authorities to support such costs, annual workplans support quarterly management steps to support patrol requirements, and expenditures for these requirements are regularly audited.
7. Monitoring of lease agreements is an important way of evaluating relative performance of individual operators in meeting industry standards and supporting the objectives of CBNRM. The 'Conservation Bullet Award' is a useful tool for this purpose and requires annual commitment by ZAWA to maintain its rigor and comprehensiveness.
8. Strictly on a percentage basis, communities appear relatively disadvantaged by being heavily taxed for producing wildlife (62.5% on licenses and 25% on concession fees). Given the added responsibilities and costs communities are burdened with to reduce poaching and land use disturbances, the industry would be better supported by imposing less deductions on community shares to encourage increased wildlife production.

D. ADMADE policy variables

1. ADMADE's strength rests very much on the premise that it is an on-going experiment of ideas and methods for building community commitment to wildlife conservation. As new lessons are learned and CBNRM methods improved, there is need for policy frameworks to also evolve in order to reinforce Government's commitment as a co-management partner with local communities.
2. Policy adjustments and continual institutional over-sight for program strengthening are critically required by Government to ensure lessons from ADMADE can be effectively applied in communal wildlife areas.
3. Key CBNRM variables that remain in the balance and require full attention by Government to make the most informed decisions for ways to strengthen ADMADE are as follows: 1) procedures of banking and disbursing community revenues, 2) revenue shares entitled to communities, 3) special licenses, 4) tendering procedures for leasing hunting concessions, 5) protecting land tenure for communities, and 6) extending ADMADE policy to encompass other resource sectors.

E. Donor relationship to CBNRM development and support

1. 75% of the non-donor funded GMAs that had a wildlife industry when the ADMADE program was introduced have subsequently lost their industry. As a result, there has been a total loss of revenue support for the local communities in these areas. In contrast, in all the areas originally provided with capital start-up support by donor assistance, all remain with private sector commitment and all are tendered competitively by the private sector. It is therefore strongly recommended the same level and conditions of capital start-up support be provided to those still without basic capital equipment to promote the CBNRM approach.
2. Donor support for CBNRM activities in a communal wildlife area should be limited to 1) a one-off equipment investment to provide the means for wildlife production to increase, 2) skills development to manage the resource as well as to gain increased profits and employment opportunities, and 3) assistance to key land use initiatives that demonstrate communities' determination to live sustainably with their wildlife resources.
3. Key training needs in the more developed CBNRM areas is more advanced training in financial management and technical know-how on establishing community enterprises in the tourist sector as well as other business ventures.
4. Over-reliance on donor funds to implement CBNRM may diminish the perceived value of the resource and may also detract from local stewardship of the CBNRM process if donor funds necessitate external personnel to administer the initiative as opposed to local leadership.
5. Donor support to intermediary organizations or institutions for assuming this responsibility of implementing CBNRM will increase costs for rural development while delaying the growth of civic responsibilities by communities themselves for managing and developing their own natural resources.
6. Because of the complex and broad significance of CBNRM in Zambia, donor/government dialogue is essential to maintain program continuity and consistency of national values and aspirations.
7. Donors provide a helpful source of critical review for progress in CBNRM development as based on mutually agreed goals and objectives. Facilitating such dialogue will help promote continued donor support and interest in CBNRM development.

It is clear there are many levels of influence affecting ADMADE's success. This study has shown what cautionary steps are needed when dealing with different variables that are bio-geophysical, cultural or demographic in nature. The ability to respond to these variables are strongly influenced by the level of skills and quality of leadership communities have. Equally important are the policies that create the needed incentives for communities to be actively committed to the benefits CBNRM promises. Such interlocking dependencies are further complicated by the number of key players that contribute their respective influences on CBNRM success and their own abilities or desires to forge partnerships for the enhancement of CBNRM with other players.

As ADMADE continues to grow, such complexities and challenges will need to be more fully appreciated by the national leaders and planners of the CBNRM process in Zambia. Doing so will also require the constructive view that ADMADE is an imperfect, evolving program that is allowing all levels of ADMADE participation to question their respective roles in its success. If such a process is allowed to proceed, this paper has shown the enormous potential to conservation and rural development that can be achieved when communities do gain a sense of ownership and financial security from a resource their lands are capable of producing.