



## Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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### **Trip Report: Zambia** 1 October – 13 October 2006

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**Purpose of Trip:** Project overview planning and management; experimental design and data analysis regarding biodiversity conservation assessments

**Sites Visited:** Mfuwe Conservation Farmer Wildlife Producer Trading Center (CTC)  
Zambian Wildlife Authority (ZAWA), Mfuwe  
African College for Community-Based Natural Resource  
Management, Nyamaluma  
US AID Mission, Lusaka

**Description of activities:**

My role as Principal Investigator involves the coordination of the various research teams from Cornell and our international and host national partners. Integration of our research into the context of COMACO, which must continue to function as a business entity, requires a high degree of coordination with COMACO. In this regard, I met with Dale Lewis, Principal Investigator in Zambia, and we discussed in detail how our joint work plan for year 2 can best be implemented. Because research is being performed to test and optimize the COMACO model, it is imperative to time the research appropriately so that the data can be gathered and the research results implemented in a timely fashion, so that they have the best chance to have impact. For example, training in food production and safety should occur before next June, at which time new production practices will already need to be implemented.

Apart from this administrative and logistical purpose, I also had my own personal research to carry out. My main objective for this trip was to analyze data just collected from our greatly extended aerial wildlife surveys. In addition to repeating the identical aerial transects flown by WCS/COMACO in previous years (which provide a comparison of “before and after” COMACO), the SANREM-CRSP helped support 3 new studies. A “northern control” stretched across the Luangwa River north of the North Luangwa National Park (Chama District). Lukusuzi National Park was surveyed for the first time. This Park lies to the east of the Valley. Finally, a “southern control” of the Sandwe and Chisomo regions was also surveyed. The Chisomo region in particular provides a control to allow comparisons of areas where COMACO is not active (a “within-without” control). It is premature to discuss the survey findings as

“results,” they must be taken within context of continued yearly surveys before they become data from which trends can be distinguished. That being said, it was clearly apparent that the areas in which COMACO has been active have significantly higher populations of the species surveyed than the 3 new regions. It is conceivable that seasonal animal movements might have contributed to the findings from this survey of the Lukusuzi N.P. (which is farther from the Luangwa River than other areas). However, the northern control straddled the Luangwa and still appeared to have significantly fewer animals, as did the Sandwe-Chisomo area. Nevertheless, we shall endeavor to include a survey done at a different time of year (the wet season).

We also recognized that COMACO’s Poacher Transformation Program (which has now trained close to 400 professional poachers with skills such as carpentry to promote alternative livelihoods) represents a potentially significant source of information. Comparison of this group versus farmers who poach with wire snares to supplement their food/income might be able to provide a window into effects of poaching beyond the loss of targeted species (for example, the purposeful (guns) or inadvertent (snares) killing of carnivores; the accidental start of bush fires, etc.). Accordingly, we designed surveys for both types of poachers.

For COMACO to have long-term positive impact on biodiversity conservation, it is imperative that its participants do not resume poaching. Information from ZAWA patrols and legal safari hunting guides needs to continue to be gathered to assess whether guns and snares turned in are merely being replaced, and poaching is continuing as before. Collection of these proxy data for wildlife populations (such as the time it takes until a trophy kill is made, percent success of hunting efforts, number of days it takes a long patrol to spot a poacher, number of snares seen per long patrol or hunt), will indicate human practices as well as trends in wildlife populations. Such data along with the aerial survey data, can form the basis for an ecosystem-scale wildlife management plan. Stakeholders including COMACO, safari hunters, other lodges, ZAWA, traditional rulers, local community resource boards, and regional/federal government will be asked to a meeting to begin laying the groundwork for such a natural resource management plan.

In addition to an assessment of wildlife populations, I sought to assist Dale Lewis with the analysis of survey data that reflect upon COMACO’s progress as a whole. Although I am not a soil or social scientist, I was able to contribute through assistance with new methods of statistical analyses, which helped reveal new findings from already collected data. Such findings can then spur new research questions. Finally, my visit coincided in part with that of Keith Moore and Maria Elisa Christie. Together we met with several of the staff of the CTC in Mfuwe. We learned how the COMACO model works, with particular attention paid to how it integrates with a complex governance structure involving traditional rulers as well as regional/federal government. It was very positive to see the degree of local initiative at this CTC, which has been operating for less than 2 years. For example, Yolum Njere has initiated new business contracts with safari lodges, and COMACO operates a shop at the Mfuwe Airport which sells not only local crafts to tourists, but also is the conduit for food orders for the lodges (which visit the airport frequently to pick up their clients). New training in organic vegetable production was obtained from a course in Lusaka, crops are being grown and sold, and a simple vegetable store-room (cooled by evaporation of dripped water) will increase their capacity for sales in the next harvest season. Furthermore, local mango production is extremely high. However, because all

the fruit becomes ripe simultaneously, it cannot be sold and much goes to waste. The making, packaging, and sale of processed fruit products represents a potential new endeavor for this CTC.

Whiteson Daka, the Coordinator of Regional Extension efforts at Mfuwe, related anecdotally that Erin McDonald's training of over 500 local villagers has resulted in an increase of close to 50% in poultry numbers this year as opposed to this time last year. Although it will be difficult to verify definitively in the absence of years of historical data, if poultry production does increase per person, it will have a dramatic impact on local nutrition and household incomes. The rudimentary diagnostic lab at the Mfuwe CTC has just been set up and begun to function, with extension officers able to perform tests for fecal parasites.

**Suggestions and Recommendations:**

Wildlife census data should continue to be collected from the newly identified control regions as well as the COMACO core area. Integration of a new survey during the early or late rainy season will also allow us to evaluate the potential for animal migration to influence the Lukusuzi results. Censusing of carnivores would add a new dimension to our current multi-species assessment. However, such species are not amenable to aerial surveys. Alternative approaches will be explored and could potentially be integrated. Additional surveys of poachers and safari hunters will allow new insights into trends in wildlife populations and human practices that can be incorporated into ecosystem-scale management planning with a number of other stakeholders.

**List of Contacts Made:**

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