

## CHAPTER 10

# *Improving Forest Beekeeping through Monitoring in Chimaliro, Malawi*

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**L**OCAL FOREST USERS REPRESENT SIGNIFICANT COLLECTIVE human resources, or social capital, in terms of knowledge of their environment, organizing capabilities, understanding of local institutions, and abilities to develop forest management systems that deal effectively with complexity and surprise. Around the globe, however, their social capital has consistently been underappreciated and underutilized. Government forest departments seem stuck in “command-and-control” forest management regimes. Forest policy makers have been slow to respond to changing circumstances, and their institutional mechanisms often interfere with the goal of achieving sustainable forests and communities. As a result, both forest quality and human well-being have suffered.

In Malawi, villagers around the Chimaliro Forest Reserve undertook to monitor sections of the reserve in return for certain usufruct rights. The agreement to cooperate in managing the forest has presented challenges to both the national forest agency and the local communities, but through their collaboration, ongoing improvements in resource management are becoming apparent. The effort hints at the potential of local forest users’ social capital.

### Context

In the Chimaliro Forest Reserve of Malawi (Figure 10-1), local communities had been denied access to the forest reserve since it was established in 1921. In 1992, the communities entered into a comanagement partnership with the country’s Forest Department, which stipulated that they be allowed to collect nontimber forest products and hang beehives for honey production in exchange for regular patrols of the forest reserve, early-season burning to reduce fuel loads, and firebreak maintenance. In 1996, the Forestry Research Institute of Malawi was given the

task of developing a management plan for the Chimaliro Forest Reserve. Three blocks were demarcated for the comanagement partnership, each having a historical connection with the group of villages under which it would be managed. The areas of blocks I, II, and III were 18, 118, and 74 hectares, respectively.

Development of this first plan was preceded by technical analyses by scientists from the Forestry Research Institute of Malawi. Although they consulted local communities, they produced models and guiding principles for management with little active stakeholder participation. This plan was, therefore, to a large extent an internal affair of forestry and ecological experts. Subsequent implementation was characterized by noticeably weak involvement of stakeholders. The plan provided little inspiration for communities, since they had not participated fully in its development.

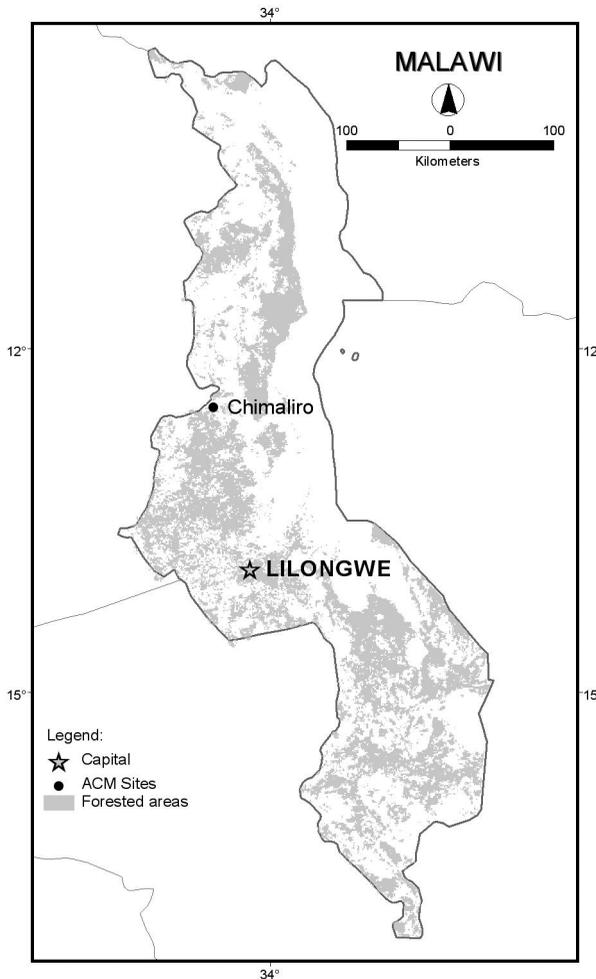


Figure 10-1. *Chimaliro, Kasungu District, Zambia*

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In 2001, a comanagement agreement was signed between the Forest Department and the villagers around the Chimaliro Forest Reserve, who were represented by their local institutions, known as block natural resource management committees. Each block had its own committee. A benefit-sharing mechanism from proceeds of sales of confiscated illegal goods was set up, with 70 percent for the Forest Department and 30 percent for the block committees.

Nevertheless, illegal harvesting of honey, timber, and poles, to which communities were still officially denied access, has continued. Harvesting of timber and poles for home construction remains a contentious policy issue, since legalization requires policy changes. The agreement has had other implementation problems as well: the comanagement activities have benefited the committee members more than the communities they are supposed to represent.

To overcome these problems, the communities, led by their local institutions with facilitation support, tried an adaptive collaborative management (ACM) process. My role, as facilitator, was to guide the communities through an analytical process that included visioning, scenario building, and vision implementation and used the principles and methods of participatory action research, participatory rural appraisal, and collaborative monitoring. The core idea was to adapt management in a conscious and continuous manner by facilitating widespread use of self-improving and equitable forest resource management systems that build on local capacity, with “vertical” and “horizontal” stakeholder interactions.

Four major players had roles:

- Process facilitators documented the ACM process, collected data on the committees’ activities and contributed to the discussions during reflection meetings.
- Forest guards led patrols, organized reflection meetings with committee members, and communicated with the process facilitator, committees, and other district forestry office staff on meeting dates and venues, and also had other government-assigned duties.
- Community members participated in block activities.
- Committee members participated in block activities.

In applying ACM at Chimaliro, we also developed collaborative monitoring to overcome some of the problems highlighted above. This chapter describes our progress with the monitoring work beginning in April 2002 and focuses on beekeeping, which is an important forest resource. Although this experience shows how specific aspects of monitoring, like the use of indicators to stabilize the use of beehives in communal areas, can be useful, our primary insights relate to the need for continual assessment of how monitoring can be improved and thus remain effective in generating forest management improvements.

### Initial Monitoring and Honey Thefts

Before the comanagement agreement, patrolling the forest reserve was the duty of government-paid forest guards, and harvesting of honey was illegal. The agreement made individual block committee members partly responsible for patrols

of their blocks and allowed honey collection as one of the benefits. Each block committee, with the Chimaliro forest guards, would set aside a day per fortnight for patrols. Normally, the chairperson, treasurer, a committee member, and the forestry staff would patrol to see whether the beehives were colonized and estimate the time remaining until harvesting.

Other monitoring activities included checking on thefts of honey and illegal tree felling. When the hives were full, the treasurer and other committee members and the forestry staff would harvest. The honey harvested never reached the market, however; the individuals involved in harvesting mostly shared it. At times, the treasurer, who was a custodian of the harvesting equipment, would secretly harvest the honey and blame the theft on the local community and outsiders (community members not involved in comanagement). Such acts caused considerable conflict among the committee members, but there were no monitoring indicators to assist the committee and the forestry staff in documenting the problem.

The block committee members reacted to the thefts of honey by removing the beehives from the blocks and hanging them in individual homestead woodlots. However, the Forestry Institute of Malawi subsequently demanded that the beehives be returned to the forest blocks, since their removal defeated the very objectives of forest comanagement. No mechanisms were established to tackle theft problems, however.

## Adjusting the Monitoring Plan

When the ACM process started, each block committee and a few community members from each block participated in a visioning exercise organized by the researcher. This visioning was based on scenario building, an exercise that aims to stimulate creativity and can be useful when complexity and uncertainty are high (Wollenberg et al. 2000). We used “force field analysis” (Box 10-1) to tease out the forest management problems within the community.

During the scenario exercise, bush fires, illegal tree felling, low honey productivity, thefts of honey, weak collaboration between block committees and the forestry

### Box 10-1. Force Field Analysis

Participants reflect about their current situation and the kinds of problems they face, visualize the problems, and draw them on paper. They are then asked to draw a picture of their desired future. Participants compare both pictures and discuss the forces that encourage or discourage changing from the present condition to the desired one. They use this understanding of the positive forces (e.g., resources available) and negative forces (e.g., constraints) affecting their goals to strategize about the best actions to take to accomplish their goals. These actions need to be consistent with the forces, so that actions counteract negative forces and reinforce the positive ones.

Source: adapted from Narayan and Srinivasan 1994.

staff, and limited involvement of the wider community in block forest management issues were highlighted as forest management problems. Central to the discussion were the low productivity and widespread thefts from beehives. Production of honey is affected by illegal felling—hives are often relocated so that particular trees can be cut—and by fires that destroy nectar-producing flowering trees and vegetation. The final product of the scenario exercise was a plan of action: indicators were needed to help stabilize use of beehives in common areas.

Based on ACM ideas and following the plan of action, monitoring indicators were developed by the wider community and block committee members, with three process facilitators, chosen with assistance from the Forestry Research Institute of Malawi. Two of these process facilitators had previously worked with the institute on other initiatives but were not on a government payroll. They were trained by the author to undertake the facilitation role and document the collaborative monitoring process.

The block committee members, a few community members, and the forestry staff agreed that monitoring should still be conducted by patrols but should be guided by the indicators. Using indicators could help track changes from the start of the intervention, in this case arresting those taking honey from the beehives as well as improving hive productivity. Indicators could help assess the causes of any observed changes. Box 10-2 contains an example of beekeeping monitoring indicators identified by actors of each block.

## Ongoing Improvements through Critical Assessment

### *Interblock Cooperation*

The ACM approach to monitoring via patrols at Chimaliro was carried out at the block level. Each block committee and the other actors undertook the patrols as independent entities, not as partners. However, at the reflection meetings, even though they were not called regularly (Box 10-2), all the blocks met, and the block committee members would share their patrol experiences.

At one meeting, participants realized that none of the committees were having much success in arresting the honey thieves. Members would point fingers at each other whenever illegal tree felling, honey thefts, or bush fires in their blocks were noted by a patrol. A coordinating committee was therefore formed to oversee issues of all three blocks. Membership was drawn from the three block committees.

As time passed, the monitoring data showed continued low production and thefts of honey and illegal cutting of trees in Chimaliro. The coordinating committee recognized that block-level patrols were inadequate. The patrols had been able to identify the culprits from within the committees and the wider community, but other factors prevented the apprehension and arrest of suspects: the patrols had previously relied on forest guards and local chiefs for conflict resolution and had not become accustomed to their new roles.

The coordinating committee proved to be the key to the solution because it represented all three blocks and could therefore approach and apprehend a culprit

## Box 10-2. Collaborative Monitoring Agreement for Beekeeping

*Local planning objective (identified by the actors below):* to obtain honey and wax that can generate income for household food security and reverse the trend of privatizing common pool resources (the beehives).

**Actors involved:**

- block committee members;
- the Chimaliro forestry staff (forest guards); and
- several community members.

**Indicators (identified by the actors above):**

- availability of beehives and wax at all times;
- frequency of patrolling the beehives;
- number of hives harvested, quantity of honey and wax produced;
- time for harvesting;
- retail and wholesale price for the honey harvested;
- market availability and income realized from marketing;
- handling of honey and income: the treasurer of the block committee stores and sells the honey and banks the cash; and
- use of income generated for community development.

**Means of data collection:**

- patrols;
- transect walks; and
- research partners (the process facilitators), secretaries of each block in the field recording and documenting the information.

**Means of sharing and reflecting:**

- ad hoc meetings attended by the actors above.

from any other block. After reflecting on block-level patrols, the coordinating committee decided to embark on joint patrols in the reserve, scheduled weekly, then biweekly. During these patrols, all participants would check the beehives and look for felled trees or fresh stumps and any signs of fires—all potentially harmful for honey production.

### *Seeing the Merits of Resource Assessments*

Further reflections on patrols made the coordinating committee and other actors realize that scheduled patrols seemed to have little effect in curbing illegal activities, including honey thefts. They believed that the culprits studied their movements and were able to continue stealing. The coordinating committee therefore decided to switch from regularly scheduled patrols to equally frequent but unscheduled patrols. This change did reduce honey thefts and illegal tree felling.

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To improve honey production, the ACM researcher decided to introduce the concept of participatory forest resource assessment to support the collaborative monitoring of resources. Such a resource assessment involves all the community's stakeholder groups in undertaking a joint assessment of the forest resource and its condition, use, and potential. The stakeholders analyze the data as a basis for discussing the condition of the forest resources and its future management and then develop a forest management plan together. The existing forest management plan for the Chimaliro Forest Reserve, developed by the Forestry Research Institute of Malawi, provided little inspiration for the communities, since they had not participated fully in its development. A management plan developed through a participatory assessment would, we hoped, give the community a greater sense of ownership.

The participatory resource assessment exercise was conducted during five days in Block II. What we learned about developing forest management plans at the block level could later be used in working with the other blocks.

The assessment exercise made the block committee members, several community members, the process facilitators, and the Chimaliro forestry staff aware that certain forest management decisions had been ill advised. For example, beehives had been located in an area with forage for livestock but few mature trees for bees. They were also located far from water sources. Beehive location had contributed significantly to the poor colonization of the hives and, hence, to low honey production. Participants agreed to move the beehives in their blocks closer to a water source to increase chances of bee colonization and honey production.

The forest resource assessment also helped the people of Block II realize what resources to monitor where. Participants identified areas for thatch grass collection and areas to monitor illegal cutting of trees based on the availability of trees for different uses. They found that the trees on the upper slopes of the Chimaliro Mountain were suitable for construction poles and firewood for beer brewing and brick making, but were at risk from high demand. They also realized that grazing animals harmed regenerating stems of the most valuable species on the lower slopes. They agreed to regulate grazing and avoid bushfires in these parts.

### *Improved Management*

Subsequent monitoring has provided interesting results. For example, the beekeeping monitoring has shown considerable improvement in communal harvests of honey. For the first time on record, Blocks I, II, and III harvested 18, 17 and 20 liters of honey, respectively, in two harvests from the reserve and the village woodlots. The honey was sold at Kasungu district headquarters for 150 Malawi kwacha per liter (about US\$2 in 2002).

This achievement has triggered considerable growth in the number of privately owned beehives—from one to five in Block II and from three to seven in Block III. Although the block committees do not feed the information from monitoring back to the wider community whom they represent, the information is shared through other existing channels, such as general social interactions between individuals and at group gatherings like funerals, community-based training, etc.

The participatory forest resource assessment experience also taught the block committees about the conditions required to produce honey, leading them to adapt their practices. The clear benefits accruing from this nontimber forest product stimulated a wider community interest and willingness to learn about the resource base.

Collaborative monitoring has improved forest management in several ways that were not possible based on the initial block patrol system. A conscious ACM-driven process led to more effective patrols and a coordinating committee. A stakeholder-owned forest management plan has been developed. And those involved in patrolling can identify new illegal practices, such as garden encroachments on the borders of the reserve.

Nevertheless, participants in the ACM process continue to identify weaknesses—for example, poor participation of the wider community in joint patrols. Several problems with sustaining the monitoring-related learning process remain. For instance, the data on honey production are still collected by facilitators because individual beekeepers have difficulty recording the information. To maintain transparency and accountability, the monitoring indicators need to be updated, now that other agents (district forestry officers) sell the honey and the cash is banked by the chairperson, treasurer, and secretary.

## Lessons

Monitoring can, indeed, trigger learning when it brings understanding about how the resource is changing, why these changes might be occurring, and what they signify. In Chimaliro, the information that was collected and shared fed the analysis that led to ongoing improvement to resource management. Developing indicators and identifying specific issues to monitor guided the communities, especially the block committees, in discovering the value of monitoring collaboratively. The process of creating the collaborative monitoring mechanisms enabled block committees to set goals for sustainable beekeeping, honey production, and forest management, besides helping them assimilate critical information about the effects of local forest management activities. It also contributed to the assessment and evaluation of progress toward the goals they had set for their forest reserve.

Local ownership of the collaborative monitoring process is critical. When individual blocks conducted their patrols independently, little or no success was recorded. These patrols had been set up as an obligation under the comanagement agreement. If communities are to take ownership of information systems to collectively make and implement decisions, then they must be participants in developing the monitoring process.

As summarized by Prabhu (2003), the goal of the monitoring should be jointly agreed on and clear to everyone involved. Critical questions to consider at the onset include these:

- Who made the decision to start developing a set of indicators? Is there community ownership of this fundamental decision? That is, does everyone agree that it is a good idea, and is everyone committed to it?



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- Are the indicators going to be generated and used only by the community itself, or in collaboration with other partners (e.g., in a comanagement relationship)? In either case, is other assistance, such as facilitation, needed?
- Who will take responsibility for which parts of the process? Who will do the monitoring?
- Who gets to use the information and how?

Without a clear understanding of the overall purpose and final use of the information, participation will be compromised and confusion may occur, leading to later disappointment.

