

CHAPTER FIVE

Creativity, Learning, and Equity

The Impacts

ADAPTIVE COLLABORATIVE MANAGEMENT (ACM) is built on a belief in the abilities of people—in forest villages, in government offices, in research institutions—to act in the interests of themselves, their communities, and future generations. It assumes the necessity for people to maintain their environment for their own survival. It is also built on the conviction that precise prediction of change in panarchies (multiple interacting complex systems) is impossible, which in turn implies the centrality of learning as an element of effective management—indeed, of living. ACM also builds on the existence of, or the latent potential for, social capital, as a critical prerequisite for collective action.

From that follows the desirability (and inevitability) of diversity of impacts. And that is what we have. Although the impacts—large and small—that those using ACM have generated are myriad, this chapter provides the flavor of what has been accomplished. The most important impacts to date are not how much cash was generated, or how many hectares of forest were protected—figures that are unlikely to be impressive in the short run anyway—but rather the human and institutional capabilities that were strengthened. These capabilities are a potentially enduring legacy that can help these communities deal proactively with future surprises and trends. We anticipate, though we can't yet prove, that these new capabilities will raise incomes and improve forest management over the long haul.

Our research design initially included context studies that could serve as baselines against which to measure change: pre-ACM studies would be compared with periodic updates to tell us what we had accomplished. Some colleagues found this approach appealing; some found it unlikely to provide believable results. In practice, although the context studies yielded useful data, the staggered onsets of ACM activities in the different sites meant that some updates were available, some not, when this analysis was done. The ACM facilitators' ever-growing understanding of what was happening on each site also conspired against comparability: what was

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actual change and what was a different level of understanding on the part of the reporter was difficult to disaggregate.

So my approach to impact assessment is an inductive and largely qualitative one. I have used anthropological methods of data analysis, immersing myself in the ACM teams' written outputs, visiting sites, interviewing and e-mailing field-based team members, and serving as a communication node among sites. In this way, I have been able to pull together and categorize the positive changes that our activities appear to have brought about. I have made extensive use of Bob Fisher's "plausible, causal links" in my search for the effects of our work, and the result is a preliminary assessment.

This chapter looks at ACM impacts from two perspectives. The first examines impacts according to the three-way differentiation explained in Chapter 1:

- horizontal collaboration among stakeholders;
- vertical collaboration between communities and policymakers; and
- adaptiveness, focusing on our efforts to catalyze social learning.

See Box 5-1 for more detail on how this played out in Nepal.

Impacts, from this perspective, are closely linked both to the way in which local stakeholders applied an ACM approach and to the strategies that the researchers used to facilitate or catalyze it. The second section involves a more conventional take on the same sites, looking at livelihoods, environment, and empowerment.

Box 5-1. Elements of an ACM Approach Used in Nepal

The two main components of ACM can be understood as learning (shared and conscious/intentional) and stakeholder relations (including communication and power and negotiation). We have broken these down into smaller elements:

1. Stakeholders effectively communicate and transfer knowledge and skills (in multiple directions).
2. All relevant stakeholders are involved in decisionmaking and negotiation, and have the "space" and capacity to make themselves heard.
3. Stakeholders effectively manage conflict.
4. Stakeholders implement actions together, as appropriate.
5. There is intentional learning and experimentation in the forest management process (and forest managers/decisionmakers are constantly increasing their understanding, knowledge and skills).^{1,2}
6. The learning is not only individual but is shared—that is, there is the cocreation of understanding and knowledge (social/transformational learning).
7. Institutions consciously apply learning as the basis for refinements in their community forest management activities and processes.
8. Institutions consider relationships within and between human and natural systems.
9. Planning clearly reflects links to the "desired future" and takes into account actual past and present trends in their planning.
10. Institutions identify and deal effectively with uncertainties³ (including risks) in their planning processes.

—Cynthia McDougall et al. (2002b)

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Our two-stream approach (described in Chapter 1) is important to remember here. On the one hand, we were trying to catalyze adaptive and collaborative management in specific communities; and on the other, we were trying to assess the effectiveness of that effort in maintaining or improving human and forest health. The latter goal is not yet fully possible, since significant changes in human well-being and environmental health do not typically happen overnight. We anticipated at least 5, perhaps 10 years would be needed to thoroughly test this approach. In this chapter, instead, I provide some sense of the opportunities and pitfalls that the ACM approach offers.

Appendix 5-1 provides an overview of the impacts in tabular form.

Approaches and Impacts: Adaptiveness and Collaboration

In this section, I describe the approaches and impacts that have resulted from our interest in adaptiveness or social learning, in collaboration among stakeholders, and in links between communities and policymakers, typically acting at wider scales. These are the diachronic, horizontal, and vertical elements, respectively.

Adaptiveness: The Diachronic Element

We have seen adaptiveness as a naturally occurring process whereby people and systems evolve, changing their behavior over time, to adjust to changing circumstances. But adaptiveness can also be a more conscious attempt to structure feedback, by means of ongoing monitoring, into a given system so that changes can be made purposefully in an institutionalized manner. We have recognized that the natural process is under way all the time, but we have been uncertain of the degree to which we and the communities with whom we work could institutionalize such a process.

We have tried several methods to bring about the social learning that would be necessary for such adaptiveness to exist (Wollenberg et al. 2001a; Guijt forthcoming). The ACM teams found various approaches useful, and participants were also enthusiastic (indeed, if they were not, the effort was abandoned). Teams were generally free to select the methods that fit best with their communities and their own skills. Mechanisms and skills for strengthening adaptive processes were instituted clearly in Bolivia, the Philippines, Nepal, Indonesia, Brazil, Cameroon, and Zimbabwe. Success is less clear (perhaps partly in some cases because of lack of documentation) in Ghana, Malawi (Ntonya Hill), and Kyrgyzstan. These sites were also among the last to begin the ACM process.

The methods we employed were the use of future scenarios, training of community members by capacity development and cross visits, criteria and indicators, qualitative approaches to social learning, and modeling.

Future Scenarios. Throughout our work—both with communities and in our research framework—we have valued a diachronic component, beginning with historical context studies, and keeping in mind likely future trends. In the commu-

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nity context, trends should include the visions that local people and other stakeholders have for their forests and communities. Clarity about such a vision is also important for the process of monitoring; one needs a star by which to navigate.⁴ Ultimately, successful collaboration also depends on a common vision or, barring that, complementary visions.

In Zimbabwe, Cameroon, Malawi, Madagascar, Bolivia, and Brazil, teams drew on the work of Wollenberg et al. (2000) to develop a systematic process for leading communities and mixed groups in discussions of their visions of the future. This process of clarifying the stakeholders' visions performed two important functions. It served as a mechanism whereby stakeholders (or community subgroups) who did not normally discuss such things together could learn about each other's views; and it served to build their support for shared (or complementary) goals for the future. This was a useful step in the adaptive process, all teams agreed. The Bolivia team found the process effective in integrating women's views into the forest management process—something that had been found difficult previously (Cronkleton 2005).

In Malawi, the community expressed a largely agricultural vision of the future, with little attention to their forest resources. The future scenarios process revealed hopes for access to a nearby block of land that had once belonged to the community but had been taken over by Malawi's previous president; people hoped it might be returned to them. Other visions (more funds to pay for funerals and care for orphans) reflected the incidence of HIV/AIDS, the serious hardships at this site, and the minimal economic benefits anticipated from the forest. Progress included work on developing indicators for assessing progress toward their goals and on conflict resolution (Kamoto 2003c).

In heavily forested Nkoelon, in Campo Ma'an, Cameroon, an egg—with the yolk representing society, the albumin representing nature—served as a starting point for a discussion of the future. The mixed group (old and young, men and women, pygmy and Bantu) identified indicators for their vision of human and natural well-being that reflected their ongoing dependence on and value attributed to the forest. Their past efforts to protect their environment emerged, as did the features they considered desirable for their future (Nasi et al. 2001). The process was a first step in improving communication and reducing conflict in the area.

The team in Chivi, Zimbabwe, used the approach to circumvent the slow and ineffective legal mechanism for hearing the views of local communities—normally from village development committee to ward development committee, and then via the chairperson of that committee to the various subcommittees of the council.⁵ Revolutionary visions emerged from these groups of villagers and government officials.

Campbell et al. (2000) stress the importance of the long-term involvement of the facilitators in Chivi, the use of the local language, and the preliminary, smaller scale meetings and orchestration that preceded the large workshop. They also had some warnings for others: they had allocated too little time to the process (though participants' time constraints made a longer meeting impractical); and the more powerful participants made it difficult to give everyone an opportunity to contribute. Such equity concerns also arose in Malawi (Kamoto 2003c) and Madagascar; facilitation and process skills help considerably, but the problem remains a “wicked” one.

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The use of system dynamics to encourage a similar visioning process in Pasir, East Kalimantan (Purnomo et al. 2003a) can be seen under “Modeling,” below. The ACM team’s modeling group also produced a software package, Co-View (Collaborative Vision Exploration Workbench). This software leads facilitators through a process to articulate and explore a shared vision of the future and to develop strategies to achieve it (<http://www.cifor.cgiar.org/acm/index.htm>).

Training of Community Members by Capacity Development. Institutionalizing an adaptive process requires that the local people be willing and able to act in their own and their environment’s interests. In Mafungautsi, Zimbabwe, the ACM team found a worrying amount of inertia and passivity within the communities. To increase motivation, they used Training for Transformation (Freire and Freire 1994; Freire 1970). This approach is built on the assumption that education can either domesticate or liberate, and trainers work toward inculcating an interest and ability in critically analyzing one’s own condition. Following the training, community members began contributing their ideas about improving forest management much more readily. Women’s involvement in decisionmaking fora increased dramatically (Mutimukuru et al. 2005). Nyirenda et al. (2001) report that collective action was “substantially stimulated” and give examples:

- The participants in one of the Training for Transformation workshops were offered per diems, as recompense for their time. After one group had received half the training, they decided on their own initiative to reject the per diem (despite assurances from the ACM facilitators that they could keep it), saying they were already benefiting from the workshop.
- One group attended the ACM meeting (without incentives) rather than attend a grain marketing board meeting where they would have received handouts. They also persuaded the grain marketing board official to change the next meeting venue so that it was more convenient for them, rather than only for the official.
- One group declined a small amount of food aid offered by the government because they decided that the potential inequity in distributing it, as requested, was not worth the small amount of food offered.
- One community concluded that some of its problems derived from not having a councillor to represent them in district government. They organized to make an official request, and as an interim measure they selected a development coordinator from within the community to perform some of the needed functions.

In Nepal, one ACM team conducted facilitation training for district-level personnel and forest user group members involved in the quarterly range post meetings (see Uprety et al. 2002b). And in the Pará, Brazil, sites, community members received training in participatory methods as part of an assessment of community members’ abilities to take on the facilitation and other roles of the ACM researchers. The research team concluded that community members could, with training, profitably use many of the participatory methods; of course, the community members increased their skills in the process. Box 5-3 refers to training in Chimaliro, Malawi, on participatory forest resource assessment, somewhat similar to the collaborative inventory of forest resources carried out in Tailândia, Pará, Brazil. All of

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these training opportunities were determined on site, in response to local conditions, needs, and interests.

Cross Visits. Cross visits, from very local to international, were arranged for those who expressed a shared need for outside information and insight. A group of indigenous women from Basac (Mindanao, Philippines) went to a neighboring village to meet with a women's group. The Basac women's purpose was to learn from the other women, to reflect on the reasons for their own past failures as a group, and to clarify their future plans (see Arda-Minas 2001). A group from Palawan made a longer trip to Nueva Viscaya to visit the innovative community work in Kalahan, where the indigenous community has argued against collaboration in favor of exclusive rights to their traditional territory (see Rice 2001). The group from Palawan went home energized. What they learned led them, in fact, to strengthen their collaboration with government agencies and start several small income-generating activities (see Lorenzo 2001b). Cross visits were also used in Nepal (Upreti et al. 2002a) and all the Indonesian sites. In Pasir (Indonesia), a community group went to Central Kalimantan, famous for rattan production and artisanal processing; in Jambi, ACM team members visited a community forestry project in neighboring Lampung Province. The ACM team in Acre, Brazil, participated in a multistakeholder visit to Mexico, organized through our partners, the University of Florida, to compare forest management in the *ejidos* with local Acre attempts. This resulted in a series of high-level meetings to discuss improved timber marketing arrangements and other serious policy issues—contributing to “vertical collaboration” as well (Cunha dos Santos et al. 2002). In each case, the participants learned valuable information, directly pertinent to their ongoing efforts at collective action.

Criteria and Indicators. In our preliminary thinking, the role of criteria and indicators (C&I) was central⁶ and built on our previous research. In Indonesia, the Philippines, Nepal, Zimbabwe, and Malawi, we used scientific C&I in our baseline context studies (Hakim 2001b; Kusumanto 2001c; Hartanto et al. 2000; New Era Team 2001a, 2001b; Vermeulen 2000; Kamoto 2002d, 2002e).

But more importantly, we anticipated that locally developed, simplified C&I would be useful to communities for monitoring their own actions (Tiani et al. 2001). We also reasoned that institutionalizing such a process might be useful in strengthening the bargaining position of communities vis-à-vis other, more powerful stakeholders (governments, conservation agencies, and timber and plantation companies). And we hoped that the communities would help us simplify C&I; the complexity of our own sets had been criticized, particularly in the ecological sphere.

Community reactions to C&I were ultimately important in decisions about whether to use them, both in the context studies and in the participatory action research process. In our Acre sites, for instance, C&I were perceived as alien ideas (Schmink 2000), emanating from those advocating “sustainable forest management” (an idea often linked in South America to oppressive government policies). In Pará, on the other hand, the ACM team used the concept to monitor the process of empowerment (a use not originally envisioned, see Table 5-1). Formal C&I sets were produced in Nepal, Indonesia (Jambi, Pasir), the Philippines (Palawan), Zimbabwe, Malawi, Ghana, and Cameroon (Ottotomo, Campo Ma'an, and Lomié). In

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Table 5-1. Potential Empowering Effects of Participatory Methods

<i>Categories</i>	<i>Empowering effects</i>
Organization	Planning and distributing tasks, learning how to make decisions
Confidence building	Gaining self-confidence, respecting the group, respecting local knowledge, gaining technical training, guaranteeing ownership
Learning processes	Enhancing creativity, getting access to new ideas, learning to learn, finding stimulation for own initiatives
Sensitization	Critical perception of one's own environment, self-positioning, reflection
Communication	Information exchange, articulation of one's own opinions, constructive discussion

Source: Pokorny 2005.

Nepal and the Philippines, governmental agencies were also interested in developing C&I,⁷ and our long-term, community-level efforts were much appreciated as contributing to a broader national effort—consistent with our initial thinking. The links between the ACM and C&I processes in Indonesia were less clear. This was one of the few instances where I pressured the field staff to undertake specific studies—justified in my mind by our commitments to donors. Consistent with our overall philosophy, such pressure was not a good idea. Indonesian policymakers and managers in other contexts have, however, made extensive use of the C&I software we produced, called CIMAT (Criteria and Indicators Modification and Adaptation tool).

In Nepal and the Philippines, locally generated sets of C&I served as the engine of the participatory planning process (see Box 5-2). Pandey (2002), for instance, describes how the C&I have spawned healthy competition among community residents of Deurali-Baghedanda. One young woman was prompted to learn the community forestry rules and regulations—and proved it—when her own ignorance came up in her hamlet's reflection meetings; another hamlet noted in January its own poor hygiene compared with that of other hamlets in the village, and by the next monitoring session (in March) had exceeded its own target by building

Box 5-2. Local Indicators Used in Bamdibhir, Nepal

In Bamdibhir, the community developed a system of self-monitoring, using the five phases of the moon for measurement, in which they periodically assessed their progress on several indicators they had selected themselves (initial, during the participatory action research process, and at the end of this phase). These indicators were

- relationships with other forest user groups and institutions;
- forest management and soil conservation activities;
- distribution of benefits;
- community forestry development work;
- participation in decisionmaking and institutional development;
- fund mobilization and income generation activities (IGA).

On all these indicators, there was movement from the new moon towards fuller moon phases, indicating progress in the areas they were working on.

—Cynthia McDougall et al. (2002b)

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26 toilets; some households did so without the planned support from their collective fund.

In Malawi, several income-generating activity (IGA) groups were formed and began using C&I to monitor their own activities (see Box 5-3). Monitoring indicators were also developed for the mushroom IGAs (discussed below, see Box 5-8): These include the number of individuals involved in the activity, the quantity of mushrooms collected, the variety of species collected, the variety of species sold

Box 5-3. C&I and the Monitoring Process in Chimaliro, Malawi

The Block Natural Resource Management Committees have been involved in beekeeping activities since comanagement in the forest reserve began. The idea was to provide regular benefits to the communities in recompense for their involvement in forest management. People stole the honey (in all three blocks), so committee members removed the beehives and hung them at their homes. This defeated the purpose of comanagement, and the members were asked to return the hives to the forest. Most committee members complied.

To solve the theft problem, the three committees merged into one, which assigned patrol duties to community members on a regular basis: first every Thursday, later changed to fortnightly. They also agreed that the main committee and the Chimaliro Forest Compound staff should organize reflection and feedback meetings every other Tuesday. They agreed to monitor colonization of the beehives, any insect attacks on the hives, and any thefts of hanging wires, tar, or honey. Monitoring indicators were developed, with the main objective being to obtain honey and wax to generate income for household food security. The specific indicators were availability of beehives and tar at all times, frequency of patrols, colonization of hives by bees, time for harvesting, volume of honey harvested, quantity of honey and wax produced, storage facilities and place, market availability, retail and wholesale price, sales per harvest, income from marketing, banking procedures, and income to be used for community assistance and development.

The unsupervised sharing of benefits from beekeeping among block committee members was another problem. To address this, the group developed the following rules: harvesting should include a community representative in addition to the committee members; storage of honey should be at the field collaborator's house along the tarmac road; and contributions towards funeral services from sales of honey should be announced at the funeral.

Monitoring and reflection, after some time, revealed that the hives in the forest were never colonized and thefts were still a problem. The committee attributed this sad event to the regularity of their Thursday patrols, and the fact that the wider community knew their movements. They agreed to have unannounced patrols in order to apprehend the culprits.

Another challenge involved the placement of hives. The communities were putting hives wherever a tree had nice branches on which to hang the hive. The ACM facilitator decided to train the group in participatory forest resource assessment, which would help in implementation and monitoring of forest resources. After the training, the participants realized that they had put hives in areas where animals grazed and where there were primarily regenerating stems, with few trees to attract bees. Realizing that they could find more suitable places, they selected sites close to water to increase the chances of colonization, rather than close to the main road, as had been done before. They realized that the location was the main reason for the colonization failure. They also agreed to move some of the beehives back to homestead woodlots and village forest areas. This was done to increase the volume of honey produced.

—Judith Kamoto (2003a)

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quickly, the quantity sold, the price variations, market availability, and the changes in numbers of user group members involved (Kamoto 2003c).

Qualitative Approaches to Social Learning. This approach was taken where the ACM facilitators were knowledgeable about social learning as a discipline and participant observation as a method. In Jambi, Sumatra, for instance, the main facilitator (Triakurnianti Kusumanto) was working toward her dissertation with a major focus in the field of social learning. All community members—but particularly women—were most comfortable speaking out in ordinary settings where interactions were informal. Participatory action research activities became part of people's daily lives, “as if nothing new had been introduced” (Yuliani et al. 2002). The team described their activities to local people as *mengalir* (to flow with the stream) in people's lives—using participant observation skills (another actor, Yayan Indriatmoko, was trained in anthropology). By means of focus groups, facilitation, informal meetings, and discussions, the idea of social learning was discussed, shared, and encouraged to good effect. Kusumanto refers to social learning as snowballing, with later communication and relationship building more significant than early attempts. She specifically notes the political implications of such learning, with improvements in leadership, consensus building, conflict management, and negotiation. One previously passive group, for instance, began taking on an active role in interactions with a neighboring community, improving two-way information flow (Yuliani et al. 2002; Kusumanto et al. 2005).

In Bolivia, in close interaction with community members, Cronkleton discovered that the plan for distributing monetary benefits from the forest management project was unclear. He found unanalyzed data regarding the distribution and used them to prompt discussion, enhance transparency, learn from past failures, and plan for the future with community members. In this way, he was able to catalyze an iterative, learning process within the community about a topic that held considerable potential for disruption if not handled carefully (Cronkleton 2005).

The researchers in Bulungan (Indonesia), Brazil, and Cameroon also used such qualitative approaches to supplement their other, more formal, methods.

Modeling. We experimented with several kinds of formal models (system dynamics, multiagent, and participatory systems analysis) to generate understanding among experts, create shared or complementary visions for the future, and stimulate social learning (see Box 5-4).

System dynamics modeling allows for the development and testing of various scenarios; the user can specify feedbacks and lag times and thus anticipate possible opportunities and problems related to a particular line of action. Teams in Indonesia, Zimbabwe, and Cameroon have used FLORES (Forest Land Oriented Resource Envisioning System) to improve understanding of how the relevant systems work.⁸

Purnomo and his colleagues (2003a) employed system dynamics (using the software platform SIMILE) to help community members, government and timber company officials, and NGO representatives develop a common understanding of forest management around the Lumut Mountain Forest Reserve (Pasir, East Kalimantan). One purpose was to integrate stakeholders' different perceptions of forest management. Scenarios built on this understanding were examined by participants in the modeling workshop, resulting in shared learning, increased mutual understanding, and some concrete planning, particularly for institutional and legal needs.

Box 5-4. The Role of Modeling in ACM

Modeling is a difficult process to manage well, and the more people involved, the more difficult it gets. However, it has the potential to facilitate rapid insights into complex issues and be a tool for mutual or social learning. Etienne Wenger (1999), in his book *Communities of Practice*, proposes that a well-designed learning process needs to have three phases—participation, imagination, and alignment—and that simulation models are a good tool for the imagination phase. This suggests that learners need to be engaged in a process first (participation), before modeling is introduced, and that after modeling, people need to have an opportunity to understand how they can use this new knowledge (alignment). There are at least five potential roles for modeling in participatory action research.

1. Models can be representations of what is known. This role uses modeling as a process for pooling baseline knowledge in a way that is useful for comparison in the future. The FLORES (Forest Land Oriented Resource Envisioning System) modeling process has been primarily used in this way. The modelers are the research team, and they are usually facilitated by outsiders.
2. Models can be used for planning actions. This is the role of conceptual models in soft systems methodology, which is an action research methodology for addressing complex human problems. The systems model is a conceptual tool for considering possible interventions or actions to bring about a change in the interactions between people, which have been the cause of problems or concerns. Modeling is used as an intermediate step between defining a problem, or issue, and intervening. It is a team process for deciding on an appropriate intervention. It is a good tool to use after visioning, as a way of exploring potential strategies for achieving the vision. The ACM Zimbabwe team and part of the ACM Indonesia team have been using modeling this way, and we have developed a toolkit, called Co-View, to support the process of visioning and modeling together. The research team includes both modelers and facilitators.
3. Models can be used as interventions. This is what is usually thought of as participatory modeling. The ACM Zimbabwe team has used modeling in this way. The team worked with a group of women from a village next to Mafungautsi forest, who built their own model of how they manage broom grass in order to explore the impacts of different harvesting methods on their income and on the grass. Insights from this process have led these women to devise a new kind of decorated broom which they can sell for much higher prices. The modeling process is designed and facilitated to enable local stakeholders to share knowledge and generate insights into a problem or issue that they have identified. The modelers are the stakeholders, facilitated by the research team.
4. Models can be used for monitoring. Modeling can be a process for deciding which data need to be collected, what indicators need to be measured, or whose knowledge needs to be acquired. A process of developing a set of criteria and indicators is a modeling process of this type. A model that includes links between indicators can be used in a process of integrating and synthesizing results from monitoring in order to develop a big picture of the system. The modelers are the monitors, facilitated by the research team.
5. Models can be used for reflection. Modeling is used as a means of posing a question in a rigorous or formal way and exploring various potential theories that may provide answers to the question. It can involve exploring alternative hypotheses to explain or understand the results of an intervention. Alternatively, it can be used to explore the implications of a theory before embarking on interventions to test it. I have used modeling in this way to explore issues, including communication, social capital, social networks, and how knowledge and “infectious ideas” spread across these networks. The modelers are the research team, facilitated by the ACM team or outsiders (see also Haggith 2001).

—Mary Haggith (2001)

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Purnomo also used CORMAS (Common Pool Resources and Multi-Agent System) to examine the hypothesis that comanagement of forests by all relevant stakeholders would improve outcomes in Bulungan Research Forest. The purpose of this model was to represent important processes under way and thus provide a basis for discussion. Its utility arises from its ability to enable exploration of people's assumptions (Purnomo et al. 2003b).

Team members from Cameroon and Zimbabwe were trained in participatory systems analysis, a more qualitative method, in South Africa (Grundy et al. 2002; Cwebe Working Group 2001) and used their insights to strengthen ACM data gathering and analysis in their respective countries.

Horizontal Collaboration

We considered two types of collaboration: horizontal and vertical.⁹ Horizontal collaboration refers to cooperation and complementarity among people who are or could be in regular contact with each other, in a particular community or forest area. Efforts to strengthen horizontal collaboration were motivated by concerns to “harmonize” and rationalize the diverse management systems typically present in any given forest.

The kinds of horizontal collaboration deemed important in the different sites varies enormously. Collaborative problems that struck me most forcibly when we were planning our research were those between local communities on the one hand and timber companies and conservation projects on the other. At a finer scale, intracommunity problems of representation in decisionmaking also have been worth our attention. Three main approaches were taken to strengthening collaboration among stakeholders: workshops, user groups, and networks.

Workshops. Efforts to strengthen horizontal collaboration often started with workshops. We used workshops a lot within the ACM program itself, both to enhance our own collaboration among the various sites (e.g., a planning workshop in February 2000 and a writing workshop in November 2001, in Bogor, Indonesia; International Steering Committee meetings in Zimbabwe and Nepal in 2000, and in the Philippines in 2001) and among collaborators on a particular site (e.g., training in participatory action research by Bob Fisher and Mohammad Emadi in Bogor in 1999; ACM training in Bolivia in 2001 (Cronkleton 2001a); and an ACM writing workshop in Cameroon in 2002, among many others).

Workshops provide a venue where representatives of multiple villages, various government departments, different industries, and research organizations can come together. These were particularly important in Indonesia, Cameroon, and Bolivia, where the problems (and corresponding power and wealth differentials) between local communities and other forest managers were obvious.¹⁰

The teams were cognizant of the potential pitfalls of bringing together groups with such radically different power, and they gave considerable thought to structuring interaction in ways that would minimize its relevance. Specifically, we wanted to reduce the likelihood that local people would hesitate to express their ideas in the presence of individuals with the power to harm them. In all cases, workshop

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participants agreed on a set of principles that would maximize freedom of expression; in all cases, the workshops alternated between small groups and plenary sessions. Where possible, participants were coached beforehand by team members on both the importance of a free exchange of views and the basics of communication (greater listening skills for some, more assertive speaking for others). All workshops had themes.

In Cameroon, the teams used the C&I framework to structure discussions about forest management and human well-being—what it meant to participants and how they might be able to measure it. They used simple pebble games to bring out volatile issues pertaining to access to resources, voice in forest management, and distribution of forest benefits among these various stakeholders (Diaw and Kusumanto 2005; Tiani et al. 2002a; Oyono and Efova 2001). The results were increased respect and understanding on the part of government and industry officials, improved confidence on the part of community participants, and increased understanding of the complexity of local conditions by all parties. There was a corresponding increase in the legitimacy granted to local concerns within the region.

In Pasir, Indonesia, the workshops were structured around priority setting and division of labor at the district (*kabupaten*) level, at a time when local governance was undergoing dramatic change because of Indonesia's decentralization process. There was a conscious decision not to begin with the difficult problems dividing communities and timber companies—though both participated in the workshops. These conflicts were deemed too volatile in early 2001, but by mid-2002, it was possible to raise them in one of the workshops and some plans were made to begin addressing them. Meanwhile, significant progress was made on the plans from the 2001 workshop—particularly intensification of community use of swidden fallows. Hakim identifies the following qualitative improvements on this site as the research progressed: gradual increase in local stakeholders' efforts to address local problems, greater willingness of other stakeholders (timber companies, government officials) to listen to local people, greater ability of local people to express their views, and increased awareness among the stakeholders that they could plan and learn from their efforts in a deliberative way (Hakim 2005).

One important workshop in Jambi, Indonesia, focused on the principles of people's representation under decentralization. It brought together local community members, district and subdistrict government personnel, and district-level legislators. One failure was the team's inability to include the hunter-gatherers, the Orang Rimba, whose mobile lifestyle made communication with them sporadic and unpredictable. Nevertheless, the group established a shared set of principles, which differed from the requirements of representation in current policy but were more appropriate for local conditions (Kusumanto et al. 2001). Subsequent field activities built on these principles through a continuing process of shared learning. A truly democratic election resulted in a much more representative group of leaders than had characterized village politics in the past (though the facilitators note with dismay that the one woman elected has been given the stereotyped role of secretary (Kusumanto and Indriatmoko 2003).

In Bulungan, Indonesia, the team organized workshops on community mapping and decentralization. Early on, they noticed the striking differences in infor-

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mation obtained when they broke large meetings into smaller ones composed of men, women, and youth, respectively. Among the young and the women, they found much greater antagonism to the destructive logging that was under way than they had uncovered in plenary, where older men dominated the discussion (Wollenberg 2001). Through such meetings the team was able to identify the need for more legislative literacy among the population and obtained funding to address that issue (Moeliono and Djogo 2001).

In Madagascar, the team used a workshop on medicinal plants as an alternative strategy when their efforts to finalize the partnership arrangements between communities and national park managers were blocked by the latter's persistent failure to respond. In February 2000, the team brought together a wide range of stakeholders (communities, traditional practitioners, pharmaceutical industry representatives, academics, NGOs, government and project officials) to discuss the potential for a medicinal plants industry in Sahavoemba. Notable results included enhanced communication and joint plans to create an association between traditional and "modern" practitioners, called FIMARA (Fitsaboana Malagasy eto Ranomafana) (Rakotoson et al. 2000; Buck 2003).

The teams were able to skirt many of the problems that can arise when representatives of government and industry meet with community representatives who have less power, wealth, education, and prestige; they found that if the workshops were structured and facilitated with care, the gains outweighed the risks. However, teams in Cameroon and Indonesia noted the near absence of women in many of their workshops and, in some cases, problems with representation of marginalized ethnic groups (particularly hunter-gatherer groups).

The gender issue was addressed directly in a workshop in Bolivia, where BOLFOR and others had already noted the lack of involvement of women in forest management (e.g., Bolaños and Schmink 2005). Important results included the adoption of a comprehensive gender policy by BOLFOR, the development of a set of "best practices," and apparent buy-in on the importance of this issue from previously skeptical (and powerful) project personnel (Cronkleton 2001d). Some success has been realized in including women by scheduling meetings at times convenient for women, waiting for women before beginning, looking at and expressly soliciting input from women, and using the local language rather than Spanish (see Cronkleton 2005).

User Groups. Another approach to enhancing collaboration involved user groups (Nepal; Zimbabwe; Acre, Brazil; Pasir, Indonesia). Forest user groups were institutionalized in Nepal by community forestry legislation, and the Nepal ACM teams blended their efforts into these existing institutions. This allowed them to follow up on areas that were recognized locally as problematic (e.g., equity, transparency, authoritarian leadership), and it strengthened the possibilities for wider application of research findings. One solution that emerged was the decision to devolve many of the rights and responsibilities of the forest user group committee to a lower, neighborhood level (toles, or hamlets). The relative caste and ethnic homogeneity of the hamlets in the four ACM sites reduced the workload and authoritarianism of the user group chair and central committee, while increasing transparency and

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representation within the overall group. The teams show impressive increases in involvement by women and marginalized castes and ethnic groups in various activities, fora, and decisions (McDougall et al. 2002a; Dangol 2005; Sharma 2002; Sitaula 2001). Uprety et al. (2001b), for instance, describe workshops held at Andheribhajana and Manakamana in 2001 in which user group members, many of whom were illiterate, reflected on previous plans and solved problems—in one case, successfully reining in a dishonest leader. Some district-level officials attended and noted with surprise the active involvement of women.

Box 5-5. Changes in Access to Markets and Services in Porto Dias

... [T]he local actors involved in the forestry project view the dirt road as an asset of the project, and most of the benefits existing in the Agroextractive Settlement Project today result from the road. The road has improved access to the market and basic public services and, consequently, has improved the standard of living of the families living in Porto Dias. Everybody recognizes that all residents of Porto Dias have benefited, to different extents, from greater access to such public amenities, including the state Citizen Project, which works with health and education.

Despite residents' perception of the road as a common good, they initially felt highly dependent on assistance from the state in maintaining it during the rainy season. Families participating in the forestry project and the Rubber Tappers Association, in order to maintain control over the road, took on the responsibility, despite the extra work this imposes on them, for road maintenance. The planning and organization of work to clean up and maintain the road has become a source of frequent conflict. Within the group of rubber tappers, those selected to participate in the forestry project have the road passing near their homes, while others not involved in the project have to travel great distances to reach the road. Other local groups also perceive their potential participation in the forestry project as a possible means to get better access to the road. A process of reflection between local groups is needed both to manage these conflicts and to discuss the benefits and risks of the forestry project ...

We analyzed ... the ACM project's contribution in promoting collective learning in Porto Dias. We worked with the group of rubber tappers, particularly those participating in the forestry project, applying future scenarios to assess uncertainties and construct new scenarios with the group. One example of a future scenario that we used was the eventual departure of the Center for Amazonian Workers and its consequences for local groups. The rubber tappers are well aware of possible impacts, including the loss of development projects and benefits and, given the group's small number, a weakening in its capacity to act within the community without external assistance. They began to realize that the absence of a social institution within the agroextractive project would diminish the local community's level of organization and empowerment. At the same time, they also recognized the need to monitor the impacts of changes resulting from new community development projects. We used this scenario to encourage the rubber tappers to collectively act and learn with different local community groups and to use this as a strategy for strengthening the community and for learning to handle uncertainties and the complexities of the community's future. This was particularly important for the very practical concern about road maintenance, since the state government's maintenance of the road is not guaranteed.

— Magna Cunha dos Santos (translated by Samantha Stone)

Box 5-6. The Snowball Effect of Collaborative Action in Jambi

As in other ACM research sites, the participatory action research in Jambi has resulted in improvements in social capital. Through continuous learning and action, diverse groups and actors at the site have built abilities to collaborate, organize institutional and community activities, and advocate local issues in wider forums. Interestingly, social capital appears to be cumulative: it starts with a minimal amount and grows as people build their experience in creating “new capital.” For example, the women’s groups at our site started with relatively simple institutional improvements aimed at better collaboration among local and settler women in running their savings and loan activities. This in turn enhanced the women’s individual and institutional abilities to deal with wider and more complex problems that were beyond the boundaries of the women’s groups. Other examples exist, showing how community groups accumulated social capital just by initiating relatively simple activities. At this stage, community groups, facilitated by the ACM field team, hope to embark on building vertical relationships and structures with formal institutions—like the government (especially at the district and subdistrict level)—in the years to come. [this has, indeed, happened]

—TriKurnianti Kusumanto (2003)

Most sites did not initially have formal user groups. In Zimbabwe, after the training for transformation described above, team members had little trouble working with the communities to form what they called action groups, based on particular natural resources of importance in the site (broom grass, thatch grass, and honey). These groups were able to improve cooperation significantly with the Forest Commission and served as fertile ground for collaborative, social learning within the group.

In Porto Dias (Acre, Brazil), a small group of rubber tappers had already formed a user group when ACM began, but their activity was dominated by personnel from an environmentally oriented NGO, the Center for Amazonian Workers (CTA), which was coordinating the small-scale timber project there. The ACM emphasis on joint learning from experience involved the rubber tappers more directly in planning and decisionmaking while prompting more open attitudes from CTA personnel. In Box 5-5, Magna Cunha dos Santos reports the successful collective action that the rubber tappers organized to maintain a road important to them; but it also brings up some of the conflicts and learning that have accompanied this process in the Porto Dias Agro-Extractive Reserve.

The women of Basac, in the Philippines, also formed themselves into several groups. One concerned itself with the production of cut flowers for income generation (Arda-Minas 2002a); another with the development of a medicinal herb garden for community use (Valmores 2003). The latter revived and built on an indigenous form of collective action (*pahina*). Overall, there were four action groups, each having about 15 members (with little overlap between group memberships). See Box 5-6 for a discussion of similar groups in Jambi, Indonesia.

In Pasir, East Kalimantan, Indonesia, the team and the community formalized three user groups in Rantau Layung and two in Rantau Buta, based on clusters of swidden fields. These groups followed up on the multistakeholder workshop recommendations for improving forest fallows after rice cultivation (specifically to incorporate rattan, durian, coffee, and rambutan). The followup process was an

Box 5-7. Establishing Networks in Palawan

While struggling to increase collaboration and gain trust from their members and other community members in the three barangays, the Board of Directors of the San Rafael–Tanabag–Concepción Multipurpose Cooperative in Palawan effectively applied different mechanisms to increase their voice and power with other external stakeholders.

This was apparent in the way they dealt with the complexities of procedural requirements to get their management plans approved by various government institutions, to get forest charges/fees for extracted fallen timber reduced, and when they applied for a permit to transport lumber samples to Manila.

The Board of Directors sent resolutions (letters) to appropriate government institutions and diligently followed up. When dealing with the Department of Environment and Natural Resources, in most cases they had to address their letters to the highest authorities (beyond the provincial level), such as regional directors, the undersecretary, and even the secretary himself. They also lobbied the provincial governor of Palawan, congressional representatives, and members of the city council. These required not only good knowledge about the functions and powers of different institutions and levels of authorities, but also strong lobbying and advocacy at the local and provincial levels to get support. Their good documentation system certainly helped as, without that, papers could fall through the cracks along the way.

They also established networks and strategic alliances with various organizations. The most important one is the Palawan Community-Based Forest Management Federation, a federation of all formal community forest holders in the province. The former chair of the cooperative played a crucial role in the formation of this federation and remains very active. In the case of forest charges, based on the lobbying activity of the cooperative, the federation wrote a resolution supporting this request and putting forward rationales for such reduction.

The capability to establish networks and linkages was very much related to the relatively high education and influence of the cooperative's board members. Four (out of nine) either held political positions in the past or have a college education. At least one of them stayed in Puerto Princesa City, the locus of provincial power, while their villages are very accessible by a good road system (see Devanadera et al. 2002 for a fuller description). This is in contrast with the situation in Lantapan [the other ACM site in the Philippines]. Despite having better collaboration and trust within their own community, members of the Basac Upland Farmers Association still need to improve their networks with external stakeholders. Being an indigenous community, they need to overcome their low self-confidence, the language barrier, and low communication skills.

—Herlina Hartanto

excellent example of the need for a dynamic approach to problem solving. When the government did not deliver on its promise to provide seedlings, the user groups decided to seek other sources, even trying to persuade CIFOR to provide funding. Eventually, the group worked with the ACM facilitators and obtained the seedlings by writing a successful proposal (Hakim 2005). More important than getting the seedlings was working together to deal with the Indonesian bureaucracy. The groups also improved their knowledge of rattan cultivation, processing, and marketing, in cooperation with other villages and outside stakeholders.

Networks. The establishment or strengthening of networks often has both horizontal and vertical implications. Links with formal networks were important in Nepal (FECOFUN) and in Acre (the National Rubber Tappers' Council) as a

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potential way to strengthen local people's voice in policymaking through pressure groups. But increased networking with local officials in larger scale institutions was important in most sites, including the Philippines (see Box 5-7).

In Madagascar, in hopes of following up on the activities proposed in Anjamba's draft forest management plan, the Manirisoa Association was created, with help from NGOs. It was intended to be a "mother association," including all the villages of Anjamba and the interest groups the people formed. A similar organization was formed in Sahavoemba, called FAFSA Association (Fampandrosoana ny Faritra Sahavoemba), for the economic and sociocultural development of the community—focusing specifically on medicinal plants, environmental protection, and crop and livestock improvement (Rakotoson et al. 1999). But the failure of the hoped-for partnership between individual communities and park management led to a more regional approach focusing on partnerships between local medicinal practitioners and the formal medical establishment. Although we do not have recent information on this process, things looked good as the funded research drew to a close in 2000 (Buck 2003).

Vertical Collaboration

Vertical collaboration involves interaction and two-way communication between individuals with less power and those with more, between people operating in community-level structures and those operating in larger scale, "higher" level structures. Efforts to strengthen vertical collaboration were motivated by the desire to empower people whose lives were being adversely affected by actors operating at larger scales. Our approach included explicit attention to the links between forest communities and the outside actors and events that affect their lives. Empowerment, to us, implied a greater ability to influence events at the larger scales, and we began by searching for mechanisms that might make this easier.

One of the first mechanisms we tried was the creation of national-level steering committees in Africa and Asia (except Kyrgyzstan). These steering committees typically had five to seven members, drawing from government, academia, NGOs, and projects. As we had hoped, steering committee members have guided us on national priorities and opportunities to affect national-level policy, and at the same time they serve as outlets for the results.

The steering committees have certainly been a positive addition to the research in Asia. In the Philippines and Nepal, members were instrumental in encouraging adoption of various ACM methods within the formal governmental context (community forestry in Nepal and community-based forest management in the Philippines). The Indonesian steering committee has contributed to our analyses and products (Salim 2002; Sardjono 2004; Soemarwoto 2003), but perhaps because of the recently chaotic Indonesian political scene and the size of the country, we have made little headway in integrating our approach into any national-level programs. Most of our Indonesian successes have occurred closer to the field.

Another approach involved more direct involvement in policymaking settings. In Zimbabwe, for instance, the leader of our ACM team was seconded from the Forestry Commission, and what he learns will be available to the national agency

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when the project ends.¹¹ In Bolivia, the team was integrated into a large, U.S. AID-funded forest management project (BOLFOR), with strong ties to the Bolivian government's forestry establishment and to the timber industry. The Kyrgyz team has a similar situation: a bilateral Kyrgyz-Swiss program (KIRFOR) was closely tied to the Kyrgyz forestry establishment. This approach gives field researchers access to a wide range of researchers, practitioners, and resources. In Bolivia, for instance, BOLFOR has been under way for nearly a decade and has built up a fund of experience, project reports, analyses, and community ties that have been available to our team. The ACM team also has access to the policy network of this long-standing project. The disadvantage is that the network is fairly clearly established, and attempts to expand it to involve more NGOs and people with social science expertise have been difficult.

The Cameroon team began the research with a thorough investigation of the policy issues in the country—forest minorities, forest margins, community and communal forests, conservation, and timber management. Members then selected sites that would provide useful input into the debates, reasoning that this would ensure interest in their results. Although the team is engaged with policymakers in thinking through the issues, concrete impacts remain difficult to pin down. Akwah (2003a) lists the Campo Ma'an policy issues on which ACM team members—and many other actors—have expressed views. Although the following examples cannot be called impacts per se, they do provide some sense of the kinds of issues ACM is addressing:

- Proposed modifications (of unknown dimensions and location) on the limits of the national park now await government approval.
- The area of the park's agroforestry zone, available for community use, has been increased, pending official confirmation.
- HFC (a logging company) and the Ministry of Environment and Forestry have signed a partnership document (*cahier des charges*) outlining, among other things, their roles and responsibilities in combating poaching; 10 guards, recruited, equipped, and paid by HFC, are posted at the two national park gates.
- HFC and another logging company, Wijma, are seeking certification.
- At an April 2003 meeting, most Campo Ma'an stakeholders (the Ministry of Environment and Forestry, local communities, NGOs) rejected the management plan proposed by the outgoing Campo Ma'an project, calling for more consultation on its contents.
- SNV, the Netherlands Development Organization, changed its strategy of employing local extension workers and is now encouraging the emergence of local NGOs. Former employees are enthusiastically forming NGOs, which will probably increase the number of village organizations.

In Asia and Africa, ACM findings have been presented to policymakers, forestry officials, NGOs, and academics at national-level workshops; in Asia, regional-level workshops have been held as well (Prabhu et al. 2002b).

Some teams developed strong links with NGOs, on the theory that NGOs would have better rapport with local communities and be freer to pressure governments and other stakeholders as needed. NGOs had very prominent roles as research partners in the work in Acre, Brazil; in Nepal; and in Pasir and Jambi,

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Indonesia—where important field personnel were seconded or contracted from NGOs to work as facilitators. NGOs have also been important as collaborators in Cameroon and in Pará, Brazil. Their involvement has broadened the applicability of ACM findings. NGO personnel—often young, passionate, and motivated—impart vibrancy and relevance to our work. The downside is that some NGO personnel have been suspicious of CIFOR as an international organization (like the World Bank or other consultative groups), and we spend valuable time on reassurance, communication, and conflict resolution.

The above mechanisms for communicating community-level views to policymakers are all indirect, however; we wanted to identify or develop mechanisms that would directly strengthen local people's involvement in policymaking. One route has been to develop their skills. The Training for Transformation curriculum, for example, includes role playing, analytical skills, and self-confidence building and has helped the people of Mafungautsi, Zimbabwe, level the playing field. Matose et al. (2002) found antagonistic relations between local communities and the Forestry Commission, but by December 2002, the two sides had collaborated in drawing up a template for how monitoring committees should work. The template was then adopted by Forestry Commission officials, who in fact adopted the ACM approach more generally, taking over many of our facilitation tasks. The local forestry official recently allocated funds to Gababe for firefighting that would previously have paid for Forestry Commission tractors. He is also exploring the communities' idea of instituting a resource management committee board to facilitate mutual support and sharing of successful approaches.¹² Two-way communication has thus been strengthened.¹³

Other ways to help communities shape policy include C&I workshops in Cameroon; legal literacy training in Madagascar; priority-setting workshops in Pasir, Indonesia; mapping, decentralization, and legal literacy sessions in Bulungan, Indonesia; decentralization workshops in Jambi, Indonesia; and workshops on gender, future scenarios, and forest benefit distribution in Bolivia. The facilitation process, including developing shared rules and breakout groups for more equitable participation, allowed reticent rural people to speak up. In Pasir, the facilitators informally coached community members before meetings and mentored them in subsequent dealings with the bureaucracy and with timber companies, gradually building up the communities' skills and self-confidence.¹⁴ In Jambi, women were coached before community meetings for similar reasons. The Madagascar team also coached community members before workshops with outside stakeholders concerned about Ranomafana National Park.

The Pará, Brazil, team, not wanting to dominate the process, experimented with training community members in facilitation and interactional and analytical methods. Community members also self-selected to undertake research on important issues, such as marketing of forest products. This exposed them to the wider world and enhanced their ability to deal with other stakeholders, besides gaining the valuable information the community needed.

Adequately facilitated, with attention to the mix of participants and agreement on rules of the game, workshops provided effective fora for interchange among stakeholders. When community members were well prepared, they had opportunity to directly affect the policymaking process and work with others to solve

policy dilemmas. This occurred dramatically in the Indonesian sites, where the wider society was also struggling with the implementation of decentralization. The workshops provided a forum wherein diverse views could be expressed, in a problem-solving and comparatively safe atmosphere.

In the Nepal sites, the communities initially focused on improving their community forest management within the structure established by the community forest legislation. The improvements gained the attention of other stakeholders, who became more attentive to the communities' needs and more interested in working with them.¹⁵ The ACM team then identified the Forest Range Post's quarterly meetings with forest user groups as a possible place to strengthen both horizontal and vertical collaboration. Using facilitation skills, the ACM researcher turned one of these meetings into an opportunity for real, substantive exchange among the participants. The eventual result was more effective transfer of governmental information, better information exchange among forest user groups, and more creative use of time and resources (Upreti et al. 2001b, 2002c). At the end of 2002, Nepal's study communities were strengthening their ties to FECOFUN (a national network of forest user groups) and participating in new fora bringing together the village development committees with the forestry personnel (two separate bureaucratic segments with overlapping jurisdictions and without previous links).

Although the efforts to strengthen the links between communities and policymakers have been worthwhile, it is important to acknowledge and plan for the extra time this takes. Steering committee members are busy people, and even arranging the meetings can be time consuming. Forest communities are in inaccessible places, and meetings to strengthen their ties with policymakers often mean arduous travel and loss of time that may be needed for subsistence. Community members who have least access to policymakers are often those whose livelihoods are the most precarious and who need their time to supply their daily food (Dangol 2005; McDougall et al. 2002a; Sitaula 2001).

Livelihoods, the Environment, and Empowerment

Our interest in stimulating more adaptive and collaborative management was based on our hypothesis that this could empower people to develop a better livelihood and improve their environment. We cannot yet tell whether these changes will occur—we are dealing with complex systems, changing at varying rates, and interactions among variables may have serious lag times—but in the following sections, I extract some hopeful indications.

Livelihoods

Livelihood is the topic that community members themselves are expected to feel strongest about and be most willing to commit time to address. Although livelihood issues were definitely important on our sites, people did not seem disproportionately interested in working on them. The actual implications of ACM for people's

Box 5-8. Generating Income with Mushrooms in Chimaliro, Malawi

Disappointed with the small amounts of income emerging from the beekeeping activity, a group of 11 women in Block III formed a user group and decided to try seasonal products like mushrooms (*Parinari curatelifolia*) and *Uapaca kirkiana* fruits. Initially conceived as a group effort, they quickly switched to an individual approach. Each person collects, processes, stores, and sells her mushrooms.

Six Block III women collected three species, which were processed differently. Some species are sun dried soon after harvesting; others are boiled and dried using fire or sun. The sun-dried variety is soft, easy to cook, nonpoisonous, and can be eaten fresh. The boiled varieties are a combination of species, including poisonous ones. Once boiled and dried, the mushrooms are safe to eat.

The dried mushrooms from the 2002 harvest were snapped up at MK5* per cup on site or MK10 per cup in town; a total of 60 cups was harvested (mostly dried, though processing made no difference in price) by the six women, who began late in the rainy season of 2002. Their gross income was MK300, all of which they were allowed to keep, as this was considered a startup activity by the district forestry officer. The District Forestry Office expressed its willingness to help with marketing of the mushrooms in Kasungu town on the women's behalf, in 2003, and the women expect to get an earlier start this year.

—Judith Kamoto (2003c)

*90 Malawian kwacha (MK) = U.S.\$1 (early 2003)

livelihoods to date have been quite modest, though I remain optimistic that these are tip-of-the-iceberg phenomena and that as the communities develop capabilities for joint planning and reflection, collective action, and networking, their lives will improve.

The Mafungautsi broom grass user group's improved broom design (see Box 5-4) enabled the women to charge Z\$50 a broom at the provincial agricultural show, compared with Z\$30 for a traditional broom. The broom sellers have also become more confident and now go in groups to distant towns to sell their brooms. Group travel has also removed a significant marketing constraint: their husbands' fears about their wives' traveling alone (Matose et al. 2002).

In Chimaliro, Malawi, the members of one income-generating activity group (see Box 5-8) collected 55 liters of honey from the three forest blocks, in two harvests, from hives in both village forest areas and the comanagement forest blocks during the first year. The honey was sold at MK750 per 5-liter container. This achievement spurred growth in the number of privately owned beehives—from one to five in Block II and from three to seven in Block III (Kamoto 2003c).

In Pasir, in East Kalimantan, Indonesia, the communities wanted to make their rattan production more profitable. They had heard about rattan processing in South Kalimantan, and as part of their ACM activities, a small group made a "look and learn" visit and then arranged for training under a cost-sharing agreement with CIFOR and another village. One family each in Rantau Layung and Rantau Buta sold rattan baskets and furniture; other families expanded their rattan cultivation to,

Box 5-9. Managing a Boundary Conflict in Palawan, Philippines

In Palawan, Philippines, the ACM approach and processes were applied to assist the San Rafael–Tanabag–Concepción Multipurpose Cooperative to manage a conflict over forest boundaries. The cooperative received rights from the Department of Forestry and Natural Resources to manage a piece of forestland (expanded from 1,000 ha to 5,005 ha in 1997) under a community-based forest management agreement. The new area was neither surveyed nor marked on the ground. The neighboring indigenous community, the Bataks, also formally manage a much smaller piece of land nearby under another community-based forest management agreement. The conflict emerged in 2000 when the Bataks assumed that the cooperative expansion included their village and an area that had traditionally been their harvesting area for almaciga (*Agathis damarra*) resins. At the same time, the Bataks also faced another problem, as they were not allowed to extract resins from their tenured forests unless they could meet the Department of Natural Resources' technical requirements.

To solve the boundary conflict, the ACM team facilitated the cooperative to reflect on the causes of the problem and strategize how to handle it. Their first proposed solution was to show the Bataks a map, demonstrating that the two forest areas did not overlap. They decided to ask the Department of Natural Resources to check the existing map to see whether or not the boundaries of the two community forest areas overlapped. However, there was no such map in the agency.

The cooperative then decided to seek assistance from the Palawan Tropical Forest Protection Project to obtain GPS coordinates of their forest boundaries. This was done, and the survey produced a clear delineation of the forest area, which was marked on the ground (using natural features, such as rivers, caves, etc.) and on the map. Unfortunately, neither Bataks nor village leaders were able to participate in the survey.

Once the map of the boundaries was available, several representatives from the group conducted a dialogue with the Bataks and presented the results of the survey to them. The dialogue was facilitated by a Department of Natural Resources representative and also attended by a local NGO. From the ensuing dialogue, the cooperative realized that Bataks had a different concept of boundaries. It appeared that the map would not be useful or effective in explaining to the Bataks where the forest boundaries were located. On reflection, the cooperative members realized that they could solve this conflict best by helping the Bataks to solve their livelihood problems.

The cooperative proposed an arrangement whereby the Bataks could extract almaciga resins in its area as long as they sold the resins to the cooperative, and the latter would purchase the resins for a price at least one-half to one Philippine peso per kilogram higher than the price offered by local traders. The Bataks considered this arrangement to be better, as the existing practice had been to barter the resins for rice, coffee, or tobacco, which resulted in very low "prices" for their resins. Furthermore, both parties agreed that they would be partners in forest protection activities and would collaborate in other livelihood efforts.

This conflict was resolved by increased collective action within the group and across stakeholders to solve the boundary issue. An important contributor to successful resolution was the level of trust between the cooperative members and the Bataks, despite the conflict, that allowed them to discuss the problem openly. Furthermore, they were able to critically analyze the situations and creatively find a way to solve the boundary conflict and the underlying livelihood problem.

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on average, 0.25 ha each (Hakim 2005). Actual benefits have, however, so far been small. These communities have also sought to intensify fruit and other tree crop production in their fallow areas.

In Palawan, the Philippines, a cooperative was able to persuade the government to reduce the fees on the timber harvested. And the same group negotiated with the neighboring Batak group to obtain higher prices for, and retain secure access to, the almaciga resin, which had formed an important part of their supplementary income, in a disputed area of the cooperative forest management unit (see Box 5-9)—thus also contributing to their ability to retain the community forest agreement with the government.

The Environment

CIFOR, as a forestry research institution, has a mandate to focus on environmental issues while also emphasizing human well-being. Our enduring interest in the environment is reflected in the large number of biophysical scientists involved in the research (see Table 11-1). However, we have been wary of pushing this interest too strongly with community members. To test our hypothesis that more adaptiveness and collaboration would benefit forest management in an enduring fashion, we had to work on issues the communities and other stakeholders considered worth their effort. Our results genuinely reflect the interests of the local communities.

Hartanto describes, in Figure 5-1, how illegal almaciga extraction was reduced in the Palawan site. The process suggests communities' increasing awareness of the importance of monitoring and management in maintaining sustainable supplies of almaciga.

In Mafungautsi, Zimbabwe, the willingness of the Forestry Commission to support local-level firefighting suggests at least the potential for improved fire management. At a workshop organized by the Forestry Commission prior to the grass-cutting season, an official encouraged the resource management committees to measure the areas where grass grew, determine the amount of grass they had, and monitor the resource. The people of Gababe measured two grass areas, Wadze and Lutope. They also divided each *vlei* into equal parts of 20 ha each, and drew a map of the plots, with the intention to mark them with pegs. Their plan is to collect records of the quantities, height, and thickness of grass from each plot so that they can take corrective action if needed (Matose et al. 2002, 68). The degree to which this plan is implemented will, of course, be the proof of the pudding.

To harvest broom grass in Mafungautsi, one can either uproot or cut the plant. The latter method has been clearly shown, in local experiments, to result in much better regeneration, but broom buyers preferred the brooms made from uprooted grass because they last longer. After considerable discussion (Mutimukuru et al. 2005) and modeling (Standa-Gunda et al. 2003b), the broom grass user group experimented with ways to strengthen and beautify the brooms made from cut grasses and held a workshop to share the best method. The new products proved popular at the annual provincial agricultural show, and the approach seems to hold promise for strengthening the sustainability of broom grass harvests (Matose et al. 2002).

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Nepal had already witnessed the environmental benefits from community forestry when ACM began, and there was general agreement that the communities were doing a better job environmentally than the government. The forest problems on the ACM sites were, rather, equity issues. However, the progress the teams and communities have made in equity seems likely to spill over to the forests. The greater involvement of more community members in the forest management process (see Figure 5-2) should mean more people obeying forest-friendly rules that are more equitable, more people monitoring to ensure compliance with regulations, and more people supporting sanctions when rules are ignored. And there is some evidence that this is happening (see McDougall et al. 2002b). Some of the specific activities the study communities have undertaken—a bamboo nursery project, a forest protection system (involving passing of a stick among rotating guards), a community forestry nursery, planting of broom grass, fine-tuning of regulations on forest product harvesting—suggest continuing and beneficial attention to environmental issues.

In Madagascar, where laws devolving rights to local communities have been passed but barely implemented, communities in Anjamba worked on management plans for three products (anguille, pandanus, and ecrevisse). These plans included inventories, boundary refinement, analysis, evaluation of pressures, and alternative income-generating mechanisms. Followup community meetings in 1998 created community action plans, divided tasks among stakeholders, and set a schedule for completion (e.g., Rakotoson et al. 1999). The improved management that would likely have emerged from this analysis of environmental conditions and income-generating opportunities was thwarted, however. Despite the communities' persistent efforts to develop the partnerships allowed by the law, park managers were ultimately unwilling to let go of any of their authority (Buck 2003).

In Porto Dias, Acre, Brazil, the conflicts between the rubber tappers, for whom the extractive reserve was initially created, and illegal settlers with a more agricultural bent is described in Chapter 10. Some settlers illegally subdivided their *colocações* (rubber tapping areas) and sold them to be cleared for agricultural purposes—with obvious negative effects on the forest. The rubber tappers were able to expel one such individual from the area with the help of the Brazilian Institute for the Environment and Renewable Resources. The agency's presence has increased since the forestry project began because it is required to audit the timber management plans of the Rubber Tapper Association. Additional illegal settlers were recently expelled and resettled (Cunha dos Santos 2002; see also case 2 in the Appendix of Cases). This is a good example of the kinds of dilemmas one inevitably encounters in the field: The illegal settlers have lost livelihood opportunities; the environment has won time. The Forest Stewardship Council certified the timber project in Porto Dias Agro-Extractive Reserve as a sustainably managed forest in January 2003.

No dramatic changes in environmental conditions have occurred in Bolivia, but the fact that the voices of women are being heard may hold some promise (Cronkleton 2005). The women showed much more interest in maintaining wildlife and other nontimber forest products than did the men, whose interests, like those of outsiders, have centered on timber production (Bolaños and Schmink 2005). The women's apparently more holistic view of the forest may prove instrumental in maintaining habitats if they continue to have opportunities to speak.

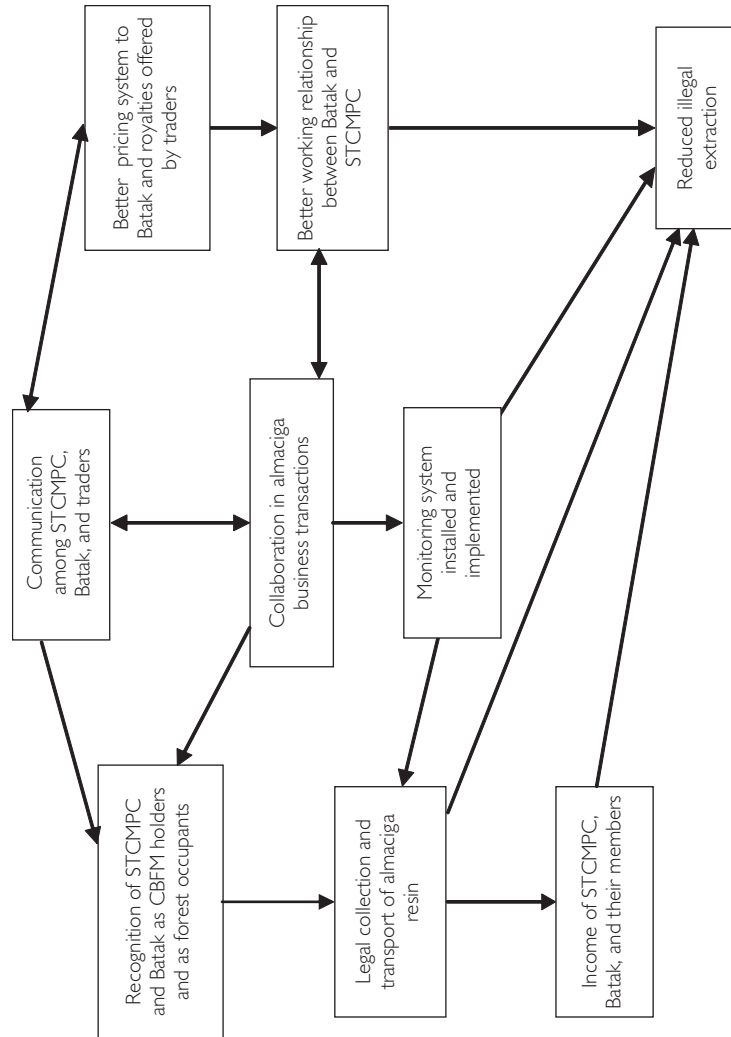


Figure 5-1. *ACM Processes Reduced Illegal Almaciga Extraction*

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In Chimaliro, Malawi, Judith Kamoto conducted training in participatory forest resource assessment for community members. This training included information on how to select areas for thatch grass collection and how to monitor the availability of trees of different sizes (to reduce illegal harvesting, particularly for construction poles and firewood, which are in high demand, Kamoto 2003c).

Indigenous views of biodiversity were the focus in Bulungan, Indonesia, where a complementary project has been under way (cf. CIFOR 2002b). An ACM village, Setulang, was recently one of the 150 finalists (of 850 entrants) for the World Water Prize (Campbell 2003, 8), and the village won the prestigious Indonesian Kalpataru Award on World Environment Day, 5 July 2003.

Empowerment

Early on, we discussed the central role of empowerment in our own thinking. We had seen many forest communities who had little say in their own futures or in the management of their environment. We saw this as both inequitable and wasteful of valuable human and cultural resources. But we feared that an emphasis on empowerment might put off some of the stakeholders we hoped to enlist in our efforts; we also found the concept a bit fuzzy. Much of what has been discussed under collaboration, particularly vertical collaboration, pertains to empowerment: on most sites, local people have developed better facilitation and negotiation skills for conflict management, lobbying, and coalition building. Pokorny et al. (2005b) specified what they considered the empowering effects of the participatory methods we have used (see Table 5-1).

In Jambi, the Baru Pelepat election of a village council, *badan perwakilan desa*, after a collaborative effort to make the process more inclusive of women, settlers, and nonelites, was pronounced “the most democratic” in a local Jambi newspaper. Limberg et al. (2002), however, working at a meso scale, recount the substantial barriers to empowerment of communities in the newly decentralizing district of Malinau in East Kalimantan (Bulungan).

Formal training in legal literacy—in Bulungan, Indonesia; in Campo Ma’an, Cameroon; and in Madagascar—is intended to make citizens aware of their new, legal rights and strengthen their abilities to negotiate fairer deals with government and other stakeholders. Actual effects, though, are not yet known.

The increased transparency of benefit distribution in the Guarayo TCO, Bolivia, and the explicit involvement of women and youth in community discussions suggest increased empowerment for some. But the work of Bolaños (2003), who looked at gender issues in Santa María, suggests that real empowerment for women in forestry issues will remain difficult because of cultural norms about women’s appropriate roles.

The newfound voices of women and lower castes in the Nepali ACM sites seem impressive. The results in Cameroon, where efforts have been focused at the meso-level, are less encouraging. Tiani et al. (2005) document the adverse effects of conservation efforts on women in Campo Ma’an, and increasing marginalization of pygmies has been noted by several Cameroon researchers (e.g., Oyono 2003b).

Box 5-10. Outcomes That Strengthen Forest Management in the Philippines

1. Increased self-confidence and self-reliance of the People's Organization in their own skills and resources, and to start initiatives within their own capacity rather than waiting for external assistance.
2. More democratic decisionmaking and planning processes that engaged more organization members, different community groups, and other key stakeholders.
3. Increased joint action by members (in establishing nursery, herbal gardens, newsletter production, proposal making), and across different stakeholders (controlling illegal activities, resolving a boundary dispute, developing a local monitoring system).
4. Increased communication and feedback provided by the People's Organization to policymakers, identifying policies that hinder effective implementation of community-based forest management and recommending alternatives.
5. Increased level of trust between the organization and key government institutions, leading to increased transparency and increased resource sharing.
6. Increased participation and support from various government institutions to the organization in implementing community-based forest management.
7. More active People's Organization and community members, and more functional committees participating in forest resource management.
8. Management of conflicts through various conflict resolution mechanisms, rather than avoidance. A boundary dispute between the organization and the neighboring Batak community, for example, was resolved and led to even better collaboration in the commercialization of almaciga resins.
9. More structured and conscious reflections among members on their actions and experience for learning and improvement.
10. Improved skills of several organization members in proper documentation, expressing and communicating their views and opinions, effectively using different mechanisms for information sharing (billboards, bulletin boards, newsletters, different forums), networking, proposal writing, and managing small enterprises.
11. Increased income generated by the organization from a wider range of forest resources (from lumber to nontimber forest products); increased income of several women who engaged in handicraft making.
12. Monitoring of members' livelihood activities and the impact on the environment.

—Herlina Hartanto et al. (2002b, 60–61)

Hartanto, in the final report for the first phase of activities in the Philippines, listed the important outcomes (Box 5-10) for forest management. I have reordered them to show how many of them (1–10) in fact also relate to issues of empowerment. Although these outcomes are difficult or impossible to measure, they have been observed and reported or implied in most ACM sites.

In sum, from the more conventional perspective—looking at livelihoods, the environment, and empowerment—our successes are modest. This is consistent with our expectations, given the amount of time that the teams have been in the field.

The groundwork has, however, been laid for more impressive results, if the process is allowed to continue.

Conclusions

In Appendix 5-1, I have arranged the important impacts of our work in tabular form. Four broad categories emerge.

- Livelihoods has two components: knowledge about livelihoods, which is relatively easy and fast to achieve, and actual improvements in livelihoods, which are more difficult.
- Environmental impacts, similarly, comprise both knowledge about the environment and actual improvements.
- Empowerment has five components: strengthened social capital (1) within and (2) between groups and (3) improved negotiation skills, all of which can be seen as means to the ends of (4) improved equity, and (5) governance. These five components, as elements of capacity building, also have the potential for significant effects on livelihoods and environmental improvement.
- Social learning is, to some extent, a means to all the previous ends.

The final column in Appendix 5-1 reflects my combined, qualitative assessment of the overall success or impacts (high, medium, or low) obtained on each site. To make this assessment, I consulted the written materials from each site; I interviewed those working on the site in person, by e-mail, and/or by phone; and in many cases I visited the sites. Though qualitative, the assessment is based on careful study of all available data and ongoing involvement with site-based activities for two to four years, in my four-year role as program leader and now as a “copoint person” in a reorganized institution. I have been part of the ACM team since its inception in 1998.

To explain the impressive results obtained in an irrigation project in Gal Oya, Sri Lanka, Uphoff (1996, 347) concluded,

Changes in behaviour were accomplished by a combination of normative and structural changes, not just by roles and sanctions or by values and norms. Indeed, it was difficult to determine how much influence could be assigned to one or the other, because the effectiveness of each was enhanced by the other in a positive-sum manner, as with the combination of administrative and participatory means used to improve [irrigation] channel maintenance ... We had to resist the impulse to explain things in a reductionist way, attributing all improvement to just one set of factors or dividing up influence in a zero-sum way—50/50, 33/67, 90/10, 25/75.

If we look back on the impacts of ACM in 30 different contexts, it becomes clear that our experience was marked by the same positive-sum—not zero-sum—outcomes. An approach initially designed to enhance collaboration among local stakeholders has the additional effect of reducing conflict or strengthening community members’ negotiating skills. A field trip designed to increase a user group’s

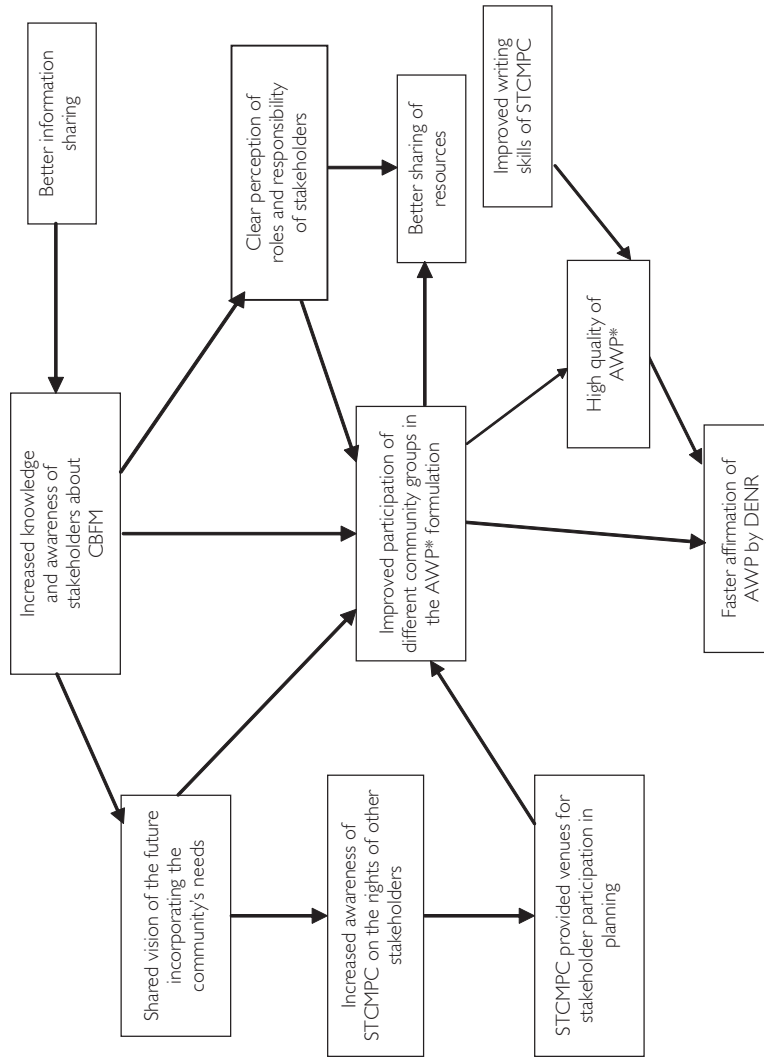


Figure 5-2. Diagram Showing increased Participation of Stakeholders in Formulating an Annual Work Plan (Martanto et al. 2003, 94)

*AWP means annual work plan.

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knowledge winds up increasing social capital within the group. Increased confidence in one sphere easily expands to other spheres. And so on.

The impacts have been diverse, as have the plans and activities selected by the communities. And herein lies one of the strengths of this approach. Rather than planning for an average outcome from a particular set of conditions (even if such could be found), the ACM approach has sought individually tailored excellence. Following a thorough investigation of the context, each ACM facilitator worked with the local communities to identify the one or two actions that had the most potential, within that context at that time, to yield results. Identifying a locally recognized problem, weighing the likelihood of success, and assessing local people's willingness to follow through on planning, monitoring, and evaluation of their effort, the facilitators targeted their efforts and, together with the communities, quickly achieved locally appropriate solutions to small problems. Starting small allowed communities or user groups to have early success and thereby build self-confidence to take on bigger tasks.

Our successes are not revolutionary: similar goals have been accomplished in different places, at different times, many times over. As our definition of ACM stresses, we are proposing a value-adding approach that builds on the work of others. ACM emphasizes equity, social learning and monitoring, collective action, communication between villagers and policymakers, and human-environmental interdependence. And it is built on assumptions that are uncommon in many settings: that surprise is inevitable, that plans almost always need revision, that failures are an opportunity to learn, that forest people have the ability to act and affect their destinies.

I have argued in the past against getting marginalized groups to "join the mainstream," suggesting instead that each community or group should identify its own path and follow that for full flowering (Colfer 1979). The approach we have taken is based on the assumption that each group of people has its own set of skills and desires that must be taken into account in its own "development" direction. This model is also consistent with the idea of a panarchy, wherein the context of systems operating at different scales both inhibits and provides opportunities for unique paths. ACM has in most cases helped create conditions that are beneficial in two ways: the creativity, energy, and knowledge of local people are tapped for societal uses; and local people use their creativity, energy, and knowledge to approach the conditions they desire. In evaluating impacts, though, it is important to remember the lag times in systems. Small successes can, with time, lead to large impacts.

In the next chapters, I examine the seven dimensions identified at the beginning of our research as variables that might influence ACM success, showing, in the process, the inconclusiveness and potentially misleading nature of reductionist science in these complex and evolving systems.

