

## CHAPTER NINE

# *Human Diversity*

**T**HIS CHAPTER LOOKS AT THE EFFECTS OF the human diversity variable on the process of adaptive collaborative management (ACM). We initially imagined diversity as primarily a local-level issue. However, it soon became clear that diversity had implications beyond the village level. A diversity of stakeholders can affect a forest, often through different management goals. It seemed important to examine the variations along this dimension to see whether such complexity made a more or less hospitable environment for the ACM process. We were unsure whether homogeneity or heterogeneity might be preferable. Would the ease of communication in a homogeneous group or the range of talents and contacts provided by a heterogeneous group make an ACM process more desirable, feasible, and effective? What were the implications of many versus few human differentiations?

Our results have suggested two parts to the diversity issue, one dealing with the diversity of external stakeholders (the number and importance of outsiders with whom communities interact), the other with diversity within communities, focusing on age, gender, ethnicity, caste, and wealth status.

### External and Formal Diversity

At the beginning of our research process, the ACM facilitators made an initial estimate and analysis of their sites' community heterogeneity and stakeholders. Although one might expect these data to be easily comparable, levels of detail differed, knowledge improved over time, and conditions changed. The categorization below derives from the facilitators' data sets, complemented by information in other reports, informal discussions, and direct observation on some sites.

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In many sites, external stakeholders wield power, authority, and resources. In the rich tropical rainforests of Indonesia or Cameroon, we find a proliferation of powerful and well-funded timber companies, government agencies, and conservation projects. In forest-poor countries, like Nepal or Zimbabwe, interactions tend to be primarily between communities and governments. The roles of NGOs also vary considerably from country to country and from community to community.

Here, I have categorized the sites by high, medium, and low levels of diversity. I am specifically discussing here both external stakeholders (like government agencies, timber companies, and conservation projects) and formal internal ones (like mothers' clubs, local unions, and churches or mosques). The basis for this categorization scheme is shown in Table 9-1. Because of cross-site variability in both importance of external stakeholders and the scale at which stakeholders were listed, it has not been possible simply to add up the total number of stakeholders; a fair amount of judgment has been necessary. In the subsequent listings, ACM facilitators and CIFOR are not listed as stakeholders, simply to avoid redundancy.

Nine sites have high external diversity: Akok, Campo Ma'an, Dimako, and Lomié in Cameroon; Ranomafana in Madagascar; Baru Pelepat in Indonesia; the two Philippine sites of San Rafael–Tanabag–Concepción, Palawan, and Basac, Lantapan in Mindanao; and Guarayos in Bolivia.

In several of these sites, the links between local communities and outsiders were identified early on as problematic. The numerous workshops held—in Campo Ma'an (Nguiebouri et al. 2001), Lomié (Oyono and Efoua 2001), and Dimako (Oyono and Assembe 2003) in Cameroon; in Baru Pelepat, Indonesia (Kusumanto 2001a); in Palawan, Philippines (Lorenzo and Hartanto 2001)—are an indication of the importance of addressing these issues.

In Campo Ma'an, community problems dealing with the government and the conservation project prompted the team to provide training to community members in legal matters. In Bolivia, the team identified the attitudes of formal forest managers and government officials as a problem for addressing local concerns. The team arranged training for these outsiders on how to deal more sensitively and equitably with rural populations. Topics included training in the ACM approach and in gender issues (Cronkleton 2001a, 2001b). In Akok, Cameroon, the ACM team members worked closely with researchers from the International Institute for Tropical Agriculture, a stakeholder with a more conventional approach to research. The ACM component appears to have dissolved in this interaction—another indication that the ACM team itself was subject to the same kinds of human constraints and complications as the communities with whom we worked.

In Basac, Philippines, the diversity of stakeholders was seen as directly providing opportunities for learning. Cross-site visits exposed community members to neighboring groups with skills needed locally and strengthened ties between communities (Arda-Minas 2001). We found that the presence of potential partners can be both an advantage and a risk. If one encounters a stone wall in efforts with one partner, one can turn to others, but having many partners can immobilize a group because of transaction costs, including conflicts, miscommunications, and differing goals.

Twelve sites were characterized by medium levels of external and formal diversity: Rantau Buta, Rantau Layung, and Bulungan in Indonesia; Ottotomo, in Cameroon; Ntonya Hill in Malawi; Tailândia and Gurupá in Pará and Porto Dias in Acre, Brazil; and Arstanbap-Ata, Achy, Uzgen, and Ortok in Kyrgyzstan.

Relations among stakeholders in the sites with medium levels of external diversity were typically more intense and focused in the conduct of ACM. The Ottotomo team worked very closely with the community, the *Office National de Développement des Forêts* (National Office of Forest Development), and the *Association Terre et Développement* (Land and Development Association), an NGO. The Porto Dias ACM team worked with the rubber tappers and *Centro dos Trabalhadores da Amazônia* (Center for Amazonian Workers), an NGO. Such focused partnerships characterized all the sites in this category, and under this scenario, good relations and mutual understanding can result in success. But the lack of choice in potential partners also spells a risk, if the few partners are insufficiently motivated to cooperate with one another.

Nine ACM sites were characterized by low external and formal diversity: the four Nepal sites (Manakamana, Andheribhajana, Bamdibhirkhorja, and Deurali-Baghedanda); Chimaliro, in Malawi; the two Ghanaian sites (Adwenaase and Namtee); Mafungautsi in Zimbabwe; and the Muaná sites in Brazil.

In sites with low levels of external diversity, relationships were between communities (or community-level organizations, such as forest user groups) and government forestry establishments (with the exception of Muaná, which had no such resident establishments). In Muaná, the community formed local researcher groups, which organized themselves to strengthen their capabilities and external ties for marketing local products. With regard to ACM processes, these sites ranged from the very successful Nepali and Zimbabwe sites to Adwenaase and Namtee in Ghana, where little seems to have occurred.

## External and Formal Diversity and ACM Success

The wide range of variation among these sites reflects differences in the number, types and importance of external actors. We obtained the best results among the sites with the least diversity (see Table 9-2; statistically significant at the 1 percent level). Among that group, six sites had high levels of success, one had medium, and two had low. Among the sites with intermediate levels of diversity, five were high achievers, one was intermediate, and six were low. The high-diversity sites had the flattest distribution, with three high achievers, four medium, and two low. There are examples of obvious successes and at least one case of dramatic lack of progress in all three categories.

In interpreting these results, it is important to note that the four uniformly successful Nepal sites were among the six high achievers in sites characterized by low external diversity; and that the four Kyrgyz sites were all among the six low achievers in the sites with intermediate levels of external diversity.

**Table 9-1. ACM Sites Classified by Presence of Formal External Stakeholders**

Forest	Neighbor communities		Government		NGOs, church projects		Company (logging, plantation)		Research institutions <sup>a</sup>		International donors <sup>b</sup>		Conservation projects		Poachers <sup>c</sup>	
	Local	Higher	Local	Higher												
Baru Pelepat, Indonesia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bulungan, Indonesia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Campo Ma'an, Cameroon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lomié, Cameroon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dimako, Cameroon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Akok, Cameroon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Guarayo, Bolivia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ntonya Hill, Malawi	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chimaliro, Malawi	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rantau Layung, Indonesia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rantau Buta, Indonesia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Basac in Lantapan, Philippines	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Arsanbap-Ata, Kyrgyzstan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Achy, Kyrgyzstan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ortok, Kyrgyzstan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Uzgen, Kyrgyzstan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Maungautsi, Zimbabwe	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ottotomo, Cameroon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bamdirikhoria, Nepal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Deurali-Baghedanda, Nepal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Manakamana, Nepal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Andherbhajana, Nepal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
San Rafael-Tanabag-Concepción in Palawan, Philippines	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Porto Dias, Brazil	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Adwenaase, Ghana	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



**Table 9-2. External Stakeholders and ACM Impacts**

Number of external stakeholders	Overall success		
	High	Medium	Low
High	3	4	2
Medium	5	1	6
Low	6	1	2

## Internal Diversity

Diversity also occurred within the ACM communities. The guidelines to help researchers characterize their sites on this heterogeneity dimension are provided below (Box 9-1).

Although gender and age differentiations exist in all societies, they take radically different forms—and the ACM sites represent the range of global differences along these common lines. Here I have categorized the sites on the basis of gender, age, and a combined category consisting of ethnicity, caste, and occupation. We began the ACM research with a resolve to address such internal community differences in our work because of our interest in empowerment and equity issues. This classification helps set the stage for the discussions of conflict, social capital, and ACM processes that follow.

### Box 9-1. Guidelines for Categorizing Communities by Heterogeneity

#### Low:

- People in the area are almost all of one ethnic group, caste, or class.
- People in the area share the same subsistence or economic base.
- Gender roles are flexible, with much overlap and shared responsibility.

#### Medium:

- Although one group has traditionally lived in the area, another group has recently begun moving in.
- Although most people share the same profession, some specialization is beginning to occur.
- Men and women share some responsibilities, but most are separate.

#### High:

- There are distinct ethnic or other social groups within the area, such as indigenous communities of various ethnic groups, combined with settlers from distant areas (e.g., parts of East Kalimantan in Indonesia, and the Trans-Amazon in Brazil).
- People practice a variety of means of livelihoods (e.g., logging, mining, plantation workers, subsistence farmers, fisherfolk).
- Gender roles are strictly divided, with little shared responsibility for specific tasks.

—Carol J. Pierce Colfer (2000)

### *Gender*

In all societies men and women have different ways of interacting with their environment and with each other. Specifically in forest communities, women and men have different amounts and kinds of access to forest resources, they have different kinds and degrees of voice in forest-related decisionmaking, and they derive different levels and kinds of benefits from forests: in short, they have “asymmetrical entitlements” (Rocheleau et al. 1996).

In Table 9-3, I have ranked each site from 1 (low) to 5 (high) along four dimensions:

1. clear division of physical space for women and men;
2. strict division of labor between the sexes;
3. strong ideology of male dominance; and
4. hostility to women’s involvement in public arenas.

Nepal and Kyrgyzstan have the strictest gender differentiation, followed by the African sites, most of which are in the intermediate category, along with the somewhat less differentiated Latin American sites. The Philippine and Indonesian sites have the least gender differentiation. This distribution also fits with what one might expect from the literature about communities in these parts of the world. High gender differentiation occurs in 9 sites; intermediate differentiation in 15 sites; and low levels of differentiation occur in 6 sites.

Attention to gender in the ACM sites spanned the range of gender differentiation, as did ACM success. Zimbabwe, Nepal, and Kyrgyzstan exhibited the most gender differentiation, and the issue was addressed in all nine of these sites. The Nepal and Zimbabwe sites made good progress in strengthening women’s voices in planning, decisionmaking, implementation, and forest product distribution; the advances in the Kyrgyz sites are much more modest, though there was some increase in women’s participation in meetings and access to the desirable forest leases (Fisher 2003b).

Sites with intermediate gender differentiation that explicitly addressed the issue included Chimaliro in Malawi, Campo Ma’an, and to a lesser extent, Ottotomo in Cameroon and Guarayos in Bolivia. Among the sites with low gender differentiation, only the Basac (Lantapan) site in the Philippines explicitly addressed gender issues. The sites with low gender differentiation (all in Indonesia and the Philippines) had considerable success at implementing ACM; some of the medium and high gender differentiation sites saw low levels of success.

The implications for ACM success are shown in Table 9-4: Sites with minimal gender differentiation did quite well: five attained high success, one attained middling success, and none did poorly. High gender differentiation resulted in a bimodal distribution: five did well, four did poorly, with none in the middle (again reflecting the dominance of Nepal in the first category and Kyrgyzstan in the last). Sites with intermediate levels of gender differentiation showed a flat distribution: four were successful, five showed intermediate impacts, and six did poorly. According to this kind of analysis, success is possible with all levels of gender differentiation, and somewhat more likely with low gender differentiation.

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**Table 9-3. Elements of Gender Differentiation in ACM Sites**

<i>ACM sites</i>	<i>Clear division of space</i>	<i>Strict division of labor</i>	<i>Strong male dominance</i>	<i>Hostility to women in public arenas</i>
<i>High</i>				
Manakamana, Nepal	5	5	5	5
Deurali-Baghedanda, Nepal	5	5	5	5
Bamdibhirkhorja, Nepal	5	5	5	5
Andheribhajana, Nepal	5	5	5	5
Astanbap-Ata, Kyrgyzstan	5	5	4	4
Achy, Kyrgyzstan	5	5	4	4
Ortok, Kyrgyzstan	5	5	4	4
Uzgen, Kyrgyzstan	5	5	4	4
Mafungautsi, Zimbabwe	5	5	4	4
<i>Medium</i>				
Lomié, Cameroon	5	5	4	3
Dimako, Cameroon	5	5	4	3
Chimaliro, Malawi	5	5	4	3
Campo Ma'an, Cameroon	5	5	4	3
Akok, Cameroon	5	5	4	3
Adwenaase, Ghana	5	5	4	3
Ottotomo, Cameroon	5	5	4	3
Ntonya Hill, Malawi	5	5	4	3
Namtee, Ghana	5	5	4	3
Porto Dias, Acre, Brazil	4	4	3	3
Tailândia (2 villages), Pará, Brazil	4	4	3	3
Muaná (3 villages), Pará, Brazil	4	4	3	3
Gurupá (1 village), Pará, Brazil	4	4	3	3
Guarayos, Bolivia	4	4	3	3
Ranomafana, Madagascar	3	4	4	3
<i>Low</i>				
San Rafael–Tanabag–Concepción, Philippines	2	2	2	1
Basac, Lantapan, Philippines	2	2	2	1
Rantau Layung, Indonesia	2	1	2	1
Rantau Buta, Indonesia	2	1	2	1
Baru Pelepat, Indonesia	2	1	2	1
Bulungan, Indonesia	1	1	1	1

Note: 1 = low, 5 = high.

**Table 9-4. Gender Differentiation and ACM Impacts**

<i>Gender differentiation</i>	<i>Overall success</i>		
	<i>High</i>	<i>Medium</i>	<i>Low</i>
High	5	0	4
Medium	4	5	6
Low	5	1	0

### *Age*

Turning to the question of age—which we did not initially consider—we detect striking differences in attitudes, specifically in the relationships between young and old. Although in none of the sites did people group for collective action based primarily on age, there were interesting and potentially important contextual differences from country to country. Since the importance of age emerged in the course of the research, the following analysis is qualitative and derives from my reading of the case material and e-mail communications on each site (except Nepal, where no information is available).

In all the Cameroon sites there is marked hostility between young adults and the old. In the past, the young were dependent on the old: parents' financial contributions were needed for young people to marry, and their blessings remained important in ensuring a successful marriage (Akwah 2002). Today, however, the young may embrace changes that many of the old fear (Russell and Tchamou 2001; Tiani 2001), and in some areas, some young people fear that the old will curse them. In our studies on intergenerational access to resources, Cameroon stood out as unusual in the degree to which the current generation was thought to be using up resources that would no longer be available to their young (Porro et al. 2001; Mala et al. 2002). Cameroon had the full range from high-impact to low-impact sites.

Similarly, in Ghana there is recurrent conflict over the sale of community timber resources by the elders (who retain the proceeds). “While the elders claim to be in charge because of their social positions, the youth also claim to be in charge because of their commitment to the establishment of institutional structures for the management of the community forests” (Blay 2002c). Relations between the young and the old in Madagascar, at least among the Tanala, also seem to be marked by considerable antipathy. Freudenberger recounts a 1990 revolution of the young against the old in a number of communities in the forest corridor of which Ranomafana National Park is a part (Freudenberger 1999). The youths' primary complaint was the harshness of traditional justice, including the possibility of complete social ostracism (becoming a “black banana”) and the imposition of fines higher than those imposed by the state. Rakotoson et al. (1999) describe the unwillingness of elders to listen to the young people who dared to speak up in public meetings in the village of Sahavoemba. Stakeholders on the two Ghana sites and the Madagascar site did not adopt the ACM process as hoped, and results were unimpressive.

Relations between old and young in Zimbabwe seem less conflict-ridden than in Cameroon. Traditional roles—the dependency of the young and the responsibility of the old—are combining with the dynamics of change (Matose 2001; Chitiga and Nemarundwe 2003). The young are drawn to new approaches and question the viewpoints and perspectives of their elders. But HIV/AIDS, which has decimated the young population, has also changed these relationships, often making young adults dependent again on parents at a time when they would have been emancipated. The recruitment of young men to back up government policy in this time of political unrest has also created an unusual situation in which the young are widely feared as enforcers (Sithole 2002a). ACM went very well in Zimbabwe.

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In Kyrgyzstan, the young are also financially dependent on the older generation, though intergenerational hostility is not as palpable as in the African sites. As they grow older, they obtain the resources (often animals, land, and labor) needed to prosper. In their youth and young adulthood, they remain part of their parents' household and subject to their decisions. Parents are expected to provide a home for each married son and find him employment. The young find more opportunities to make money in forest resources (which are peripheral) than in the central economic activities of the area. A fair number of young Kyrgyz and Uzbek men and women leave to work in the cities or in other countries, mainly Russia and to a lesser extent Kazakhstan (Marti 2000; Schmidt 2002a). The ACM process was cut short in Kyrgyzstan.

In the Latin American sites, the young are expected to make their own way once married, and marriage choices are made by the young couple (with varying amounts of advice from the parents). Parents in the western Amazon make significant sacrifices to ensure, for instance, that their children obtain an education (Campbell et al. 2005). Cronkleton (2005) notes differences in perceptions between older and younger community members about how the benefits from forest management might be used in the Bolivian site, but serious conflict has not been reported. Whereas in the African sites, local people discussing age emphasize the problems related to relations between young and old adults, in the Latin American sites, the responsibilities of adult parents for their young children are emphasized (Campbell et al. 2005; Bolaños and Schmink 2005). Guarayos in Bolivia and Porto Dias in Acre, Brazil, did very well; Muaná in Pará, Brazil, had intermediate success; and Tâilandía in Pará did poorly.

In Borneo and Sumatra, Indonesia, although there are differences in perspective between young and old (cf. Colfer 1981; Hakim et al. 2001b), in general the relationship is amicable. The young are expected to respect the old but also to take responsibility for decisionmaking as they grow into mature adulthood; parents expect both to make significant sacrifices for their children and to relinquish control as their own labor contribution decreases. The idea that the old might harm their own young—for example, by cursing them—is inconceivable.<sup>1</sup> All four of these ACM sites did well.

The African sites had the most pronounced differentiation based on age and the full range of ACM outcomes. In eastern Cameroon, Oyono et al. (n.d.) explicitly link the belief among the young that previous generations have wasted their environmental heritage to a lack of environmental concern for the future—indeed, he argues that the young would prefer obliterating the forest. Previous research has shown the negative perceptions of Cameroonians about what their forests will be able to provide for the coming generation (Porro et al. 2001; Tiani 2000). One might anticipate that such perceptions could interfere with the ACM process, and with its focus on collective action pertaining to the environment. But many of the African communities have made excellent progress with ACM, including attention to environmental issues. As with gender, those sites characterized by little age-related differentiation (South America and Southeast Asia) did not show any obvious pattern of problems with the ACM process.

*Ethnicity, Caste, and Occupation*

Ethnicity is a critical dimension in all ACM sites in Africa and Asia. Cameroon, for instance, has 286 languages, each representing ethnic differences (Summer Institute of Linguistics 2003). Within the data set discussed here, caste is relevant only in Nepal. Occupation is a dominant social grouping mechanism in the Latin American sites.

Here, I characterize each site in terms of its internal diversity (Table 9-5); and then examine the variation in ACM success based on diversity. Information about diversity that can be of direct help to those trying to manage natural resources more effectively will be available in such works as Fisher et al. (forthcoming), Matose and Prabhu (forthcoming), and Diaw et al. (forthcoming), for Asia, Cameroon, and Zimbabwe, respectively (see the Appendix of Cases for more contextual information).

The four sites in Nepal—Bamdibhirkhoria, Deurali-Baghedanda, Manakamana, and Adheribhajana—stand out as the most internally diverse in our sample. Historically and culturally influenced by the hierarchical world view of Hinduism, each community has its own hierarchy of castes, each with its own occupation. Additionally, there are other ethnic groups (see Dangol et al. 2001b; New Era Team 2001; and McDougall et al. 2002a). The prominence of diversity as a contextual feature prompted considerable attention to it in the ACM work. Box 9-2 describes some of the measures taken to address this issue by Nepali communities as part of their ACM efforts.

Ten sites were characterized by intermediate levels of internal diversity. Five large sites in fact included both high and medium levels of internal diversity. Since our work focused more on communities with medium amounts of internal diversity, I have categorized these five sites—Campo Ma’an, Lomié, and Dimako in Cameroon, Bulungan in Indonesia, and Guarayos in Bolivia—accordingly. Other sites in this intermediate category were Baru Pelepat, in Jambi, Indonesia; San Rafael-Tanabag-Concepción, in Palawan, Philippines; Arstanbap-Ata and Achy in Kyrgyzstan; and Mafungautsi in Zimbabwe.

**Table 9-5. ACM Sites Classified by Heterogeneity (Diversity of Ethnicity, Caste, and Occupation)**

<i>High diversity</i>	<i>Medium diversity</i>	<i>Low diversity</i>	
Bamdibhirkhoria	Bulungan	Rantau Layung	Namtee
			Ranomafana
Deurali-Baghedanda	Campo Ma’an	Rantau Buta	Ntonya Hill
Manakamana	San Rafael-Tanabag-Concepción	Basac	Chimaliro
Adheribhajana	Achy	Ortok	Porto Dias
	Astanbap-Ata	Uzgen	Muaná (3 villages)
	Lomié	Ottotomo	Tailândia (2 villages)
	Dimako	Akok	Gurupá (1 village)
	Mafungautsi	Adwenaase	
	Baru Pelepat		
	Guarayo		

### Box 9-2. Dealing Constructively with Diversity in Nepal

In the Nepali sites, the issue of diversity—or more specifically, inequality—was raised explicitly by community members and colleagues within the forestry bureaucracy. There was widespread recognition that elite community members generally dominated the forest user group and its committee. The desire for greater equity emerged in informal discussions and in the local workshops that initiated the participatory action research process on each site. As workshop participants developed shared local visions for the community forest and considered criteria and indicators, equity in making decisions and sharing benefits was identified as important in almost all the groups. The groups developed their plans based on priorities identified in this process.

The decisionmaking processes evolved over the course of the research. One pattern that we observed in all the sites was a shift in decisionmaking from the centralized forest user group committee to the hamlet (*tole*) level. The hamlet groups were smaller and generally more homogeneous in terms of caste and ethnicity. It appeared that men and women felt freer to express their views in these smaller and more like-minded groups. The issues raised at the hamlet level were then fed to the centralized committee for further discussion and ratification.

A second pattern that emerged in most forest user groups was an effort to elect a wider representation of caste, ethnicity, and gender to leadership positions, including the newly created hamlet committees and in the centralized committee.

An important strategy in two sites was the development of a mechanism to track participation and equity. The committees led processes of categorizing households into high, medium, or low privilege, then tracked who was participating in forest user group events and who was benefiting. This helped the groups move away from lip-service commitment to providing benefits and opportunities to marginalized users. Other important mechanisms to enhance equity included establishing working groups that would assess the need for various benefits in an interactive way at the hamlet level and draft plans for benefit sharing (rather than leaving it to the committee).

In all the sites, the research team and other stakeholders supported forest user group members in capacity-building activities, some targeted marginalized users, to support more equitable decisionmaking processes, such as facilitation skills.

—adapted from Cynthia McDougall

More than half our sites (16) were marked by low internal diversity: Rantau Layung and Rantau Buta in Indonesia; Basac in the Philippines; Ortok and Uzgen in Kyrgyzstan; Ottotomo and Akok in Cameroon; Adwenaase and Namtee in Ghana; Ranomafana in Madagascar; Chimaliro and Ntonya Hill in Malawi; Porto Dias in Acre, Brazil; and Muaná, Tailândia, and Gurupá in Pará, Brazil. Most of these communities consist primarily of one clearly dominant group.

Interestingly, class was not used as an analytical tool by the team. Using a social class framework, it would be hard to see any of these people as anything other than “lower class”: they are generally financially poor, poorly educated or uneducated, and marginalized by the wider society (with possible exceptions in Nepal). Class as an analytical category is perhaps most congruent with, and more commonly used by others to describe, the situation in Brazil.

**Table 9-6. Community Heterogeneity and ACM Impacts**

Community heterogeneity	Overall success		
	High	Medium	Low
High	4	0	0
Medium	5	3	2
Low	5	3	8

Quantitatively examining the links between community heterogeneity (ethnicity, caste, and occupation) and ACM outcomes, we find that the four most heterogeneous sites (all in Nepal) had uniformly high overall success (see Table 9-6). The communities marked by intermediate levels of diversity include five high-success sites, three medium-success sites, and two low-success sites. Five of the low-diversity sites had high success rates, three had medium success rates, and eight had low success rates. Success is possible at all levels of diversity but somewhat more likely in diverse sites; statistically, however, these results were not significant at the 1 percent level. I remain skeptical of analyses implying unilineal causation.

## Conclusions on Human Diversity

This section has examined the levels of external diversity and community heterogeneity in the ACM sites. The practical implications of such diversity have often been overlooked in attempts to manage forests. Busy forest managers not infrequently ignore or trivialize the different use patterns, organizational traditions, and kinds of knowledge of users and stakeholders—to both the people’s and the forests’ disadvantage. These findings suggest that both the quantity and quality of diversity may be important factors to consider in creating sustainable management systems.

Diversity affects the conduct of ACM on any given site. Gender, age, and other kinds of differences are crucial elements to take into account in efforts to achieve sustainable forest management and human well-being because people in different categories tend to have different relations with the forest in terms of use, conceptual models, and rights. Diversity also has implications for equity. Subsets of the population in most forest villages are disadvantaged in their rights, use, and access to resources. The ACM teams’ experience in working with the subgroups strengthens our conviction that this is an important issue to address and that ACM provides a practical tool to do so.

As with most of the other variables we have examined so far, diversity itself has little *predictable* effect on the conduct of ACM. Quantitative analysis without a thorough understanding of the context can mislead. Holling et al.’s observations in Box 9-3 pertaining to systems in general help us consider some of these issues in a more abstract, conceptual—perhaps generalizable—way.

The authors’ discussion of biological functions within scales (“lumps”) and between scales seems comparable to the distinction made in this chapter between internal and external human diversity, respectively. I have long believed that global

### Box 9-3. Functions of Diversity in Systems

There are two types of such diversity, one concerning how diversity affects biological function within a range of self-similar scales—within a lump (Walker et al. 1999); and one concerning the way it affects biological function across scales—between lumps (Peterson et al. 1998). Both types of diversity contribute to the resilience and sustainability of the system.

... [W]ithin-scale and between-scale diversity produces an overlapping reinforcement of function that is remarkably robust. We call it imbricated [overlapping] redundancy.

—C.S. Holling et al. (2002c)

cultural diversity serves as an insurance mechanism for the human species—a thought related to theories about the function of biodiversity in maintaining ecosystems' resilience, sustainability, and robustness.