

PN-ACM-972

DELEGATING PROTECTED AREA MANAGEMENT TO AN NGO:

*The Case of Guatemala's
Sierra de las Minas Biosphere Reserve*

Estuardo Secaira, Andreas Lehnhoff,
Anne Dix, and Oscar Rojas

*A Case Study for
Shifting the Power:
Decentralization and Biodiversity Conservation*

Biodiversity Support Program
Washington, D.C.

A

TABLE OF CONTENTS

SIERRA DE LAS MINAS	2
Ecosystem Threats	4
Environmental Policy Framework	6
SMBR MANAGEMENT ARRANGEMENTS	7
Defensores de la Naturaleza as Management Authority	7
National Protected Areas Council: Delegating Authority over Protected Areas	11
Other Key SMBR Stakeholders and Defensores' Relationship with Them	13
Political Economy of the SMBR Institutional Arrangements	16
Accountability of Defensores as SMBR's Management Authority	21
Varying Interests in Biodiversity Conservation	23
SMBR AND CONDITIONS OF INSTITUTIONAL FUNCTIONING	24
Impact on Biodiversity Conservation	24
Organizational Capacities to Exercise Rights and Responsibilities	28
Factors Affecting Institutional Functioning	29
CONCLUSIONS	30
REFERENCES	35

**DELEGATING PROTECTED AREA MANAGEMENT TO AN NGO:
THE CASE OF GUATEMALA'S SIERRA DE LAS MINAS BIOSPHERE RESERVE**

Estuardo Secaira, Andreas Lehnhoff, Anne Dix, and Oscar Rojas

Sierra de las Minas

Sierra de las Minas is a steep and rugged mountain range in eastern Guatemala, rising from 15 m (some 50 ft.) to 3,015 m (approximately 10,000 ft.) above sea level. The Sierra de las Minas Biosphere Reserve (SMBR) comprises the greater part of the mountain range, with a length of 30 km covering more than 236,000 hectares (ha) (583,000 acres). This area represents about 2.2 percent of Guatemala's national territory (see map). At its nearest edge, the reserve is about 90 km northeast of Guatemala City, accessible by the road that links the capital to the Caribbean coast.

Formed of the oldest Paleozoic rocks in Central America, with soils that are highly prone to erosion, Sierra de las Minas encompasses six major Holdridge vegetation life zones. The reserve contains the largest remaining tract of cloud forest in Central America. It harbors at least 15 species and six genera of conifers, and is considered one of the largest sources of tropical pine germplasm in the world. It is home to more than 2,000 species of plants, as well as 70 percent of the reptile, bird, and mammal species reported for Guatemala and Belize (Nations et al. 1989). These include many endemic species of orchids, insects, and reptiles. The reserve's some 400 bird species include such endangered or threatened species as the resplendent quetzal (*Pharomacrus moccino moccino*), the harpy eagle (*Harpia harpyja*), the peregrine falcon (*Falco peregrinus*), and the horned guan (*Oreophasis derbianus*). The reserve is also home to five species of felines: puma (*Felis concolor*), jaguar (*Panthera onca*), jaguarundi (*Felis yagouaroundii*), ocelot (*Felis pardalis*), and margay (*Felis wiedii*). Other important mammals include the tapir (*Tapirus bairdii*), spider monkey (*Ateles geoffroyi*), black howler monkey (*Alouatta pigra*), mantled howler monkey (*Alouatta palliata*), red brocket deer (*Mazama americana*), collared peccary (*Tayassu tajacu*), and white-lipped peccary (*Tayassu pecari*) (Lehnhoff and Núñez 1998).

The reserve is a key watershed resource for inhabitants of the Polochic and Motagua river valleys. Both rivers ultimately drain into the Caribbean Sea. Sixty-three rivers originating in

Sierra de las Minas provide water for downstream household consumption, irrigation, hydropower, and industry. Both large- and small-scale farmers, located on hillsides and in the surrounding valleys, depend on these rivers for raising cattle and growing an array of crops, including corn, beans, grapes, melons, sugarcane, rice, coffee, lemon grass, cardamom, bananas, tomatoes, potatoes, and broccoli. These products are key to Guatemala's food supply and revenue. The rivers also provide a resource for industry, including sawmills, transnational soft drink manufacturers, and paper-recycling plants, which employ local people and help supply the internal market (Dix 1997).

The homes and fields of those living in and around the reserve are located on the lower- and middle-elevation slopes of the range. Historically, the higher-elevation slopes, which currently form the core of the reserve, have not been permanently inhabited because of their steepness and inclement topographic and climatic conditions. Local communities in and around the reserve rely heavily on the Sierra's forest resources for their subsistence and commercial activities. They are both the group most dependent on the benefits the forest provides and the main threat to its conservation. An estimated 40,000 residents living in 140 rural communities, averaging 40-45 families each, are widely scattered throughout two management zones surrounding the core area of the reserve. These two management zones, the sustainable use and buffer zones, cover 126,400 ha, or 53 percent of the reserve. The northern slope of the range and Polochic river valley is inhabited by Maya descendants of the Q'eqchi' and Poqomchi' peoples, while the southern slope is mainly inhabited by people of Spanish or mixed origin, known as *ladinos*, but more accurately characterized as *mestizos*. Most of these people depend on small-scale farming and cattle grazing for their subsistence, in addition to cultivating cash crops and extracting timber and non-timber forest products (NTFPs) to supplement their household income. However, adverse topographic and climatic conditions result in relatively low agricultural productivity. Difficult access to the area also entails high costs for forestry operations.

An estimated 45 percent of the SMBR's land is publicly owned, 50 percent is private, and five percent is municipal. These percentages are only approximate, as the most recent land survey is outdated and imprecise. Historically, patterns of SMBR land use and tenure have been quite distinct on the northern and southern slopes. Along the southern slope, there is less remaining forest because accessibility has allowed greater human exploitation. Currently this slope experiences comparatively little colonization pressure, due to a relatively coherent land tenure structure and small property sizes. The scarcity of suitable lands for colonization and the low productivity of soils have even led to out-migration. In contrast, the northern slope is still home to vast forested areas, but here in recent years there has been high pressure on the forest. The increased demand for land on the northern slope results partly from the concentration of land in the hands of a few, and partly from the rapid growth of the poor and marginalized rural population. In addition, many communities and small holders occupy land without having title to it. The difficulties of this situation are exacerbated by insecure land tenure, including the absence of an updated, reliable, and coherent land survey (Lehnhoff and Núñez 1998).

Ecosystem Threats

By far, the worst threat to the SMBR's ecological integrity is deforestation. Between 1987 and 1995, the annual deforestation rate was 1.1 percent of the range's total area, equivalent to 1,860 ha per year (Jolom-Morales 1997). Degradation and loss of forest cover is caused mainly by slash-and-burn agriculture to grow subsistence crops (e.g., corn and beans), forest clearing for cash crops (e.g., cardamom and coffee), extraction of firewood (the only domestic fuel of rural inhabitants), and illegal logging (particularly of the reserve's primary and old-growth forest). Logging on the southern slope of Sierra de las Minas has occurred since colonial times. Although SMBR management since 1990 has helped slow deforestation, it has not been able completely to halt or reverse the process.

Fire is another significant threat to SMBR ecosystems. Fires usually start as uncontrolled annual burns of the oak-pine forest understory by small- and medium-scale cattle ranchers to promote rapid regeneration of pasture. Without appropriate precautions, this practice frequently leads to extensive forest fires. Elsewhere, fires start as burns associated with shifting agriculture of annual

subsistence crops, subsequently extending to forested areas. Ecologists are concerned that the original forest structure of the reserve is being irrevocably replaced by a fast-growing and fire-resistant pine monoculture.

Wildlife hunting and poaching also threaten the integrity of the reserve's ecosystems. Preferred hunting species include the endangered horned guan, agouti (*Agouti paca*), white-lipped peccary, collared peccary, white tail deer (*Odocoileus virginianus*), and red brocket deer. People hunt to complement the family diet with animal protein, protect their crops from certain animals, and obtain medicinal substances attributed to specific animals, as well as for recreation. Local residents may sometimes serve as hunting guides for outsiders (Lehnhoff and Núñez 1998).

Several principal causes underlie the increasing pressures on the SMBR's natural resources. First are the poverty and marginalization of local rural people, who have scarce social and economic development opportunities in Sierra de las Minas. Despite social development efforts of the past eight years, basic social services, such as health and education, are still inadequate. Economic development possibilities are also limited, given the remoteness of this area, its few public services (such as access to electricity), the land's steepness and corresponding low fertility (particularly on the southern slope), and limited employment for unskilled workers, confined primarily to low-paying fieldwork. Also hindering development is the absence of a support system for small producers, who lack appropriate credit, technology transfer, and marketing conditions. Consequently, many local people rely heavily on natural resource extraction, generally practiced in unsustainable ways.

The second cause of increased pressure on the SMBR's natural resources relates to ill-defined rights over land and natural resources. This problem is particularly pronounced on the northern slope, where many Q'eqchi' and Poqomchi' smallholders lack stable landholdings. Consequently, these resource users lack incentives to invest effort or financial resources in sustainably managing the land. Land-tenure insecurity, a widespread condition in Guatemala, underlays nearly four decades of civil upheaval in the country, until the Peace Accords were signed in late 1996.

A third threat to the SMBR's natural resources derives from a rapidly growing population, when combined with the poverty and lack of economic development alternatives described above. As Sierra de las Minas' poor and marginalized rural population grows, particularly on the northern slope of the range, the demand for land for subsistence agriculture increases dramatically. This correlation between population growth, demand for land, and deforestation appears consistent with overall natural trends. In 1960, Guatemala had four million inhabitants and 68 percent of its territory under forest cover. By the end of 1981, the population had reached 8.6 million and total forest cover had decreased to 39 percent (Leonard 1987). As of 1997, Guatemala's population was close to ten million and the country's remaining forested area was only 29 percent.

Environmental Policy Framework

Guatemala has significantly advanced its environmental policy framework over the last 15 years. The country is signatory to most major international environmental agreements, including the Convention on World Heritage, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR), Convention on Biological Diversity, and the Convention on Climate Change. It is also a signatory to the Western Hemisphere Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, and the Central American Conventions on Forests (Regional Agreement on the Management and Conservation of Natural Forest Ecosystems and the Development of Forest Plantations, 1994), Biodiversity (Agreement on the Conservation of Biodiversity and Protection of the Priority Wilderness Areas in Central America, 1993), Climate Change (Regional Agreement on Climate Change, 1996), and Toxic Waste (Regional Agreement on the Transborder Movement of Dangerous Waste, 1994). Together with the rest of Central America's governments, Guatemala's central government also participated in the initiative to create the Central American Commission for Environment and Development (CCAD) in 1989. This led to adoption of the Alliance for Sustainable Development in 1994, the joint regional environment and development agenda of the isthmus' seven countries: Guatemala, Belize, Honduras, El Salvador, Nicaragua, Costa Rica, and Panama.

At the national level, the Constitution of 1985 mandated the creation of a new legal and institutional framework for the environment. During the 1986-91 administration of President Vinicio Cerezo, a group of important environmental laws was passed. These included the Environmental Protection and Improvement Law, which established the National Environmental Commission (CONAMA) and the Protected Areas Law with its implementing agency, the National Protected Areas Council (CONAP). Two other important laws established the Maya and Sierra de las Minas Biosphere Reserves. Together, these protected areas cover more than 17 percent of the national territory. At the local level, the Municipal Code also establishes certain responsibilities of the municipalities regarding the environment, although these usually concern "brown issues" such as water, sanitation, and waste disposal.

While Guatemala's national government has advanced in passing specific environmental legislation, the country has lagged in effectively implementing these laws and promoting local environmental protection. After a short period of significant advances (1985-1990), the subsequent two presidential administrations (1990-1995) made the environment part of the rhetoric of their agendas, but only minimal pro-environment and conservation measures were taken (Lehnhoff and Núñez 1998). Fortunately, the subsequent administration showed greater interest in environmental issues due, in part, to the personal interest of President Alvaro Arzú, but primarily because of the leadership of the two main environmental agencies, CONAMA and CONAP. The current environmental legislation and policy framework allow and even encourage decentralization. But in reality, decentralization is only happening slowly. This can be attributed to a combination of factors, including a tradition of centralization, lack of funding, and absence of human and institutional capacity to take on decentralized environmental functions.

SMBR Management Arrangements

Defensores de la Naturaleza as Management Authority

In October 1990, the Guatemalan National Congress legally established Sierra de las Minas as a protected area, under the management category of biosphere reserve (see Box 1). The Guatemalan Protected Areas Law and its bylaws recognize 17 categories of protected areas,

ranging from strict conservation areas, such as biological reserves, national parks, and wildlife refuges, to multiple-use areas that allow for sustainable extractive activities and other extensive public use. In 1993, the United Nations Organization for Education, Science and Culture (UNESCO) listed the area as part of the International Network of Biosphere Reserves. Until 1998, this designation was merely nominal, since it had not represented any concrete financial or technical support for the reserve by UNESCO or related organizations. In the law creating the reserve (Law 49-90), management authority was assigned to Defensores de la Naturaleza, a Guatemalan non-governmental organization (NGO) founded in 1983 by conservationists, private entrepreneurs, and philanthropists to conserve Guatemala's biodiversity.

Formally, Defensores acts as the SMBR's executive secretariat. Law 49-90 includes a provision to form an oversight board for the reserve, chaired by CONAP, the country's protected areas umbrella agency, with representatives of local governments, landowners, and indigenous communities. However, the board was never established because the set of bylaws passed by the government was so flawed that they effectively prevented the board from functioning. Specific problems included the virtual impossibility of designating indigenous and landowner representatives in a transparent way and the lack of protection from undue pressures and political influence by interest groups, such as aggressive loggers. Since the board was never formed, Defensores has performed its management role under the oversight only of CONAP.

Defensores is responsible for implementing the SMBR's programs, as established in the five-year master plans and annual operational plans that are approved by CONAP. Current programs include ecosystem protection, sustainable natural resources management, environmental education and community outreach, scientific research, and administration. During the early years, the staff of Defensores were the principal implementers, together with local communities. A more recent trend is to work via strategic alliances with other NGOs, local groups, and agencies of the central and local governments.

Box 1. Steps in Creating the Sierra de las Minas Biosphere Reserve

Creation of the Sierra de las Minas Biosphere Reserve (SMBR) resulted from an intensive and relatively rapid process. The main steps in the process were:

Identification. Following the suggestion of a group of biologists from Guatemala's Universidad del Valle, and after several orientation visits, the non-governmental organization (NGO) Defensores de la Naturaleza decided to study the viability of creating a legally protected area in Sierra de las Minas.

Proposal development. With technical and financial support from the international NGO, World Wildlife Fund-US, and the Guatemalan National Environmental Commission (CONAMA), in 1989, Defensores assembled a multi-disciplinary team of scientists. The team conducted a detailed study of the area's ecological and socioeconomic situation. In 1990, Defensores presented a proposal for the protected area.

Consultation. To gain public support, Defensores developed audiovisual materials and organized an informational campaign throughout Guatemala to advertise the potential benefits of the reserve's establishment. Together with the National Protected Areas Council of the Presidency of the Republic (CONAP), Defensores carried out a series of consultations with stakeholders, resulting in the decided backing of most, including the 13 municipal governments. Defensores also negotiated mutually agreeable compromises with opponents of the initiative, the most important being the Chamber of Industry's Forestry Guild.

Government approval. In April 1990, CONAP approved the proposal. On June 5, 1990 (World Environment Day), President M. Vinicio Cerezo of Guatemala signed the bill in a public event celebrated at the National Palace, and sent it to Congress. After several attempts, Congress finally ratified reserve establishment on October 4, 1990, and management authority was delegated to Defensores.

Legal defense. A few weeks after the declaration, a group of Sierra de las Minas landowners formally requested that the Constitutional Court repeal this law, claiming it imposed limitations on their constitutional rights regarding use of their own private property. Six months later, Guatemala's constitutional court upheld the law, setting an important precedent for conservation in Guatemala.

International recognition. In January 1993, the SMBR won international recognition by being included in UNESCO's International Network of Biosphere Reserves.

Since the SMBR was created, Defensores has never received a budgetary appropriation from the government to manage the reserve. Defensores has been solely responsible for privately raising reserve management funds from within Guatemala and abroad. CONAP's contribution is the provision of eight park guards. In monetary terms, that represents only about 2 percent of the reserve's overall budget. Currently, most of the reserve's annual budget of approximately \$800,000 comes from a wide array of international public and private sources, and, to a lesser extent, from national private sources and trust funds. Defensores has established an endowment for the SMBR, but this is too small to guarantee the long-term funding of its basic operations. Ensuring the long-term funding of the reserve is one of the administration's greatest challenges.

In terms of law enforcement, Defensores acts as the SMBR's guardian, but not as a police presence. Its field employees and park guards do not carry arms. Any illegal act of timber exploitation, poaching, or wilderness areas invasion is reported to the government police forces and the district attorney and eventually to the courts, with CONAP assumed to act as the responsible governmental agency. The disadvantage of this arrangement has been the frequent lack of efficient action by the authorities. While this arrangement seriously limits the power of Defensores, it has allowed the NGO greater flexibility in relating to stakeholder groups. It is also more consistent with Defensores' preferred role as promoter and technical advisor.

During the SMBR's first seven years, Defensores had virtual autonomy to organize, coordinate, and implement actions in the reserve, with little governmental intervention and subject to little political pressure. On the one hand, this arrangement has allowed Defensores' actions to be efficient and responsive to local needs and to gain the support of local governments. On the other hand, scant government participation in managing the SMBR has resulted in low government commitment to providing essential financial and human resources and law enforcement. In the long run, this represents a major risk to the reserve's permanent status.

National Protected Areas Council: Delegating Authority over Protected Areas

In 1989, during Guatemala's first civilian administration following many years of military rule, the new Protected Areas Law came into force (Law 4-89). This law created a unified regulatory framework for Guatemala's protected areas and established CONAP as the umbrella agency to coordinate, oversee, and develop the country's protected areas system. Previously, the existing protected areas, which then comprised only about 2 percent of the country's territory, had been managed by the University of San Carlos and two governmental agencies, the former forestry agencies (INAFOR, later DIGEBOS) and National Institute of Anthropology and History (IDAEH). Only a few of these areas were significant sites for biodiversity conservation.

Structurally, CONAP is part of the Presidency of the Republic. It has a governing council, originally formed of representatives from 14 national government, non-governmental and decentralized institutions, as well as a private sector representative. At the end of 1996, reforms to the Protected Areas Law reduced the governing council to seven members to make it more efficient. CONAMA chairs the Council. Other members are representatives of the Ministry of Agriculture, University of San Carlos, IDAEH, Association of Municipalities, Guatemalan Tourist Commission (INGUAT) and environmental NGOs. CONAP also has an executive secretariat as its implementing arm.

CONAP's initial efforts focused on expanding ecosystem representation and coverage in the Guatemalan Protected Areas System by promoting the establishment of new protected areas. With SMBR, one of the first established protected areas, CONAP adopted the policy of delegating management authority. Delegating authority to Defensores de la Naturaleza was both legal and practicable since Defensores was an already well-respected but small conservation group recognized widely as the main proponent and promoter of the reserve initiative. Significantly, although Defensores had not yet developed the implementation capacity legally required to manage the reserve by 1990, the credibility of its board led the government to entrust Defensores with this responsibility.

Guatemala's first case of delegating authority over a protected area paved the way for entrusting several other protected areas to NGOS. Laws establishing more recent protected areas state that the administration of the protected area will be CONAP's responsibility, transferable to another organization through public bidding. In this way, the Bocas del Polochic Wildlife Refuge, adjacent to the SMBR, was also delegated to Defensores in 1996. The Cerro San Gil Spring Protection Reserve was entrusted to the Foundation for Ecodevelopment and Conservation (FUNDAECO). The indigenous community-based organization of coffee producers, known as Asociación Chajulense, obtained management authority over the Bisis Cabá-Ixil Biosphere Reserve in Chajul, Quiché. Recently, other governmental agencies holding protected areas, such as the recently created Forestry Institute (INAB), have also adopted delegation policies. In 1997, INAB entrusted Defensores with management of the Naciones Unidas Park for 30 years. It also signed a co-management agreement with Fundación Solar to manage the Laguna Lachuá National Park, and transferred the Las Victorias and San José La Colonia recreational areas to the corresponding municipal administrations. Unfortunately, the latter experiment has not worked well.

CONAP retains some responsibilities over the areas delegated to other organizations, as follows:

- general oversight and monitoring;
- approval of the five-year management plans and annual operations plans submitted by managing organizations;
- authorization and supervision of any natural resource extraction from reserve zones, where permitted; and
- law enforcement.

In addition, CONAP is theoretically responsible for providing or procuring financial resources. In the case of SMBR, CONAP's support has been limited. Between 1990 and 1998, CONAP's financial and human-resource contributions to the reserve have ranged between 2-4 percent of the overall reserve budget. Other government support, including that related to legal and political issues, has varied markedly, depending upon the political will of the prevailing government administration, as well as the vision and capacity of CONAP's often-changing leaders and regional

representatives. For instance, under the administration of President Alvaro Arzú, CONAP showed improved capacity for developing the protected areas system and more clearly defining the responsibilities of different actors, owing largely to the vision and understanding of CONAP's then-executive secretary.

Other Key SMBR Stakeholders and Defensores' Relationship with Them

Including the SMBR area's key stakeholders in management processes has helped resolve resource-related conflicts and improved collaboration in coordinating the reserve's management.

The most important actors are as follows:

National Governmental Agencies and Local Governing Authorities. Despite the SMBR's status as a legally protected area, many overlapping institutional interests and jurisdictions in the reserve remain. This makes inter-institutional coordination crucial. Key actors include the following central government agencies:

- CONAP
- Land Transformation Institute (INTA), which holds most of the country's public lands and the mandate to title suitable lands to landless farmers;
- CONAMA, which oversees environmental impact statements;
- INAB, which oversees forestry activities outside protected areas;
- Ministry of Energy and Mines, which conducts Guatemala's exploitation of non-renewable resources (in the Sierra de las Minas, this means small-scale mining);
- law enforcement agencies (police, district attorney, and judicial system); and
- Ministry of Education and National Literacy Commission, two government bodies responsible for education of both children and adults.

Additional key stakeholders are local government authorities, including five departmental (provincial) development councils and 13 municipalities, which have territorial jurisdictions similar to those of counties in the United States.

Without a functional, overarching coordination body for the reserve, Defensores frequently must act as mediator among agencies to achieve information exchange and coordinated project planning.

To date, this coordination has worked reasonably well. Defensores has been able to gain agencies' respect and maintain reasonably good relations with them.

Difficulties in gaining the interest and participation of some agencies can be attributed to agency heads' lack of vision regarding the importance of collaboration, incompatible institutional mandates, and lack of human and material resources. Increasingly, there are examples of successful collaboration, like the joint prevention and combat of forest fires, which has involved municipalities, INAB, CONAP, landowners, and rural community members. Another case of effective coordination was Defensores' work with INTA, which resulted in land titling policies and practices for farmers that are more consistent with the objectives of the reserve management zones.

Non-governmental Organizations. Aside from Defensores, a number of other NGOs are working in the SMBR. Some are primarily environmental organizations, including the Baja Verapaz Environmental Defense Foundation (FUNDEMABV), which promotes environmental education and watershed management in the province of Baja Verapaz. Several international and national community development organizations directly or indirectly support conservation efforts. These include Foster Plan International, ALTERTEC (a Guatemalan NGO that promotes organic agricultural practices), Center for Family Integration (CIF), Penny Foundation, and CARE. The Guatemalan Catholic Church has also contributed to conservation efforts in the SMBR, particularly those related to social organizations. After an initial period of poor cooperation and even competition, coordination among NGOs and governmental agencies has been increasing in recent years, particularly in specific areas or watersheds. This improvement has hinged upon groups developing better knowledge of each other's activities and recognizing that strategic alliances will allow each NGO to focus on its own core competencies, while ensuring that all of the other needs and requirements in the area are addressed.

Local Communities. As mentioned earlier, there are some 140 small rural communities in the sustainable use and buffer zones of the SMBR. In general, the Q'eqchi' and Poqomchi' indigenous communities of the northern slope have extremely low levels of education and

literacy. They rely on subsistence agriculture and production of some cash crops, resource extraction, and employment as fieldworkers in nearby coffee and cardamom plantations. Often, these communities have only a few Spanish speakers, usually men. The *ladinos* (people of Spanish or mixed origin) of the southern slope rely mainly on small-scale cattle ranching, cash-crop production, and timber extraction. Their level of education is generally higher than that of members of the northern slope communities, although still much lower than that of Guatemala's urban population.

Defensores' development of relationships with these communities has been an interesting process. Many communities were initially distrustful of and some openly opposed the reserve, fearing that resource extraction would be banned completely. However, dividing the reserve into four management zones (core, sustainable use, buffer, and recovery zones) designed to optimize management activities has helped eliminate this fear. In addition, Defensores' emphasis on responsiveness to local needs and concerns has expanded and improved the quality of local inhabitants' participation in SMBR management. A key element was the hiring of Q'eqchi' and Poqomchi' speakers as Defensores staff. Also, training, education, and technical assistance programs were customized to accommodate local cultural and social circumstances.

Community programs related to SMBR protection and stewardship take two interrelated approaches: 1) addressing community-based conservation and 2) assisting with compatible economic development. The first approach is based upon developing a good-neighbor relationship with the reserve; increasing the level of environmental awareness through environmental education programs; implementing natural resource conservation activities that are in the interest of both the communities and the SMBR administration; and offering advice and facilitation supporting the creation and strengthening of local community organizations, including those for women and teachers. The second approach integrates a strategy of providing technical assistance in sustainable agriculture, community forestry, and other income-generating activities.

Private Landowners. The greater portion of the mostly forested landholdings in the higher-elevation regions, as well as many of the coffee and cardamom plantations located at an

intermediate altitude, are owned privately by individuals and families living in nearby towns or in the capital city. Depending on their economic interests, these private actors' levels of support range from unconditional collaboration to outright opposition to the reserve's conservation. Some of the supporters are capital-city families who have inherited land and have either never or seldom used it. Several of them have either sold or granted a 30-year land usufruct to Defensores. Others, generally those practicing sound land management, including having shade coffee plantations and timber farms, have also collaborated with the reserve. The conservation opponents are mostly those with purely extractive interests, such as loggers and, to lesser extent, cattle ranchers. These groups have been the most difficult to integrate into reserve management. Despite repeated efforts, interaction with them has been mostly on a one-to-one basis. Only recently, a group of loggers formed the Association for the Development of Sierra de las Minas to oppose core area conservation and promote "wise use"—meaning logging—of the reserve's old-growth forests. Clearly, developing more constructive relationships with reluctant or opposing landowners and extractive industries is an important challenge for Defensores.

Political Economy of the SMBR Institutional Arrangements

CONAP and Defensores, the two entities with strongest authority over the SMBR as a protected area, are natural allies largely because of their similar institutional mandates. As the responsible public agency, CONAP holds legal jurisdiction over the entire protected areas system, including the SMBR, with overall responsibility and maximum authority. Defensores, as the entity responsible for managing the reserve and the one most influential in setting the reserve's agenda, derives its authority and strength from several sources. Its mandate and legal authority are directly received from the National Congress. Also in its favor are strong and varied collaborative links with different levels of government, donors, allied groups, local stakeholders, and the public. In addition, it raises privately all the funds used to run the reserve, has managed its financial resources soundly, and implemented effectively. Crucial to its authority are its problem-solving capacity and approach, and, significantly, its ownership of about 24, 000 ha (60,000 acres) of land in the reserve's core area. This ownership status helps legitimize Defensores' interest in Sierra de las Minas in the eyes of other landowners and local communities.

In general terms, CONAP and Defensores have had a productive relationship based on mutual respect. The factor most favoring collaboration is both organizations' recognition that they need each other to conserve the SMBR effectively. However, in most cases, Defensores has taken the initiative in getting CONAP to act on key reserve-related issues. Periodically, tensions arise between the organizations, mainly caused by poor communication or differing interpretations of each other's responsibilities and consequent dissatisfaction with each other's actions.

Underlying causes of these problems include Defensores' insistence that CONAP—and the government in general—increase financial, technical, and political support to the reserve, and take a stronger proactive role regarding law enforcement and inter-institutional coordination. In turn, regardless of CONAP's general respect for Defensores for providing effective, professional reserve management, some of CONAP's employees apparently would like Defensores to act less independently. They would also prefer greater control over the funds Defensores has raised for the SMBR. Furthermore, it appears some government employees are wary (even jealous) of Defensores' political clout and strong public support, which has afforded it organizational and financial stability through four national government administrations. Nonetheless, when threatened by such agencies as the Ministry of Energy and Mines, which favors small mining and petroleum exploration initiatives in protected areas, Defensores and CONAP act in coordination.

As mentioned above, the formal body intended to allow such stakeholders as indigenous communities, landowners, and local governments to participate in the reserve-wide governance structure is still not functional. However, there are other ways (both formal and informal) that these stakeholders can participate in stewardship of the SMBR. The most important and systematic way is through the annual evaluation and planning process Defensores conducts, where more than 50 communities and local authorities help develop the SMBR operational plans. Several local mayors have requested that the staff of the SMBR participate in “municipal technical units,” technical advisory bodies formed by governmental institutions and NGOs that assist municipalities in policy and technical matters. SMBR staff members also participate in regional efforts to organize the environmental and development NGO communities in Alta and Baja Verapaz. Defensores staff maintains constant personal communication with local authorities, including community and municipal mayors and government officials. In addition,

Defensores systematically involves a number of groups in the SMBR's conservation and management objectives through organizing regularly held workshops. The groups include local authorities, governmental, non-governmental and grass-organizations, private entrepreneurs, landowners, and community leaders.

Although participation by community members in planning and decision-making can be costly in terms of Defensores' staff time, logistical support, and financial resources, the benefits are increasingly clear. Likewise, although community members may perceive a cost in terms of their time while participating in conservation activities—especially during harvest time—their high level of participation demonstrates their view that the price is worthwhile. As communities' awareness of conservation issues has increased, their willingness to participate in concrete actions has also grown. For example, as residents have seen positive results from sustainable agricultural practices, they have increasingly adopted these techniques. Moreover, various communities have taken the initiative to denounce illegal activities in the reserve to local authorities and Defensores. Some community members have individually tried to convince their neighbors about the importance of conservation initiatives and enforcing environmental laws.

To date, Defensores has had almost exclusive responsibility for collecting and using information to manage the SMBR, with little community involvement in setting the research agenda. Two exceptions were a study on medicinal and edible plants in seven SMBR communities and another study on water production and use in two reserve watersheds. As local communities become more aware how documented research results can be used for better decision-making about managing and conserving natural resources, the reserve administration expects that it will be able to promote greater community participation in setting research priorities and involving community members in research. Data from studies conducted by SMBR are now available to a variety of groups. Technical reports have been prepared for governmental, donor, NGO, and technical audiences. Results of research studies have formed the basis of environmental education campaigns. Such information has been used to prepare posters, pamphlets, calendars, and audio-visual and video presentations disseminated within SMBR communities and throughout Guatemala. The rationale for sharing information resulting from research efforts is to

keep partners and SMBR communities better informed. Defensores has based implementation of this strategy upon the assumption that greater communication on key conservation issues leads to better understanding of and ultimately greater security for the SMBR.

A major factor favoring increased stakeholder participation in public decision-making has been the peace process and the country's general movement toward greater democratization. Since 1985, Guatemala has been undergoing dramatic social and political changes, following years of military repression of democratic initiatives and of the activities of grassroots organizations. As democracy began to flourish in the late 1980s and early 1990s, particularly during the negotiations resulting in the 1996 Peace Accords, civil society became increasingly active in the national decision-making processes. The new political climate has created an enabling environment for NGOs, popular organizations, and local communities to seek a more active voice in issues affecting their lives.

The SMBR's management has sometimes worked with presumed local leaders who turned out not to be the true representatives of local residents. While this has not proven catastrophic, it has caused delays in developing sound relationships with some local communities and forced Defensores to redouble its efforts to gain trust. As a result, the new approach is not to rely on any one community representative during first contact, but to conduct open community meetings to identify and address key issues. As it becomes clearer who the true community leaders are, Defensores can begin to develop a working relationship with them.

Over the years, Defensores has invested significant efforts in developing the capacity of local decision-makers, as well as community organizations. It has also conducted workshops and training courses to increase local decision-makers' awareness of environmental issues. In 1995, Defensores implemented a program financed by the MacArthur Foundation to develop community organizations in several of the reserve's watersheds. Through this program's activities, local leaders and groups gradually and consistently increased their skills to conserve the reserve's natural resources. Defensores is working toward the time when these local leaders and

groups will participate in local decision-making bodies capable of assuming more formal management authority over specific watersheds or other subsections of the reserve.

The most serious weakness of the SMBR's management arrangement, in terms of participation and accountability, is absence of a formal advisory committee or board that includes relevant stakeholders. This has restricted the possibility for local authorities, communities, and landowners to have a voice in decision-making regarding reserve management. It will soon be crucial to redesign, legalize, and organize the SMBR's advisory committee to ensure more meaningful participation of these key stakeholders. Another important step will be to pursue Defensores' long-term conception of establishing a series of watershed-specific local boards. The idea is that these boards could focus on smaller geographic areas and operate under the larger advisory committee. Defensores' political clout, capacity, and knowledge of the area would be instrumental to the success of such an initiative.

As of yet, there are no formal mechanisms for conflict resolution among the various stakeholders. At the field level, controversies between Defensores and CONAP or other governmental agencies are generally minor, relating to such specific issues as law enforcement, extraction permits for timber and non-timber forest products, land titling criteria, or personnel issues. Usually, every effort is made to resolve the problem locally. Only if the conflict cannot be resolved at that level is it referred to the organizations' central management staff in Guatemala City.

Resource-related conflicts in the SMBR traditionally have been linked to the following three causes (Lehnhoff and Núñez 1998):

- ***Controversy about large logging operations carried out by powerful loggers at the higher-elevation areas of the range.*** Most conflicts occurred shortly after SMBR was created. Over the years, such conflicts have gradually diminished. They have usually been resolved by exerting pressure on authorities to enforce the law.
- ***Conflicts over land use and tenure on the northern slope.*** There are numerous types of land-related conflicts among large landowners, communities, and the government. For

the reserve's administration, the most significant conflicts concern invasions or illegal use of the core area. Defensores usually addresses these conflicts with a graded approach, starting with persuasion, which sometimes works. If not, Defensores next seeks to find a negotiated solution benefiting both parties, such as voluntary relocation. Negotiated resolution is the most complicated and most common circumstance. Least common, when no other way avails itself, Defensores seeks legal action before the courts.

- ***Disputes over water rights on the arid southern slope.*** Water users in the lower watershed resent the detriments to water quality and quantity caused by upper watershed deforestation, particularly by logging companies. Excessive use of water for irrigation or agroindustry and water pollution are also sources of conflict. In this region, which is inhabited by *ladinos*, conflicts are resolved in a variety of ways, including direct negotiation, mediation by local municipal authorities, legal court action, and confrontation. Rarely does the reserve's administration become involved in these private conflicts, which mostly occur outside of the reserve.

Accountability of Defensores as SMBR's Management Authority

Since its inception, Defensores has made an outspoken commitment to transparency and accountability, and over the years, it has proven itself capable of living up to that pledge. As the SMBR's managing organization, it is accountable to a number of stakeholders on financial, managerial, and programmatic issues. Defensores has developed a sound track record with donors, via good planning, effective implementation, sound financial management, timely reporting, and external auditing.

Defensores' accountability to the central government has varied. On one hand, the highest levels of Guatemalan government have recognized Defensores' work, and thus the NGO was awarded the Presidential Environmental Medal in 1994. Also, Defensores has always complied with its formal obligations to the government regarding SMBR management. On the other hand, on a daily basis, communication and interaction with CONAP—the agency to which Defensores is formally accountable—has depended more on personal willingness and capacity of CONAP's

often-changing directors and staff to interact with Defensores than on formal, institutionalized mechanisms.

With local and regional authorities, Defensores' communication and relationships generally have been very good. Authorities are kept well informed through distribution of documents, local and regional workshops on environmental issues, meetings, and field trips to the reserve. In response to this effort to keep them "in the loop," local and regional authorities have generally provided support, although more through goodwill and political influence than resources. Increasingly, these authorities hold Defensores accountable to its mission as reserve manager. Ever more frequently, sub-national authorities request Defensores' advice in helping them make informed decisions on SMBR-related issues.

In rural communities, after an initial period of little trust and reluctant collaboration, support of and participation with Defensores has consistently improved. This is a direct consequence of Defensores' new, more participatory approach, which is based on listening to community concerns. A key factor has been the annual participatory evaluation and planning process, which allows Defensores to get communities' input in programmatic decisions about the reserve. This method has also forced Defensores to be increasingly accountable and responsive to local needs and concerns. Another factor promoting accountability has been communities' growing environmental awareness. As the intensity of Defensores' environmental education campaigns has increased, many communities have increased the pressure on Defensores and CONAP to control illegal activities and improve reserve management.

Perhaps the most uneven relationship between the SMBRs' administrator and a stakeholder group has been Defensores' relationship with private landowners. Some landowners have an outspoken commitment to conservation and try to contribute to the reserve's management, or at least do nothing to counter it. These landowners are mainly coffee farmers and forest plantation owners whose land is located in the reserve's sustainable use buffer and core zones, as well as some families and firms who own forested land. These owners generally see conservation as beneficial to and compatible with their own activities.

Other landowners oppose the reserve and its management. These are mainly those with interests in traditional logging as well as some small-scale cattle ranchers. Since the reserve's establishment, Defensores has had an especially tense relationship with loggers. In the early years, a group of loggers exerted strong political pressure against the reserve, and even sent death threats to Defensores board members and staff. Fortunately, in more recent years, their influence has been diminishing (see Box 2). Although some loggers have formed an association known as ASIMI to further their objectives, this interest group has not attracted many supporters to its cause.

Box 2. Montaña Larga

Sierra de las Minas is increasingly in the public eye, especially through the press. Public opinion and expression in Guatemala, growing in influence, support conservation of the reserve. Worth mentioning is a case concerning overexploitation of a large-scale logging operation in the Montaña Larga property. Here, public press outcry finally helped generate enough political pressure on the Forestry Directorate (DIGEBOS) to cancel the illegal logging permit. The outcome of this case was the principal factor serving to diminish the strong negative influence of loggers opposing reserve conservation.

Varying Interests in Biodiversity Conservation

The SMBR provides such benefits as water, timber, food, and economic opportunities to people living in and around the reserve. Benefits accruing to individuals range from subsistence-level to large-scale economic returns from managed logging, mining, and commercial agriculture. Communities inside and around the reserve benefit from some of the environmental services it provides, including climate moderation, clean water for drinking and agriculture, and soil conservation. For the state, SMBR is a place where sustainable development has a formal legal framework, and enjoys institutional support and local interest. The resulting balance is that most stakeholders, including the state, consider it in their best interest to use the SMBR's resources wisely and to support the reserve's conservation. Moreover, most social and economic

development organizations working in and around the SMBR acknowledge the need to incorporate conservation activities into their own programs.

At times, conflicts have arisen between individual landowners who want to exploit natural resources (such as timber) and the communities that would be affected by such activities. These conflicts represent a struggle between economic benefits for a minority of residents of the reserve and costs to a greater number of people. For example, almost immediately after the reserve was declared in 1990, a group of landowners in the core zone brought a suit before Guatemala's constitutional court to revoke the reserve declaration. They believed that the restrictions imposed on resource extraction violated an individual's right to use his property. The court ruled in favor of the reserve declaration, stating that the public benefits far outweighed the individual costs.

There is also evidence of emerging intergenerational conflicts over conservation and economic development objectives. For the most part, older reserve residents appear more likely to support conservation activities because they have seen extensive degradation during their lifetimes and have also already cleared enough land to satisfy their own subsistence needs. Younger generations have not witnessed degradation over time, and they generally need to find new lands on which they can establish their families.

SMBR and Conditions of Institutional Functioning

Impact on Biodiversity Conservation

In 1990, when the reserve was declared, deforestation was the main threat to its integrity. Contributing activities were rampant illegal logging, advance of the agricultural frontier, and forest fires. Documentation of the direct impact of Defensores' management on SMBR biodiversity conservation shows that the rate of deforestation attributable to agricultural expansion has decreased. A recent comparative analysis of satellite images of the advance of the agricultural frontier suggests that deforestation has been slowing in most of the watersheds, and eventually may be halted. A combined approach of conservation and sustainable development

has enabled Defensores, local authorities, and communities to stop large-scale illegal logging and slow the advance of the agricultural frontier.

Among the strategies contributing to this promising trend is cancellation of large-scale illegal logging operations, particularly in the core zone, and purchase of critical core tracts. Improved physical presence, through infrastructure and regular patrolling by reserve field staff, demarcation of reserve boundaries, and assistance to law enforcement agencies has also helped. In addition, Defensores has facilitated relocation of two communities within the reserve core area. The impact of this relocation on forest regeneration is apparent. To further slow the advance of the agricultural frontier, the reserve's administration is designing a program to support the process of land surveying and titling to communities already settled in the reserve. The assumption is that clear and secure land titles will offer an incentive for sustainable resource management and deter land invasions.

Forest fires continue to be a major problem on the dry, southern slope of the reserve. Although environmental education and other activities have been initiated, they cannot alone begin to resolve this enormous threat to the survival of the reserve's pine and oak forests. The good relationship Defensores has developed with such governmental agencies as INAB and with local communities has resulted in joint actions to fight both the seasonal forest fires and a bark-beetle pest that afflicts pines. Defensores has also started to study the issue of hunting, a major threat to the reserve's biodiversity, in order to develop a comprehensive strategy for its control and regulation.

For Defensores, skills development has been key to addressing the challenges of reserve management. Increasing the range of professionals within the organization, training personnel, and developing more integrated approaches to conservation and development have been a central focus. Another recent approach has been forging strategic alliances with institutions that have needed skills for better reserve management. For example, Defensores' agricultural extensionists have received training in sustainable and organic agriculture from Cosecha, a Honduran NGO that promotes soil conservation, and improved techniques from ALTERTEC, the Guatemalan

NGO. The Environmental Law and Sustainable Development Institute has held Defensores-organized workshops for regional and local reserve authorities.

Resource stewardship in the SMBR has been driven increasingly by adaptive management practices. An important step in that direction has been the effort to generate baseline information to monitor biodiversity impact and, in turn, support better management decisions. For socioeconomic baseline information, an extensive participatory diagnostic was carried out in 1993-1994 to determine local community practices and their perceptions of and relationship with the reserve's natural resources (Margoluis and Gálvez 1993). Based on this information, Defensores reviewed its strategy, priorities, and tools for community work. For example, that study documented the significant effect of radio programs and other communication measures in remote, rural indigenous communities. This led Defensores to redesign the content, timing, and media it uses to implement its communications strategy. The diagnostic also demonstrated the extensive use of medicinal and edible plants by rural families. Consequently, Defensores designed and carried out a project to identify and promote the most useful medicinal and edible plants.

Several assessments have been conducted to establish ecological and biological baselines to monitor the state of conservation of key species and ecosystems and to identify the respective threats to their conservation. These studies included a 1993 rapid ecological assessment, a 1995 comparison of the dynamics of the agricultural frontier over several years, and a detailed 1995-1996 study on the resplendent quetzal and its habitat. Based on these data and on land-tenure information, Defensores redesigned the dimensions of the reserve management zones, altering the core area in particular. Defensores submitted a proposal to CONAP, which ratified these modified zones as part of its 1997-2002 master plan. Another evidence of adaptive management has been Defensores' decision to adjust its geographic priorities and strategies to address threats after reviewing recently generated maps comparing the geographic distribution of programs and their effects on forest conservation.

Defensores has proven itself as an appropriate unit for reserve management, reducing conservation threats, and putting in place a firm strategy for conservation and development. By comparison, other conservation units administered by various government agencies are not being properly managed. Unlike many of Guatemala's public agencies, Defensores has been able to offer the necessary conditions to hire and retain a highly qualified professional staff, which has proven itself as the organization's most valuable asset (Soto 1998).

The institutional arrangement devised to manage the SMBR—once it became fully functional—would appear wholly adequate to this task, uniting the best of different worlds. The government agency is theoretically responsible for oversight to ensure that larger reserve goals are achieved, while carrying out only those functions that cannot be delegated, such as law enforcement and issuing natural resource extraction permits. The managing NGO is to act as an executive body in charge of implementation, allowing for a more effective execution than the national government could accomplish within its current capacity. The other major stakeholders, including local municipal authorities, landowners, and local communities, would be represented in an advisory committee, ensuring their input in major decisions and providing an opportunity to improve the accountability of the managing organization. In the case of the SMBR, even without a functional advisory committee, the remainder of this arrangement has proven more effective, both in terms of costs and accomplishments, than direct implementation by the national government.

Defensores has experienced few threats to its central authority as the organization responsible for overall SMBR management. Its staff members, however, have personally withstood serious threats almost since the organization was established. During times of crisis, numerous staff members have received death threats, as on one occasion when Defensores managed to stop an individual from illegally logging in the reserve. In that instance, the threat was later converted into reality when two Defensores field workers were ambushed and shot by associates of the logger. One field worker was left partially paralyzed and the other died about a year later, possibly as a result of the injuries he sustained in that attack.

Organizational Capacities to Exercise Rights and Responsibilities

Since its 1989 inception, CONAP has been slow to develop the capabilities it is supposed to demonstrate as umbrella agency of the protected areas system. These abilities should include strategic planning, fundraising, policymaking and regulatory skills, legal support, and monitoring and evaluation. CONAP has neither sufficient qualified personnel nor the infrastructure necessary to perform these functions. It has focused most of its efforts on developing implementation capabilities to manage the country's largest protected area, the Maya Biosphere Reserve, whose management it has not been able to delegate. However, under the leadership of a new executive secretary and based on the Institutional Modernization Plan developed in 1997-1998 (with support provided by the international NGO, The Nature Conservancy), it is hoped that soon CONAP will overcome its most acute capacity limitations.

As the SMBR's managing organization, Defensores has been able to develop institutional capacity for carrying out its functions. Its key asset is its people. Defensores possesses an imaginative, well-respected, and committed voluntary board, as well as a qualified and committed managerial, technical, administrative and field staff of 100. Staff members incorporate a wide range of disciplines, including management, engineering, and natural and social sciences specialties. This diversity has allowed Defensores to relate effectively on political, technical, and personal levels to a wide array of stakeholder groups according to their own needs, ranging from the highest levels of national government bureaucracy to illiterate rural populations. Defensores has also developed a clear and outspoken institutional strategy, an adaptable organizational structure, and effective management systems. In a data-scarce environment, it has had the capacity to generate information or engage others in generating it, and to adapt its management decisions according to new findings. From a financial viewpoint, since 1991, Defensores has had a small endowment fund. In 1997, it created another fund specifically for the SMBR and equivalent reserves. Defensores has maintained an excellent public image both in Guatemala and in the international environmental community.

Capabilities of landowners in the SMBR vary markedly, as do their levels of education. From the viewpoint of land stewardship, some are reasonably skilled at managing their properties. Others simply inherited their land and have never exercised any stewardship. Still others have acquired their land solely to extract its resources. Given their diversity of interests and their wide geographic distribution, landowners are not well organized and generally keep a low profile. One exception, as mentioned above, is a handful of loggers who are members of ASIMI and have consistently opposed the reserve's management regime. Owing to their aggressive tactics, these logging interests are not generally well regarded by most stakeholders.

Factors Affecting Institutional Functioning

Among the variety of factors that influence the institutional functioning of the reserve's administration, one major internal factor has been the strong commitment of Defensores' members to the mission of conserving biodiversity. SMBR is considered by Defensores as its main arena for putting this mission into practice.

Defensores controls the majority of SMBR's budget, since it also raises the funds to implement the programs in the operational and master plans approved by CONAP. Defensores has been only moderately successful in fundraising for its SMBR activities and still requires more funding to expand its operations into the entire reserve. In addition to funds received by donor organizations, Defensores has raised funds within Guatemala through its individual and corporate sponsors, and by publishing a calendar. To ensure its long-term financial sustainability, as mentioned above, Defensores established its own small endowment fund in 1991 and in 1997, created another endowment for the SMBR and other equivalent reserves. External funding for conservation and sustainable development activities has come, for the most part, from international NGOs, including The Nature Conservancy, World Wildlife Fund, Claiborne-Ortenberg Foundation, and MacArthur Foundation. Primary bilateral and multilateral donor organizations include the United States Agency for International Development (USAID), the European Community (EC), the Global Environmental Facility (GEF, through the United Nations Development Program), and the German Agency for Technical Cooperation (GTZ).

The SMBR has been fortunate in having international NGO and donor organizations contribute to its strengthening. Foreign partners generally have not exerted undue pressure or interfered with its programmatic priorities and processes. On the contrary, they have made invaluable material contributions while respecting the reserve's development process as laid out in the master plan. They usually try to identify, in conjunction with Defensores, a relevant program component to which to contribute. Given the broad range of SMBR activities, there are many options from which to choose. When a donor identifies a program component it favors, it signs an agreement with Defensores. This orderly process has developed largely through Defensores' authoritative leadership in coordinating master plan implementation, and its skill in maintaining a synergistic relationship with many partner organizations along diverse programmatic lines.

An important asset to conservation work in Guatemala is that environmental protection is often regarded as a noble cause that will benefit all people. Consequently, issues that otherwise would polarize a society just emerging from decades of civil strife, such as land use and tenure, have proven less controversial when approached from the environmental perspective. Political parties appear implicitly to agree not to make the environment a field of political contention. Moreover, the Guatemalan Peace Accords signed in late 1996 have greatly benefited the enabling environment for advancing environmental and development goals. The cessation of armed conflict has opened up the door for creating new forms of organization and institutional arrangements, and offers a setting for more equitable and effective resolution of conflicts.

Conclusions

The Sierra de las Minas Biosphere Reserve was established because of its global, national, regional, and local importance. By delegating the SMBR's management to the national NGO, Defensores de la Naturaleza, the Guatemalan government transferred most of the responsibility and authority for the reserve to Defensores. De facto, the national government also expects Defensores to raise most of the funds needed for managing the reserve.

The arrangement for reserve management was intended to assign distinctive and complementary roles to the government agency, the managing NGO, and key stakeholders. However, practice

has shown that the arrangement of NGO and governmental institutional responsibilities needs some clarification and redefinition. Notwithstanding its flaws, this first Guatemalan case of a public-private arrangement for protected area management by a national NGO has resulted in more efficient and responsive implementation, more effective stakeholder participation, and better governance than in those in which the country's protected areas are managed by government agencies.

For this national government-NGO partnership to remain both legitimate and functional, certain fundamental conditions must prevail over the long term. These include the following:

- ***The NGO should be able to remain independent within its partnership with the Government, and not act as parastatal organization.*** Two conditions are essential for this. First, the NGO must retain its financial independence. This means that, although the state should provide or raise a significant portion of the reserve's budget— ideally 50 percent— the NGO should develop capacity to raise the remaining portion in the short-term and to establish mechanisms for long-term financial sustainability. In the case of the SMBR, the government clearly has lagged in contributing its share. The second condition for a functional partnership is intellectual independence for the NGO. Perhaps the most important factor in this regard is having an independent NGO board. Defensores has a board of nine committed and capable voluntary members, well-known and respected business leaders, professionals and academics, who are personally and collectively capable of relating to the highest levels of national government. Members include the president of a major private university, several corporate CEOs, retired philanthropists, and a well-known journalist. Several Defensores board members are Rotarians. For eight years, under four national-government administrations, this roster has loaned Defensores the strength to evade or resist party pressures, government manipulation, and similar situations. The board has been able to ensure that the organization has remained faithful to its mission and its commitment to transparency. To increase its strength, the board should gradually incorporate more social and indigenous leaders to increase its representativeness and legitimacy. This could help ensure the long-

term organizational conditions necessary to manage the reserve adaptively for the conservation and sustainable use of its resources.

- ***The NGO must be able to maintain a strong constituency and public support for its activities.*** In the case of SMBR, this constituency refers mainly to local communities, townships, local and regional authorities, government agencies, and, to a lesser degree, landowners. It also signifies the general public, as addressed through the press. In critical moments, when economic and political interests have threatened the reserve and its resources, reserve constituents have actively supported reserve conservation.
- ***The NGO requires the ability to maintain a capable, diverse, and committed technical, administrative, and field team.*** Without a doubt, the personnel who carry out the NGO's work constitute its most valuable capital. In the field, they become the face of the NGO for the community and local stakeholders. Their personal and professional qualities—technical, organizational, and interpersonal skills—are key to ensuring programmatic effectiveness. To be able to attract and retain the best personnel, the NGO needs skilled management, appropriate policies and proceedings, an efficient administrative and financial support system, and above all, the incentives to ensure that staff members stay motivated and dedicated. This is a particularly important challenge as the organization is expanding to manage other areas, drawing on its successful experience in SMBR.
- ***The government must be willing and able to provide necessary law enforcement support.*** In the case of the SMBR, this means support of the police and the district attorney, CONAP, CONAMA, and other related agencies.

Regarding stakeholder participation, experiences of the SMBR and of some Guatemalan conservation areas delegated to NGOs suggest that NGOs have fewer constraints and are less defensive than central government agencies about including local stakeholders in conservation-related decisions. Interestingly, failing to include the key stakeholders in the reserve's formal decision-making, at least in the early stages, has proven not to be a critical issue for reserve development. In the short run, it evidently proved more important to develop a variety of formal and informal ways of keeping key stakeholders involved in direct resource management than to actualize the reserve's representative oversight board. Within Defensores, there is a clear

understanding of the fundamental long-term necessity to include representatives of key stakeholders in formal decision-making bodies for the reserve and its subsections. This will require Defensores to invest heavily in strengthening the capacities of local leaders, as well as in supporting new institutional arrangements. Expected benefits include development of a more committed local constituency that can provide improved ways to address local threats, thereby reducing Defensores' level of effort and resources invested in protecting and managing the reserve.

Strengthening local community groups and leaders is already having results. Increased environmental awareness and knowledge have been brought about by the Environmental Teachers' Association of Sierra de las Minas. Local communities are more willing to invest in concrete actions to protect resources, as demonstrated by several local groups who voluntarily help fight forest fires during the dry season. Defensores has also seen communities demonstrate an increased capacity to act collectively and share experiences and concerns regarding natural resource management. This is especially evident during the annual participatory evaluation and planning process, which is carried out locally and feeds into the overall operational plan of the reserve. During this critical process, community members assess their own performance and that of Defensores, setting goals and pledging commitments for the next year in such areas as soil conservation, reforestation and forest protection. This process is truly the communities' own endeavor and not simply an endorsement of Defensores' plan. Community members are the main implementers of those actions, which serve both their own interests and those of the reserve. These range from protecting water resources and conserving soil to improve crops and prevent erosion, to improving forestry practices, fighting forest fires, and preventing upstream land invasions. Significantly, the process of strengthening community groups for natural resource conservation is slow and complex. Its success depends on attending to a wide array of socioeconomic factors, including cultural background, current leadership, levels of education, land-tenure situation, sources of income, and political history. Past repression, or forced relocations, and even generation-long feuds and conflicts over land and family issues will all have an impact.

The decision made by the government of Guatemala in 1990 to delegate a protected area to NGO management for the first time has so far paid off for conservation. Successes achieved in the SMBR over the past several years have outweighed the failures, and the future appears promising. Moreover, this case has provided many valuable lessons about participation of civil society in protected area management. It has allowed observers to understand the many factors that influence a public-private institutional arrangement. Given this generally positive experience of sharing responsibility and authority, the Guatemalan government has broadened the model and applied it to other societal actors besides national NGOs, including municipalities and community groups. The central government's approach of entrusting protected area management to other groups still may be regarded as risky by more traditional managers and planners. Yet, over time, this approach may well prove to be Guatemala's best bet to conserve its extraordinary but rapidly dwindling biodiversity endowment.

References

- Dix, A.M. 1997. El Estado Actual de los Recursos Naturales en Guatemala. In *Informe de Desarrollo Humano para Guatemala*. Guatemala: PNUD.
- Dix, A.M. 1997. Sierra de las Minas Region and Biosphere Reserve, Guatemala. In *Centres of Plant Diversity, A Guide and Strategy for their Conservation*. Vol. 3, The Americas, eds. S.D. Davis, V. H. Heywood, O. Herrera-MacBryde, J. Villa-Lobos, and A.C. Hamilton, 193-197. Cambridge, UK: IUCN Publications.
- Jolom-Morales, M. R. 1997. *Caracterización de la Actividad de Cacería en la Reserva de la Biósfera Sierra de las Minas y Diseño de un Plan de Monitoreo*. Guatemala: Fundación Defensores de la Naturaleza.
- Lehnhoff, A., and O. Núñez. 1998. Guatemala: Sierra de las Minas Biosphere Reserve. In *Parks in Peril: People, Politics and Protected Areas*, eds. K. Brandon, K. Redford, and S. Sanderson, 107-141. Washington, D.C.: Island Press and The Nature Conservancy.
- Leonard, H. J. 1987. *Natural Resources and Economic Development in Guatemala*. New Brunswick: International Institute for Environment and Development and Transaction Books.
- Margoluis, R. and E. Gálvez. 1993. *Diagnóstico para la Integración Humana a la Reserva de la Biósfera Sierra de las Minas*. Guatemala City, Guatemala: Defensores de la Naturaleza.
- Nations, J., B. Houseal, I. Ponciano, S. Billy, J. C. Godoy, F. Castro, G. Miller, D. Rose, M.R. Rosa, and C. Azurdia. 1989. *Biodiversidad en Guatemala: Evaluación de la Diversidad Biológica y los Bosques Tropicales*. Washington, DC: Centro para el Desarrollo Internacional y Medio Ambiente, WRI/AID.
- Soto, S. M. 1998. Validación de la Metodología 'De Faria' diseñada para evaluar Efectividad de Manejo a Través de su Aplicación en Cuatro Areas Protegidas en Guatemala. Unpublished thesis, Instituto de Investigaciones Agronómicas, Facultad de Agronomía, Universidad de San Carlos, Guatemala.

Figures

Figure 1. Sierra de las Minas

About the Authors

Estuardo Secaira has served in various positions in Defensores de la Naturaleza between 1993 and 1998, most recently as Protected Areas Director. He has an M.S. in Conservation Biology from the University of Wisconsin and a B.A. in Agricultural Economics from the University of Florida.

Andreas Lehnhoff is the current Director of The Nature Conservancy's Guatemala Country Program. From 1991 to 1995, he was Executive Director of Defensores de la Naturaleza. Between 1989-1991, he served as the first Executive Secretary of Guatemala's National Protected Areas Council (CONAP), the country's protected areas agency. He has an M.A. in Environmental Economics and Policy from Duke University and a B.A. in Architecture from Rafael Landivar University in Guatemala.

Anne M. Dix is a Regional Environmental Advisor for USAID. At the time this document was written, Dr. Dix was Project and Research Coordinator at Defensores de la Naturaleza and Ecology Professor at the Universidad del Valle. She has a Ph.D. in Ecology from the University of Georgia.

Oscar Rojas is currently Protected Areas Director of Defensores de la Naturaleza, and he has also served in other positions within Defensores. Previously he worked with the NGO World Vision on community development projects in eastern Guatemala. He has an Engineering degree in Natural Resource Management from San Carlos University in Guatemala.

Citation

Please cite this publication as: Secaira, E., A. Lehnhoff, A. Dix, and O. Rojas. 2000. *Delegating protected area management to an NGO: The case of Guatemala's Sierra De Las Minas Biosphere Reserve*. A case study for *Shifting the power: Decentralization and biodiversity conservation*. Washington, D.C.: Biodiversity Support Program.

This is one of six BSP case studies undertaken as research for *Shifting the power: Decentralization and biodiversity conservation*. The full-length publication and the other five case studies can be viewed or ordered on BSP's Web site, at www.BSPonline.org.

About the Biodiversity Support Program

The Biodiversity Support Program (BSP) is a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute, funded by the United States Agency for International Development (USAID). BSP's mission is to promote conservation of the world's biological diversity. We believe that a healthy and secure living resource base is essential to meet the needs and aspirations of present and future generations. BSP began in 1988 and will close down in December 2001.

A Commitment to Learning

Our communications activities are designed to share what we are learning through our field and research activities. To accomplish this, we try to analyze both our successes and our failures. We hope our work will serve conservation practitioners as a catalyst for further discussion, learning, and action so that more biodiversity is conserved. Our communications programs include print publications, Web sites, presentations, and workshops.

Visiting BSP Web Sites

We invite you to visit our general and program-specific Web sites even after the program closes down.

Biodiversity Support Program
www.BSPonline.org

Biodiversity Conservation Network
www.BCNet.org

CARPE: Central African Regional Program for the Environment
<http://carpe.umd.edu/>

KEMALA: Supporting Indonesian NGOs for Community Based Natural Resource Management
<http://www.bsp-kemala.or.id/>

BSP Listserv

Through June 2001, you can receive e-mail updates about BSP through www.BSPonline.org. To join our listserv, click on stay informed and enter your e-mail address. We will keep you posted on project highlights, upcoming events, and our latest publications.

Ordering BSP Publications

Many of our print publications are now also available online at www.BSPonline.org. At the home page, click on publications. You can view publications online or order copies to be sent to you. You can view publications online or, through June 2001, order copies to be sent to you.

Contact BSP

For more information, to give us feedback, or to order copies of BSP publications, contact us.

Biodiversity Support Program
c/o World Wildlife Fund
1250 24th St. NW
Washington, DC 20037 USA

Phone: 202-861-8347
Fax: 202-861-8324
E-mail: BSP@wwfus.org
Web Site: www.BSPonline.org

Publication Credits

Authors:

Estuardo Secaira, Andreas
Lehnhoff, Anne Dix, and Oscar
Rojas

Editor:

Kate Christen

Publication Manager:

Susan Grevengoed

Copyediting/Production Editing:

Marilyn Bernbaum

BSP Director of Communications:

Sheila Donoghue

Director of BSP's Analysis and Adaptive Management Program:

Richard Margoluis

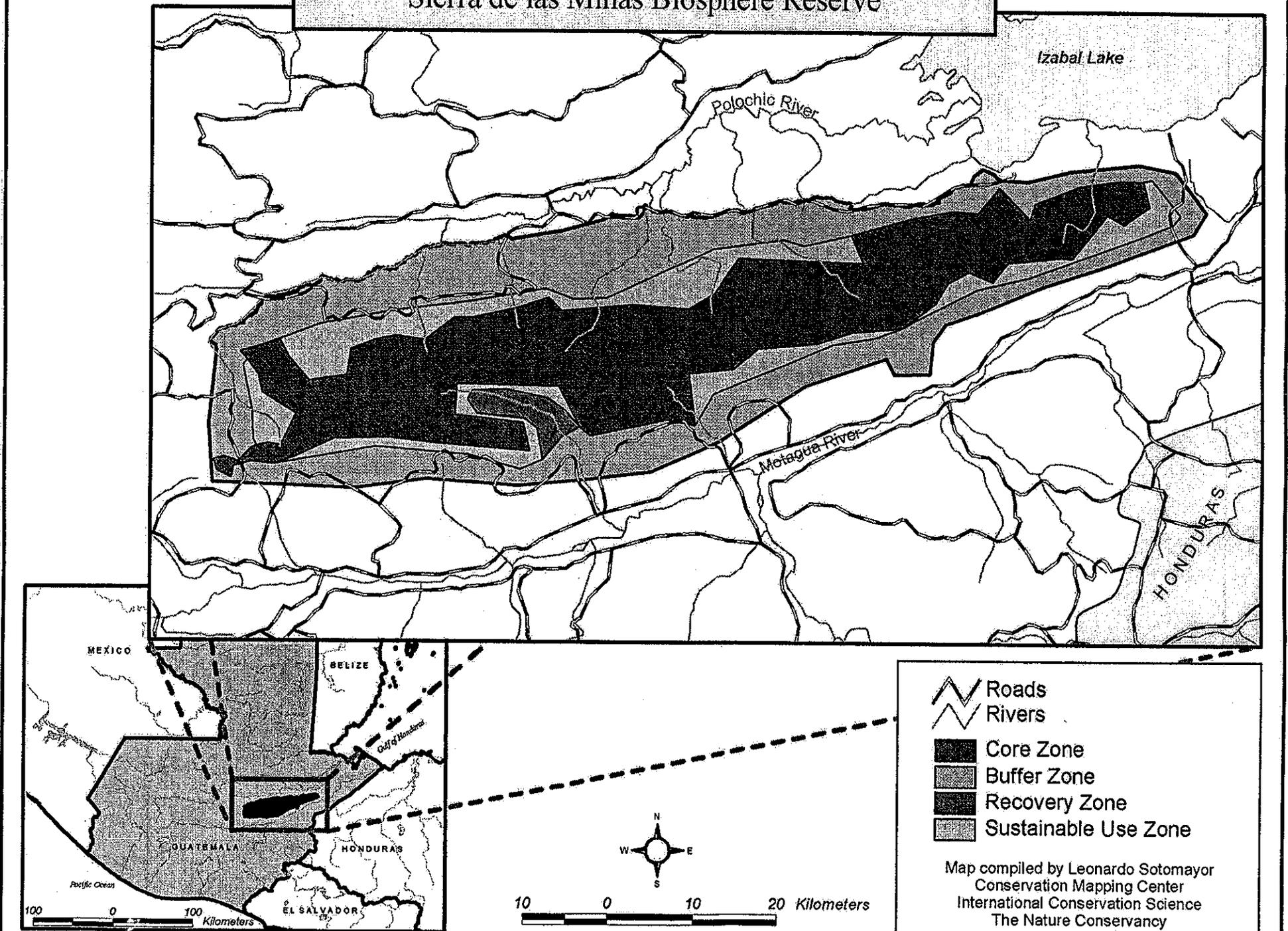
BSP Executive Director:

Judy Oglethorpe

The publication of this report was made possible through support provided to BSP by the Global Bureau of USAID, under the terms of Cooperative Agreement Number DHR-A-00-88-00044-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.

© 2000 by World Wildlife Fund, Inc., Washington D.C. All rights reserved. Reproduction of this publication for educational and other noncommercial purposes is authorized without prior permission of the copyright holder. However, WWF, Inc. does request advance written notification and appropriate acknowledgment. WWF, Inc. does not require payment for the noncommercial use of its published works and in no way intends to diminish use of WWF research and findings by means of copyright.

Sierra de las Minas Biosphere Reserve



39.