Governance Trends in Protected Areas

Experiences from the Parks in Peril Program in Latin America and the Caribbean

Ana Maria González V. and Angela Sue Martin

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Editing: Angela Martin

Design/Layout: Kristen Truitt

Cover Photo: Hikers in Amboro-Carrasco ©2006 Hernando Cabral

Production: Imaging Zone

Parks in Peril Program Director: James F. Rieger

Contributors to this publication: Felipe Carazo, Jorge Cardona, Ana María González, Jaime Fernandez, James Rieger, Julio Rodríguez.

Please cite this publication as:
Balloffet, N.M. and Martin, A.S. 2007. Governance Trends in Protected Areas: Experiences from the Parks in Peril Program in Latin America and the Caribbean. Parks in Peril Innovations in Conservation Series. Arlington, Virginia, USA: The Nature Conservancy.

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID) through the Award No EDG-A-00-01-00023-00 for the Parks in Peril Program. The contents are the responsibility of The Nature Conservancy and do not necessarily reflect the views of USAID or the United States Government.

For further information on the Parks in Peril Program, please visit
www.parksinperil.org

Parks in Peril Program
The Nature Conservancy
4245 N. Fairfax Drive, Suite 100
Arlington, VA 22203-1606 USA
Tel: +1-703-841-5300
Fax: +1-703-524-0296
www.parksinperil.org
www.parquesenpeligro.org

Foreword

The Parks in Peril (PiP) Program began in 1990 as the U.S. Agency for International Development's and The Nature Conservancy's urgent effort to safeguard the most imperiled natural ecosystems, ecological communities, and species in the Latin America and Caribbean region. A partnership among the U.S. Agency for International Development (USAID), The Nature Conservancy (TNC), and governmental and non-governmental organizations throughout Latin America and the Caribbean, over time PiP evolved through three distinct phases until 2007, adapting to changing needs and priorities in the region and promoting an advancing strategy to conserve increasing amounts of biodiversity. For 17 years, the program operated in threatened national parks and reserves of global biological significance, seeking to conserve these critically important ecosystems by building local institutional capacity for site management. USAID – both the Latin American and Caribbean Regional Bureau in Washington, as well as individual Missions – invested more than $77 million in the program; with TNC and partner match, the total that flowed through PiP was more than $104 million. PiP activities also resulted in indirect leverage – funding attracted by sites and partners strengthened by PiP, or complementing PiP investment – of more than $450 million.

PiP has become well known for its success in transforming "paper parks" into functional protected areas through what is called "site consolidation" – the process of consolidating the infrastructure, staff, tools, institutional and technical capacity, and financing necessary to protect and manage protected areas, and to ensure their management can respond to threats that may arise in the future. PiP has consolidated 45 protected areas in 18 countries, totaling more than 18 million hectares. Through Multi-Site and Alliance Strategies developed during the third phase of PiP (2002-07), PiP changed the way entire systems of protected areas are managed, bringing together multi-institutional alliances to collaborate on significant conservation challenges. Nearly all the achievements of Parks in Peril have depended vitally on the diligence, insight, and ingenuity of the staff of PiP's countless partner organizations in the countries where PiP worked.

As part of the process of closing "PiP 2000 – A Partnership for the Americas," USAID, TNC, and partner staff described the program's seminal thematic achievements in the Parks in Peril Innovations in Conservation Series. The series includes bulletins, which provide a quick survey of a topic and PiP's contributions, as well as publications, which provide a much more thorough treatment of each topic for an audience interested in greater detail. The other bulletins and publications of the Innovations in Conservation Series, as well as PiP's End-of-Project Reports and about 700 other publications of the Parks in Peril program, may be found on the final PiP DVD (published in March, 2008) and on the Parks in Peril website, www.parksinperil.org. Added to the capacity for science-based conservation and participatory management that PiP fostered in the region, these publications constitute an indelible legacy – a foundation for future conservation and development in Latin America and the Caribbean.

Jim Rieger, Ph.D.
Director, Parks in Peril Program

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Abstract

Governance is emerging as a key concept in protected areas management. Governance is about who is making decisions regarding the management of protected areas and how those decisions are being made between the government, private sector and civil society. In a classic model of protected area governance, the government is likely the main or only actor making decisions about governing the area, primarily because it has the tools to do so. A broader view of governance incorporates into the management of the area diverse actors, such as private landholders and communities living close to the protected area as well as those receiving benefits from the area (e.g. water). The quality and type of governance (whether management is by government, shared, private or the community), is seen as a key to increasing the ecological connectivity across landscapes, facilitating greater participation of civil society in protected areas management, and enhancing the long-term sustainability of protected areas.

This document provides an overview of the current concepts in protected areas governance, outlines the governance element of the Convention on Biological Diversity's (CBD) Programme of Work on Protected Areas, and examines examples and lessons learned about governance in protected areas supported by the Parks in Peril (PiP) program throughout Latin America and the Caribbean.

The governance structures within the protected areas in the PiP program are as diverse and complicated as the protected areas themselves. It is clear that governance affects the management effectiveness of a protected area, and ultimately whether the area meets its conservation objectives. While most of the PiP sites are officially government-managed, there appears to be a trend towards shared governance structures that involve the participation of numerous stakeholders and collaborative decision-making models. However, there is no "best fit" governance model for sites within the program. Each site must take into account complex socio-economic, political, institutional and ecological processes when determining the most appropriate governance model. Countries will likely need to employ a variety of governance structures in order to fulfill their commitments to the CBD. The authors propose some practical steps in identifying, developing and implementing an appropriate protected area governance structure based on the literature and the experiences seen in the PiP case studies.

1. Introduction

Governance is emerging as a key variable in biodiversity conservation and specifically within protected areas management (Ervin, 2007). At the World Conservation Union's (IUCN) 5th World Parks Congress in Durban, South Africa in 2003, governance was recognized as an important factor for achieving the environmental, as well as the social objectives of protected areas[1].

> *The degree to which protected areas meet conservation objectives, contribute to the well-being of society and achieve broad social, economic and environmental goals is closely related to the quality of their governance. Thus, protected areas are relevant, benefit society-at-large, and are a legacy to future generations (WCPA, 2003, p. 175).*

The establishment of protected areas has been a primary strategy for protecting earth's biodiversity. Protected areas now account for more than 12% of the earth's surface (of this, less than 1% are marine protected areas) (Chape, Blyth, Fish, Fox & Spalding, 2003). Yet, it has been suggested that the design, comprehensiveness and, the management of many protected areas are insufficient to protect fully their biodiversity for the long term (CBD, 2004; Dudley et al., 2005; Ervin, 2006).

In addition to biodiversity conservation, many protected areas also strive to incorporate other interests, such as sustainable development, recreation, and cultural heritage preservation. This is particularly the case of protected areas where people live within or alongside the borders, or protected areas that fall under IV – VI (and in some cases II and III) of the IUCN classification system[2]. However, there is concern that protected areas management does not adequately include those who are most affected by protected areas, such as communities residing within or near the area. Yet, it is also recognized that local communities may play a pivotal role in the sustainability of the protected area (Borrini-Feyerabend, Kothari & Oviedo 2004).

Protected areas governance incorporates both biodiversity and social concerns by addressing the what, why, how, and by whom of protected areas management. Essentially: What is the area being protected (what is the context? e.g. are there people living there?); Why is the area being conserved (what are its conservation objectives? e.g. species or watershed protection or a cultural feature); How is an area being conserved (e.g. by strict protection or through sustainable development practices); and by whom is it being protected or managed (by the government, by a consortium of stakeholders, or by a community).

This document provides an overview of the current concepts in protected areas governance, outlines the governance element of the Convention on Biological Diversity's Programme of Work on Protected Areas, and draws on examples and lessons learned about governance in protected areas supported by the Parks in Peril (PiP) program throughout Latin America and the Caribbean.

1.1 WHAT IS PROTECTED AREAS GOVERNANCE?

In Governance Principles for Protected Areas in the 21st Century, Graham, Amos and Plumptre (2003) define governance as:

> "*...the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say*[3]. Fundamentally, it is about power, relationships and accountability: who has influence, who decides, and how decision-makers are held accountable."

Borrini-Feyerabend, Johnston and Pansky further clarify the distinction between protected area management and governance by explaining (2006), "*Management is about what is done about a particular site or situation, governance addresses who makes those decisions and how.*" (p. 116).

Governance is also about the interaction between the government, private sector and civil society (Borrini-Feyerabend, et al., 2006). In a classic model of protected area governance the government was likely the main or only actor making decisions about governing the area. A broader view of governance incorporates diverse actors, such as private landholders and communities living close to the protected area and those receiving benefits from the area (e.g. water) into the management of the area.

The quality and type of governance in protected areas is recognized as being important for increasing the ecological connectivity across landscapes, facilitating greater participation of civil society in protected areas management and enhancing the long-term sustainability of protected areas (Ervin, 2007; Borrini-Feyerbend, 2007).

1.2 GOVERNANCE PRINCIPLES

Good governance of protected areas has several principal characteristics, outlined below, which were derived from principles of good governance from the United Nations Development Programme (UNDP) (Graham, et al., 2003; Ervin, 2007; Borrini-Feyerabend, et al., 2006).

Upholding the above principles is the cornerstone of good governance of protected areas. While these principles represent an ideal few protected areas have achieved, they represent important goals, which strengthen protected areas management.

1.3 TYPES OF GOVERNANCE STRUCTURES IN PROTECTED AREAS

To broaden the general concept of protected areas governance and in order to incorporate the principles of good governance into protected areas management, experts have divided governance structures into four main categories (Borrini-Feyerabend, 2007):

- State governance
- Shared governance
- Private governance
- Community governance

Figure 1 indicates that there is a continuum with regard to decision-making and participation among the categories of protected areas. Given the complexity of most protected areas, one type of governance structure may contain governance elements generally found in another structure. For example, Chagres National Park is a government-designated and managed protected area in Panama that falls in the middle of the spectrum as a result of its shared or collaborative governance structure. While the government (Autoridad Nacional del Medio Ambiente) has governance and management responsibility for the Park, there is an advisory management committee for the Park, which includes other governmental agencies, NGOs, and community leaders.

Table 1: Principles of good governance

Five Good Governance Principles	Description[4]
Legitimacy and Voice	in protected area management, particularly the level of participation and the degree of consensus in decision making.
Leadership and Direction	of protected area managers and policy makers, including strategic vision and clear direction based on the ecological, historical and socio-cultural complexities of protected areas.
Performance	of protected area management, including responsiveness, efficiency, and efficacy.
Accountability	of the protected area management to local communities, the public and other key stakeholders, including transparency of decision making.
Fairness	in decision making in protected areas management, including equitable benefits sharing among key stakeholders, and application of the rule of law.

Figure 1: Protected areas governance types and range of decision-making characteristics. *(Adapted from Borrini-Feyerabend, et al., 2004)*

Type A: state governance		**Type B: shared governance**		**Type C & D: private & community governance**	
Authority & responsibility by government through federal, national or sub-national agency		Authority & responsibility shared between governmental agencies and other entitled actors		Authority & responsibility by landowners or communities with customary rights	
←					→
enforce rules and suppress violations	inform and/or consult about management decisions	seek consensus, also through benefit sharing	negotiate (involve in decision making) & develop specific agreements	formally share authority & responsibility (e.g. via seats on a board)	recognize full private or customary rights & assist in management

1.4 SUSTAINABLE FUNDING AND GOVERNANCE

Sufficient and reliable funding is a fundamental component of effective management and good governance within protected areas. Adequate funding allows for activities that strengthen governance, such as administrative and technical capacity building within protected area staff and community organizations, holding participatory meetings with stakeholders, and long-term planning that emphasizes transparent decision-making. The United Nations Environment Programme (UNEP) emphasized that, "*stable, predictable and adequate funding is a prerequisite for improved governance and should constitute a central aspect of deliberations on improving international environmental governance*," (UNEP, 2001). In a global survey of protected areas managers from 45 countries conducted by Dearden, Bennett and Johnston in 2002, managers listed "*involving and cooperating with stakeholder groups*" and "*obtaining adequate funding*" as the top two challenges to achieving effective protected areas governance (2005, p.97).

Funding and governance are closely linked: governance may improve as a result of adequate and dependable funding and improved governance may also serve to generate increased funding for a protected area (Dearden, et al., 2005). In addition, the public, governmental agencies, and in many cases, donors are holding managers of protected areas responsible both financially and for achieving conservation results. Protected areas are held accountable through various mechanisms including legally mandated annual reports, project-reports to donors, external audits, public meetings and advisory committees (Dearden, et al., 2005). These mechanisms have increased the public's knowledge of the management of protected areas, the transparency of decision-making, and in many cases strengthened the administrative management of the area. Strengthening the governance of an area, through increased accountability, may allow for more diverse funding sources, such as user fees and payment for ecological services, as well as external donors and payments from financial mechanisms such as debt swaps. Sustainable and transparent funding are critical features of protected areas governance that not only contribute to improved governance, but also result from improved governance. Therefore, for protected areas to achieve their social and ecological goals, it is important to address the financial as well as the social aspects of protected areas governance.

1.5 WHY IS GOVERNANCE IMPORTANT FOR PROTECTED AREAS?

Protected areas are a principal strategy for biodiversity conservation, yet they are only effective if they achieve their conservation objectives. Effective management is a key part of achieving those conservation objectives. Governance contributes to the overall effectiveness and sustainability of the area. According to Borrini-Feyerabend, et al. (2006) "*The governance setting of the protected area determines whether the protected area achieves its management objectives (is it effective?), is it able to share fairly the relevant benefits and costs[5] (is it equitable?), and whether it has the support of local communities, politicians, and the broader society (is it sustainable?)*" (p.117).

While some protected areas do not have local communities in their vicinity, many, particularly

in Latin America and the Caribbean, have people living inside or in the area immediately surrounding the protected area. Often this produces a conflict between protected areas managers and local populations. In addition, it is recognized that few protected areas in Latin America and the Caribbean have sufficient resources (financial, human and political) to uphold the strict state governance model of exclusion, patrolling, and enforcement. It is in these areas where evaluating governance options can be particularly beneficial. For example, in Amboró National Park in Bolivia, the management categories were modified in 1991 from strict protection throughout the entire park to include a core area (management category II) and a multiple use zone (category IV) in order to accommodate the human settlements already living there. This strategy appears to have improved relations with local communities and has put Amboró on the path towards greater sustainability and conservation of its core area than when the entirety of it was under strict protection (Parkswatch 2007).

While the state may have official responsibility for a protected area, there are often differences between the official or *de jure* and the *de facto* governance of the area (Borrini-Feyerabend, et al., 2006). For example, in the Rio Plátano Biosphere Reserve in Honduras, the government is officially in charge of the Reserve. However, as of 2005, the northern part of the reserve had only one governmental representative (NGO-MOPAWI, personal communication). In practice, the reserve is a complex web of mostly untitled private and indigenous communal lands with an assortment of actors engaged in governance of the area, including NGOs, indigenous leaders, new colonists, and others. Recognizing this context and developing inter-related governance structures that take this diversity into account can help improve overall management of the reserve.

Different types of governance structures, such as management committees and community-conserved areas, that allow communities to participate in decision-making processes or manage an area or resource, can improve the management and conservation status of the park. Therefore, it is important to recognize the diversity of actors and governance options within a protected area so that the most effective governance and management structures can be developed.

1.6 GOVERNANCE AND THE PROGRAMME OF WORK ON PROTECTED AREAS

The Convention on Biological Diversity (CBD) notes that "protected areas are a vital contribution to the conservation of the world's natural and cultural resources" (CBD, 2007). As such, at the seventh meeting of the Conference of the Parties (CoP7) to the Convention on Biological Diversity in 2004, CBD developed the "Programme of Work on Protected Areas." The overall purpose of this ambitious program is to support, by 2010 for terrestrial and 2012 for marine areas, the "establishment and maintenance of comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas" (CBD, 2004).

In order to achieve this, CBD outlined goals, targets and suggested activities, which fall into four main categories (Dudley et al., 2005; CBD, 2004):

- Direct Actions for planning, selecting, establishing, strengthening and managing protected area systems and sites.
- Governance, participation, equity and benefit sharing.
- Enabling activities.
- Standards, assessment and monitoring.

While the principles of good governance, diverse governance structures and the importance of local participation are found throughout all the elements, the CBD expressly recognized the importance of governance for effective protected areas management by designating *Governance, participation, equity and benefit sharing* as one of the four principal elements. There are two main goals of this element: 1) To promote equity and benefit sharing and 2) To enhance and secure involvement of indigenous and local communities and relevant stakeholders (CBD, 2004).

To achieve these goals, the CBD suggests that parties legally recognize a diverse set of gover-

nance types in coordination with their potential to enhance biodiversity conservation. The CBD places particular emphasis on the need to go beyond state-managed protected areas and to recognize and support private protected areas and indigenous or community-conserved areas.

This document provides examples, characteristics and lessons learned from specific protected areas within Latin America and the Caribbean, which are in the process of modifying the governance of the particular area to more fully reflect the socio-cultural context of the area, in order to more effectively conserve the biodiversity of the area.

2. Governance lessons in the Parks in Peril experience

The majority of the 45 protected areas within the PiP program are officially state-governed areas. In fact, in the early years of the program, that was a criterion for inclusion in the PiP program. However, while legally many are considered to be state-governed, in practice most of the protected areas have a much more nuanced governance structure and may contain elements of multiple governance types (state, shared, private and community-conserved). As part of the PiP approach to site consolidation[6], the program has focused on building a supportive local constituency for protected areas, in part by strengthening protected area governance. This was done by bolstering existing governance structures and increasing the opportunities for civil society to participate in protected area governance by expanding the definition of roles and responsibilities within the current legal, cultural and organizational framework.

Strengthening civil society's participation in protected areas governance can be a slow process. For some protected areas, it can take years of building trust and capacity among the various actors involved in governing the area before a shift of power and decision-making can occur. In other cases, policies must be developed that administratively and legally enable this shift to happen. The following nine

Figure 2: PIP Sites and IUCN governance types and management categories

Of the 45 protected areas PiP has worked in since 1991, the majority are designated category II or category VI. Therefore, categories III – V are not represented by PiP sites in the table. Also, TNC does not work with corporate-owned areas.

Protected Area Type: IUCN Category (Management Objective)	IUCN Governance Types									
	A.State-Governed Protected Areas			B. Protected Areas with Shared Governance		C. Private Protected Areas			D. Community Conserved Areas	
	Federal or National Ministry or Agency in Charge	Local/Municipal Ministry or Agency in Charge	Governmet-delegated management (to an NGO)	Transboundary Management	Collaborative Management (Various Pluralist Influences & Structures)	Declared and Run by land owner	Declared and Run by non-profit organizations (NGOs, Universties)	Declared and Run by for Profit Organizations (corporate landowners)	Declared and Run by Indigenous Peoples	Declared and Run by Local Communities
I. Strict nature reserve or wilderness area										
II. Ecosystem conservation & protection				Amistad, Costa Rica & Panama	Chagres, Panama					Pacaya-Samiria, Peru
III. Natural Monument										
IV. Conservation through active Management										
V.Landscape / Seascape Conservation & Recreation										
VI. Sustainable Use of Natural Resources	Cockpit Country, Jamaica	Atitlan, Guatemala	Sierra de las Minas/ Bocas del Polochic / Motagua, Guatemala			Condor, Ecuador	Mbaracayu, Paraguay		Bosawas, Nicaragua	

examples, arranged according to governance type and management category, are explored in more detail in the subsequent section and illustrate the PiP experience with strengthening the governance of protected areas throughout Latin America and the Caribbean. While there are no cut-and-paste templates for strengthening protected areas governance, the protected areas featured in this document provide examples for meeting the governance element of the CBD's Programme of Work on Protected Areas, within each area's unique legal, cultural, organizational and ecological context.

2.1 STATE GOVERNANCE

State governance is the most common form of protected areas governance in Latin America and the Caribbean. While the traditional model of state governance emphasized control and protection, within state-governed protected areas, new approaches have been developed which seek to increase participation by local people in the management of the area. Additionally, the increased emphasis on decentralization, and more specifically the decentralization of natural resources management, has enabled more local governments to become involved with governing protected areas. Many national agencies within Latin America and the Caribbean have delegated protected areas management to NGO's and indigenous groups.

"The main task of the Parks in Peril project is to establish alliances between civil society or communities, and governments."

—Felipe Carazo, Parks in Peril Amistad Site Manager.

In many cases, it can be argued that the national protected areas system ministry or agency is the most efficient and most appropriate entity to manage a protected area. In areas that have been owned by the state for a long period of time (100 years or more), state governance is usually the most appropriate form of governance (Dudley & Borrini-Feyerabend, n.d.) This is also true in cases of national patrimony or areas that are part of natural cultural identity. For example, in the case of Tikal National Park in Guatemala, which is located within the Maya Biosphere

Government-delegated management to Bolivian NGOs

Bolivia was one of the first countries in South America to establish government-delegated management agreements, agreements with the private sector and civil society (PiP 2007a). Beginning in the early nineties, the government delegated management of seven protected areas to several national NGOs, Indigenous organizations, an international NGO and an academic institution (Oetting, 2006; Mason et. al., 2004). Called co-management agreements, these provide a legal basis for shared responsibility for protected areas management (PiP 2007a). The Nature Conservancy (TNC), through the Parks in Peril program, supported the efforts of two national NGOs at three of those protected areas.

In 1995, Fundación Amigos de la Naturaleza (FAN) signed a ten-year co-management agreement for with the Bolivian Directorate for Biodiversity (DGB), which later was overseen by the newly created National Protected Areas Service (SERNAP), for Noel Kempff Mercado National Park. The agreement concluded in 2005 and FAN declined to renew the agreement, but remains deeply involved with the park and continues to execute specific projects within Noel Kempff, such as community development and a carbon-sequestration project (FAN, 2007b). FAN was also responsible for co-administering Amboró National Park from 1991 until SERNAP re-assumed management authority for the park in 1995 (FAN, 2007a, Parkswatch, 2007). In 1997, Protección Medio Ambiente Tarija (PROMETA) signed a five-year co-management agreement for Tariquía Flora and Fauna Reserve. In 2003, PROMETA declined to renew the agreement, but continues to implement conservation and sustainable development projects in the Reserve.

While the co-management agreements in the above-mentioned protected areas were not renewed, other co-management agreements in Bolivia have persisted. The Parks in Peril program supported an evaluation of the private/public co-management agreements in Bolivia to ascertain whether these agreements have contributed to biodiversity protection and to document lessons learned. The evaluation concluded that co-management in Bolivia has been a positive experience and does benefit biodiversity protection as a result of increased park personnel, technical capacity, funding, and local community participation as compared to protected areas managed directly by the government (PiP 2007a). However, the evaluation also suggested that for co-management agreements to be successful and sustainable, SERNAP should consider co-managers as equal decision-making partners and strengthen its funding capacity (PiP 2007a; Oetting, 2006). In addition, successful co-managers needed to be committed to and possess the capacity to carry out the protected area's management goals. Finally the report determined that overarching mechanisms that improve communication, generate broad participation and support adaptive management are critical for successful co-management by public and private institutions (PiP 2007a, PiP 2007b).

Reserve, the government manages the park through two government agencies, the Instituto de Antropologia e Historia de Guatemala (IDAEH) and the Consejo Nacional de Areas Protegidas (CONAP). The ancient Maya temples found within the park are an important source of cultural identity for all of Guatemala. However, in some cases, state governance may fall short with respect to stakeholder and local populace participation, buy-in, and influence in decision-making.

In table 2, three types of State Governance are investigated through case studies from three protected areas in the PiP program.

Table 2: Comparison of key issues among three types of state-governed protected areas

Key Issues[7]	1. Central Government Agency	2. Local or Municipal Government	3. Government-delegated management (e.g. to NGO)[8]
Name of Protected Area	Cockpit Country Forest Reserve	Lake Atitlán Watershed Multiple Use Protected Area (LAWMUPA)	Sierra de las Minas Biosphere Reserve (SMBR); Bocas del Polochic Wildlife Reserve (BPWR); Motagua Valley Thorn Scrub (MV) (not officially designated PA)
Principal Observed Characteristics of Governance Sub-type	Central government owns and has ultimate management authority for PA[9]. Central government/agency may manage regional agency branches.	Management authority for PA is decentralized[10] to local or municipal government. Land may be owned by central government or by local or municipal government.	Central government delegates management authority to NGO or other private entity, while retaining ownership of land. There may be a hybrid situation where an NGO owns a parcel of land within larger government owned PA.
Country	Jamaica	Guatemala	Guatemala
IUCN Category (Management Objective)	VI	VI	VI
Primary Ecoregion[11]	Jamaican Moist Forests	Sierra Madre de Chiapas Moist Broadleaf Forests	Central American Pine Oak and Montane Forests, Motagua Valley Thornscrub
PiP Project Timeframe	PiP 2002-2007	PiP 2002-2007	PiP 2002-2007; Sierra de las Minas only; PiP 1995-1999
Size of Protected Area[12] / Conservation Unit[13]	22,327 ha / (45,000 ha in conservation unit)	62,500 ha / (130,000 ha in conservation unit)	SMBR 240,803 ha; BPWR 20,760 ha; MV 900 ha / (440,000 ha in conservation unit)
Site Overview	The Forestry Department is re-inventing its approach to forestry management by incorporating participatory management practices, such as the formation of Local Forest Management Committees.[14]	Five municipal governments in the Department of Sololá have created municipal parks on land owned by the municipalities of San Pedro, San Juan, Santa Clara, San Marcos and San Lucas Tolimán.[15]	Management of SMBR was delegated to the Fundación Defensores de la Naturaleza (Defensores) in 1990 upon designation of the reserve as a protected area.[16,17]
Official Management Authority	Central government: Jamaica Forestry Department	The municipalities are the primary authority for the municipal protected areas. CONAP provides some management oversight. Other land in this site is managed privately.	Defensores and the national protected areas authority, Consejo Nacional de Areas Protegidas (CONAP)

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Land Tenure: State, regional, municipal, private, or communal?	Mainly state-owned, also private and communal lands in periphery.	Most land is municipal or communal or private. Little or no central government-owned lands.	Mainly state-owned. Some lands owned by Defensores, private and communal landholders. Insecure land tenure, especially in Polochic watershed.
People-Nature Interaction: Present & generally positive with regard to biodiversity conservation?	Mixed. Bauxite mining poses a threat. Agricultural practices and resource overexploitation.	Yes and generally positive.	Mixed results with regard to biodiversity conservation.
Environmental Services: Area provides environmental services to specific communities?	Yes. Water, soil, eco-tourism, forestry, biodiversity.	Yes. Water, soil, forestry, eco-tourism, biodiversity.	Yes, Water, soil, forestry, eco-tourism, biodiversity.
Social Values: Area at the basis of economic livelihood of local communities? Extractive or non-extractive (e.g. tourism)?	Yes. Extractive and non-extractive.	Yes. Extractive and non-extractive.	Yes. Extractive and non-extractive.
Traditional Occupancy: Area comprised of traditional settlements?	Yes. Maroon indigenous communities in periphery of the reserve.	Yes. 94% indigenous of Maya origin, including Tz'utujil, Kaqchikel and K'iche' linguistic groups.	No, not in core part of SMBR. Northern part of SMBR and BPWR experiencing recent migration.
Sacred and Cultural Values: Area with sacred or culturally valuable sites that are regularly visited, not visited or not present?	Yes. Maroon township considered culturally valuable site and permanently occupied.	Yes. Regularly visited sacred and culturally valuable sites.	Yes. Culturally valuable sites, especially in MV.
Relation to Cultural Identity: Area crucial for the cultural identity of the country (national patrimony), families (family patrimony), local communities (community patrimony), or indigenous people (indigenous patrimony)?	Yes. Site is crucial for national, family, community and indigenous patrimony.	Yes. Site is crucial for national, family, community and indigenous patrimony.	Yes. Site is crucial for national, family, community and indigenous patrimony.

Table 2: Comparison of key issues among three types of state-governed protected areas			
Key Issues[7]	**1. Central Government Agency**	**2. Local or Municipal Government**	**3. Government-delegated management (e.g. to NGO)[8]**
Name of Protected Area	Cockpit Country Forest Reserve	Lake Atitlán Watershed Multiple Use Protected Area (LAWMUPA)	Sierra de las Minas Biosphere Reserve (SMBR); Bocas del Polochic Wildlife Reserve (BPWR); Motagua Valley Thorn Scrub (MV) (not officially designated PA)
Integration in the Landscape/Seascape: Area well-integrated into the surrounding landscape	Mixed. Some incompatible land uses (Bauxite mining, land conversion).	Mixed. Some incompatible land uses (Fire, uncontrolled tourism, land conversion).	Mixed. Some incompatible land uses (Fire, settlements).
Interest in Management: Strong interest among many, some, or few stakeholder groups?	Interest among some groups.	Strong interest among many groups.	Some. Interest among some groups.
Public Consultation / Involvement Guaranteed by Law?	Yes. LFMCs mandated by law.	1996 Peace Accords mandate strengthening of local government and civil society and opportunities for public participation.	1996 Peace Accords mandate strengthening of local government and civil society and opportunities for public participation.
Sustainable Funding Mechanism in Place?[18]	Yes. US $16M debt swap (2004) will create endowment fund and provide support conservation, forestry and sustainable development projects, accessed through LFMCs.	Yes. US $24M debt swap (2006) will provide a portion of funding to Atitlán & other sites in western highlands. Government forestry & Conservation subsidies (PINFOR[19]) will provide $250K over next five years to municipal PAs.	Yes. US $24M debt swap (2006) will provide a portion of funding to SMBR/BPWR/MV conservation unit & other sites. PINFOR subsidies will provide $200K over next five years for site. A water fund is also being developed by Defensores.

"This project has succeeded in getting some authorities to take us into account and has enabled us to be known outside of Chagres National Park, however this is just the beginning; we need the communities to be aware of the need for conservation, the importance of hydrological sources and the conservation of natural resources, and it is also important for them to be organized in groups for the communities to develop.

—Cristina Ortega, President, Management Committee Region 3, Community Association for the Participatory Management of Chagres National Park, or ACOCHA by its Spanish acronym. (Panama)

2.2 SHARED GOVERNANCE

Shared governance is a relatively new concept in protected areas management, but one that is becoming more important as legislation or policies increasingly require managers to include local stakeholders in protected areas management. Dearden, et al. (2005) note that in the last ten years, participatory management has become much more prevalent in protected areas. In addition, the CBD's Programme of Work on Protected Areas emphasizes the importance of establishing and strengthening transboundary protected areas (goal 1.3) and creating highly participatory protected areas planning and management processes (goals 1.4.1, 2.1 and 2.2) (CBD, 2004). Protected areas that span two (or more) countries, necessitate a shared governance structure or mechanism for

joint management. Other protected areas may have very complex and at times conflictive social contexts, which benefit from management committees and other participatory governance mechanisms that represent multiple interests and influence decision-making. The effectiveness of shared governance, in terms of the actual participation of civil society in decision-making may vary considerably, from simply holding participatory meetings with the public, to consensus-based management boards composed of stakeholder representatives.

Table 3 illustrates characteristics of the Shared Governance type through two sub-types: Transboundary Governance and Collaborative Management.

Table 3: Comparison of key issues between two types of shared governance

Key Issues	Transboundary Governance	Collaborative Governance
Name of Protected Area	La Amistad International Park	Chagres National Park
Principal Observed Characteristics of Governance Sub-type	Multi-stakeholder management PA crosses a geopolitical border. Generally across international boundaries, but may have similar elements between different states or provinces within a country.	A multitude of stakeholders share management authority and responsibility. May involve multi-stakeholder body, which presents recommendations to decision-making authority. Multi-stakeholders may hold seats on and make decisions on a formal board .
Country	Costa Rica & Panama	Panama
IUCN Category (Management Objective)	II	II
Primary Ecoregion	Talamanca Montane Forest, Isthmian Atlantic and Pacific Moist Forest	Isthmian Atlantic Moist Forests
PiP Project Timeframe	PiP 2001-2007	PiP 2001-2007
Size of Protected Area / Conservation Unit	Roughly 584,000 ha in Costa Rica and 655,000 ha in Panama (1.2M ha in conservation unit)	129,585 ha (130,585 ha in conservation unit)
Overview	Complex transboundary site has developed a Binational management committee to coordinate management of this World Heritage site.[21] Site is composed of four administrative units, divided by country and by Pacific and Atlantic Regions.	Multiple stakeholders as this site is located in the Panama Canal Watershed and supplies water for canal operations and two largest cities. Management committee developed to create shared governance in this important site with multiple stakeholders.[22]
Official Management Authority	Costa Rica: Sistema Nacional de Areas Protegidas (SINAC). Panama: Autoridad Nacional del Medio Ambiente (ANAM)	National Environmental Authority - Autoridad Nacional del Medio Ambiente (ANAM)
Land Tenure: State, regional, municipal, private, or communal?	Mostly state-owned. Also indigenous and private ownership.	Mostly state-owned. Some private and communal ownership
People-Nature Interaction: Present & generally positive with regard to biodiversity conservation?	Yes. Generally positive with regard to biodiversity conservation, especially on Caribbean side of site.	Mixed results with regard to biodiversity conservation.
Environmental Services: Area provides environmental (ecosystem) services to specific communities?	Yes. Water, biodiversity, soil, eco-tourism.	Yes. Provides 40% of freshwater for Panama canal operations, Panama City and Colón. Also biodiversity and eco-tourism.

Table 3: Comparison of key issues between two types of shared governance		
Key Issues	**Transboundary Governance**	**Collaborative Governance**
Name of Protected Area	La Amistad International Park	Chagres National Park
Social Values: Area at the basis of economic livelihood of local communities? Extractive (e.g. forest products) or non-extractive (e.g. tourism)?	Yes. Extractive and non-extractive.	Yes. Extractive and non-extractive.
Traditional Occupancy: Area comprised of traditional settlements?	Area comprised of traditional settlements, indigenous settlements (Ngäbe-Bugle, Naso, Bri Bri, Cabecar) and people migrating to area.	Area comprised of small settlements and some indigenous settlements (Emberá). There is increased migration to area.
Sacred and Cultural Values: Area with sacred or culturally valuable sites that are regularly visited, not visited or not present?	Yes. Visited regularly.	Yes, Visited regularly.
Relation to Cultural Identity: Area crucial for the cultural identity of the country (national patrimony), families (family patrimony), local communities (community patrimony), or indigenous people (indigenous patrimony)?	Yes. Site is crucial for national, family, community and indigenous patrimony. Also recognized as globally important (World Heritage Site).	Yes. Site is crucial for national, family, community and indigenous patrimony. Globally important for its role in Panama Canal.
Integration in the Landscape/Seascape: Area well-integrated into the surrounding landscape (compatible land-use practices, incompatible practices, ecological isolation)?	Yes. Threatened by some incompatible land-uses (mainly agricultural).	Yes. Threatened by some incompatible land-uses (agricultural and urbanization).
Interest in Management: Strong interest among many, some, or few stakeholder groups?	Strong interest among *many* stakeholder groups	Strong interest among *many* stakeholder groups
Public Consultation / Involvement Guaranteed by Law?	Yes. Biodiversity Law 7788 provides some guarantee of public participation in natural resources management.	Yes. Two recently passed policies: Decentralization policy guarantees public participation (Executive decree N° 82, April 9, 2007) and Public Access to Environmental information policy (Executive decree N° 83, April 9, 2007).
Sustainable Funding Mechanism in Place?	Yes. A portion of US $26M debt swap (2007) is earmarked for conservation in Amistad.	Yes. 2003 US $10M debt swap provides funding for $5M in investments in Chagres over the next 14 years, as well as the creation of a long-term $5M endowment fund – "Chagres Fund".

2.3 PRIVATE GOVERNANCE

Private Governance of protected areas is recognized as a crucial part of biodiversity conservation. Private protected areas are defined as "*as any lands of more than 20 ha that are intentionally maintained in a mostly natural state and are not government owned*" (Langholz and Lassoie, 2001 in Borrini-Feyerabend, Johnston and Pansky, 2006). **Types of private landowners include single landowners, NGOs, Universities, and Corporations.** Privately owned protected areas may be established primarily to protect biodiversity, or they may focus on tourism or other types of environmentally sustainable productive activity. They may have extensive rights, which give them flexibility, but they may lack accountability to local communities or to a country's protected areas system. Some landowners have formed private

protected areas associations, which can lobby as a group and may set up guidelines for inclusion as a protected area. Recognizing private reserves as an integral part of the protected areas system of a country adds accountability and credibility to private reserves. The Parks in Peril program provided funding and capacity building to private lands associations, including the Network of Private Nature Reserves of Costa Rica. Carlos L. Sandí, vice-president of the Network noted, "*PiP's support has been very important at the national and regional levels because now private lands conservation is seen as an opportunity and not as a threat to the public systems of protected areas.*"

The concept of Private Governance is described in table 4 through two types of private governance: individual private landowners and NGO owned and managed lands.

Table 4: Comparison of key issues between two types of privately governed protected areas.

Key Issues	Individual Governance	NGO Governance
Name of Protected Area	**Condor Bioreserve**	**Mbaracayú Forest Nature Reserve**
Principal Observed Characteristics of Governance Sub-Type	Individual owners manage lands for conservation. May have productive/economic component. Generally have fewer governmental regulations and oversight. Lands of 40 ha or larger (citation). Private ownership may be concentrated among wealthy. Individual landowners tend to form collaborative groups of conservation-minded private landowners.[23]	NGO owns and manages PA. May participate in protected areas system, but likely to have fewer governmental regulations and oversight. Different from government-delegated management to NGO because in this case, NGO owns the land and creates a private protected area in contrast to government-delegated management, where government retains ownership of land.
Country	Ecuador	Paraguay
IUCN Category	IV	IV
Primary Ecoregion	Northern Andean Páramo, Eastern cordillera real montane forest, Napo moist forest	Paraná-Paraíba interior forests (interior Atlantic forests)
PiP Project Timeframe	PiP 2001-2007	PiP 1992-1997
Size of Protected Area / Conservation Unit	2.4M ha in conservation unit (90,000ha private lands corridor between the Antisana and Cayambe-Coca Ecological Reserves)	64,400 ha in reserve, roughly 20,000 ha in buffer zone.
Overview	Condor Bioreserve is a large, functional landscape, which includes six protected areas and buffer zones between them.[24] Private landowners play a critical role in conserving ecological corridors within buffer zones.[25]	Mbaracayú Reserve was created in 1992 by Law 112/91. At that time Fundación Moises Bertoni (FMB) assumed management responsibility for Reserve. Reserve was purchased by The Nature Conservancy and FMB. FMB now has legal ownership of reserve.[26]
Official Management Authority	Ecuadorian environmental ministry: Ministerio del Ambiente	National Paraguayan NGO: Fundación Moises Bertoni (FMB)

Table 4: Comparison of key issues between two types of privately governed protected areas.		
Key Issues	**Individual Governance**	**NGO Governance**
Name of Protected Area	**Condor Bioreserve**	**Mbaracayú Forest Nature Reserve**
Land Tenure: State, regional, municipal, private, or communal?	Mixed. State-owned, Indigenous Reserves, Communal, Private ownership.	NGO-owned. Private land in buffer zone.
People-Nature Interaction: Present & generally positive with regard to biodiversity conservation?	Yes. Mixed results with regard to biodiversity conservation.	Mixed results with regard to biodiversity conservation.
Environmental Services: Area provides environmental (ecosystem) services to specific communities?	Yes. Provides freshwater for greater Quito metropolitan area, ecotourism, biodiversity, soil benefits.	Yes. Provides biodiversity benefits.
Social Values: Area at the basis of economic livelihood of local communities? Extractive (e.g. forest products) or non-extractive (e.g. tourism)?	Yes. Extractive and non-extractive activities.	Yes. Aché indigenous group retain right to subsistence hunting within Reserve.
Traditional Occupancy: Area comprised of traditional settlements?	Yes in parts of reserve. Kichwa indigenous group in town of Oyacachi, within Cayambe-Coca Ecological Reserve and Cofán indigenous group within the Cofán-Bermejo Ecological Reserve. Area also has small and medium-sized farmers.	Not at present, but was originally occupied by Aché indigenous group.
Sacred and Cultural Values: Area with sacred or culturally valuable sites that are regularly visited, not visited or not present?	Yes. Regularly visited.	Yes. Occasionally visited.
Relation to Cultural Identity: Area crucial for the cultural identity of the country (national patrimony), families (family patrimony), local communities (community patrimony), or indigenous people (indigenous patrimony)?	Yes. Site is crucial for national, family, community and indigenous patrimony.	Yes. Site is crucial for national and indigenous patrimony. Buffer zone critical for community patrimony. Also recognized as globally important (United Nations Man and Biosphere Reserve).
Integration in the Landscape/ Seascape: Area well-integrated into the surrounding landscape (compatible land-use practices, incompatible practices, ecological isolation)?	Yes. Threatened by some incompatible land-uses (mainly agricultural and infrastructure).	Yes. Becoming somewhat ecologically isolated. Some incompatible land-uses in buffer zone.
Interest in Management: Strong interest among many, some, or few stakeholder groups?	Strong interest among *many* stakeholder groups	Interest among a *few* stakeholder groups.
Public Consultation / Involvement Guaranteed by Law?	Yes. Ministerio del Medio Ambiente guarantees participation of civil society.	As a private NGO managing a private reserve, FMB is not bound by national laws of protected area system. However, FMB works closely with local communities.
Sustainable Funding Mechanism in Place?	Fondo para la protección del agua (FONAG) is a water protection fund for the metropolitan area of Quito, Ecuador that provides PA funding through fee for water.	Mbaracayú Trust fund was established in conjunction with Reserve. Roughly $250K is dispersed per year. Other funding is self-financed by FMB.

2.4 COMMUNITY GOVERNANCE

Local and Indigenous communities have long been taking care of natural resources and sacred sites, but only fairly recently have they been formally acknowledged as managers of protected areas on a level equal to state-governed areas (Kothari, 2006). Community[27] governance is defined by Borrini-Feyerabend, et al. (2006) as "*natural and modified ecosystems including significant biodiversity and ecological and cultural values voluntarily conserved by indigenous, mobile and local communities through customary laws or other effective means* (p. 120). Given that a number of protected areas have been superimposed on lands which were (and still may be) occupied by people, recognizing community governance is another key strategy for sustainable biodiversity protection. While community conserved areas may differ greatly in terms of their size, objectives, history, management institutions, legal mandate, and type of social, economic and ecological benefits, there are three principle characteristics that unite them. According to Ashish Kothari of the IUCN's World Commission on Protected Areas (WCPA) (2006), these characteristics are:

1) *One or more communities closely relate to the ecosystems and/or species because of cultural, livelihood, economic or other ties.*

2) *Community management decisions and efforts lead to the conservation of habitats, species, ecological benefits and associated cultural values, although the conscious objective of management many not be conservation per se and could be related to livelihoods, water security or cultural values.*

3) *Communities are the major players in decision-making and implementing actions related to ecosystem management, implying that some form of community authority exists and is capable of enforcing regulations. (p. 549)*

The importance of recognizing the role of indigenous peoples and communities in conservation is apparent throughout the CBD's Programme of Work on Protected Areas, however in goal 2.1.3, it is stated explicitly, "...facilitate the legal recognition and effective management of indigenous and local community conserved areas in a manner consistent with the goals of conserving both biodiversity and the knowledge, innovations and practices of indigenous and local communities" (CBD, 2004).

> *"PiP helped me principally through trainings and technical assistance, so that I could achieve self-management as well as the ability to manage funds from this Project and other international organizations. Now I feel more capable personally and more committed to conservation in my territory, through my association."*
>
> *—Marcos Serapio Martínez, Vice President of the Indigenous Association, KUNASPAWA in the Territory of Kipla Sait, Bosawas Biosphere Reserve, Nicaragua.*

While some communities may declare and manage their own protected areas, unresolved land tenure issues may complicate this. In other cases, a community may enter into an agreement with the state government to manage a particular natural resource or area within a protected area, thus creating a model of shared governance. For example, it was noted that the single most relevant accomplishment of the Parks in Peril project in Cahuinari National Park in Colombia (1992 – 1998) was the formulation of a co-management model between indigenous communities and the Park authority. Cahuinari was the first National Park in Colombia to establish a co-management model, which then served as an example for other parks in the country. This agreement was the result of 12 years of negotiations between the Park and the communities.

The IUCN Community Governance type is illustrated in table 5, through two case studies involving indigenous and community management.

Table 5: Comparison of key issues between two types of community-governed protected areas.		
Key Issues	**Indigenous governance**	**Community governance**
Name of Protected Area	**Bosawas**	**Pacaya Samiria National Reserve**
Principal Observed Characteristics	Self-identified as indigenous Traditional governance body Generally advocate collective rights to lands and resources	A community is a human group occupying same general area, in daily contact with each other and engaged in various livelihood activities within area. Community may manage an area or a specific natural resource. Generally advocate collective rights to lands and resources
Country	Nicaragua	Peru
IUCN Category	IV	IV
Primary Ecoregion	Central American Atlantic Moist Tropical forest	Amazonian Flooded forest (Iquitos Várzea)
PiP Project Timeframe	PiP 2001-2007	PiP 2001-2007
Size	730,000 ha (6% of Nicaragua's total land area)	2,150,770 ha (1.7% of Peru's total land area)
Overview	Biosphere Reserve (United Nations Man and the Biosphere Reserve). 21,000 Mayangna (~7000) and Miskitu (~14,000) indigenous people live within the reserve. Composed of six indigenous territories in core of reserve.[28] In 2005, government granted communal land titles for six territories. A pilot governance structure was developed through a participatory process in Li Lamni territory. The governance structure is based on traditional indigenous governance and Nicaraguan legal framework.[29]	This is the second largest PA in Peru. It was originally established to protect the paiche (Arapaima gigas), the largest fresh-water fish in the Amazon. Over 40, 000 people live within the reserve (25% are of indigenous Cocama-Cocamilla decent). 50,000 additional people live in the buffer zone of the reserve. 18 Resource management committees have developed legal resource management plans for paiche and arahuana fish, yarina and moriche palms, and river turtles.[30]
Official Management Authority	Indigenous Associations from six territories participate in decision-making processes for reserve; Ministerio del Ambiente y los Recursos Naturales (MARENA); Secretaria Tecnica de Bosawas (SETAB) are in charge of management of reserve.	Instituto Nacional de Recursos Naturales (INRENA)
Land Tenure: State, regional, municipal, private, or communal?	Communal land titling being carried out.	Mainly state-owned, but people live within PA.
People-Nature Interaction: Present & generally positive with regard to biodiversity conservation?	Yes. Generally positive with regard to biodiversity conservation.	Mixed results with regard to biodiversity conservation.
Environmental Services: Area provides environmental (ecosystem) services to specific communities?	Yes. Biodiversity, water, soils, forestry.	Yes. Biodiversity, water, soils, forestry.

Table 5: Comparison of key issues between two types of community-governed protected areas.		
Key Issues	**Indigenous governance**	**Community governance**
Name of Protected Area	**Bosawas**	**Pacaya Samiria National Reserve**
Social Values: Area at the basis of economic livelihood of local communities? Extractive (e.g. forest products) or non-extractive (e.g. tourism)?	Yes. Mainly extractive.	Yes. Mainly extractive (fishing, forest products, hunting, turtle eggs). Threatened by overexploitation of natural resources. Some tourism.
Traditional Occupancy: Area comprised of traditional settlements?	Yes	Yes
Sacred and Cultural Values: Area with sacred or culturally valuable sites that are regularly visited, not visited or not present?	Yes. Regularly visited.	Yes.
Relation to Cultural Identity: Area crucial for the cultural identity of the country (national patrimony), families (family patrimony), local communities (community patrimony), or indigenous people (indigenous patrimony)?	Yes. Indigenous patrimony; national patrimony. Was declared UNESCO Biosphere Reserve.	Yes. Community patrimony; indigenous patrimony; national patrimony.
Integration in the Landscape/ Seascape: Area well-integrated into the surrounding landscape (compatible land-use practices, incompatible practices, ecological isolation)?	Yes. But threatened by some incompatible land-uses (mainly agricultural).	Yes. But threatened by some incompatible extraction and land-use.
Interest in Management: Strong interest among many, some, or few stakeholder groups?	Yes, strong interest by *many* stakeholders.	Yes, strong interest by *many* stakeholders.
Public Consultation / Involvement Guaranteed by Law?	Yes.	Yes. INRENA guarantees participation of civil society through national and PA-level representative management committees.
Sustainable Funding Mechanism in Place?	No.	Yes. A portion of US $14M debt swap (2002) is earmarked for conservation in Pacaya-Samiria.

3. Conclusions

Protected areas governance is a complex and relatively new way of thinking about the role of civil society, government, and the private sector in protected areas management. Yet policy makers and practitioners increasingly recognize that governance plays a fundamental role in the long-term success of protected areas. Principles such as legitimacy, leadership, performance, accountability, and fairness form the framework of good governance. Sufficient and transparent funding is also a critical component because it both drives and results from good governance.

The CBD's Programme of Work on Protected Areas emphasizes the importance of protected areas governance throughout the four program elements, and in particular in element two: governance, equity and benefit sharing. CBD stresses incorporating participatory processes that enable the involvement of local stakeholders. It also broadens the type of governance structures within a protected areas system to include shared, private, and community governed areas, in addition to various types of government-managed areas.

The Parks in Peril program has supported the development of good governance and helped countries meet their commitments to CBD by strengthening the site constituency of protected areas. This includes supporting the development of policies, processes and mechanisms that enable a plurality of stakeholders to participate in protected areas management, facilitating dialogue among diverse stakeholders, recognizing a spectrum of governance structures, promoting compatible resource use by local communities, and providing environmental education and institutional strengthening.

Parks in Peril experience

The protected areas outlined in tables in the previous section illustrate the variety, as well as the similarities in governance among sites in the PiP program. It is challenging to draw specific conclusions about governance across sites because of the unique and overarching socio-political context of each country and protected area.

The questions or key issues as presented in tables 2, 3 and 4 are drawn from a tool being developed by IUCN to evaluate and implement governance structure that are most appropriate for the site (Dudley and Borrini-Feyerabend, n.d.). The questions reflect the critical issues for protecting biodiversity that the CBD addresses through the Programme of Work on Protected Areas. However, these key issues are somewhat vague. For example, the question of Sacred and Cultural Values asks whether the area has sacred or culturally valuable sites that are regularly visited, not visited, or not present. The country or protected area will have to define what a sacred or culturally valuable site means for that area and what constitutes regular visitation. While the key issues bring up important questions, each country will have to adapt the tool to the context of their protected areas system in order to effectively use it to evaluate where a protected area actually fits within the governance framework. Barring that adaptation, how a protected area rates in terms of its governance is a matter of judgment at best.

In spite of the challenges to systematic evaluation using the tool mentioned above, some interesting experiences with protected areas governance have emerged from sites in the Parks in Peril program.

Context matters

As mentioned above, the regional and national (and international) context of the protected area is critical for determining the most effective governance structure for that site. It is important to look at the political framework within country and determine how protected areas governance fits with larger political and social context. Governance is strongly influenced by forces outside of the control of individual sites and even outside of the protected areas

system. Those forces may drive certain types of governance structures and mechanisms, which may have a positive or negative impact on biodiversity conservation. For example, Guatemala is recovering from a more than 30-year civil war. Protected areas governance structures and processes that foster dialogue, participation, transparent decision-making, and equitable benefit sharing among all stakeholders are crucial to the long-term success of biodiversity conservation in the country.

"To collaborate with these type of initiatives allows one to see our region from a different perspective, perhaps a little romantic and idealized, but at the same time with our feet firmly on the ground. This gives us a commitment that transcends frontiers and borders for a cause that belongs to everyone."

—Luis Olmedo Sanchez, Environmental Education Director for Panamanian Community organization, FUNDICCEP, which works on the Pacific side of Amistad in Panama.

Scale

As protected areas management expands from focusing exclusively on sites to approaching conservation at an ecoregional or landscape scale, embracing a diverse set of governance structures becomes essential. Transboundary and Marine Protected Areas are some of the most complex types of protected areas and are greatly affected by scale. Differing institutions, legislation, norms, culture, language and socio-economic conditions are a few of the issues that influence protected areas governance at a larger scale. While the protected areas in the early years of the PiP program were all government managed, the later sites included larger conservation units that incorporate public, private, and communal lands. Therefore, a multi-prong, collaborative, approach that incorporates diverse governance structures into the larger conservation vision and within the socio-political context is needed.

State governance

States currently are (and are likely to remain) the principal owners and managers of protected areas in Latin America and the Caribbean. In many instances, they are the most appropriate and efficient managers of protected areas. In addition, as a result of increasing democratization, many countries are in the process of developing policies and mechanisms that ensure the participation of civil society in protected areas management. However, many governmental agencies lack the funding, capacity and training to fully implement the policies. Therefore, fortifying state government and empowering them to integrate communities and develop shared management mechanisms is a critical part of strengthening protected areas governance.

"There isn't conservation while there is hunger. ...We as governmental agencies or NGOs can't expect that people and local communities will become involved in the processes of conservation if they can't first satisfy their basic necessities. ...The knowledge that PiP gave me, is that conservation projects should be accompanied by alternatives that generate economic opportunities for local participants."

—Luis Sánchez Arguedas, Protected Areas Manager for La Amistad Pacific Conservation Area, which pertains to the Costa Rican government National System of Protected Areas/Ministry of Environment (ACLAP, SINAC/MINAE)

The move to shared governance

One trend that has become apparent within the PiP portfolio of sites is that most protected areas seem to be heading towards shared and participatory governance, regardless of the official governance structure. The need for greater collaboration and an emphasis on local participation and decentralization policies are driving many protected areas to the middle of the governance spectrum. However, this may be in part because of the type of sites PiP selects. Many of these sites tend to be government-

managed, either category II or VI, fairly large, and with complex social contexts. These types of sites would seem to favor a more collaborative approach, since many stakeholders are interested in the management and outcome of these protected areas and demanding a say. One could argue however, that governments themselves are emphasizing participation and decentralization on a system-wide level. Either way, many types of protected areas are increasingly being managed in a more collaborative manner.

One caveat is that while many protected areas are moving in the direction of participatory and shared governance, actual decision-making power may still ultimately be concentrated in the hands of the state, with local stakeholders having nominal influence on management. This is due in part to a lack of trust among stakeholders. Therefore it is important to stress a positive trust-building process that leads to greater collaboration and influences diverse governance policies and practices.

Private governance

To ensure ecological connectivity and sustainability, conservation practitioners increasingly approach conservation at a landscape scale. This necessitates working with private landowners outside of the government owned and managed protected areas. Often the most room for innovation is outside of the core protected area. Private lands may have more regulatory flexibility than public lands, so there may be more opportunities to employ diverse conservation strategies, such as shade-grown coffee, that also benefit the landholder. However, since it is much easier to reverse the conservation status of private reserves, it is important that they are recognized by the government as protected areas, and that they are integral to the biodiversity of a country. Policies and practices that promote private lands conservation by facilitating conservation easements, recognizing and collaborating with private-reserve networks, and inscribing private reserves into the protected areas system, all strengthen the private governance of natural resources.

Equitable sharing of costs and benefits

Determining how to share equitably the costs and benefits of protected areas needs to be addressed at both a site and country level. As governments strive to include local stakeholders in protected areas management, it is important to not just share the "responsibilities" of managing an area. Stakeholders also need to share in the benefits. As governments devolve power to and recognize indigenous and community conserved areas or resources, communities must be allowed to carry out decisions and not just act as "guardians" of an area. However, a word of caution is that indigenous and community conserved areas, or areas with high levels of participatory protected areas management, do not always achieve their conservation objectives. (Dearden, 2005).

"Before this project, we only carried out agricultural activities and the extraction of natural resources, because we didn't have any alternatives. Now, thanks to the project, we see an improvement in our lives. I feel that I have improved a lot, both in knowledge as well as economically. Five years ago, I worked only to provide subsistence because I didn't have an alternative. Now I realize that I am rising above that."

—Miguel Jarama Valderrama, Member of Pacaya-Samiria community organization, COMAPA and boat driver in the "Rumbo al Dorado" Consortium in Peru.

Funding

Funding is a chronic concern of protected areas and impacts the quality of governance. However, good governance can lead to increased funding. Of the nine case studies chosen, eight had sustainable finance mechanisms. While this is not necessarily illustrative of the connection with good governance, this does point to the importance of long-term funding for the success of a protected area.

Since funding may drive good governance. If a protected area has funding, it can develop processes that incorporate participatory management. Funding mechanisms can also be structured in way that force collaborative governance, as in the case of the Chagres fund, which mandated the creation of another entity to manage the disbursement of funds.[31] Trans-

parent and accountable financial management and demonstrating a commitment to principles of good governance may also serve to generate funding for a protected area or group (e.g. NGOs or private lands associations). The Programme of Work stipulates that funding mechanisms be developed which support diverse governance structures.

Expanding definition of protected areas governance

Broadening the definition of protected areas governance opens up more ways for civil society and the private sector to participate. This gives credibility and empowerment to those who may not have had a voice at the table, such as private landowners and communities. Recognizing shared and community conserved governance types may also help protect and validate traditional knowledge and practices. It is crucial to encourage the government to adapt to participatory approaches and new protected areas governance paradigms.

"Our organizations believe that it is very important to receive recognition and support from our Governments. In this area, the support received from PiP has been very important because TNC has identified itself with the needs and goals of our local organizations, it has been giving us advice, technical support and guidance so that we could create our own identity and to obtain, through our own work, recognition from our governments, which is so important to us and society in general."

—Franklin Carmiol, President Costa Rican Network of Private Nature Reserves

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Policy development

There is a need for protected areas policy development in many countries that allows numerous governance structures. There is generally room for innovation in governance within a country's legal framework and laws and practices must support increased participation in protected areas management. In some PiP sites, protected areas governance policy is being shaped from the bottom-up, leading to a change in legal or customary practice. In others, the policies are being enacted on a national scale. Policy development that addresses governance issues also helps fulfill Programme element 3: enabling activities.

No best fit

Countries will likely need to employ a variety of governance structures in order to fulfill their commitments to the CBD's Programme of Work on Protected Areas (Ervin, 2007). In some cases, government managed areas are more appropriate than Community Conserved Areas and vice versa. The complexity of the site also calls for a plurality of governance types. For the purposes of demonstrating differing governance types, the sites presented in this document were divided into the four main governance types. However, in reality, most of these sites have similar governance issues. For example, although most are government-managed, all have people living in or immediately surrounding the borders of the area and most are important for both national and community patrimony. As a result, a nuanced approach to governance, one that leans towards shared governance by incorporating meaningful local participation in management and decision-making processes, may be the most effective approach for long-term conservation of the area. A variety of governance structures also contributes to ecological connectivity by supporting conservation between different types of protected areas at different scales. The ecological, political, social, and legislative context of a protected area is key to determining the most appropriate conservation category and governance type.

Timeframe

Building trust and modifying power and decision-making structures can be a long process. Expectations should be realistic, with short and long-term goals (i.e. initially working to strengthen governance within the existing framework and, in the long-term, actually modifying the governance framework). Often the process of developing shared governance mechanisms is as important as the outcome, because it is during these processes that trust is built and then expanded upon.

4. Recommendations

Some practical steps in identifying, developing and implementing an appropriate protected area governance structure arise from the conclusions of this study. These are:[32]

- Evaluate institutional, economic and social gaps of protected areas and stakeholder institutions.
- Identify the legislative and policy gaps that determine the range of governance types for a country. For example, not having laws that allow for delegated management (sometimes called co-management).
- Evaluate costs and benefits of protected areas to local and indigenous communities.
- Reevaluate, and when appropriate modify, management categories and governance types, using a participatory approach.
- Identify potential ways to expand governance to include civil society.
- Ensure local participation and appropriate management category and governance type when creating new protected areas.
- Support bottom up (and top down) policy making that take into account diverse governance types and good governance principles.
- Ensure sustainable funding mechanisms support all the governance structures and uphold the principles of good governance.

"The bottom line"

The governance structures within the protected areas in the PiP program are as diverse and complicated as the protected areas themselves. It is clear that governance affects the management effectiveness of a protected area, and ultimately whether the

ADDITIONAL RELEVANT PIP LEGACY PUBLICATIONS

- Equitable Sharing of Costs and Benefits of Protected Areas
- Conservation in the Context of Decentralization Processes
- Indigenous Groups and the Management of Protected Areas
- Management Committees in Protected Areas
- Policy Agenda for Protected Area Management
- Community Initiatives for the Sustainable Use of Natural Resources in Protected Areas
- Partnerships in Protected Areas Conservation
- Gender in the Conservation of Protected Areas
- Land Tenure in Protected Areas
- Park Guards in the Conservation of Protected Areas
- Pride Campaigns for Community Engagement in Protected Area Management

available on www.parksinperil.org

FOR ADDITIONAL RESOURCES

www.parksinperil.org: Parks in Peril program information, publications and tools.

www.conserveonline.org: Database of multiple conservation publications and tools, including publications and tools produced by The Nature Conservancy such as Conservation Action Planning (CAP) Methodology.

www.protectedareas.info: A guide for government and others for carrying out a gap analysis on national protected areas systems within the framework of CBD's Programme of Work on Protected Areas.

www.conservationfinance.org: The Conservation Finance Alliance is a collaborative effort to promote sufficient and sustainable funding for biodiversity conservation worldwide.

www.biodiv.org: Convention on Biological Diversity (CBD). Programme of Work on Protected Areas can be found here. In addition, the *excellent* CBD Technical Series No. 18: Towards Effective Protected Areas Systems: An action Guide to Implement the Convention on Biological Diversity Programme of Work on Protected Areas can be found on this site.

www.iucn.org: World Conservation Union

www.iucn/wcpa.org: World Conservation Union's World Commission on Protected Areas

www.fosonline.org/cmp: Conservation Measures Partnership

area meets its conservation objectives. While most of the PiP sites are officially government-managed, they appear to be merging towards shared governance structures, which involve the participation of numerous stakeholders and collaborative decision-making models. Diverse governance structures and approaches, which seek to involve civil society into the management of protected areas, contribute to upholding both social and conservation needs.

However, there is no "best fit" governance model for sites within the program. Each site must take into account complex socio-economic, political, institutional and ecological processes when determining the most appropriate governance model. Countries will likely need to employ a variety of governance structures in order to fulfill their commitments to the Convention on Biological Diversity's Programme of Work on Protected Areas (Ervin, 2007).

"I am in love with this beautiful land. I wanted to create tangible results, such as this easement, from these efforts. But this is just the beginning."

— Jose Humberto Jaramillo, First private landowner to sign a conservation easement in Colombia.

Endnotes

1 *Protected Area:* An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means (IUCN, 1994).

2 The IUCN Categories below reflect the management objective of the protected area, and generally progress from little or no human intervention (category I) to most human intervention (category VI). (WCPA 2007):

I: Strict nature reserve/wilderness protection area managed mainly for science or wilderness protection

II: National park: protected area managed mainly for ecosystem protection and recreation

III: Natural monument: protected area managed mainly for conservation of specific natural features

IV: Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

V: Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation or recreation

VI: Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural resources.

3 Original emphasis by authors.

4 Adapted from Ervin, 2007.

5 For additional information and examples on determining the costs and benefits of protected areas, see Gonzalez, A. M., & Martin, A. (2007) *Equity and Benefit Sharing* on www.parksinperil.org.

6 See Balloffet, N. & Martin, A. (2007) *Parks in Peril Site Consolidation: A Framework for Strengthening Protected Areas* on www.parksinperil.org for additional information on the Parks in Peril Approach.

7 Key Issues are adapted from Dudley, N. & Borrini-Feyerabend, G. (n.d.) *A Tool to Help Selecting the Appropriate IUCN Categories and Governance Types for Protected Areas.* WCPA/CEESP/IUCN.

8 In Latin America and the Caribbean, government delegated management is often referred to as "Co-management."

9 PA is short for protected area.

10 Democratic decentralization: devolution of decision-making from central government to lower level of government or authority that is representative of and accountable to local populations (Ribot, 2004).

11 WWF Conservation Science/Ecoregions: http://worldwildlife.org/science/ecoregions

12 United Nations Environmental Programme/ World Conservation Monitoring Center/ World Commission on Protected Areas: World Database on Protected Areas: http://www.unep-wcmc.org/wdpa/index.htm

13 Conservation Unit: The early Parks in Peril program sites focused primarily on the protected area itself. The later cycles, including the 2002-2007 cycle have considered a broader area, or conservation unit, around the actual protected area, taking into account such items as buffer zones, ecological corridors, and the communities living in the vicinity of the protected area.

14 The Nature conservancy. 2007. *End-of-Project Report: Cockpit Country*. The Nature Conservancy, Arlington, VA.

15 The Nature conservancy. 2007. *End-of-Project Report: Atitlan*. The Nature Conservancy, Arlington, VA.

16 Secaira, E., Lehnhoff, A., Dix, A., and Rojas, O. 2000. *Delegating Protected Area Management to an NGO: The case of Guatemala's Sierra de las Minas Biosphere Reserve.* Biodiversity Support Program. Washington, D.C.

17 The Nature conservancy. 2007. *End-of-Project Report: Motagua-Polochic*. The Nature Conservancy, Arlington, VA.

18 n.b.: This is not an exhaustive list of funding sources or mechanisms in particular PA, nor does this connote funding sufficiency.

19 PINFOR: Programa de Incentivos Forestales is a Guatemalan subsidy program to provide financial incentives for forest conservation and reforestation on private and municipal lands. For additional information see www.inab.gob.gt

20 Borrini-Feyerabend, et al., 2006. *Governance of Protected Areas.* In Managing Protected Areas: A Global Guide. Lockwood, Worboys and Kothari eds. Earthscan UK and USA. p.116-145.

21 The Nature conservancy .2007. *End-of-Project Report: Amistad*. The Nature Conservancy, Arlington, VA.

22 The Nature conservancy. 2007. *End-of-Project Report: Chagres*. The Nature Conservancy, Arlington, VA.

23 Borrini-Feyerabend, et al. 2006. *Governance of Protected Areas.* In Managing Protected Areas: A Global Guide. Lockwood, Worboys and Kothari eds. Earthscan UK and USA. p.116-145.

24 Six Protected Areas: Cayambe-Coca Ecological Reserve (RECAY), Antisana Ecological Reserve (REA), Cotopaxi National Park (CNP), Llanganates National Park (LNP), Cofán-Bermejo Ecological Reserve (CBER), and Sumaco National Park (SNP) (which is also a UNESCO Biosphere Reserve).

25 The Nature conservancy. 2007. *End-of-Project Report: Condor*. The Nature Conservancy, Arlington, VA.

26 The Nature conservancy. 1996. *Consolidation Report: Mbaracayú Forest Nature Reserve.* The Nature Conservancy, Arlington, VA.

27 Community refers to local, indigenous, or mobile peoples.

28 Six indigenous territories: Mayangna territories - Mayangna Sauni As, Mayangna Sauni Bu, and Mayangna Sauni Bas. Miskitu territories – Miskitu Indian Tasbaika Kum, Kipla Sait Tasbaika and Li Lamni Tasbaika Kum (Stocks, 2003).

29 The Nature conservancy 2007. *End-of-Project Report: Bosawas.* The Nature Conservancy, Arlington, VA.

30 The Nature conservancy 2007. *End-of-Project Report: Pacaya-Samiria*. The Nature Conservancy, Arlington,VA.

31 See The Nature conservancy. 2007. *End-of-Project Report: Chagres*. The Nature Conservancy, Arlington, VA. and Sistematización de una Experiencia Compartida de Ejecución para la Consolidación del Alto Chagres (2002-2007)

32 Adapted from Dudley et al., 2005.

33 Maroon communities are descendants of freed or escaped African slaves and native Taino people who found refuge in Cockpit Country and maintain a distinct identity. They are recognized internationally as an indigenous group (TNC 2007).

34 In Costa Rica the Amistad Biosphere Reserve includes PILA (La Amistad International Park), Chirripó National Park, Tapanti-

Macizo National Park; Hitoy Cerere Biological Reserve, two protected zones (Rio Banano and Las Tablas watersheds), and five indigenous reserves. In Panama, the Reserve expands into Bocas del Toro and covers PILA, Palo Seco Forest Reserve, San San Pond Sak Ramsar site, Bastimentos National Marine Park, and Volcán Barú National Park on the Pacific side of Panama (TNC 2005)

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Appendix 1. Case studies

Cockpit Country Forest Reserve, Jamaica

The Cockpit Country Forest Reserve is located in the northwestern part of the island of Jamaica. This protected area measures approximately 450 square kilometers and is composed of cone karst, which forms a series of steep, rounded hills and crater-shaped sinks. Cockpit Country contains the largest and most intact wet limestone forest in Jamaica. The area is also known for a high level of endemism. For example, 66% of vascular plant species recorded in the area are endemic to Cockpit Country. Each of Jamaica's 28 endemic bird species is found in Cockpit Country. On a systems level, the complex underground freshwater systems arising from the karstic medium in Cockpit Country produce more than 40% of Jamaica's freshwater (TNC 2007). The area's inaccessibility has long-preserved it and much of the area is now protected through a series of forest reserves, which are administered through the Forestry Department. Most of the people, including indigenous Maroon[33] groups, live in communities that ring the reserve.

The ecological stresses to Cockpit Country stem mainly from overexploitation of resources. Threats include conversion of forest to agriculture, unsustainable logging (both legal and illegal), guano harvesting, uncontrolled tourism and bauxite mining. These threats are being addressed in a variety of ways, from providing technical information and supporting a campaign to inform the public about bauxite mining's impact on biodiversity, to developing a national policy on caves, to increasing enforcement of forestry regulations. One strategy to mitigate threats at the site involves strengthening the relationship between the Forestry Department and local communities through the establishment of Local Forest Management Committees (TNC 2007).

Part of the national Ministry of Agriculture, the Forestry Department is charged with managing the forestry reserves in Cockpit Country. As its role has shifted from managing timber production to watershed and biodiversity protection and tourism regulation, the Forestry Department has begun to engage a more diverse group of stakeholders as it encounters a more complex management context. While the Forestry Department is legally responsible for managing the forest reserves, the Department also recognizes that local communities must benefit from and be able to participate in the management of forest resources, if biodiversity and watershed protection is to occur and be sustainable (Headley, 2003). In 1996, the Forest Act charged the Forestry Department with setting up local forest management committees as legal entities for involving local stakeholders in the management of the forest reserves.

The Parks in Peril program has contributed to strengthening protected areas governance in Cockpit Country in two ways. First, by increasing the administrative and technical capacity of the Forestry Department as it transitions into biodiversity and watershed protection and second, by supporting the participation of local communities in natural resources management through the formation of Local Forest Management Committees (LFMCs).

The 1996 Forest Conservation Act and the 2001 National Forest Management and Conservation Plan were instrumental in redefining the Forestry Department's focus and approach to managing the forest reserves. Although it is an entity of the central government and has primary responsibility for the management of the Cockpit Country Forest Reserve, the Forestry Department has suffered from a lack of capacity, as well as financial and institutional support, which make it difficult to carry out its responsibilities as outlined in the National Forest Management and Conservation Plan (TNC 2007). The legislation mentioned above created a framework for The Nature Conservancy's Jamaica office (an NGO) to develop a memorandum of understanding (MOU) with the Forest Service in

order to form a partnership to carry out conservation activities in the Cockpit Country Forest Reserve. The Nature Conservancy, through the Parks in Peril program then worked with the Forestry Department to provide training in science-based conservation planning and monitoring, financial management, GIS software and equipment, and environmental education. To address the issue of lack of financial resources for forestry-related projects, Cockpit Country was named as a recipient of funding through the 2006 debt-for-nature swap. The funding will provide funding for forestry projects developed through the Local Forest Management Committees.

Local Forest Management Committees (LFMCs) are legally mandated for forest reserves. The LFMCs serve in an advisory role to the Forestry Department and are composed of local NGOs, community-based organizations, government agencies, community business organizations and others (TNC 2007). Each organization is allowed to choose a representative and an alternate to serve on the committee (Forestry Department, 2001). According to the National Forest Management and Conservation Plan, the purpose of the LFMCs are to monitor and hold public meetings to discuss the condition of the natural resources within the forest reserve; advise the forestry department about the development of local forest management plans, including the development of regulations; contribute to the development and implementation of conservation projects, and provide suggestions for conservation incentives, and other functions as stipulated by the Forestry Act (Forestry Department, 2001).

With support from the Parks in Peril program, three LFMCs were launched in Cockpit Country in early 2007. A survey for the World Bank, conducted by The Windsor Research Center (WRC) and Southern Trelawny Environmental Agency (STEA), ascertained that the Maroon communities in the region felt strongly about being included in decisions affecting the area and were generally in favor of some environmental protection for Cockpit Country (TNC 2007). In addition to gaining a voice at the table in terms of the management of the forest reserves, a primary benefit for the LFMCs, is access to technical assistance from the Forestry Department, The Nature Conservancy, The Windsor Research Center, Southern Trelawny Environmental Agency, and other organizations to develop environmentally sustainable, income-generating projects.

The three LFMCs were formed according to the geography of the area and were divided into the Northern, Southern and Southwestern sector. Beginning in December 2006, preliminary meetings were conducted with 88 communities and included community leaders and members, government officials, and NGOs. In addition to community members, these meetings involved representatives from the Foresty Department, The Nature Conservancy and others. The purpose of the preliminary meetings was to explain the premise of the LFMCs and the process of forming these committees. Initially, the communities responded with weariness to Forestry Department and NGO interventions. Some were suspicious of the motives of the Forestry Department, especially with regard to answering questionnaires about their use of forest products (TNC 2007). Some community members were concerned that TNC and the Forestry Department would steal their ideas for income-generating projects and that they would not be privy to the benefits of those projects.

Several factors contributed to overcoming these initial challenges. Support of the government at a national level, as demonstrated by the Minister of Agriculture's attendance at the launch event, lent credibility to the process. The commitment of time and staff from the Forestry Department and TNC, including a sociologist from the Forestry Department helped to build trust and increased understanding of the concept and benefits of the LFMCs. Two early-action projects were carried out with communities which helped convey the Forestry Department's commitment to the LFMCs. The first project was a Culinary Tour designed to bring in tourists to the Bunkers Hill community and the second was a map developed for the Accompong Maroon's visitor's center, which highlights the history and tourism attractions of the area. These projects showcase the potential the LFMCs have to develop, finance and implement income-generating projects in the area.

The move of the Forestry Department towards participatory management of forest resources and the initial success of the Cockpit Country LFMCs has set up an important framework for a more collaborative and equitable approach by the government

to forestry management in Cockpit Country and throughout Jamaica. As noted by Geoghegan and Bennett (2003), "A commitment to participation has major implications for the way organizations are structured and operate. For forestry departments, a collaborative approach is likely to require changes in rules and procedures, budget allocations, and the responsibilities, training needs and working conditions of staff" (p. ii). The ideological change in the Forestry Department's approach requires structural and cultural changes within the organization. As the agency with the primary responsibility for conserving the biodiversity and ecological services of Cockpit Country, the Forestry Department is the key actor in the region. The Parks in Peril program has recognized this and has worked to bolster this governmental agency as it makes the transition to participatory forestry.

The LFMCs are an important step forward to achieving a shared and more equitable framework for managing the forest resources of Cockpit Country. As the three LFMCs develop more income-generating projects and participate in the decision-making process for managing the forest, it is important to keep Geoghegan and Bennett's (2003) advice in mind: "making participation work means responding to the capacity needs of different stakeholders, paying attention to the balance of power within the arrangement, and sharing an understanding of how – and by whom – different types of decisions are made" (p. ii). They also note that, "incentives and benefits are the key to getting and keeping stakeholders involved" (p. iii). In addition, it is cautioned that the most marginalized people in the region may not form a part of a stakeholder organization and therefore may not have access to participating in the LFMC.

With those caveats in mind, the Forestry Department's commitment to participatory forest management and the collaboration of the LFMCs with managing the Cockpit Country forest reserves is an important innovation and advance in managing state-governed protected areas. It is expected that this collaboration will improve management of Cockpit Country, while also bringing real benefits, in terms of increasing capacity, economic development and more equitable decision-making, to the Forestry Department and surrounding communities.

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Lake Atitlán Watershed Multiple Use Protected Area, Guatemala

The Lake Atitlán Watershed Multiple Use Protected Area (LAWMUPA) is located in the Sierra Madre volcanic chain in Guatemala's western highlands. The LAWMUPA covers approximately 62,000 ha. of watershed, including Lake Atitlán and the surrounding volcanoes of San Pedro, Atitlán and Tolimán, as well as private and municipal lands. The Parks in Peril project site included the LAWMUPA, but encompassed a larger conservation area of approximately 130,000 hectares (TNC 2005).

The area is composed of parts of three ecoregions, including the Sierra Madre Moist Forests, Central America Montane Forests and the Central America Pine-Oak Forests. The dramatic topography of the volcanic chain has produced areas of endemism for plant and animal species, including the azure-rumped tanager (*Tangara cabanisi*). The area also serves as an important migratory bird corridor and as refuge for threatened and endangered species such as the horned guan (*Oreophasis derbianus*), resplendent quetzal (*Pharomacrus mocino*) and the highland margay (*Leopardus weidii*) (TNC 2005).

The Atitlán Volcanoes conservation area is a highly populated and impoverished region. More than 90% of the human population in the area is indigenous, composed of three linguistic groups of Maya origin: Tz'utujil, Kaqchikel, and K'iche' (TNC 2005). Subsistence farming or low-paid agricultural jobs sustain a majority of the population. However, the area also supports large private landholders, who grow coffee and other agricultural products for export and a growing national and international tourism industry. Threats to the area arise from the overexploitation of resources, particularly firewood extraction, unsustainable subsistence farming practices, and pollution and development concerns arising from tourism (TNC 2001).

The conservation strategy in this region has involved strengthening municipal and private lands conservation. The municipality of Santiago Atitlán had previously established the Municipal Park Rey Tepepul, which set a precedent for the development of a municipal park system in the area. Thus, in 2002, the TNC project proposed the establishment of a municipal park system to the 19 municipalities in the Department of Sololá. Although Santiago Atitlán declined to continue with the project, over the course of five years, the municipalities of San Pedro, Santa Clara, San Juan, San Marcos and San Lucas Tolimán set aside roughly 2,000 ha of municipal land as parks. Given the positive response on the part of the municipalities in the area, it is anticipated that the system will grow to ten municipal parks, each with their own income generating mechanisms (TNC 2007).

The process of establishing the municipal park system began by clarifying the concept of municipal parks and conducting surveys to determine municipal-owned forested areas. The mayors then declared the land as a municipal park. The PiP project worked with the municipalities to determine the desired purposes of the park (ie. tourism, research, biodiversity/watershed protection) and what activities would generate management funds (tourism, forestry subsidies).

Management plans were developed through participatory processes. Each municipal park has a management committee, which is composed of the mayor, and civil society representatives from that municipality. The management committee is responsible for hiring and supervising the director of the park. In turn, the director of the park is responsible for implementing the management plan for the park. The parks were then inscribed as "regional reserves" within Guatemala's National System of Protected Areas (SIGAP).

According to the purpose of each park, infrastructure and visitor materials were developed. The municipal parks were then added to the Program of Incentives for Forest Conservation (PINFOR), conservation subsidy program. Finally, mechanisms were developed to ensure transparent and efficient collection, use, and reporting of funds and a monitoring system was established to monitor the progress of the municipal park, both in terms of administration and conservation of biodiversity (TNC 2007).

Currently, four of the five parks have master plans and will receiving PINFOR benefits for the next ten years. For example, the 184 ha Santa Clara Municipal Park, called Parque Chuirakamoló, will receive US$11,000 in PINFOR benefits. The San

Pedro, Santa Clara and San Marcos municipal parks now have visitor centers and San Pedro and Santa Clara are charging visitor entry fees. Of the funds collected, 75% goes back into the park to pay salaries, facilities maintenance, and other park management costs. The remaining 25% goes to the municipality to support other activities, such as waste disposal and street maintenance (Fernandez, 2007). In addition, each municipality has established a technical office as part of the government structure, which among other duties, helps to oversee park management

Factors for success included the leadership, technical expertise and capacity of partner Vivamos Mejor. As a well-respected, and well-established local organization, they played a key role in demonstrating the feasibility and costs and benefits of municipal parks. In addition, the leadership of Mr. Guillermo Batz, the mayor of San Pedro, and Mr. Pedro Par, the mayor of Santa Clara, was essential. They both understood the potential benefits of establishing municipal parks, both for their communities, as well as for sustaining the biodiversity of the region. They committed resources and enthusiasm to establish the parks and as a result, other municipalities in the area, including San Marcos, San Juan and San Lucas Toliman became interested in setting up municipal parks. A key factor in the success of this project was framing the municipal parks as a way of generating funds and direct and indirect employment as well as for achieving biodiversity conservation. A challenge was that some mayors were less enthusiastic, as they did not see a direct political benefit. Setting up a municipal park system has been a good strategy for the conservation of this area, since much of the forested land is owned by municipalities or private landholders. The decentralized municipal government is seen as more legitimate by local communities and more efficient than the central government (TNC 2007).

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Motagua-Polochic System, Guatemala

The 440,000-hectare Motagua-Polochic system encompasses two protected areas, the Sierra de las Minas Biosphere Reserve (SMBR) and the Bocas del Polochic Wildlife Reserve (BPWR). The Motagua Valley Thorn Scrub (MVTS) also forms part of the system but is not an officially designated protected area, although two municipal reserves and two private nature reserves were declared there in 2005 (TNC 2007b). The Polochic and Motagua Rivers on the northern and southern part of the reserve respectively, give rise to the system's name. This area is characterized by extreme altitudinal and rainfall gradients, ranging from 0 to 3,000 m (50 to 10,000 ft.) above sea level and 450 to 3000 mm/year, respectively. These gradients have produced unique conditions that make this one of the most biologically important areas in Guatemala (TNC 2007b). One of the largest tracts of cloud forest is found in the upper parts of the reserve and the driest area in Central America is found in the Motagua thorn-scrub region. Endangered species in this region include the golden-cheeked warbler (*Dendroica chrysoparia*), the beaded lizard (*Heloderma horridum charlesbogerti*), and Tillandsia and Cactaceae species. The reserve is the source of 63 rivers and water is a key resource in the area (TNC 2007b).

There are more than 300 communities with roughly 74,000 people, including Poqomchi' and Q'eqchi' indigenous peoples, many in the northern part of the reserve, and mestizo (mixed Spanish and Amerindian) groups living in the area outside of the core zones of the reserve (TNC 2007b). Many are subsistence farmers. Also transnational beverage corporations and large agricultural plantations are found in this area and rely heavily on the water resources of the reserve. Major threats include unsustainable agricultural practices, forest-fires, illegal extraction of resources such as timber or epiphytes, poaching, and human colonization (TNC 2007b).

In 1990, by the same law (Law 49-90) that designated Sierra de las Minas as a protected area, Fundación Defensores de la Naturaleza (Defensores) was given co-management authority for SMBR (Secaira, Lehnhoff, Dix and Rojas, 2000). In 1996, Defensores also bid for and assumed co-management authority for Bocas del Polochic. Defensores holds responsibility for raising the funds needed to manage both SMBR and BPWR. CONAP contributes a handful of park guards, but little or no direct funding. Defensores carries out patrols, but calls on CONAP or other governmental agencies such as the police to carry out law enforcement activities. This distinction has allowed Defensores to develop better relations with local stakeholder groups, but limits the effectiveness of the enforcement activities, since governmental action may not be as responsive (Secaira, et al., 2000).

The PiP program provided support to the Sierra de las Minas Biosphere Reserve from 1995-1999 and to the entire Motagua-Polochic system from 2002 until 2007. As the principal management authority for SMBR and BPWR, Defensores plays a key role in the conservation and governance of the entire conservation area. Defensores' governance successes in the last cycle of the project include (TNC 2007a):

- Establishment of a fire management program in collaboration with municipalities, which decreased fires from roughly 12,000 ha to 2,000 ha burned per year.
- Acquisition by Defensores of a 333 ha property within the government-owned core zone of reserve.
- Declaration of additional, complementary protected areas (Six private nature reserves, 2 municipal parks) in the MVTS and SMBR areas.
- Formation of shared management structures (SMBR Board, BPWR Advisory Council, MVTS "Grupo Promotor")
- Defensores counts with a solid financial plan and a strengthened institutional development office, financial plans for each protected area, and multi-year funding from PINFOR ($200,000/year) and the government of the Netherlands. In addition, Defensores is developing a permanent *water fund* for the area.

In the more than 15 years that Defensores has co-managed the reserve, they have significantly strengthened their institutional capacity and their leadership

role. They are now a driving force for conservation in the region and country. While not perfect, the arrangement between Defensores and the SMBR has benefited the biodiversity of the reserve and can be held up as a model of co-management for Guatemala and other countries (Secaira, et al., 2000). There are several factors which have contributed to the long-term success of this co-management structure:

- Leadership: Defensores has managed the Reserve with an eye towards transparency and accountability to both CONAP and local communities (Secaira, et al., 2000). As an institution, they also enjoy significant political clout nationally and regionally, and have represented the NGO community on the CONAP board (TNC 2007b).

- Broad Collaboration: Defensores has made a pronounced effort in communicating with and involving private landowners, local businesses, other NGOs, communities, and municipalities in the management of the reserve through regular contact, public workshops and environmental education. They have organized management committees for the SMBR, BPWR, and MVTS, as well as on a micro-watershed basis. (Secaira, et al., 2000; TNC2007b)

- Dual Development and Conservation Approach: Defensores zoned the park into four zones, including core, buffer, multiple-use and recovery. This has helped minimize conflict with local people living in the area because some areas were designated as areas where they could continue to farm and extract natural resources, within certain guidelines. In addition, Defensores has committed to providing technical assistance to compatible economic projects (e.g. sustainable agriculture) (Secaira, et al., 2000).

- Technical Capacity: Defensores has developed strong science, managerial, social-outreach, and financial capabilities, which are essential for successful management of this complex area (TNC 2007b).

- Funding: Defensores has had to be creative, resilient, and diversified with regard to acquiring suffient funds to manage the reserve. Their proven ability to manage international funds has helped them increase international public and private funding. As a landholder within the SMBR, they have qualified for significant PINFOR funding. They also have developed a water fund for the Reserve, ecotourism and scientific tourism ventures and an institutional membership program (TNC 2007b).

- Longevity/Stability/Trust: Defensores brings more than 15 years of experience to the Reserve's management, throughout multiple changes in governement and fluctuating support from CONAP. In addition, local stakeholders view their position as landowners in the Reserve as adding to their credibility and committment to conservation of the Reserve. Hiring staff who speak the indigenous languages, including the director of SMBR, has increased the trust and participation of local communities in the management of the reserve (Secaira et al., 2000).

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The Nature Conservancy (TNC). 2007b. End-of-Project Report: Motagua-Polochic. The Nature Conservancy, Arlington, VA.

La Amistad International Park, Costa Rica & Panama

The bi-national Amistad site spans the south-central region of Costa Rica and the north-western sector of Panama. Amistad bridges the continental divide and extends to both the Pacific and Atlantic sides of each country. This 1.2 million acre forested expanse encompasses Amistad International Park and its buffer zones including several protected areas and indigenous reserves in both Panama and Costa Rica[34]. In 1982, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) declared La Amistad a Biosphere Reserve. One year later, UNESCO also declared Amistad a World Heritage Site. The Amistad site is one of a handful of remaining really large forested areas in Central America, which connect along the spine of the isthmus. As a result of altitudinal and climatic extremes, Amistad is one of the most biodiverse areas in Costa Rica and Panama. It is estimated that 4% of the world's terrestrial species are found in this area. In addition, because of its size, it can support species that need large ranges such as jaguars, tapirs and harpy eagles. Four indigenous groups, the Cabecar, BriBri, Naso, and Ngäbe, live in this area, as well as numerous mestizo communities. Amistad is threatened by incompatible agricultural activities, infrastructure development, hunting and human-induced fires (TNC 2005).

A key strategy for the site was to strengthen bi-national coordination between the two governments. Although there were efforts to work bi-nationally in the past, by the 1990s, there were no functioning bi-national coordination mechanisms for cross-border collaboration (TNC 2007). At the start of this project, there was little or no communication between the two governmental agencies in charge of the management of Amistad, the National System of Conservation Areas/Ministry of Environment and Energy (SINAC/MINAE) in Costa Rica and the National Environmental Authority (ANAM) in Panama. In addition, there was poor coordination between the two regional (Pacific and Atlantic) administrative units of Amistad in both countries.

In 2002, the Comptroller's offices in Costa Rica and Panama commissioned an evaluation of the efforts of SINAC/MINAE and ANAM to implement "Integrated Management of the Amistad International Park". The evaluation reported poor coordination between the two countries with regard to the management of Amistad. In Costa Rica, SINAC/MINAE organized a national commission to follow up on the comptroller's report. Because of the bi-national work being carried out in Amistad through the PiP program, The Nature Conservancy was invited to a meeting of the commission in March 2003. At this point PiP began to provide technical and financial support to the process of creating a bi-national coordination mechanism (TNC 2007).

A series of meetings between ANAM and MINAE were carried out in 2003 and 2004 to better define the structure of the coordinating body and to carry out joint technical activities, such as a pilot bi-national patrolling plan. The process of creating the bi-national agreement was time-intensive and complex as a result of the number of governmental entities involved in developing an official international agreement. Furthermore, the government of Panama changed before the agreement was formalized and this pushed back the timing of the agreement. Fortunately, by this point there was enough enthusiasm on the part of governmental agencies in both countries to get the process moving again. Finally in April 2005, through the Bi-national Cross-border Cooperation Agreement, the Costa Rica Ministry of Planning (MIDEPLAN) and the Panama Ministry of Economy and Finance (MEF), formally recognized the Amistad Bi-national Commission as the official coordination mechanism for the management of the Amistad International Park.

The main objective of the Bi-national Commission is to develop and oversee joint plans, programs or projects being carried out in Amistad. For example, the Commission will ensure that the management and operating plans in both Costa Rica and Panama are congruent and working towards the same conservation goals and outcomes. In addition, it serves as the main coordinating body for developing cooperative agreements with international organizations and foreign countries that want to support the conservation of this site. The Commission has already proven effective in this role by negotiating an agreement with the Inter-American Development Bank for the conservation of the upper Sixaola Watershed,

which is located on the Atlantic-side of Amistad and spans the border of Costa Rica and Panama. The Bi-national Commission is also developing a proposal to UNESCO to be recognized formally as a *transboundary* biosphere reserve. Currently, there are only six transboundry biosphere reserves and all are located in Europe (TNC 2007). The establishment of the Bi-national Commission has been a key factor in developing effective governmental joint management of this transboundary protected area and ensuring that conservation actions on both sides of the border benefit the integrity of Amistad in its entirety.

The Nature Conservancy (TNC). 2005. Site Evaluation FY05/ Workplan FY06 – Amistad. The Nature Conservancy. Arlington, VA.

The Nature Conservancy (TNC). End-of-Project Report: Amistad. The Nature Conservancy, Arlington, VA.

Chagres National Park, Panama

The nearly 130,000-hectare Chagres National Park was established in 1985 to protect the Chagres River watershed. This watershed provides more than half the water needed for Panama Canal operations, as well as most of the water for Panama's two largest cities, Panama city and Colón. In addition to supplying a critical source of water, Chagres National Park contains the largest tract of tropical forest in the canal watershed and harbors rich biodiversity, with North and South American species overlapping distribution ranges. More than 3,000 people live in Chagres National Park, with roughly 150,000 additional people living in the area surrounding the park. Threats to the park include urban and industrial development, the poultry industry, cattle-ranching practices, illegal extraction of timber and gold, and poaching.

As a key part of the Panama Canal Watershed, Chagres National Park has a complex institutional framework, with many stakeholders interested in its management (TNC 2005). As a result, Chagres National Park has multiple management and governance structures, at differing scales.

Inter-institutional Commission (CICH)

The Panama Canal Authority (ACP, by its acronym in Spanish) is the lead governmental organization in the Panama Canal Watershed. To better coordinate within the canal watershed, ACP has formed the Inter-institutional Commission (CICH), which is made up of seven other governmental organizations and two NGOs, including the Ministry of Housing, the Ministry of Agricultural Development, the Ministry of Economy and Finances, the Ministry of Government and Justice, the Caritas Archdiocese, and the Natura Foundation (Gonzalez and Martin, 2007). The National Environmental Authority (ANAM, by its acronym in Spanish) is responsible for managing Chagres National Park, but must also coordinate and attain approval for some activities, such as the review of the management plan and land tenure study, with CICH (Gonzalez and Martin, 2007).

Local Management Committees

Although several thousand people live within Chagres National Park, the park did not have mechanisms that would allow local communities to participate in decision-making within the management of the park. However, a Conservation Area Plan carried out at the start of the project recommended that existing community organizations be strengthened and that a regional community coordinating body be established. To remedy this, local NGO, Sociedad Nacional para el Desarollo de Empresas y Áreas Rurales (SONDEAR), conducted an evaluation process to determine the most feasible and appropriate mechanism for a regional coordinating community organization. This led to the development of four local management committees, each with its own board, which together form a larger body called the Community Association for the Participatory Management of Chagres National Park (ACOCHA) (TNC 2007). The formation of ACOCHA has enabled the communities to gain a voice at the table with ANAM and ACP in the management of the reserve.

Long-term Finance Mechanism & Oversight Committee

The National Chagres Park Conservation Fund was established through a debt-for-nature swap in 2003, made possible by the US Tropical Forest Conservation Act. As part of this deal, the US government cancels part of Panama's debt to the US in return for the government of Panama investing US $10M in conservation in Chagres National Park over the course of 14 years. $5M will be used for conservation actions in Chagres over the next 14 years and the remaining $5M will be invested in an endowment fund, called the Chagres Fund Trust Fund, which will allow for long-term conservation in the area. To manage this mechanism, an oversight committee was formed. The committee is made up of six permanent members (five with voting rights) and one, Fundación Natura, which acts as secretary and observer of the committee. In addition, two non-permanent members, chosen from NGOs, sit on the committee for periods of two years (TNC 2007).

Co-management Scheme

The government of Panama recognized the importance of shared governance for long-term conservation of Chagres National Park through the debt-for-nature swap. As part of the debt-swap, it was stipulated that a co-management mechanism be developed for the park. However, it was not clear which organization would be the most appropriate Panamanian organization to partake in a co-management agreement. Therefore, a new NGO was formed called the Chagres National Park Foundation. However, the process is currently stymied because a lack of norms and regulations governing co-management has prevented a co-management agreement from being signed and as a new organization, the foundation does not yet have the capacity to negotiate (TNC 2007).

Chagres Steering Committee

A Chagres National Park Technical Steering Committee was formed initially to carry out the Parks in Peril project. As the PiP project came to an end, it was observed that the steering committee had been very effective in arriving at consensus-based decisions to guide conservation interventions in the park. As a result, the steering committee decided to continue post-PiP, and expand to include other relevant actors (TNC 2007).

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Rodríguez, J., Spadafora, R., Gutiérrez, R., & González, M. (Eds.). 2007. Sistematización de una Experiencia Compartida de Ejecución para la Consolidación del Alto Chagres (2002-2007). The Nature Conservancy, Panama City, Panama.

The Nature Conservancy (TNC). 2005. Site Evaluation FY2005/ WorkplanFY2006: Chagres. The Nature Conservancy, Arlington, VA.

The Nature Conservancy (TNC). 2007. End-of-Project Report: Chagres. The Nature Conservancy, Arlington, VA.

Condor Bioreserve, Ecuador

The Condor Bioreserve is a 2.4M hectare functional landscape that includes six protected areas: Cayambe-Coca Ecological Reserve, Antisana Ecological Reserve, Cotopaxi National Park, Llanganates National Park, Cofán-Bermejo Ecological Reserve, and Sumaco National Park, which is also a UNESCO Biosphere Reserve. This is one of the most biologically diverse places in South America. More than 760 bird species, 150 mammal species and 120 amphibian species have been documented in the Condor Bioreserve. Threats to the area include unsustainable agricultural, ranching and forestry practices, poorly planned water infrastructure projects, and hunting, particularly the Andean Bear (*Tremarctos ornatus*) (TNC 2005).

One of the principle strategies to conserve the Bioreserve is to maintain biological corridors between the core protected areas. To this end, the PiP program has been working with private landowners in the 90,000-hectare Paramo Conservation Corridor, which connects the Antisana and Cayambe-Coca Ecological Reserves (TNC 2007). The private lands range from huge ranches, or haciendas, to community cooperatives.

The small, medium and large-scale landowners have been united by their mutual concern for protecting the natural resources of the area. After conducting workshops and meetings with the private landowners in the corridor, the landowners decided to establish a voluntary Corridor Management Committee to respond to threats to the site, particularly in the form of water infrastructure development, and to better manage the area (TNC 2007).

Local NGO, Fundación Antisana, developed a management plan for the entire corridor and worked with five haciendas and communities to develop specific characteristics and management guidelines for those private properties. The Fundación also provided technical training in the form of improving small animal production and agricultural diversification. Several haciendas and communities are in the process of implementing management plans for their respective areas, which include more sustainable livestock management as well as increased patrolling of sensitive areas (TNC 2007).

The Committee decided to adopt a community park ranger model for the patrolling, which was approved by the Ministry of Environment. Three hacienda owners have provided four private park rangers to carry out the patrols. These rangers, actually hacienda workers who now work at the hacienda 50% of the time and as rangers the other half of the time, patrol the highland paramo areas along-side the Antisana and Cayambe-Coca Reserves. The private park rangers were provided equipment and training by Fundación Antisana and through the support of the hacienda owners (TNC 2007).

Sustainable financing is one of the main challenges to supporting the efforts of private landowners in the conservation of the Paramo Corridor. Fundación Antisana acquired a property, which is now the Palugillo Private Nature Reserve, and invested US$20,000 as initial capital in an endowment fund for management of the Reserve and to be able to carry out other private lands conservation activities in the Corridor. The voluntary contributions of the large hacienda owners, such as financing the park guards, are key aspects in the continuing success of the Paramo Conservation Corridor (TNC 2007).

The Nature Conservancy (TNC). 2005. Site Evaluation FY2005/ WorkplanFY2006: Condor. The Nature Conservancy, Arlington, VA.

The Nature Conservancy (TNC). 2007. End-of-Project Report: Condor. The Nature Conservancy, Arlington, VA.

Mbaracayú Biosphere Reserve, Paraguay

The Mbaracayú Nature Reserve (TNC 1992-1996) is one of two NGO-owned and managed protected areas, which have been a part of the Parks in Peril Program. The other NGO-owned and managed area is the Rio Bravo Conservation Area in Belize (TNC 1992-1996).

Law 112/91 legally established the Mbaracayú Forest Nature Reserve in Paraguay in January 1992 (TNC 1996). The Reserve was the result of an international agreement between the Government of Paraguay, the United Nations Development Program, The Nature Conservancy, and the Paraguayan NGO, Fundación Moisés Bertoni para la Conservación de la Naturaleza (FMB), which recognized the biological importance of the area and mandated its protection in perpetuity for the people of Paraguay (TNC 1996). The Reserve is a Category II protected area, which limits its use to tourism, recreation, and scientific research. Local Aché indigenous peoples are also allowed to hunt in the Reserve.

The reserve is composed of 64,400 ha, with a 20,000 ha area that is considered a buffer zone. Approximately 286,000 ha of the Upper Jejuí watershed surrounding the Reserve is considered a multiple-use zone and in the year 2000, this entire area was designated a biosphere reserve by the United Nations Educational, Scientific and Cultural Organization's Man and the Biosphere Programme (UNESCO 2007). FMB works closely with local communities in the buffer zone to involve them in the management of the reserve and to provide environmental education, technical support for sustainable development projects (TNC 1996).

At the time the reserve was being negotiated in the late 1980s, there was concern about the stability and objectives of the Paraguayan government, therefore it was decided that a private NGO would be created to own the Reserve (Fundación Mbaracayú) and FMB would manage the Reserve (Yanosky, 2000). As a private reserve, Mbaracayú does not receive funding from the Paraguayan Directorate of the National Parks and Wildlife. The PiP program provide initial funding for the management of the reserve, but FMB has had to develop sustainable funding sources to cover the costs of managing the reserve. A trust fund was established at the same time the reserve was established. The trust fund capital reached US $2M by 1996, but this is not sufficient to cover the operating and maintenance costs of the Reserve (TNC 1996). FMB is exploring additional funding opportunities such as international grants, scientific and natural tourism and consulting services.

The Mbaracayú Biosphere Reserve is one of the best-managed protected areas in Paraguay (TNC 1996). The success of the reserve has also helped establish FMB as a leader of conservation in Paraguay. Although FMB has worked closely with the Aché communities, they are now broadening their work with local non-Aché communities. An honorary council, composed of the government, UNDP, TNC, Fundación Mbaracayú, FMB and Aché representatives meets once a year to provide oversight of the Reserve by reviewing the annual report and proposed workplan. However, inviting local mayors and non-Aché community representatives would help FMB incorporate a broader range of local communities into the management of the Reserve (1996).

Although a concern with private reserves is their ability to reverse their protection status, the Mbaracayú Reserve is mandated by law, so there is little chance of reversibility. Another potential issue with private reserves is that they may or may not be accountable to local communities. Whether it is an NGO or a government-managed protected area makes little difference to local peoples if they have participation in the management, decision-making, and accountability of the area. While the participation of the Aché is written into the law of the area, the participation of other local communities is not. In the last ten years, FMB has increased their work with and the participation of other local communities in the multiple-use zone of the reserve. This is in recognition of the importance the local communities to the integrity of the Biosphere Reserve (Yanosky 2000). The Reserve now counts with a Management Committee (Comité de Gestión de la Reserva de la Biosfera del Bosque Mbaracayú) (FMB, 2007).

Fundación Moisés Bertoni (FMB). 2007. Reserva de Biosfera del Bosque Mbaracayú. Retrieved on September 20th from http://www.mbertoni.org.py/donde_trabajamos/mbaracayu/

The Nature Conservancy (TNC). 1996. Consolidation Report: Mbaracayú Forest Nature Reserve. The Nature Conservancy, Arlington, VA.

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2007. Retrieved on October 28, 2007 from http://www.unesco.org/mab/BRs/map.shtml.

Yanosky, A. 2000. The Mbaracayú Forest Reserve in Paraguay: A GHG Investment as a Catalyst for Conservation and Development. Fundación Moisés Bertoni. Paraguay.

Bosawas Biosphere Reserve, Nicaragua

The nearly 730,000 ha (2M ha with buffer zone) Bosawas Biosphere Reserve in Nicaragua forms the heart of Central America's Mosquitia region (UNESCO, 2007; MARENA, 2007). Bosawas is named for the **Bo**cay River, the **Sa**slaya Mountain and the **Was**puk River. It was declared a protected area in 1991 and in 1997 was named a Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization (UNESCO). Bosawas covers nearly 6% of Nicaragua's total land area and is made up of montane and lowland tropical moist broadleaf forests (TNC 2005). Although few scientific studies have been conducted in this area, Bosawas is thought to harbor populations of threatened species that need large ranges, such as the harpy eagle (*Harpia harpyja*).

Roughly 21,000 Mayangna (~7,000) and Miskitu (~14,000) indigenous people live within the Reserve (MARENA, 2007). Beginning in 1993, The Nature Conservancy supported the establishment of six indigenous territories, Mayangna Sauni As, Mayangna Sauni Bu, Mayangna Sauni Bas, Miskitu Indian Tasbaika Kum, Kipla Sait Tasbaika and Li Lamni Tasbaika Kum within the core part of Bosawas (Stocks, 2003). In 2003, the Nicaraguan parliament passed an indigenous titling law (Law 445) and in May of 2005, six communal, non-transferable titles were granted to indigenous communities in the Reserve (TNC 2005). However, the Bosawas Technical Secretariat (SETAB) and the Ministry of Environment and Natural Resources (MARENA) still maintain jurisdiction over the Reserve because of its status as a protected area (MARENA, 2007).

While communities have received land titles, they lack a reserve-wide organization that is composed of democratically elected representatives in order be recognized as a legal authority. Having such an organization would give them the legitimacy to establish environmental norms and regulations, among other things, for the Reserve (TNC 2007). In addition, mounting external pressures, such as government presence, colonists, the advancing agricultural frontier, illegal loggers and drug-traffickers necessitate a strong indigenous institution that can make decisions and negotiate on behalf of the communities. To this end, the Parks in Peril project supported the development of a governance model based on traditional organizations (TNC 2007).

Representatives from the municipalities, the local organization Center for Understanding with Nature (CEN), TNC, MARENA and 26 Mayangna and Miskitu male and female leaders from the Li Lamni Territory, participated in the activities and workshops to design and validate the model. As part of this process, the group met with every community in the territory in order to understand their concerns and future vision. Workshops and general assembly meetings, with consensus-based decision-making, were also held with leaders from the other territories. Nicaragua's legal and judicial framework in relation to organizations and indigenous law both within and outside of protected areas was also analyzed (TNC 2007).

The governance model has the following elements (TNC 2007):

- Each community in the six territories will elect, through a participatory process, elders to represent the community in the Elders Council.
- The Elders Council (based on ancestral governance structure) will be the organization in charge of solving problems and guiding the people and communities.
- The Elders Council will be further organized by geographical sector (e.g. a group of communities with easy communication and by territory).
- The Elders Council is also responsible for organizing elections for an executive director for each territory, as well as administrating the goods and services of the community. The Council can also take action against any council member found guilty of corruption.
- Once the Elders Council has organized general elections to elect an executive director for each territory, then the community member that is elected will organize technical teams in order to implement the directions elucidated by the Elders Council.

- The executive director will have the authority and capacity to propose conservation and livelihood strategies, which must be presented to the Elders Council for approval.

- An Elders *Territorial* Council will be made up of representatives of each geographical sector, for territory and reserve-wide decisions.

A key aspect of this model is that it is based on and incorporates existing governance structures in the territories. Each community currently counts with an Elder Council, made up of 3-5 elders, the schoolteacher, judge and priest. General Assembly meetings are held with all community members and decisions are made by consensus. Therefore, the Elder Council may influence decision-making, but must abide by the majority decision. The existing Councils are effective at the local level but lack the organization and mechanisms for scaling-up to sectoral, territorial and reserve-wide decision-making bodies (Fernandez, 2007).

This governance structure is a proposal developed by and validated by the people of Li Lamni. It will be implemented by the local Association as a pilot program over the course of the next five years, with funding from the World Bank and technical support from MARENA and other organizations (Fernandez, 2007).

El Ministerio del Ambiente y los Recursos Naturales (MARENA). 2007. La Reserva de Biosfera BOSAWAS – Nicaragua. Retrieved on October 28, 2007 from http://www.marena.gob.ni/areas_protegidas/reserva_biosfera_bosawas.htm

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The Nature Conservancy (TNC). Site Evaluation FY2005/Work-planFY2006: Bosawas. The Nature Conservancy, Arlington, VA.

The Nature Conservancy (TNC). 2007. End-of-Project Report: Bosawas. The Nature Conservancy, Arlington, VA.

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Pacaya-Samiria Reserve, Peru

The Pacaya-Samiria National Reserve is a Category IV, government-managed protected area in Peru. At 2,150,770 ha, it is the 2nd largest protected area in the country and it makes up 1.7% of Peru's total land area (TNC 2005). The Reserve was established in the 1940s to protect the natural resources of the area including the huge freshwater fish, *Arapaima gigas*, known locally as Paiche (Rojas et al. 2006). Roughly 42,000 people, in 94 communities (including 24 Cocama-Cocamilla indigenous peoples) live within the Reserve. An additional 50,000 people live in the buffer zone of the Reserve. The majority of the people living within and outside of the reserve are dependent upon its natural resources for subsistence (TNC 2005).

In Pacaya-Samiria, artisanal fishing organizations have gained the authority to manage and commercially harvest Paiche (Rojas et al. 2006). This fish is consumed locally and is also dried and sold outside of the Reserve. Beginning in the mid 20th century, Peru passed laws to protect the Paiche, whose population was sharply declining due to uncontrolled harvesting. These measures included creating the Reserve and mandating the development of a management plan for commercial Paiche harvesting.

These efforts supported the Paiche's recovery, and beginning in the mid 1990s, TNC, NGO ProNaturaleza, and communities living within the Reserve began to work with governmental authorities to consider approving a management plan for Paiche that would give community organizations the right to manage this resource for commercial purposes. The principle behind this was that the communities within the Reserve would benefit economically by legally commercializing the Paiche harvest and would contribute to conserving this resource by being involved in its sustainable management. In coordination with ProNaturaleza, the local fishing and processing organization, Organización Social de Pescadores y Procesadores Artesanales (OSPPA)/ Unidad de Pesca Comunitaria (UPC) Yacu Tayta, developed a management plan for Paiche for 2004 – 2008. This plan stipulates the time period, methods, size and quantity of Paiche that can be harvested and fishermen must keep data on the number, gender, age and size of fish caught (Rojas et al. 2006). A harvest quota was established of ten percent of the total adult individuals tagged each year in the lake. During 2004, 220 Paiche were landed, and approximately 4,500 kg of dry fish and 6,000 of fresh fish were commercialized. This generated an income of US$23,431 (TNC 2007). Sustainable harvesting of Paiche is now contributing to the economic well being of local communities within the Pacaya-Samiria Reserve, and is supporting long-term conservation of this species.

While the Paiche management plan was a significant accomplishment, the long timeframe for gaining approval was prohibitive (TNC 2007). The PiP program conducted a series of meetings and workshops between all the stakeholders involved in developing and approving the plans to ascertain ways to make future resource management plans more efficient and feasible. As a result, a new protocol was developed whereby, instead of submitting the completed plan to the authorities, all the relevant authorities are involved in the development of the plan from the start.

As a result of streamlining the process and with the efforts of the highly motivated local management groups, in June 2007, four yarina palm management plans (four management groups), one moriche palm management plan (one management group), one river turtle management plan (one management plan for the basin, four management groups), one paiche management plan (one management group) and six arahuana fish management plans have been approved and are being implemented (eight management groups) (TNC 2007).

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