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Under the Cecropia tree: Case studies of conservation and development projects in Costa Rica.

Elizabeth B. White
The University of Montana

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UNDER THE CECROPIA TREE:
CASE STUDIES OF CONSERVATION AND
DEVELOPMENT PROJECTS IN COSTA RICA

by

Elizabeth B. White

presented in partial fulfillment of the requirements
for the degree of
Masters of Science

The University of Montana

May 2002

Approved by:

[Signature]
Chairperson

[Signature]
Dean, Graduate School

S-31-02
Date

Advisor: Neva Hassanein

The professional paper I present here is a critical analysis of three natural resource conservation projects in the Osa Conservation Area of southern Costa Rica. I look at each project from the perspective of community participants and present the information in the form of three comparative case studies. Of the three conservation projects I studied, two are based within single communities and combine conservation with community capacity building and income generating activities. The third project draws from and integrates conservation and community development efforts in multiple communities. Its overall goal is to create a forested corridor connecting the protected areas of the Osa Conservation Area. Each project’s approach to community involvement and natural resource conservation is different. To varying degrees, the projects sought approaches that are economically sustainable, defined as lasting longer than the time period the managing organization is directly involved, and reflective of the socio-economic needs of the local community members, while also maintaining an overall objective of alleviating the stress on the natural resource base. Drawing on the perspectives of local community members who have participated in one of the three projects, I make conclusions about approaches to community development combined with natural resource conservation that are most successful in the Osa Conservation Area of Costa Rica. The three projects profiled here suggest that community participation through empowerment and a participatory process need to happen in order for natural resource conservation projects, focused on the populated areas of the Osa Conservation Area, to be successful in meeting the objective of conserving natural resources.
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Esta tierra pertenece a los costarricences,
algunos ya han muerto, otros todavía viven,
pero la mayoría aún no ha nacido.
- Costa Rican saying

This land belongs to the Costa Ricans, some
have already died, others are still living, but most
have not even been born.
Chapter One

Introduction

Not too long after arriving in Costa Rica, I traveled to the capital city of San José for some meetings. I went out for a drink with a sociologist from the University of Costa Rica (UCR), who conducted research in the Osa Peninsula. We had met at a conference the week before in Golfito, and she suggested that we meet up when I would be in San José. I was ecstatic about an opportunity to gain the insight of a native Costa Rican, and especially a woman’s perspective on doing research in the Osa.

We sat at a noisy café down the road from the UCR campus. A mariachi band played for the drinking crowd and young children weaved through the tables selling roses and jewelry. After the usual introductory chat about our backgrounds and own research goals, I asked her what advice she might have for a student, woman, and foreigner endeavoring to carry out a research project in the Osa Peninsula. She smiled a knowing smile that told me she could speak to that question to no end, but the piece of wisdom she offered was this: Don’t be quiet; talk to people, and be continually upfront and honest about what you are doing. If you don’t do this, she said, people will wonder and feel as though they are being observed. I took this advice to heart, and approached every conversation with it in mind.

The professional paper I present here is a critical analysis of three case studies of conservation and development projects carried out in the Osa Conservation Area of southern Costa Rica. I carried out the data collection during a three-month period
between August and October 2001. The research took place primarily in the communities of Cañaza and La Gamba, and in several other locations within the Osa Conservation Area. The communities of Cañaza and La Gamba are both made up of about 90 families and are located in buffer zones of protected areas.

In recent years, the management of international protected areas has been the source of much debate as to how such management should be carried out on the ground (Wilshusen et al., 2002). Throughout current literature, two major paradigms emerge as approaches to natural resource conservation. The first is the protectionist position, which calls for strictly enforced nature protection for specified uses such as scientific study or recreation, among others. The second position, the integrated conservation and development approach (ICDP), emerged as a critique to the protectionist position and combines conservation goals with economic development objectives. ICDPs operate on the premise that people will conserve their natural resource base when attractive alternatives to exploitation of the natural resources exist. The ICDP position also assumes that communities value their natural resources for the economic benefits or functional roles that they fill (Wells et al., 1992).

The three case studies presented here are examples of integrated conservation and development projects in that they combine the objectives of community economic sustainability and protection of the surrounding natural resource base. I define "economic sustainability" as economic improvement within a community that lasts beyond the time an organization or outside party is directly managing and directing the activities that led to increased economic benefits. They projects profiled operate under the accompanying assumptions of the ICDP model – that community members will
conserve the surrounding natural resource base when alternatives to exploitation exist. ICDPs around the world have faced many challenges with combining natural resource conservation and economic development in a way that will stand the test of time (Brandon and Wells, 1992; Wilshusen et al., 2002; Stem, 2001; Western and Wright, 1994).

This document explores the approaches that the three projects profiled use to implement the combined objectives of economic development and natural resource conservation. The overall research question this document addresses is: How do the three projects approach natural resource conservation within the Osa Conservation Area and how does that approach affect the success and sustainability of the effort, including the satisfaction of the participants from the community? I explore this question through a critical look at each of the three projects’ approaches. I do this through an analysis of responses to open-ended interviews with local community participants, detailed field notes, collected documents, and notes from my participation in meetings and conferences. Each project that I profiled uniquely addresses the combined goals of community economic sustainability and natural resource conservation. I make recommendations, based on the opinions of participants in the three projects, as to what approach to carrying out these combined goals is most appropriate for conservation organizations working in the Osa Conservation Area.

This document is presented in six chapters. This current chapter, “Project Introduction,” gives an overall summary of the project including a summary of the contents of the document. The second chapter, “Literature Review,” presents a review of current protected area literature, ranging from the early years of conservation strategies
that focused primarily on strict protectionism, to the more recent emergence and subsequent critiques of community based conservation and integrated conservation and development projects (ICDPs). It situates the case studies within a larger body of literature on existing approaches to economic development through income generating activities combined with natural resource conservation. And it explores the unique role of non-governmental organizations (NGOs) in the larger context of natural resource conservation. Chapter 2 also provides a look at the history of protected areas and conservation in the Osa Conservation area, outlining important events and themes that have shaped and dictated the current conservation tone of the area. Lastly, chapter 2 outlines my methodology including the rationale behind my mixed methods approach to data collection. Chapters 3 through 5 present the findings from the three case studies. Each chapter includes background and history of the project and the organization that directs it, and eight sections laying out the themes that emerged from my data. In the final of those sections, "Lessons to be Learned," I summarize the findings for each case study and make some conclusions about what can be learned from taking a critical look at the case study. Chapter 6, "Project Conclusions" gives a summary of the findings for each case study and ties them into the larger picture of current protected area management and integrated conservation and development literature.
A review of current literature surrounding protected area management and international conservation and development informed this study. In this chapter, I present an overview of existing literature and existing schools of thought that affect the three case studies. It serves the purpose of grounding the case studies within a larger context of protected area management and conservation and development literature.

**Changing Paradigms**

The development and management of international protected areas and the conservation of the biodiversity both inside and in the buffer areas around them has become a pivotal topic in conservation literature of recent years (Brandon and Wells, 1992; Brechin, et al., forthcoming; Ghimire and Pimbert, 1997; Redford, Brandon and Sanderson, 1998; Western and Wright, 1994.) Throughout the literature, two major paradigms emerge as current approaches to biodiversity and natural resource conservation. The first is the authoritarian or protectionist position, which has most recently emerged as a “new protectionist paradigm”, in response to critiques of people-oriented approaches to biodiversity protection. This position, particularly the new protectionist paradigm, calls for strictly enforced nature protection and seeks to preserve key tracts of forest or water bodies for biodiversity and/or scientific research, sometimes combined with recreation and tourism development (Wilshusen, 2002; Ghimire and Pimbert, 1997). The types of protected areas generally referred to by this position are
described by The World Conservation Union (IUCN) categories I, II, II (See Appendix C).

The second approach to natural resource and biodiversity conservation combines economic development objectives with conservation goals. Such initiatives, coined “integrated conservation and development projects” or ICDPs by Wells et al. (1992), operate on the idea that people will be more likely to conserve natural resources if there is an incentive to do so or when economic alternatives to natural resource exploitation exist. The ICDP model assumes that people must receive material benefits to conserve resources (Belsky, 1999; Donovan, 1994; Western and Wright, 1994). This position is generally people-oriented and often seeks to improve environmental resources in or near settlement areas to better living conditions of certain social groups (Ghimire and Pimbert, 1997). These two approaches have often clashed both theoretically and in the practical application of projects on the ground. This has led to an emerging body of literature recognizing that, while strict protectionist approaches may be appropriate in certain contexts, a clarification must take place on how nature protection can and should occur in ways that are not only ecologically sound, but also practically feasible and socially just (Wilshusen et al., 2002).

Many conservationists recognize that excluding communities that lie adjacent to protected areas access to the natural resources that lie in those areas, without providing them with alternative opportunities for income is both politically unfeasible and ethically unjust (Wells et al., 1992). In the case of the communities of both Cañaza and La Gamba, many residents previously lived in areas that are now designated protected and were forced to leave them.
In the initial years following the emergence of the ICDP model, many conservation organizations embraced the approach, quickly involving communities in development activities to achieve their broader conservation goals. Many times, organizations assumed that the improved economic conditions that such activities could bring would automatically lead to participants adopting practices that took pressure off the natural resources. However, there is little evidence to indicate that such projects are an effective means of continuing economic and ecological goals over an extended period of time. Also, according to some critics, it is inaccurate to assume that communities participating in such activities will actually abandon practices that use surrounding natural resources (Brandon and Wells, 1992; Wells, Brandon and Hannah, 1992).

The Emerging Roles of Non-Governmental Organizations

As debates over protected areas and their management have grown and changed throughout recent years, non-governmental organizations (NGOs) have emerged as key players in the orchestration of projects implementing biodiversity protection, sustainable development and integrated conservation and development projects (Evans, 1999; Fisher, 1993; Fisher, 1997). The role of NGOs has been complex. They have been embraced and promoted in the past decade by international development agencies, such as the World Bank, that represent top down models of conservation, as well as by radical critics of top-down development (Fisher, 1997). NGOs have bridged gaps between international scientists, funding sources, and economic resources and local communities and grassroots conservation efforts. As Fisher states (1993), “In Asia, Latin America, and, more recently, in Africa, this organizational explosion is creating a partnership between some
of the best- and least-educated people in each society as intellectuals and technically
trained professionals seek out and work with grassroots village and neighborhood
groups.”

But oftentimes NGOs are idealized as organizations through which people help
others for reasons other than profit or politics. This idealization has led to lofted
expectations about their abilities and a view of them as “the new panacea to cure the ills
that have befallen the development process” (Dichter, 1993; Fisher, 1993; Fisher, 1997).
Fisher explains that the challenge is in understanding what is happening within and
through NGOs, and how they can adapt to the changing conditions within which they
operate. We must consider NGOs as “one specific possible form of collective action and
human community to set the stage for a comparative analysis of the different
configurations these forms of collective action have taken and are taking in a complexly
woven field of [international and community-based conservation work]” (Fisher, 1997).

While there exists the full gamut of players in the conservation arena in Costa
Rica, NGOs have particularly emerged as central actors in conservation efforts in the
country in recent years (Cuello, Brandon, and Margoluis, 1998; Evans, 1999; Wallace,
1992). They are unique in their relative flexibility in where to invest energy and
resources and in Costa Rica, serve as liaisons between many other conservation actors
such as the government, community groups, international funders and other individuals
(Mack, 2001; Rivera, 2001). They have also played important roles in the rich
conservation history in Costa Rica. This history has shaped and molded the cultural
political and social context in which NGOs and other conservation groups currently
operate and has been influential in laying the groundwork for future conservation efforts.
Conservation in Costa Rica

Since the early 1970's, the Central American country of Costa Rica has become known throughout the world for its extraordinary beauty, rich biodiversity, recreational opportunities as well as its still-growing, elaborate system of national parks and other protected areas. During the past three decades, numerous local, national, regional, and international organizations and programs have been established in Costa Rica, working on everything from scientific research and sustainable development to agriculture and ecotourism. These programs have also followed the recent trend towards more people-oriented approaches by attempting to draw upon local knowledge and to incorporate members of local communities into their programs and into the natural resource conservation process (Donovan, 1994; Evans, 1999; Wallace, 1992). However, environmental problems in Costa Rica have only become more complicated and pressing. Deforestation persists at an alarming rate. Illegal hunting and trapping of wildlife is recurring within protected areas. And local animosity and distrust towards or disregard for many organizational and governmental conservation efforts is common (Cuello, Brandon and Margoluis, 1998).

In the Osa Peninsula Conservation Area (ACOSA) in southwestern Costa Rica, historically there have been numerous NGOs, governmental organizations, internationally run projects, and ICDPs, working towards biodiversity protection and sustainable development in the area. While these projects and programs have achieved some success; however, previous studies have shown that on the whole they have been unable to successfully reach their proposed goals or to arrest the acute environmental destruction.
in the Osa region (Cuello, Brandon, and Margoluis, 1998; Donovan, 1994).

Organizations, particularly those based outside the Osa conservation area, have had only minimal success historically in gaining support of local residents for their conservation initiatives. As a result of these programs and projects being managed from outside the region, many local residents apparently have continually felt that outsiders have imposed conservation upon them. Also, the local residents that are involved in these collaborative efforts are often a select group and are not representative of the entire community (Cuello, Brandon, and Margoluis, 1998; Evans, 1999). Some researchers suggest this ineffectiveness and elitism is due to a virtual lack of coordination of institutions involved in conservation and sustainable development in the Osa region (Cuello, Brandon, and Margoluis, 1998.)

Creation of the Osa Conservation Area

During the past two decades, the government of Costa Rica took on a restructuring process of governmental agencies overseeing conservation within the country (Donovan, 1994). Throughout this process, the government’s stated objectives have been to integrate protected area management with surrounding areas, decentralize much of the decision-making power to regional levels, and consolidate the country’s system of protected areas at the regional level. In part this was done to address the problem of too much diffusion of responsibility within conservation management. The government also viewed sustainable economic development and increased local control as essential to conservation success in Costa Rica (Cuello, Brandon, and Margoluis, 1998; Donovan, 1994; Evans, 1999).
In 1987 the government created a national system of protected areas called the Sistema Nacional de Areas de Conservación (SINAC) (Evans, 1999). SINAC was the result of the combining of the National Parks Service, the General Forestry Directorate, and the Wildlife and Wildlands office under one designation. The government created nine regional conservation areas (ARC’s), each made up of three land-use categories:

- a core protected area, such as a national park;
- buffer zones and areas of multiple use; and
- lands for agriculture or other uses.

In 1989, an area including the Osa Peninsula, on the southwestern coast, became the Osa Conservation and Sustainable Development Area. The Osa Conservation Area currently includes Corcovado National Park, Golfo Dulce Forest Reserve, Golfito Wildlife Refuge, Isla de Caño Biological Reserve, Sierpe-Terraba Mangrove Forest Reserve, and Piedras Blancas National Park. As of 1994, the Guaymi Indigenous Reserve is no longer part of the conservation area.

The Osa Conservation Area is a region of particular ecological and social importance. The Osa Peninsula is a 280,000 hectare humid lowland area and is the only large remaining block of lowland rain forest on the Pacific side of Central America. It is part of the land bridge between North and South America and contains roughly 2,000 species of plants, 370 species of birds, 120 species of reptiles and amphibians, 40 species of freshwater fish, and more than 8,000 species of insects (Cuello, Brandon, and Margoluis, 1998; Donovan, 1994).

The objectives for the creation of the conservation area were (1.) “to achieve optimal protection and management of the peninsula’s protected areas and surrounding
areas through actions directed at the communities that live inside and near these areas; and (2.) to integrate under one management unit, the protected areas and buffer zones under the perspective of sustainable development” (quoted in Cuello, Brandon and Margoluis, 1998:150). The creation of a system of conservation areas was innovative in its goals to link protected areas with buffer zones and with the local inhabitants. However, according to Cuello, Brandon and Margoluis (1998:151), historically it has been difficult to establish those links either within the Osa Conservation Area or in the minds of local people who “see conservation as an imposition, and something for which they have been sacrificed.”

The Osa Conservation Area is currently an assortment of protected areas created during a period of almost thirty years. They exist under a variety of management categories such as National Park, Biological Reserve, Forest Reserve, National Wildlife Refuge, Indigenous Reserve, and Protected Wetland. In most cases the areas were created in response to opportunities, such as donations of land or money, or imminent threats, such as land invasions and slash and burn agriculture (Project Profile, 2001; Sistema Nacional de Areas de Conservación, 2002). This being the case, their establishment and borders were usually influenced as much by political, social, or economic factors as by considerations of biodiversity conservation. Also, the management categories assigned to these areas were not always adequate, and each area is presently under a separate administration, and management activities are not closely coordinated among them. ACOSA, the government agency responsible for the management of the Osa’s public protected areas is continually faced with a shortage of
resources, and because of this many important areas receive no protection at all (Project Profile, 2001).

Conservation Organizations in the Osa

Concerned about the fate of the Osa, an array of conservation organizations have taken to arms in the Osa Conservation Area over numerous different issues. The number of organizations working in the area is daunting. Their projects and programs are extensive and often overlap in objectives. And many organizations' involvement in the region remain in flux, changing according to demand and the environmental issues at hand.

Within the wide mix of players in the organizational community of the Osa area, few groups have actually made a long-term or intensive commitment in the area. At the time I was conducting this project during 2001, I attempted to compile a comprehensive list of NGOs, governmental organizations (GOs), community groups or other players currently involved in the environmental scene framed within the Osa Conservation Area. I soon realized such an undertaking would be a project in itself, principally because of the ebb and flow of the work of many groups and the unorganized state of many others. Therefore, with this in mind, I created a list, albeit incomplete, to demonstrate the variety of organizations that are presently working in the Osa Conservation Area (see Appendix A). The community groups were most difficult to obtain information about because many are not very active and tend to organize only around particular issues or events. And the organizations range from large scale and relatively high profile, such as the
Neotropica Foundation, to small scale grassroots or community organizations such as CLACOSA (see Appendix A).

**Osa Biological Corridor Area**

For many years conservationists in Costa Rica have discussed the creation of a forested corridor to connect the protected areas within the Osa Conservation Area. This corridor would function as a part of a larger Mesoamerican corridor project that aims to connect protected land from the five southernmost states in Mexico down through Central America to the southern boundary of Panama. These corridors would serve to promote movement of species and genetic material among the currently existing sectors of protected land. The Osa Biological corridor would connect with the Paso de la Danta corridor, which runs North along the Pacific coast to protected areas in the Talamanca Mountain Range (Boletín Especial Corredor Biológico Paso de la Danta, undated).

According to one of the coordinators of the corridor project, Steve Mack:

> The Osa Biological corridor will include and connect seven existing public conservation areas as well as private lands... The consolidation of the biological corridor addressed by this project was identified by ACOSA as its highest priority over the next five years in a Conservation Site Planning exercise facilitated by The Nature Conservancy in April and May, 2000” (Mack, 2001; Project Profile, undated).

The Paso de la Danta Biological Corridor (CBPD) is part of a regional initiative to reestablish a communication route for flora and fauna between the forests of the Osa Peninsula and the Golfo Dulce basin with the Los Santos Forest Reserve in the Talamanca Range. Its goal is to protect the hydrographic basins, the coastal zone and the
quality of the region’s landscape. All of this is within the name of the Mesoamerican Biological Corridor (CBM) project (Boletín Especial Paso de la Danta, undated).

**Threats to Natural Resources**

There are currently numerous threats to the natural resource base in the Osa Peninsula and the Osa Conservation Area. A brief discussion of the most prevalent problems is important in understanding the current environment in which conservationists are operating and the context of this study.

**Logging and Deforestation**

At present, a large percentage of Costa Rica is deforested, suffering from erosion, and many species of flora and fauna, including a large number of endemic ones, are falling victim to habitat loss. As late as 1950, 90 percent of the country remained in forest cover, but by 1990 the cover had decreased to only 25 percent. In the Osa Conservation Area, logging continues to threaten protected land. The timber permits, given out by the government Ministry of Energy and the Environment (MINAE) under the auspices of “management plans” have created a checkerboard of clearcuts around the peninsula that have caused the rivers to turn brown with uncontrolled runoff and destroyed important wildlife habitat and fisheries. The silt eventually makes it to the sea where sedimentation is choking out the coral reef in the Golfo Dulce (Evans, 1999; Cecropia, 1998).
Management Plans

Forest “management plans,” which I often heard referred to by residents of the Osa as “forest destruction plans,” are a problematic system, according to a study conducted by the Cecropia Foundation in 1999 (Cecropia, 1999). The Ministry of Energy and the Environment (MINAE) issues permits to cut a specified number of trees on property within the Golfo Dulce Forest Reserve. The initial authors of the plans intended them to be strictly regulated and given to land owners who needed to secure some income from their forested land. However, the system has more directly served private loggers who easily obtain permits from the government, promising them a portion of the income from sale of the wood. They approach land owners offering cash for their trees. The campesinos see the short term benefits of immediate income and are quick to accept money for their forest. And frequently loggers exploit many more trees than the permits allows for, paying the land owner a small percentage of what the wood is worth (Cecropia, 1999).

Development

For over a decade, ecotourism has boomed in Costa Rica. While it has brought a heightened awareness of the country’s spectacular natural wealth, it has also brought its share of growth and development. The northern part of the country has seen much more glaring development with large luxury hotels cropping up along the Pacific coastline, than the less developed, steamy South. However, the Osa Peninsula has certainly been discovered and numerous jungle lodges and rainforest hotels have appeared in recent
years (Evans, 1999, Wallace, 1992). While this abundance of foreign investment has brought more tourists, more money and more use, the nature of the development is mostly in keeping with the wild feel of the peninsula. The lodges are open air, “rustic” and tend to be tucked away in the midst of the remaining primary rainforest. The inland areas have seen less new tourism infrastructure, save a few sport fishing and jungle lodges along the northeastern coast of the Golfo Dulce, however visitation is increasing with the creation of the new National Park, Piedras Blancas, and with the improvement of roads to access the areas.

**Unsustainable Agriculture**

Various forms of unsustainable agriculture have had a negative effect on land in the Osa and surrounding areas. When colonization began to stretch to the Osa, the Costa Rican government created an incentive program called *mejoras*, or “improvements” as a way of gaining title to land, to promote colonization of the area. If a campesino¹ conducted *mejoras* on his or her land over a long period of time, they were promised title to that land. These “improvements” were generally environmentally detrimental, consisting of activities such as cutting down trees to create land for agriculture, building infrastructure such as houses, and practicing methods such as slash and burn agriculture to keep the land useful for crops (Evans, 1999; Vandermeer and Perfecto, 1995b).

Another primary form of unsustainable agriculture was brought on by the arrival of plantations to the Osa. Bananas came first and remained a mainstay of the southern zone’s economy; however, due to market fluctuations and lowered demand, the banana plantations on the Osa closed up shop or converted to other products such as African oil.

¹ Campesino translates to mean “peasant,” “countryman,” or “farmer” (Smith, 1971).
palm or fast-growing tree species for export to foreign countries for production.

Regardless of the product, plantations in Costa Rica and the Osa occupy a large amount of space that was most often previously tropical forest, and they tend to use significant amounts of petrochemicals and generally wreak havoc on the ecology of an area (Van den Hombergh, 1999; Alanso-Martinez, 1993; Stone Forestal, 1999).

**Land Tenure**

The uncertainty of land tenure in the Osa Conservation Area has been a troubling obstacle for numerous past conservation efforts undertaken in recent years. The issue of land tenure in the corridor area is extremely complicated, but is also paramount to a clear understanding of environmental conservation issues in this area.

The problem originated in 1975 with the expropriation of the North American Company *Osa Productos Forestales* and the subsequent creation of Corcovado National Park on land previously belonging to the company. The government relocated many families from the area that became the park and moved them, without land title, to areas outside the park boundaries. A few years later, the Golfo Dulce Forest Reserve was created, with the difference that the National Park is not inhabited but people do live in the Forest Reserve. Many of its inhabitants live in fear that the Forest Reserve will also be converted to a National Park, and they will be forced to leave the land also (van der pol, 1994).

The history of land acquisition in the area was through a system that encouraged *mejoras* or improvements mentioned above. Since many farmers in the Osa Conservation Area acquired land in this way, the government recognizes many residents
as "owners"; however, they do not possess title to their land. This continually causes confusion over property boundaries, making conservation efforts on private land very difficult and many landowners ineligible for forestry incentives (Mack, 2001). One source estimates that less than 10 percent of people in the corridor area have secure title to their land. Also the average size of a forested parcel is less than 60 ha. Such fragmentation makes forest management or conservation extremely difficult (Donovan, 1994).

**Government Incentives**

Currently the national government, operating through the ministry of energy and the environment (MINAE) and the Osa Conservation Area (ACOSA), has a system of incentives designed to promote forest conservation and sustainable management of land. These incentives are called "Money for Environmental Services" (Pagos Por Servicios Ambientales) and are given out by MINAE to individuals who complete certain types of "environmental services" on their land. These services could include reforesting a portion of their land or leaving a portion as forest cover or under some type of conservation easement, among others. The individual who completes these "services" receives tax incentives from the government in the form of property or other tax breaks (Cecropia, 1999).

Some organizations in the Osa are attempting to utilize this system to their advantage to promote private conservation through easements; however, there are several inherent problems with this system. Principally, MINAE is uncertain whether there will be resources to pay for such incentives in the future. They are presently setting up
contracts even though funding to support them is unsecured. Secondly, the government agencies lack the personnel to monitor properties of individuals who participate in the incentives to assure they are complying with the conservation regulations (Cecropia, 1999).

Past Conservation Projects

The history of failure, conflict and controversy surrounding many conservation efforts in the Osa has undoubtedly set the tone for future work in the area and complicated its social and political landscape. Two particular efforts, that I discuss in the following section, are of specific importance to the conservation history of the area: the World Wildlife Fund’s BOSCOSA project and the fight against Ston Forestal, the Latin American subsidiary of the U.S. based timber company, Stone Container.

BOSCOSA

In 1997, the Tropical Forestry Program of the World Wildlife Fund (WWF), in collaboration with the Neotropic Foundation, developed “The Osa Peninsula Forest Conservation and Management” (BOSCOSA) project. The collaborating organizations directed BOSCOSA at natural resource conservation in the Golfo Dulce Forest Reserve and advocated for sustainable use of natural resources instead of relocation of local populations. BOSCOSA’s main goal was to arrest the rate of deforestation in the Osa by working through local institutions to provide economically sustainable land-use alternatives to the regions inhabitants. Beginning in 1997, BOSCOSA’s leaders worked
in the community of Rancho Quemado, beginning as a pilot project and later expanding
to other communities on the Peninsula (Donovan, 1994; van der pol, 1994).

According to Donovan (1994), BOSCOSA struggled to address two complex
policy issues: interagency coordination and land tenure. And though the project
identified these two issues as focal points, it was unsuccessful at actually addressing
them. Through anecdotal evidence while in the Osa, I was told that a big mistake made
by BOSCOSA is that they went full steam ahead with their project objectives without
addressing the land tenure situation, which ultimately compromised the project’s success.

According to one source, “BOSCOSA retained agriculture as a potential activity
because the project was committed to the notion that farmers on the Osa should work in
their own interest, on alternatives that they themselves identified” (Donovan, 1994).
However, again from anecdotal information, BOSCOSA tried to do too much too
quickly, hoping to change what had been historically an agricultural tradition into a
forestry one. In addition, they made sweeping promises regarding income the project
would bring the local farmers and, when the project did not pay as promised, there was
sweeping discontent.

According to van der pol (1994), the fundamental problem of unsure land tenancy
undermined the success of BOSCOSA’s activities. She asserted that only once the
situation surrounding land tenancy is clarified can other activities within communities fall
into place. Also, BOSCOSA continually talked about community participation in their
projects; however, the ways in which community members could participate and
communication from the project were inconsistent.
Ston Forestal

Ston Forestal is the Latin American subsidiary of the United States’ Stone Container Corporation. In 1995, Ston Forestal submitted a proposal to the Costa Rican government to build an export facility for “gmelina arborea,” or “melina” in English, at the northern end of the Golfo Dulce. The project proposed the planting of 65,000 acres of gmelina, called “the miracle tree” for its rapid growth, and the construction of the largest chip mill in Central America in the middle of the biological corridor area (Alonso-Martinez, 1993).

Ston Forestal’s past track record included environmental destruction such as an ecological and social disaster the company caused with a similar project in Brazil, depreciation of land value upon departure of past projects, and carrying out similar projects without collective support from local residents. Citing such reasons, a group of local community members on the Osa Peninsula organized themselves and took to arms and successfully stopped the construction of the gmelina plant (van den Hombergh, 1999).

After “winning” that battle, there was much bad blood on the part of those who were in favor of the project, and a very shady event took place where three key players on the community side of the conflict died when their house burst into flames in the middle of the night. The local residents involved never made formal accusations; however, suspicion ran rampant and tensions on both sides of the natural resource conservation debate became even more fiery (van den Hombergh, 1999).
SIPRAICO

SIPRAICO (Sindicato de Productores Agrícolas Independientes del Cantón de Osa) is a syndicate of independent agriculture producers, who organized informally with the creation of the Golfo Dulce Forest Reserve in 1978 and informally in 1985. The immediate motive for the creation of this group was that Campesinos who cut down trees on their own land would be incarcerated until they paid 15,000 colones (about $60) to get out of jail. In response to the Forestry Law, SIPRAICO began an aggressive campaign against the Ministry of Energy and Mining (MIRENEM), the agency which at the time managed the forest reserve and the National Park land, and against BOSCOSA, which they perceived as a threat also. They campaigned to be allowed to cut down trees on their land and farm it as they pleased. These farmers argued that they settled in the Osa Peninsula because the government encouraged them to do so through the incentive of mejoras and that it was a violation of their human rights not to be allowed to do as they pleased on their land. They took their argument to the Supreme Court of Costa Rica and won. Presently members of the group are attempting to force the government to buy their land back from them at astronomical prices (Russman, 2001; van der pol, 1994).

According to many residents of the Osa, BOSCOSA and the conflict with Ston Forestal created a strong sense of anger and mistrust toward outside interests in the Osa. Residents expressed similar sentiments in the interviews I conducted, and it was apparent that these past projects, among others, had a strong effect on the residents of the Osa. Their inclusion in this introduction serves to further describe the tone in the Osa regarding conservation as a whole and how that tone is a factor in situating current conservation projects within the larger conservation context in the area.
Methodology

I approached this project with the assumption that the natural resource base in the Osa Conservation Area is in danger and that those in favor of protecting the area’s natural wealth must address the problem and search for solutions. In concert with the conclusions of Wilshusen et al., (2002), I am working on the assumption that nature protection should occur in the Osa Conservation Area of Costa Rica. However, I hoped to constructively explore how nature protection might occur successfully in this area.

Research Questions

I first experienced the Osa while in college, as a study abroad student in 1995. After a semester living and studying in Golfito, I left the country with more questions than answers about the mystery of environmental problems in the developing world. Why were the so-called “protected areas” inhabited, and were the inhabitants there legally? Why were “squatters” such a national issue? Why were the forests still being hauled away on logging trucks when the country was internationally heralded for its rich natural wealth and system of protected areas? Was the cause of rainforest deforestation as simple as a people in need exploiting protected areas for survival or were there more complicated reasons? I tossed such questions around in my head for years, hoping that someday I would be able to return to Costa Rica and explore them. However, because of the limited scope of this project, I could not address all my questions and therefore chose to focus on one primary research question and several other supporting questions. My overall research question is: How do the three projects approach natural resource conservation within the Osa Conservation Area, and how does that affect the
success and sustainability of the effort including the satisfaction of the participants from the community?

Objectives and Data Collection

While I had numerous objectives, both personal and professional for carrying out this project, my primary objectives for the completion of this study were threefold.

- To create a comprehensive list of organizations operating in the Osa Conservation Area.
- To conduct three case studies profiling three different projects operating in the Osa Conservation Area.
- To recommend an NGO approach to natural resource conservation in the Osa Conservation Area that addresses how NGOs can learn from local perceptions regarding conservation projects and programs, and can use that input to guide future projects in the Osa.

Throughout this study I used a mixed methods approach to data collection incorporating five main methods: the collection and review of documents, unstructured interviews, in-depth interviews, participant observation and field journals.

Collection and Review of Documents:

Throughout my field season, August through October 2001, I collected government documents, including various scientific studies conducted by agencies, in
addition to non-governmental organizations' documents. These included published and unpublished studies conducted by the organizations or internal documents describing the organizations, as well as Costa Rican journal articles from the University of Costa Rica’s journals and databases.

Unstructured Interviews

I began the interview process through conducting general and informal interviews with individuals to determine my best sources of information and whom I would choose for my formal, taped interviews. I did this through networking and determining the individuals most directly involved with the projects I was studying.

In-depth Interviews

I conducted a total of 18 taped interviews. Fifteen were conducted in Spanish and three in English. I interviewed a total of 12 community members, 6 from Cañaza and 6 from La Gamba, the project head or organization director involved with the two organizations’ projects and four individuals regarding the Corridor Coalition.

Participant observation

While carrying out this study I lived in two communities, Puerto Jiménez, which lies 18 kilometers down the road from my study site of Cañaza, and Golfito which is 15 kilometers from the other study site of La Gamba. From these two places I traveled to my study sites. I also participated in several meetings of the Corridor Coalition and in a 3
day conference in Golfito where presentations on the Osa Biological Corridor project were presented to the general public.

Field journals

Throughout my field season I kept a detailed field journal of my impressions, insights and experiences while carrying out this study.

Data Analysis

I began analyzing my data by transcribing all 18 interviews and translating those interviews that were conducted in Spanish into English. Using the processes of Content Analysis and open coding (Berg, 2001), I assigned categories to the transcribed interviews. The categories were a combination of themes that emerged in the data in the form of terms and phrases that actually appeared in the interviews and themes that I felt effectively summarized the ideas expressed by the interviewees. I used the scientific software Atlas-Ti (1996) to help with the management of my data and the organization of my codes.

My analysis of interviews and documents was a combination of inductive and deductive approaches in that I aimed to make assumptions and continually test them against the current literature and existing theory, in addition to my own perspectives on the world and human nature (Strauss and Corbin, 1998). This being said, my own bias is inherently present in my descriptions of what is going on because I present the information within the framework of my worldview. I try to bring my worldview and my assumptions into the discussions.
Site Descriptions

Two of the case studies presented here were carried out in the communities of Cañaza and La Gamba (Appendix C). The third case study of the Corridor Coalition focuses on the broader scope of the Osa Conservation Area as a whole (Appendix D). The following presents brief descriptions of the two communities and the parameters of the Osa Biological Corridor.

Cañaza

The community of Cañaza is located 18 kilometers from the town of Puerto Jiménez on the Northeastern side of the Osa Peninsula and just outside of the Golfo Dulce Forest Reserve. The community is made up of around 80 families who work in a variety of types of jobs from cattle raising and agriculture to day laborer jobs in the surrounding plantations or various other work in the town of Jiménez. Cañaza was established in 1910 and its name originates from the fact that there was once a lot of sugar cane (caña) grown there. Originally there were only 10 inhabitants who were sparsely located along the coast North of Puerto Jiménez. Beginning in the 1940s more colonists began appropriating land in the area, but the population still remained sparse until the 1980s when the United Fruit Company arrived on the peninsula and brought new employment to the area (van der pol, 1994).

In 1976 when Corcovado was declared a National Park, half of the families (48) that lived in the park area were relocated to Cañaza. The families relocated from Corcovado received 15 to 22 hectares of land, depending on whether they were married or single. Also, as part of the contract for the expropriation of the park land, a school and
a health center were constructed in Cañaza. Many of the town’s inhabitants left Cañaza during the first year after the expropriation, and few of the original families still live in the community. (Evans, 1999; van der pol, 1994). Historically, development in the community of Cañaza has been slowed because of problems with poor market opportunities or availability and lack of consistent employment.

La Gamba

The community of La Gamba sits 15 km Northwest of Golfito in the Osa Conservation Area of Costa Rica. The origin of its name is from the long extended roots (Gambas) that grow out of the base of some types of rainforest hardwoods. The town is bordered by Piedras Blancas National Park and the Golfito Wildlife Refuge and is reached either from the Interamerican highway to the East or an eroding, unpaved road that runs through the wildlife refuge from Golfito. Settled in the early 1950s, La Gamba is a small rural community of around 100 households. The mainstay of the community is small farming and livestock production, although many Gambenos support themselves or supplement their income through day laborer jobs such as workers in oil palm plantations or the Golfito duty free market.

In the early years, the region was an important banana growing center until the United Fruit Company (UFCO), just called “The Company” by many local residents, shut down operations in 1984, intensifying a severe economic crisis throughout the country (Molina and Palmer, 1997). Former banana workers settled the countryside and tried to make a living off the land. Presently, most landowners have land in forest cover or pasture for cattle raising (Stem, 2001).
In 1991, the Esquinas Sector of Corcovado National Park (which later became Piedras Blancas National Park) was expanded, and many residents of La Gamba abandoned their farms and moved closer to the town center or to other towns. This move, however, did not come without controversy or bad feelings. In Costa Rica the government has often been delinquent in compensating farmers in many protected areas, but the case of Piedras Blancas is one of the most severe with nearly half the park land not yet purchased. Hard feelings still exist today among those affected by the protected area declaration.

One local ecotourism project has played a significant role in La Gamba's recent conservation history - the Esquinas Rainforest Lodge. Built in 1994 with funding from the Austrian government, this ecotourism lodge was to provide an alternative income source to La Gamba. In theory all hotel profits support local social and development initiatives. However, the Esquinas Lodge has fallen short of meeting many of its objectives. Initial interactions with the community brought about misunderstandings and mistrust. Originally, the Austrian government had planned to train Gambeños and eventually turn over management and ownership to the community. But when this did not occur within the first few months of operation, residents felt deceived. Some made an attempt to take over the hotel but were met by riot police from San José. Given the reaction of the community to the hotel, the Austrian government determined it was best for the hotel to remain in outside hands but for all the personnel, with the exception of the managerial staff, to come from La Gamba. In the last few years, relations between the community and the hotel have improved, due, in large part, to new management and serious efforts to create a more positive image (Stem, 2001).
The “Osa-Golfito Project” was another project that had a significant impact in La Gamba. The European Economic Community (EEC) funded this integrated, rural development project, which lasted for two and a half years. Its goal was to promote agricultural production and increase living standards, thereby reducing pressure of regional forests and resources. Several people working in La Gamba described this project as a huge flop. The EEC gave participating community members a cow with the intention that they would breed them with other participants’ cows, use them for dairy production, and eventually repay the cost of the initial animal. However, many participants sold the original cow and used the money for other purposes or butchered it for meat. Also, the EEC did not make it clear that the price of the animal was to be repaid, and many community members were left in debt and bitter about the entire experience. This perpetuated feelings of mistrust toward environmental efforts and outsiders who tried to implement them (Donovan, 1994).

Osa Biological Corridor

As discussed above, the proposed area of the Osa Biological Corridor is the land that connects the protected areas of the Osa Conservation area. The principal part of the corridor begins in Cañaza and runs until the limits of Piedras Blancas National Park and the Golfito Wildlife Refuge. The protected areas included are Corcovado National Park, Piedras Blancas National Park, the Golfo Dulce Forest Reserve, the Golfito Wildlife Refuge, Isla del Caño Biological Reserve, Sierpe-Terraba Mangrove Forest Reserve, Guayami Indigenous Reserve and various other private reserves (Evans, 1999; Rivera,
The land included in the corridor is in federal protection (the protected areas), private ownership, or unclear tenure status.

Case Study Themes

Through the process of analyzing the data collected in this study, I chose eight major themes to describe and categorize my data. The themes are a combination of words or topics that interviewees expressed themselves and themes that I felt effectively summarized the responses. In the subsequent three chapters, I use the eight themes: community management, productive activities, funding and economic resources, natural resource conservation, participatory process, empowerment, project sustainability, and lessons to be learned. Each of the case studies is organized around these themes. The following brief paragraphs describe each of the eight themes and its role in my analysis of each case study.

Community Management

The theme of community management or control, as shown previously in the review of current literature, is at the center of the natural resource management debate. The amount of power local community members should have in decision-making processes regarding natural resources has been explored through numerous community conservation projects in recent years (Brandon, Redford and Sanderson, 1998; Western and Wright, 1994).

This section explores how community or local control and management plays out in the three case studies presented and how each project approached involving the local
community in which it worked. I identify “community management” as the role of the community members or local residents in the decision-making process regarding the design and execution of project objectives and the ongoing management of the project. It describes the structure of the project on the ground, how it is managed within the community.

Productive Activities

These are activities that are economically productive while also being compatible with many conservation organizations’ objectives of forest or natural resource conservation. Some examples of such activities include ecotourism, education and research, sylvo-pastoral systems, fallen wood reserves, reforestation and sustainable forest management, development of traditional and non-traditional agricultural activities compatible with conservation (Project Profile, undated).

The productive activities introduced in the following case studies pertain to activities that promote the improvement of agriculture and cattle raising systems. This is done to increase productivity on a smaller area of land in order to free up the additional land for activities such as reforestation. The organizations I studied are exploring these activities as a means of ameliorating some of the impact of human use on ecologically significant areas where strict protection, through land purchase or other methods, would not be possible or prudent. Conservation organizations are exploring productive activities more and more as a way for community economic sustainability to go hand in hand with the conservation and protection of natural resources (Project Profile, undated; Neotropica, 2000).
Funding/Economic Resources

Organizations’ need to secure funding or economic resources emerged as a strong theme throughout the three projects I studied. Private donations and foundation grants are two significant sources of funding for non-profit organizations and are the primary sources of funding for the projects studied. While such funding sources can prove very fruitful, they can also be unreliable and do not always provide the resources an organization needs. Because of this it is important to secure a diverse resource base for any project in order to assure its longevity and sufficient resources to see it through to completion.

Natural Resource Conservation

All of the three projects profiled, through various avenues, are working towards the overall goal of conserving and protecting the rich natural resource base that exists in the Osa Conservation Area. The projects profiled either developed or draw upon productive activity systems, as income generating activities, within the larger objective of conserving natural resources and biodiversity. This section will demonstrate how each project, successfully or unsuccessfully, has attempted to meet the goal of natural resource conservation.

Participatory Process

Each project profiled maintained a different approach to involving and working with the local community members living in the area of the project. From my interview
responses, strong opinions emerged as to the nature and level of each of the projects’
participatory process, the process, by which I refer to how they involved the local
community members. This section addresses the major themes that emerged surrounding
participatory process, addressing the concerns expressed by interviewees regarding each
project. It focuses on the philosophy of the organization regarding community
participation.

Empowerment

While the theme of empowerment goes hand in hand with the idea of community
management and control, it emerged separately in the interviews in the context of
whether the projects profiled provided participants with the necessary capacity, in the
form of skills and knowledge, to continue the activities introduced by the projects.

Project Sustainability

All three of the projects studied either have ended or have a proposed end date
marked by the termination of direct support and direct involvement of the organization.
The theme of sustainability of the projects emerged throughout the statements made by
interviewees regarding either what already has happened or what will happen upon
termination of the organizations’ direct support and involvement. All of the projects
studied focus on the goal of sustaining their work, through various means, with the goal
of the projects continuing after the organization is no longer present to provide support.
This section will also address the idea of economic sustainability and how the previous theme of funding affects the long-term survival of a project.

Lessons to be Learned

Both the successful and the not-so-successful aspects of the projects I studied, according to project participants, teach important lessons. Throughout the interview responses, participants expressed strong feelings about what worked and what did not work within the case studies' approaches to conservation and income generating activities. This section is a summary of the successes and concerns surrounding each project and the knowledge that can be taken away from the analysis of the community participants' perspectives on the project.

I presented the information in this chapter to inform the following case studies. The history of conservation in Costa Rica is rich and diverse and has shaped the atmosphere that conservation groups currently operate in. It affects current conservation efforts and influenced the three projects presented in this study, as the following case studies will address.
Chapter Three
The Cecropia Foundation:
Project COPROSA

Cecropia Foundation

In 1998, a group of both local residents of the Osa Peninsula and foreigners created the Cecropia Foundation in response to growing concern about the increasing rate of deforestation in the area. The Cecropia tree is a local rainforest species. It stands out in the forest because of its thin, white trunk that extends high into the canopy, sprouting leaves that resemble large pinwheels. Cecropia trees feed and provide a home for many animals, namely two and three-toed sloths that hang lazily in the shade of the giant leaves. A couple from the United States, who came to the Osa in 1993 with Greenpeace, as part of the Ston Forestal conflict, initiated Cecropia’s inception and gave name to the organization. The foundation’s first Executive Director was a former Peace Corp volunteer who had worked in rural development in Costa Rica. After nearly two years with Cecropia, his contract ran out and Cecropia’s current director, a native Costa Rican, took over. The foundation consists of a board of directors with local, national and international members, an executive director and 1-3 paid employees, depending on current projects or, more often, who you ask.

Since its beginning, Cecropia has worked mostly with Campesinos and primarily in several small towns within or on the border of the Golfo Dulce Forest Reserve (Cecropia, 2001). Cecropia’s mission is: “To work together with stakeholders, private owners and organizations to implement new ideas and strategies for reaching
conservation objectives by means of developing land uses, businesses, and products that protect important ecosystems while improving local economies and permitting them to reach their community goals.” The foundation’s organizational objectives in the field of sustainable development are:

- To create business opportunities with forest products.
- To improve management techniques of wood and the value added to the process to increase profit margins and diminish the pressure on forest resources.
- To offer informational and administrative support to facilitate grassroots efforts in monitoring human activities that impact the forest and marine environments of Osa.
- To promote sustainable ecotourism (Cecropia, 2001).

The COPROSA Project (Conservation and Production, OSA)

Cecropia’s first Executive Director, with the support of its board of directors and the financial backing of the North American foundation Oasis, took on COPROSA as one of the organization’s initial projects. COPROSA was a pact devised between Cecropia and a locally organized group of cattle farmers in the area of Cañaza: the Cañaza Association of Livestock and Agriculture Producers (APAC). The project’s primary objective was to promote a nature friendly model of agriculture and cattle production through managing soils according to their use capacity and diversifying the methods of production. COPROSA aimed to do this in such a way that each farmer would increase the yield of his or her land without exhausting forests and other natural resources in Cañaza’s surrounding areas (COPROSA, 1999.)
In the project’s first phase, Cecropia proposed to implement COPROSA’s objectives in three key areas: cattle, silvipastures\(^2\), and forestry. In the area of cattle, COPROSA would support the existing cattle ranchers that belonged to APAC, while introducing improvements to their farming methods. Secondly, COPROSA aimed to introduce the use of silvipastures on existing cattle farms. And thirdly, in keeping with Cecropia’s organizational goals in the area of forestry, COPROSA aimed to create business opportunities with forest products, to improve management techniques, and to increase profit margins with the goal of diminishing the pressure on forest resources. COPROSA also aimed to employ MINAE’s forestry incentive program (described in chapter two) to support this goal. For its part of the pact, APAC committed to conserve 500 hectares of primary forest, recover fragile areas (e.g. areas near rivers, in ravines, or on eroding slopes), and reforest areas previously but no longer used for agriculture and cattle (COPROSA, 1999).

According to the initial proposal, Cecropia would coordinate the project’s management and administration, and both APAC and Cecropia would help provide financial and technical support. A representative of APAC was directly responsible for organizing and coordinating the work in the field (COPROSA, 1999). One community participant summarized the project in the following way:

The idea of the project was to analyze alternatives for the peninsula that could demonstrate various things such as planting trees, cattle raising, organic vegetable gardens... it was a plan of forestry incentives, with MINAE. It was a large project, like 1 million dollars... but now they left and dropped the project. It implemented agriculture, cattle raising, silvipasture systems, some of which were very small. But we used trees to

\(^2\) Silvipastures combine silviculture, or tree cultivation, with the use of pastures for cattle. Native tree species are planted as live fence posts, which provide cover for the animals, increase nutrients in the soil and can provide an alternative source of income through tree harvesting for timber.
plant live fence posts - we began with this system. And a little more forest was created with various people.

COPROSA’s second phase planned to work more with reforestation, but never began due to the fact that Oasis terminated funding. The project ended in 2000 after only about a year of activities, which I will discuss in the Funding/Economic Resources and Project Sustainability sections.

Community Management by APAC (Asociación de Productores Agropecuarios de Cañaza, Cañaza Association of Livestock and Agriculture Producers)

In October 1992, a group of Cañaza community members founded APAC with support from the Costa Rican Ministry of Agriculture. The farmers in the area created APAC in response to the need for a productive organization based in Cañaza. They organized to improve production and marketing of their products. When COPROSA began, APAC’s membership consisted of 24 families, 10 of which participated in the COPROSA project (APAC, 1999).

The exact level and nature of APAC’s management role in the project was often unclear in my interviews. Apparently Cecropia delivered all funds for the project to APAC to distribute and manage. Cecropia also hired a forestry engineer to provide administrative assistance to the Association and technical assistance on other parts of the project (community member, 2001). From my interviews, it appeared that the forestry engineer or the other technical advisors were the ultimate decision makers in many situations from where money was spent to the systems that the farmers implemented.
One particular community member in Cañaza was central in creating and managing APAC. At the time of this study, it had been a year since he had been involved with the Association. Another community member had since taken over as leader of APAC. Two different interviewees expressed that the Association is currently struggling, which may explain why when I visited the facilities, the building appeared to be used infrequently.

A goal Cecropia maintained for COPROSA was to promote community management and autonomy among Cañaza residents who participated. Through COPROSA, Cecropia aimed to encourage locally-based management and subsequent community support that would hopefully lead to greater sustainability of the project objectives in the long run. However, certain flaws in the implementation of this goal appeared in my interviews. First, APAC’s original director was a visionary. He worked extremely hard and saw many great possibilities for APAC; however, many projects never left the vision stage. Secondly, only 24 families belonged to the Association and only 10 participated in COPROSA, making the scope of its influence relatively narrow.

Productive Activities

COPROSA aimed to implement its objectives through promoting productive activities using environmentally friendly systems. While COPROSA proposed a plethora of activities, for both the project’s initiation and for future pursuits, it actually only initiated some of these, and even a smaller portion were sustainable after the end of COPROSA. The productive activities COPROSA proposed were cattle raising,
production of dairy products, silvipastures, biodigesters, production of tilapia (a type of freshwater fish) and a native plant nursery.

**Cattle raising**

Raising cattle for dairy and meat is an integral part of the economy of Cañaza. COPROSA chose to focus on and build upon this activity by improving the current systems. Historically cattle production in tropical climates requires a large amount of land for a relatively small number of animals (Vandermeer and Perfecto, 1995b). With this in mind, COPROSA aimed to improve the way the farmers managed their pastures through implementing silvipasture systems. In this system, farmers divide their pastures into several smaller corrals. They then rotate each corral’s use, permitting the resting areas to recover and regenerate. This allows the farmer to maintain the same level of production as before but using less land. It also allows a portion of the land to be set aside for reforestation. The second part of this system involves planting native trees as fence posts dividing the corrals. This helps to increase the amount of forest cover in areas used for cattle, provides lumber or forage, replaces nitrogen in nutrient depleted soil. In the case of COPROSA, tree starters grew in a native tree nursery, also created as part of the project.

**Dairy Production**

In the early 1990s, APAC secured funding to create a production facility for dairy products, such as milk, cheese and sour cream, to be sold in neighboring communities on the peninsula. The organization’s director had attended a workshop on “cattle for double
purpose," where he learned techniques for using animals for both dairy and meat production. He brought this idea to APAC as a preliminary project.

When COPROSA began almost 8 years later, it supported the operation of the factory with administrative and technical assistance and through the improvement of cattle ranching systems. I inquired about the factory in Puerto Jiménez, the largest neighboring town to Cañaza. Several people reminisced about the rich and naturally produced (without the use of chemicals or chemical preservatives) dairy products that used to arrive from the factory. At one time they were sold in stores around the peninsula, but the products had since disappeared. At the time of this study, the production facility was no longer in operation and had been changed over to a slaughterhouse. Apparently families could butcher animals and sell the meat in stores on the peninsula. However, because most families had a relatively small numbers of animals, raising them for meat was not a reliable source of income. The cattle ranchers I interviewed expressed the need to continue exploring alternative sources of income.

Biodigesters

The idea of a biodigester is to convert animal waste into biogas for cooking. This is done by constructing an apparatus that contains a reservoir for the waste, a tarp or cover that will keep the gas contained and a pipe that connects to the stove inside. Biogas reduces the need to cut firewood or purchase commercial gas, and prevents the health problems caused by cooking over a wood fire (Neotropica, 2000).

COPROSA proposed to build three biodigesters and which were constructed. At the time of this study, of the three actually built by the project, I visited two families
where they no longer worked and was told that the third did not work either. One woman mentioned that someone was supposed to come out to help fix hers but never did.

**Native plant nursery**

Another objective of COPROSA was to create a native plant nursery to provide trees for the silvipasture system and for other reforestation projects. APAC members came together for workdays and constructed a native tree nursery. However, at the time of this study, many of the plants were still growing near the APAC building but the nursery was overgrown and apparently not maintained.

**Funding/Economic Resources**

Project COPROSA was funded by the North American foundation Oasis. Oasis’ director had spent time on the Osa Peninsula and learned of the area’s environmental situation and wanted to help protect its natural resources. Throughout my interviews with people involved with COPROSA, interviewees generally identified two major economic problems with the project: the lack of long-term economic planning and poor use of economic resources.

According to one interviewee, Oasis’ support ended due to “unforeseen developments from the funder.” Because Oasis was the sole source of economic support, the project lacked a secured, diverse funding base. Cecropia did not foresee Oasis backing out as a possibility and therefore had no alternatives to keep the project going. One interviewee in Cañaza commented on this situation:
Here the greatest problem, really, was with resources. Because when they cut off the resources, everything ended. It was one of the main problems. And it should have been planned on economically in the long term.

It was apparent through my interviews that COPROSA participants felt a deep level of frustration regarding the lack of funding. Many had been hopeful and excited about the project’s objectives but were left with few options once the resources were gone. I interviewed one farmer who was involved with tilapia and growing native trees with COPROSA. He expressed his frustration with the termination of the project:

When [the first director of Cecropia] was still there, Oasis cut off the resources and the projects remained in chaos. They couldn't continue. COPROSA had contracted a forestry engineer, but he had to leave because COPROSA couldn't continue paying him. Cecropia couldn't pay him. He had been doing studies on the farms...economic studies, but he couldn't finish with APAC. The idea was to have done management plans for forest use and for protection with producers from the Association. But after they left nothing more could be done because there were no funds. This was the first phase, but the second one never happened because there was no money. Also the plan was to use forestry incentives. But this was part of the first phase that didn't happen...when the engineer left we couldn't continue. The second phase couldn't happen because we didn't have the funds.

Participants in COPROSA were also frustrated with the use of economic resources and stated that project leaders often used them unwisely. For example, the forestry engineer and other technical assistants traveled outside the Osa to purchase materials or contract work. An alternative to this would have been doing so locally, which would have provided secondary support to the local economy. Secondly, a common criticism from participants was that money for the project was used for overhead such as salaries and administrative costs, while the actual participants saw very little of it. Two different farmers interviewed expressed their discontent with this:
I think if COPROSA had taken all the money and given it to APAC to put into planting it would have been much better. But instead they spent so much on administrative things, and now we remain the same and have to find things to eat.

COPROSA cost around 30,000 dollars. The majority went to salaries. They contracted a forest engineer who was not a Tico [native Costa Rican]... I would say that 80% went to salaries, and very little went to Ticos. Practically what money stayed for APAC was for administrative things... such as the computer. So this was the project's error.

The availability and use of economic resources was a predominant concern expressed by the community participants I interviewed. There was a general sense of frustration and disappointment among participants that they could not continue because of the lack of money. This points to the need for any organization endeavoring to carry out a conservation project to secure a diverse funding base before initiating a project.

Natural Resource Conservation

An overall objective of COPROSA was to promote activities that would lead to the protection and conservation of the natural resource base on the Osa Peninsula. The project aimed to do this by implementing more environmentally friendly cattle ranching and agricultural practices, by increasing forest cover in area, and by providing economically sustainable alternatives to using the surrounding forests and other resources for income generation. According to the participants interviewed, the project succeeded in furthering this goal by increasing a minimal amount of forest cover, and indirectly through encouraging environmental awareness among participants. According to interviewees, COPROSA did not succeed in introducing sustainable productive

3 Participants in COPROSA planted trees in areas previously cleared for cattle ranching or agriculture; however, data on the number of trees or the amount of new forest cover created was not available.
alternatives or implementing new ranching and agricultural systems. The project ended before these objectives were carried out.

COPROSA participants I interviewed felt there was an increasing awareness about protecting the Osa’s diminishing natural resource base. While this was not an expressed objective of the project, it seemed that participants were exposed to the goal of natural resource conservation driving COPROSA’s objectives and gained an awareness of the importance of the resources around them for various uses that would provide them with longer-term economic support. Two different farmers I interviewed commented on this:

I don't think there is sufficient awareness, but little by little it is increasing – that a chancho or tapir is worth a lot [as food], but will be worth a lot to bring tourism [also].

Yes, [the project] was a help. Maybe not what we needed, but it worked as an educational system. The people have taken interest in what a bird is worth, or what different species exist in the forest in the region, the function of the forest as help for man.

Along with an expressed awareness of the value of the natural resources of the Osa, some interviewees demonstrated concern and appreciation for the environmental challenges facing the Osa such as logging and deforestation. One farmer I interviewed worked in cattle, but also had a tract of virgin forest he hoped to use for tourism some day. He expressed his concern surrounding these challenges the Osa currently faces:

There they are, cutting trees. There are logging roads into the forest. But a small producer doesn't have anything, doesn't have a way to combat that. The loggers do the solicitation and everything, but there are many other problems. I think that part of the second phase for Cecropia was to supply the structure for a pact that would permit those resources to continue. But then support of Cecropia ended.
From interviewee responses and my observations of the farms where Cecropia had attempted to implement COPROSA’s objectives, the project did not have a significant impact on protecting or conserving natural resources in the area in the three areas it proposed to do so: the improvement of existing production systems, reforestation, and economic alternatives to natural resource use. While the project helped to create a small amount of new forest cover, it is unknown whether participants cut other areas of forest on their property, or just how significant the forest cover created really was in contributing to Cecropia’s goals of reforestation in the Osa. Secondly, the improved cattle ranching and agricultural systems Cecropia introduced through COPROSA did not last, and therefore the project was not successful in alleviating the identified impact that previous systems caused to the environment. Thirdly, the farmers and farms I visited had almost all dropped the activities introduced in COPROSA, such as organic vegetable gardens and biodigestors and began or resumed other activities that are not in keeping with the activities Cecropia identified in COPROSA to be more environmentally friendly.

**Participatory Process**

Certain aspects of Cecropia’s approach to involving the local community participants in the COPROSA project were unclear. Many interviewees were unsure of when or how the project began and a few did not even know it by the name “COPROSA,” but rather just the “project with Cecropia” or “the project with APAC.” It was clear in the interviews that the project leaders from Cecropia, primarily the forestry
engineer, approached the farmers, soliciting their participation in the project and offering assistance.

Yes, a technician came and told me what to do and how to plant, but his methods didn't work and I lost a lot of time and a lot of good time. I have had to work hard. The way he designed the plastic over the garden, it couldn't withstand the wind and would turn into a parachute when it was too strong.

The lack of a strong level of communication among Cecropia, APAC, and the project leaders was apparent through the different levels of understanding various interviewees had about the goals of the project. The participants, other than a couple of individuals that were the leaders in APAC, knew little about the overall goals of the project. Cecropia lacked a specific game plan for involving the community members in the project, other focusing on existing members of APAC.

Empowerment

The theme of empowerment emerged in my interviews in Cañaza in primarily three contexts: COPROSA’s use of a technical assistant, the project’s function as an educational experience, and its serving to lift participants up from a more challenging economic state. Several interviewees commented on COPROSA’s provision of a technical assistant to aid with the productive activities. It was apparent that this approach fell short of empowering participants with the skill necessary to continue with their activities once the project terminated. Three different participants commented that the “expert” just showed up to their farms and homes and set up systems such as electric fence or the biodigesters, doing the majority of the work for them. Because of this, once the engineer left, participants were not empowered with the capacity to continue. The
antithesis to this would be guiding participants through the work, allowing them to master skills through the process. Experience teaches best and would have been more likely to lead to a greater level of sustainability for the project objectives. As one farmer commented:

[T]his project worked very much on the level of bringing in other people to work on someone's farm. Therefore this work is never going to be as effective because the farmer will say, this is my farm, and I want to do the work. For example if you give the producer the resources to build a biodigester, you know that they are going to build one. But if you bring someone else in to build it, you are not taking advantage of the assistance of the producer, of the work force available. You have to take advantage of the work force.

Another response from several participants towards COPROSA was that the project taught important skills for future use and, more importantly, gave participants confidence in their abilities and knowledge of options and alternatives that are available to their community. For example, two participants commented that:

We began with milk, and we didn't know anything. A few experts came and helped, but it was hard. And there were very few human resources. But we did it little by little. The most important part is the knowledge that we will have in the future.

It is important that now we know that in the future there are possibilities, to produce different products, etc.

A final poignant remark was from a participant who explained that the project was not carried through to completion and that it did not meet many of its objectives; however, it served to lift the community up from a previous state it was in.
Cecropia helped us a lot with wire, with the experts, with an administrative salary. They helped us to get out of crisis. Now we have problems, but we are not in crisis.

The project’s function as an educational experience was often pointed to as one of its greatest benefits, although responses were both positive and negative. While some participants felt that it showed them what not to do and what systems do not work well in their particular environment, others felt that it increased general environmental awareness and taught some valuable lessons, as one participant commented:

I think it was important because at the very least it was educational... the project was good because I learned a lot from the experience.

Project Sustainability

The greatest flaw of project COPROSA was that, for many reasons, it came to an end prematurely and without successfully meeting its objectives. It was not sustainable and many project participants expressed frustration about its brevity. For example, one farmer directed me on an extensive tour of her farm where she and her husband had implemented a silvipasture system with COPROSA. The system failed for many reasons, the trees she used as fence posts did not take root, the electric fence dividing the pastures stopped working, and the expert that installed the system said he would come to help her, but never showed up. Her bitterness was apparent, as the following statement demonstrates:

This was a project that began but never ended, and when a project begins and never ends, it would be better if it had never begun at all because you move backwards back to the beginning. Well, some experience remains at least. But it is so hard because you have to start all over again.
Another farmer who participated in the project expressed similar sentiments:

It was projected that it would create ponds for tilapia, but they were never finished. The silvipasture part of the project worked a lot with concepts surrounding wood, but many of the trees never took root. Really many needed to be planted in the winter but were planted in summer instead and didn't grow. Also, what are they called, the biodigestores – I think some might have functioned but most stopped functioning... they also created a nursery for trees from the region. This functioned well for a while.

Another strong theme that emerged regarding the sustainability of the project surrounded Cecropia’s use of a hired forestry engineer to provide technical assistance and to help implement the new productive systems. Infrastructures and systems that the engineer built for the project were often poorly designed and constructed, and therefore created problems and did not last. Also, the forestry engineer and other project leaders did not pay sufficient attention to growing season or type of soil and moisture environment necessary for particular plant species to thrive. Participants expressed frustration with this and some felt that either they were better off before the project began or they would have been better off doing the work themselves, as one participant expressed:

COPROSA – yes they helped me put in the electric fence. But it doesn't work now... the way the pastures work, the water pools and makes the grass bad... this was a common problem with this project, that COPROSA contracted people to do the work and they didn't do a good job.

Primarily the technical assistant made mistakes in his design of many systems, and secondly, he did all the work, showing the farmers how to do it, but never actually helping them to develop skills through hands on experience. His presence created
dependence among the participants in that they did not have the capacity to continue the work he had begun, and they did not have the resources or know how to obtain them.

One participant commented on this:

   When the engineer left we couldn't continue. The second phase couldn't happen because we didn't have the funds. The idea was to construct a greenhouse, but it was never carried out.

   Overall, participants expressed frustration and disappointment in the project's premature end, as one participant expressed:

   No, we thought we were going to finish the objectives. Because one of the objectives on the forestry part was a proper analysis of each farm, mentioning the amount of space, an analysis of the area of trees, the species of trees, the quantity, etc. The other part was a management plan for the use of the forest – the fallen wood and other protection.

However, certain aspects of COPROSA did have lasting effects. A strong theme that emerged as a success of COPROSA was its function as an example for future projects. One example of this is that much of the knowledge and lessons learned in Cañaza were implemented in the project in La Gamba, as one participant commented:

   The project COPROSA... I think the project was not just for here but served more communities. Because this was a pilot program, to see what the community reactions would be. And it was very positive.

   And here in Cañaza the project was initiated to be projected to more communities and protect the forest.

While a majority of the objectives proposed by Cecropia for project COPROSA did not occur, at the very least some strong lessons can be learned from this project. The leaders of the La Gamba Project described in Chapter 4 used some of these lessons in its design.
Lessons to be Learned

Project COPROSA aimed to improve existing productive systems, introduce ecologically friendly activities, and reforest certain areas to conserve the natural resource base in and around the community of Cañaza. However, the majority of its objectives remained incomplete and participants were left hanging when the supporting foundation terminated the project’s funding. Community members expressed frustration and displeasure regarding many facets of the project, such as the time they had devoted to systems that either didn’t work or could not continue, the poor use of economic resources by the project administrators and the lack of funding to complete project objectives. Cecropia’s approach to carrying out this project overall was not successful, according to participants interviewed. However, several aspects of the project were very positive for the participants and have the potential to have lasting results. Both the positive and negative aspects of the project have important lessons to teach.

Frustration was apparent among interviewees and some felt they had returned to where they were before the project had begun, while others felt they were worse off, having expended time and energy for systems that did not work. In light of other past conservation efforts in the Osa such as BOSCOSA, this could have had the negative effect of perpetuating mistrust in the minds of community members, towards conservation or sustainable development projects, which could also undermine efforts to consolidate the Osa Biological Corridor.

However, there were successful aspects of COPROSA that have had lasting effects. Project participants named several positive outcomes such as the educational
benefits of COPROSA, increased environmental awareness among participants and indirectly the larger community, and that the project modeled some important lessons for other projects [such as the La Gamba Project]. The majority of the project COPROSA's objectives were not fulfilled, which led to important knowledge among participants and leaders as to aspects of the project that did not work. This knowledge possibly went on to inform other projects, such as the La Gamba Project, as some participants indicated, and will hopefully continue to provide examples of certain approaches that did not work.
Chapter Four

Neotropica Foundation:

The La Gamba Project

The Neotropica Foundation is a national organization based out of San José, Costa Rica. Created in 1985, the foundation has worked in many areas of the country to "contribute to the balance between human development and conservation of nature" (Neotropica, 2002). The foundation has also served as a national partner organization for international NGOs, such as The Nature Conservancy and the World Wildlife Fund (Cuello, Brandon and Margoluis, 1998). As a sign in the lobby at the Neotropica headquarters, the foundation’s mission reads, to “Transform concrete realities of natural resource management in the Neotropics into sustainable practices that protect natural heritage and improve the quality of life of present and future communities.”

The Neotropica Foundation has functioned in the Osa Peninsula since its inception in 1985. It has been involved in various parts of the peninsula, very much on the field level. The foundation’s projects have ranged from technical assistance and empowerment to scientific research, environmental education and sustainable development. Sustainable development projects are always in agreement with environmental care and environmental restoration while also focusing on food security and the alleviation of poverty (Rivera, 2001).
The La Gamba Project

The “Strengthening Self-Help Capacity in the Community of La Gamba Project,” better known as the “La Gamba Project,” began in February of 1998 with the objective of “strengthening the self-help capacity in La Gamba through the execution of productive activities that encourage sustainable development” (Neotropica Foundation, undated). The Neotropica Foundation initiated the project with funding from the Austrian Corporation for Development.

Beginning in 1994, the Austrian Corporation became involved in forming Piedras Blancas National Park. From this experience grew a desire to give something to the neighboring community of La Gamba, and the Austrian Corporation funded and built the Esquinas ecotourism Lodge, described in the site descriptions in Chapter 2. In 1996, after the conflict between the Lodge and the community, where the community of La Gamba became angry that the Lodge had not fulfilled its promises of turning management entirely over to the community of La Gamba, the Austrian Corporation contracted with the Neotropica Foundation to evaluate the situation and devise a way to resolve the conflict between Esquinas and the community. Basically what Neotropica found was that the project with the lodge was interesting, but it did not function as a direct benefit to the 90 families that make up the community. Maybe it helped 10 or 14 people as a source of employment, but really there were many other productive objectives that could be carried out with the community. So the Austrian Corporation asked the Neotropica Foundation to come up with a way to collaborate with the community in a
way different than the Esquinas Lodge. As a result, in February of 1998, the La Gamba Project began permanently in the community (La Gamba Project Leader, 2001).

Community Management

In carrying out the La Gamba Project, Neotropica works through “The Association for Well-Being of the Community of La Gamba,” also called COOPEGAMBA. Those involved with the project refer to it as “The Association,” which is how I will refer to it throughout this document. The Association was created in 1996 after the conflict between the Esquinas Lodge and the community of La Gamba, for the purpose of creating a more inclusive association that the community approved of. And when Neotropica initiated the La Gamba Project in 1998, they began by supporting the Association.

Various committees within the Association administer different aspects of the La Gamba project. Neotropica provides the technical assistance and the funding, and the committees distribute the resources. While Neotropica’s oversight is based externally in the nearby community of Rio Claro, everything they do on the level of the community is through the Association. For example, Neotropica has a joint bank account with the Association; Neotropica signs things in their main office and sends them directly to the Association. The "Credit Committee" directs the distribution of loans. When a community member desires credit to develop an activity within the objectives of the project, he or she submits a proposal directly to the committee. The committee then reviews the proposal and incorporates its own conditions and guarantees for the debt. The proposal then goes to the board of directors of the Association to be ratified or
rejected. The philosophy of this management system is to directly empower the
Association and its members to manage and operate autonomously currently and once
Neotropica no longer oversees the project (Rivera, 2001).

One important issue that emerged through my interviews was the fact that, in
order to be involved with the La Gamba Project and to receive assistance or credit, a
person must be a member of the Association. Membership entails small monthly dues
and compliance with the processes of committee management and the management of the
Association leaders. According to the project leaders, they hope to empower the
community to continue the project objectives under the leadership of the Association.
However, several participants I interviewed felt that negative feelings existed on the part
of community members not involved with project and the Association. Either they felt
that the Association was exclusive or they did not want to pay the obligatory dues.
According to project participants, there existed a rift between those people involved with
the project and those not involved. Culturally the majority of residents of La Gamba are
accustomed to working on plantations or as day laborers, a type of work where the
workers are in positions of equality. Many Gambeños are unaccustomed to inequality in
terms of leadership roles within their community, which could possibly contribute to
negative sentiments towards peer management through the Association. One of the
project leaders commented on this situation:

La Gamba has a lot of potential, but they don't realize the potential they
have. It is hard. I think that is very much cultural, very much rooted in
their previous customs of being workers. And they think that everyone
should be equal. The people are poorly accustomed there. They are afraid
of new systems.
According to the project leaders from Neotropica, the leaders within the Association are a select group. Several of them mentioned that in La Gamba you always find the same people participating in new activities and projects. And while the leaders in the Association are currently operating the project, there is no assurance that their leadership will remain effective once Neotropica leaves. Two potential future concerns exist regarding community management and the long term survival of the project. The hierarchy of the Association creates conflicts with certain cultural norms in the community. Neotropica has helped to lift these individuals into leadership roles; and once Neotropica leaves, it is possible that the community will not uphold their position.

**Productive Activities**

The La Gamba Project began initially with objectives in five main areas: ecotourism, environmental education, community infrastructure, self-help and community credit, and the improvement of productive systems. After the development of infrastructure and initial projects in all five categories in its first phase of operation, the project decided to focus on two activities for its second phase: (1) self-help and community credit, and (2) the improvement of productive systems. At the time I conducted this study, the project was in phase two; therefore, I will focus on the categories the participants were involved with at the time of my interviews.
Improvement of Productive Systems

1. Cattle Raising

The main productive activity that the La Gamba Project focuses on is cattle raising. The goal of the project is to introduce a new approach in a region dominated by farms that practice extensive cattle ranching. Relatively small herds (the largest number I heard reported was 30 animals) live on large tracts of land that require minimal management but offer a low yield per acre. Traditional practices use high impact farming techniques, without rotating or resting fields or other environmentally friendly management procedures. Years of using the land for this purpose, along with adverse local conditions such as constant rainfall and problems with flooding, have affected the development and productivity of cattle ranching activities in the community (Neotropica, 2000).

The system introduced through the La Gamba project uses sectioned fields to rotate the herds, permitting better recovery of pastures. The fields are divided by living fences made of trees that can be used for lumber or forage and that enrich the system by adding nitrogen to the soil. The system also calls for portions of the land to be dedicated to protein banks, areas set aside for the cultivation of plants that provide the cattle with a source of protein. Animal waste is converted into biogas in biodigesters. All of these techniques permit a more intensive use of the land, freeing up areas for conservation and reforestation (Neotropica, 2000).

Cattle ranching is historically portrayed as an enemy of conservation, but the Neotropica Foundation views it differently. Ranching provides an opportunity and a
logical activity to build upon because it is already a part of the local culture. Changing to a new activity would be time and cost intensive, and as past projects have shown, would not be feasible to support a community in the short term. As Neotropica realized, it is essential to promote activities in agreement with the existing culture and livelihoods of the community. As one project leader from Neotropica expressed:

[Cattle ranching] is what the people do, what the people are living on. If we want the people to change from cattle, it is not overnight. There would have to be all kinds of studies of the economic possibilities, the markets, etc., and it would be very complicated. The people are raising cattle; their livelihoods are raising cattle. The people feel that even though it is an activity that does not provide much income, it is an activity that sustains their families' lives. Therefore, generally the people have large farms, farms that for example are 10 hectares, or up to 50 or 100 hectares. And they have several cows that live on the entire area of the farm. So this is very bad, because they deteriorate everything, the pastures, the soil, etc.

2. Other Productive Activities

In an economy dominated by cattle production, the La Gamba Project also aimed to diversify sources of income through the introduction of other small-scale activities. These types of productive activities were directed towards families with less land that do not work in cattle, or cattle ranchers who implement the silvipasture system and free up additional land for other uses. Two community members I interviewed had organic vegetable gardens. The project trained them in organic gardening, through field trips to other communities where they could learn from examples and demonstrations. The project also provided necessary seeds and infrastructure. One woman describes her experience with alternative productive activities:
I have been studying medicinal plants. I have plants that they have given me. And afterwards, they gave me a loan to buy chickens and that helped me... I plant apio, cilantro, chile, etc... Because they taught us how to plant those, how to make gardens or planters for those.

Two of the participants interviewed raised chickens, which they had purchased by using credit provided by the project. One participant raised hogs and another demonstrated his stove that used biogas produced from a biodigester. He also told me that several other biodigesters in the community had been constructed and continued to function well. In general the participants interviewed spoke positively about the activities they were involved in and expressed gratitude to Neotropica for their help. However, several interviewees expressed concern about market availability for their products, as one farmer expressed:

I work with hogs. Raising them for food is very hard and the market is also. Raising them solely for food is very hard...and we work with chickens and have around 80 from the help of the Neotropic Foundation. We also have biogas to cook with, from the help of the foundation. The foundation has helped us move forward, not backward.

All in all, participants expressed gratitude for Neotropica’s help with getting started in their various productive activities and income generating activities.

Funding/Economic Resources

As mentioned above, the La Gamba Project is funded by the Austrian Corporation of the Government of Austria. While funding is minimal, the money is put to work in the community in a variety of ways. In the project’s first phase, it funded new community
infrastructure, such as a new elementary school building and a house for the teacher, who previously had to commute to La Gamba from a neighboring town. Funding for materials and projects reaches the community directly through a system of credit or loans given to community members to help with productive activities. Participants solicit credit from the community Association and pay the money back when their income allows. The La Gamba Project has secured funding through its proposed date of termination in 2002. However, the project is currently seeking additional money to continue with another phase of the project. If this does not happen, Neotropica will stop working directly in La Gamba in spring/summer of 2002.

Throughout Neotropica’s involvement in La Gamba, the project leaders have been adamant about the community’s independence in carrying out the activities and have continually promoted their financial independence. While funds are available for many activities, they are limited, and the project has encouraged community members to seek out other funding options. This serves to diversify resources, and more importantly empowers the community members with the know-how and the confidence to raise money themselves. As one of the project leaders described:

For example, the health center, we didn't give them money for that. But we said to them, organize yourselves and raise the money. The community had two parties and raised the 70,000 colones they needed and with the 70,000 colones they bought the materials they needed and began construction. And through Judesur, they were granted the money to construct the house.

One community member also illustrated this form of empowerment:

We have to use the strength of the community. What we have to put in is work. We wanted a school and many people said, no you cannot build a
school without money, but we had dances and raised the money and we built one with the work of the community.

Ideally this experiential learning will enable participants to carry out project objectives independently in the future. However, it is very apparent through interview responses that the success of the La Gamba project has been strongly dependant upon the resources provided by Neotropica. The project leaders are aware that once the project leaves, the community will not have the same resources to operate with and are actively addressing this in several ways. One way is providing the participants with knowledge and skills to continue to develop activities to secure resources necessary to continue in the future. As one of the La Gamba Project coordinators put it:

The idea is that when the project ends, the people will be able to continue with the same system of work. Maybe not with all the same economic resources that they will need, but they will have a capacity with activities that can be developed.

The project leaders also recognize that the community will need to seek out additional funding once Neotropica leaves and are approaching this by searching for ways they can demonstrate to the community that they must look for funding themselves, as one of the project coordinators explained:

Now...we are looking at the question of how can we show the people that they have to look for the economic support they need. And a lot can be done through the organization for well being.

A discrepancy between this goal and the sentiments of community participants was apparent in several interviews, however. Community members expressed the need for resources to continue with their current activities, and hoped that more resources
would be available. One community member even stated that she hoped another project like the La Gamba Project would come in and help them, as this quote illustrates:

I hope there will be more projects so we can continue working, because without money we cannot do anything. We're at this point now; we'll see what we can do.

And another Gambeño expressed:

Well, I think with the Association, here we are. If we don't have money, we can't work. We know that if another country donates money we can continue working. It's no secret that without money you die – everything dies, your heart dies, everything dies.

In my opinion, how this plays out will be the telling moment of whether this project succeeds. The La Gamba Project tried to address this reality through empowering the community members with skills and know-how to be able to continue independently. However, whether they take the initiative themselves once the project is gone will determine the project’s sustainability. Several interviewees seemed to understand this need to “lift themselves up” and to “continue moving forward,” but they also expressed concern and even fear that they will be unable to do so without the financial resources from Neotropica or another source.

**Natural Resource Conservation**

The location of the community of La Gamba makes it important as a link between the Golfito Wildlife Refuge and Piedras Blancas National Park. Because of this, the La Gamba Project is essential in promoting activities that help to alleviate some of the pressure on and use of the natural resources of the surrounding area. These activities,
which are described as being “more harmonious with nature” (Neotropica, undated) are meant to improve environmental conditions on land historically impacted by extensive agriculture and cattle ranching, generate new forest cover, and take pressure off the surrounding resource base. Reforestation, restoration, environmental education and teaching sustainable forestry are all ways the La Gamba Project is promoting natural resource conservation.

At the time of this study, several of the participating farms had set aside portions of their land for natural regeneration. Two other interviewees mentioned that they had planted trees on their land as did several other community members that I did not formally interview. In the first phase of the project, Neotropica conducted workshops, river clean-ups, and other various activities to promote environmental awareness and to stimulate conservation mindedness among the community participants. One product of these workshops is a smattering of signs along the main road, reminding passersby to protect nature and keep the rivers clean. And while there was no specific question I asked to get at this theme, I was immediately impressed with the level of environmental awareness among those people I encountered in meetings, workshops and interviews. Gambeños who I interviewed formally and those I chatted with in passing spoke regularly about forest protection, the importance of their town’s location, and the consequences of trash and other waste in the rivers. Many also had strong opinions about illegal hunting and logging they had witnessed taking place in the neighboring National Park and Wildlife Refuge.

I noted that the participants I interviewed often mentioned people, both from La Gamba and from outside, who were creating environmental problems and lacked
awareness of the consequences of their actions. One community member I interviewed passionately expressed his feelings on the matter:

Here there has been a huge problem because people destroy nature. The same people destroy what God has done. Maybe they cut down 4, 5, 6 trees and don't plant any and then there are no trees. People cut trees a lot and kill animals. And it is for business. I don't see people with hearts about destroying nature. Because to care for nature, to care for the mountains, to care for whatever thing is beautiful because that is why they are there... The rivers are in bad shape because people take trees out through them.

There are people and families that think it should not be destroyed but there are people who destroy what there is. With protecting forest areas we have problems with loggers, people dirting the rivers, the people don't pay attention.

When I asked about the matter of deforestation and logging, interviewees felt strongly that they were severe problems in the area and spoke with dismay about the issue, as one Gambeño expressed:

[Deforestation] is horrible, because here there are little cedar trees that people cut and take out through the rivers. And they are cutting little trees, and don't leave them to grow... they are from right here in La Gamba... they come and cut trees for the money. They do it at night.

I asked one participant why he thought people cut trees illegally, recognizing that this question could be another study entirely. He commented:

Many people because of necessity, others to sell the wood because they have the opportunity. Some people cut a tree and plant another. But some go in the woods and cut a tree and another and another...

The theme of illegal hunting in the protected areas also emerged in several interviews. Interviewees told stories of both local Gambeños and outsiders furtively taking animals from the forest at night. Several interviewees mentioned that the La
Gamba Project was addressing this problem through raising tequesquitles, a small rainforest mammal that is commonly hunted for meat.

Yet another theme that emerged in discussions about deforestation and logging was the ineffectiveness of the Ministry of Agriculture and the Environment (MINAE) and the park guards at combating the illegal hunting and logging in the area. A common problem within the agency is the lack of sufficient human resources to carry out the protection of protected areas on the ground. Two community members expressed their feelings regarding this:

One day in a meeting with Elena, I was telling her I think there needs to be another building for the park guards in the town. They are so far inside the park they don't know what is going on and the loggers and hunters know they are far inside and can get around them. They need an office in this town. And the loggers come at night. There are people who come from outside and from within Gamba.

We need to talk with the park guards, because people go cutting the forest. People go cutting the forest, and there aren't enough park guards.

The natural resource base surrounding the town of La Gamba is key in its function as the buffer zone to the abutting national park and wildlife refuge. A principal goal of the La Gamba Project is to conserve and protect this natural resource base. The community participants I interviewed expressed opinions and demonstrated practices that were in harmony with this goal. However, two potential problems could undermine this objective of the La Gamba Project. First, less than half of the community participates in the project. The remainder of Gambeños, who potentially practice environmentally unsound activities or tap into the resource base, legally or illegally, could be enough of a destructive force to affect the positive activities exhibited by the participants I interviewed. Secondly, with the precarious status of future funding or support for the La
Gamba Project and no guarantee that it will be sustainable, participants could drop their current activities for past practices or for other economic opportunities down the road.

**Participatory Process**

The La Gamba Project approaches community involvement in decision-making processes by working directly through the Association for Well-being. From the La Gamba Project’s initiation, Neotropica structured this facet of the project so that the Association, through its committees, would ultimately make all decisions and guide the future direction of the project. Not only did Neotropica build on activities that were already present and established in the community, participants also chose which new activities to begin, according to their skills and interest, and Neotropica would provide a loan to finance the endeavor. One participant who raised both chickens and hogs and had a small vegetable garden commented on this:

Yes, yes...yes, from the beginning they have given us credit for whatever things we wanted to do, for cattle for example. We took out credits for what we wanted to do.

In conversations with the project leaders, they emphasized that in order to receive any sort of resources, either financial or technical, community members must go to the Association and solicit them. This is how Neotropica operates within the community. They make it clear that they are available, but do not go to the community to try to “market” their help. According to project leaders, they hope that this approach will encourage initiative among the project participants and that they will realize their capacities to seek out resources they need.
Empowerment

As discussed above, Project La Gamba has focused on empowering community members through every aspect of the project. They teach participants skills, giving them the knowledge and ability to carry out activities, but without doing the work for them. They have created a relationship with the participants where they, as the project leaders, are available for help if they need it, but the community members must initiate communication and solicit help. The project leaders have also been clear with the community from the beginning that they must learn to do things themselves, because Neotropica will not always be around. Several community members I interviewed recognized this.

Another way the project empowered participants was by demonstrating to them that these systems work and are being used successfully in other areas. At the start of Neotropica’s involvement, they took community members from La Gamba to other communities in Costa Rica where improved systems and productive activities were benefiting the community. This instilled confidence in the community members of La Gamba that they too had the capacity to move themselves forward if they took the initiative. Two women farmers commented on the skills they had acquired through field trips to other communities:

- All of that we learned from them because they sent us to study it. We went to Limon, to Guapiles, they have sent us to do all this. If it weren't for [Neotropica] we wouldn't have done those things and I wouldn't have gotten to see those places either.

- I know a lot about medicinal plants because we went to Heredia. There is a place where we went where they grow medicinal plants.
These trips were visuals, demonstrating that other farmers in the country were also working with alternative productive activities and benefiting from them in various ways.

**Project Sustainability**

From the initiation of Project La Gamba, the leaders from the Neotropica Foundation have approached their objectives with the goal of sustainability. From the start they have set up the project’s infrastructure to be free standing, so that it will be able to continue once they are gone. Through education, technical assistance, and capacity building, the leaders have promoted independence and longevity with the hope that their foresight will pay off, as the project coordinator commented:

The idea is that when the project ends, the people will be able to continue with the same system of work. Maybe not with all the same economic resources that they will need, but they will have a capacity with activities that can be developed.

However, the true test will be once Neotropica leaves and the community is left to its own devices. One community member expressed her concern that once the project ends things will collapse. Her fear seems to be reflective of the EEC project described in Chapter 2, which left many community members in debt:

Many people are afraid that when the Foundation leaves everything will collapse and that we don't know how to administer what we have. Because there are many people who have debts to pay to the Foundation and when the Foundation leaves they will say you and you and you haven't paid us. People are afraid of this, because it can happen in any moment. Therefore I say I can see a problem. I am afraid too that when the Foundation leaves everything will collapse... I myself think that when the
Foundation leaves, because they say that funds will still be here for things to continue the same, but I say that they know everyone and they can say you haven't paid us. And that can happen in any moment.

Through my interview responses it was evident that community members also know they must work hard to make the project continue. Two farmers who work with cattle and another who raises chickens commented on this:

I think that each of us is going to continue improving because they have left us with a parcel to continue. I don't know about the rest of the community, but with my parcel I will continue on my own. I say it's stupid to move backwards. We have to keep moving forward on our own.

The project can leave, but we have to work. We have to continue working the same so that when they leave things won't crash but we will continue lifting ourselves up. And they are not going to do that. They are here now as a guide, but we have to keep moving forward and when they leave we must keep working as if they were still here - to do it the same, not to depend on them. [The leaders from Neotropica] we have to do the project the same as if they were there.

They cannot leave and have us fall; we have to lift ourselves up by ourselves... when they leave we cannot fall; we have to lift ourselves up. When they leave we have to stay and continue moving forward.

There are several challenges that the project might face once Neotropica is gone.

One of the project leaders expressed her concern about the 40 families that are not involved with the project:

But it is a shame that we will not be able to work with those 40 families that are not participating. But we don't have the time to look for them; we have to continue working with those already involved... It is a question of whether we want to begin with other objectives or continue with what we already have.
It is possible that those families that are not involved could undermine the success of the project as a whole. The non-participating families could potentially be working in ecologically and economically unsustainable and unsound practices on their land, or could be using the surrounding protected areas illegally. Such activities could be detrimental to the ecologically important areas in La Gamba and its environs.

Additionally, while the Association is currently in a leadership role and a position of respect among the community members, it seemed that this “authority” was being somewhat maintained by the presence of Neotropica. Returning to a cultural view of the community as a people who are historically accustomed to the equality of all being plantation workers, the Association could have difficulty maintaining a position of leadership in the community once Neotropica leaves.

Thirdly, financial resources are at the heart of the success of this project for they are necessary for the purchase of materials and the support of all infrastructure necessary to carry out and maintain the project objectives. In the precarious world of fundraising, there is no guarantee that the community will be able to secure the funds to continue with the projects in place. The sustainability of this project will become clear only once Neotropica leaves and the community must continue moving ahead independently.

Finally, many productive activities are very much long-term processes. In the case of improving cattle farms, it can take five to seven years of work to develop production levels that guarantee family sustenance. One lure of illegal hunting or selling wood for timber is the immediate financial gain it provides; however, the gain is only short lived. Cattle ranching and agriculture are slow to produce profit; however, when
done correctly these can be a sustaining source of income. The route Gambeños choose to take will have a profound impact on the surrounding natural resource base.

Lessons to be Learned

From the perspective of the community members I interviewed, the La Gamba project has been successful in implementing systems that have provided the community members with a higher level of economic well being, knowledge and skills, and awareness for and restoration or conservation of the natural resource base in the community and the surrounding protected areas. Speaking with the project organizers, it was evident that they were explicitly clear from the start that, through this project, the community would never amass large amounts of money. However, if they participated and implemented the proposed systems and project objectives, they could have enough to sustain themselves and their families. This demonstrates that the project leaders possibly took into account unsuccessful approaches of past projects that made sweeping promises that were impossible to keep. And at the time I was there, the community members I interviewed felt the project had served them well in many ways. As one community member described:

Well, I have a great debt of gratitude to the foundation. Because of them I began to move forward. Before them I couldn't lift myself up. But because of the empowerment the foundation has given to the majority of the people here, in my case, I have learned a lot...

In the case of the La Gamba Project, the key to sustainability thus far has been in the community's involvement in decision-making, management and in doing the actual work. From the beginning, the Neotropica Foundation has served as a guide and a
resource, but the community has had to seek them out. And the project leaders have been vocal, upfront and honest about their intentions to help implement new systems, with natural resource conservation in mind, and that the community members would have to continue the project objectives on their own. Two different interviewees commented on this:

Neotropica's project has helped to lift people up and show us that, yes we can, that we can do something. And I am very content... Two years ago I came here and I didn't have anything. I didn't have any resources to work or any hope. But then these people appeared began with their empowerment and they taught us that everyone has the ability to do something.

I have plants that they have given me. And afterwards, they gave me a loan to buy chickens and that helped me. Because when I had my son in school, with that I could sustain us with the money that I collected from selling eggs. And with the little money I earned from that I could send him to school. Therefore, he finished everything. I am thankful for the people from the Foundation because they have helped me a lot with making the coops for my chickens and giving me loans.

However, one of the main concerns expressed by community members was finding economic resources to continue with activities in the future. The participants of the La Gamba Project are empowered with skills and knowledge of their abilities to continue these activities in the future, but without the money to do so it is most likely not feasible. From analyzing the interview responses surrounding this project, participants appear to be in a challenging position. While the La Gamba Project has helped them out of a state crisis and encouraged autonomy and ownership of the activities introduced by the project, it appears to have created a certain level of dependence among participants. And now that Neotropica is ending the project, the participants are afraid of what is to come.
In general, Neotropica used much thought and foresight when initiating and carrying out the La Gamba Project. They stressed, from the project’s inception, autonomy and independence among its participants. But even though they used a successful approach, Neotropica may be faced with an unavoidable reality that no matter how successful they are in empowering and building capacity among participants, their support creates dependence. And once that support is taken away, sustainability of the project may be compromised.
Chapter Five
The Osa Corridor Coalition:
The Osa Biological Corridor Initiative

The Osa Biological Corridor Initiative

The Osa Biological Corridor Initiative evolved from an idea that conservationists have been talking about since the 1980's. The vision is to create a forested corridor that will connect and include the seven existing federally protected areas, as well as private lands, within the Osa Conservation Area. The corridor would stretch from Corcovado National Park on the Osa Peninsula to the Golfito Wildlife Refuge on the mainland (See Appendix D. The overall objective of the initiative is to increase the area of natural forest habitat and improve its protection to ensure the survival of its biodiversity (Project Profile, undated). The consolidation of the biological corridor (e.g. the actual linking of the protected areas and interspersed forested areas) proposed in the project was identified by ACOSA as its highest priority over the next five years in a Conservation Site Planning exercise facilitated by The Nature Conservancy in April and May 2000 (Project Profile, undated; Mack and Rivera, undated).

The corridor project takes an ecosystem approach to this expansion of the Osa's protected natural area. The approach aims to use primarily biological criteria to maximize inclusion of the most important areas, resulting in a larger and unified protected area, under a single administration and with a single, comprehensive management strategy (Project Profile, undated). A parallel goal is to improve the effectiveness of the
conservation NGOs in the region in addition to the management and administrative capacities of ACOSA. Working with private landowners who wish to conserve the natural resources on their lands will also be an important element of this work (Project Profile, undated; Mack and Rivera, undated). However, according to the project leaders, the coalition is aware of the importance of consolidating the corridor from the biological standpoint as well as from the social point (Rivera, 2001).

**History of the Corridor Coalition**

In the Osa there has historically been a lack of successful coordination and communication among conservation organizations. Conservationists, working towards similar goals often work independently and repeatedly fall short of meeting goals their objectives. Collaboration with other groups could combine skills and strengthen efforts and capacity. In light of this past trend, for the first time in the Osa, a group of local, national, and international organizations as well as government representatives, all currently active in the peninsula, have joined forces. This unified group operates under the common title of the “Osa Biological Corridor Coalition.”

The coalition has as a key objective facilitating ways to reach consensus and to build communication bridges and cooperation among the different sectors in the Osa Peninsula (farming, business, development associations, municipalities, government institutions, non-governmental organizations, etc.) (Project Profile, undated). To carry this out, the Coalition is managed by a primary coordinator in addition to a technical advisor, both of whom work with one of the participating organizations. The group is coordinated out of San José, where both the coordinator and technical coordinator are
based, and alternates monthly or bimonthly meetings between San José and Puerto Jiménez, in the Osa Conservation Area.

The coalition aims to carry out its objectives through supporting the work currently being carried out by the participating organizations in addition to implementing new projects. Since the area of the corridor is outside of the protected areas of the Osa, the coalition’s projects, both those previously being carried out by the member organizations and those proposed, focus on direct work within communities. The areas linking the protected areas of the conservation area are inhabited and populated to various degrees. Strict protectionism is not an option, other than possible private conservation in isolated cases. Therefore, the coalition aims to support and implement integrated conservation and development, among other strategies.

Role of Each Organization

Each of the eight groups that make up the coalition has a specific purpose and role based on its current projects, skills, and organizational focus. However, as part of the coalition, they are also responsible for the overall objectives of the coalition itself. The following paragraphs describe each organization and its participation in the coalition, based on interviewee responses and my observations in meetings and conferences.

Cecropia Foundation: Sustainable productive activities, forest policies, conservation on private land.

Corcovado Foundation: Coordination of the coalition, logistical, financial and administrative support for the protected areas of ACOSA and private conservation.
**TUVA Foundation**: Work with indigenous communities, sustainable productive activities, private conservation and integrated management of the Golfo Dulce.

**Neotropica Foundation**: Environmental education and empowerment, documentation center, productive sustainable activities.

**CEDARENA**: Land tenancy study, private conservation, legal and political support.

**INBio**: Administration of funds from CR-USA for phase 1, technical and scientific support, studies and dissemination of biodiversity information.

**The Nature Conservancy**: Conservation site planning, technical and scientific support, the raising and managing of funds for Piedras Blancas National Park.

**Osa Conservation Area/Ministry of Energy and the Environment (ACOSA/MINAE)**: Coordination and administration of the protected areas, forestry and natural resource management, environmental education, Local Committee of ACOSA (CLACOSA).

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**Community Management**

The Osa Biological Corridor Initiative is coordinated from San José. Only two of the participating organizations are based within the corridor area. Several people I interviewed felt that the coalition specifically invited them to participate because their organizations were based within the corridor area. While projects being carried out by participating organizations may promote community management, such as the La Gamba Project, the corridor project, from its inception, has been designed and directed externally and without input from local residents.

**Productive Activities**

The Osa Biological Corridor Initiative is taking a multi-faceted approach to the consolidation of the corridor area. While the primary basis for the corridor is
conservation of natural resources, the coalition members recognize they must focus on the socioeconomic aspects of the corridor area also. As one of the project coordinators explained:

[We aim] to consolidate it from the biological point of view, but also to provide the alternatives for the remaining people that live in the surrounding areas or in within the corridor, have possibilities to develop economically and socially, beginning with the sustainable use of the natural resources in the area of the corridor. Through different activities, improvements of their agriculture in a sustainable way, movement of their cattle to more sustainable methods, forest management, reforestation, etc.

The coalition aims to do this through supporting productive activities already being carried out in the corridor area through current projects such as the La Gamba Project and devising new ways in which such activities can be implemented in areas where they are not already in existence. The improvement of agricultural and cattle ranching systems, reforestation, and the introduction of low impact supplementary activities, such as organic vegetable gardens, are all productive activities that the coalition proposes to support in the corridor area. However, one concern is that such activities will take a long time to yield results and will not ameliorate the problem of environmentally destructive forest practices in time to save the remaining forest areas. As expressed by one of the corridor project leaders:

The problem with the campesinos that want to stay on the peninsula, even if they agree to begin productive activities on their farms, it still takes several years to get any return on the crops etc. This is what happened with BOSCOSA. It took so long for the crops to grow to where they could sell them, and also the project never researched the market for the products.
In the area of productive activities, the corridor project has an advantage in that it can support ongoing activities being carried out by the participating organizations. However, the scope of the few current successful productive activity projects is small, and there are many populated areas that are continuing with the status quo of environmentally destructive activities. One woman who is a leader of a community organization in the Osa felt that her group had a unique role because they interact directly with the farmers on the ground and have gained insight into what some farmers want to do with their land. She commented that:

We have had the experience where we go to the owner of the forest and say what is the problem? Why do you want to cut those trees? And they say it's because we don't have money to eat. And suddenly they have two or more hectares without trees, and they don't have a single platano tree planted, or a single pipa tree that they would have if they needed oil. They don't have anything and they could have chickens or cows for milk to make into cheese, or pigs to have for meat or fat, because Costa Ricans eat so much fat.

Productive activities are a key part of the project in that they are one of two strategies the coalition has for the inhabited areas of the corridor. The coalition plans to target current residents who express a desire to stay on their land in the Peninsula with productive activity projects. The alternative strategy for those residents who do not want to stay on the peninsula is to raise the money to buy land from anyone who is willing to sell. In one coalition member's opinion, productive activities are not a long-term solution and will not provide a viable source of income.

Basically everybody is asking for two things – one is [land] title and certainty as far as land tenure goes, and the other is economic alternatives to logging. Because what they'll say is, well, if you will give me a way to
make a living from my land, then I won't log. But it's kind of hard, that area is not really... there are parts that are flat and apparently they are decent for agriculture but a lot of those areas are not good. It's going to be a real struggle making them pay. I think people have figured out that raising cattle and growing corn and beans just isn't a way to make those lands pay... And even the crops, you know, right there on the large scale aren't paying anymore either and the whole problem is that the rice and the palm oil, those things really aren't bringing in much profit either. Cattle [ranching] is disappearing.

The coalition is addressing this and exploring other options for activities that can be carried out in the corridor area. This presents numerous challenges that the coalition must address:

So basically what we are also doing... is trying to figure out what economic activities, sustainable or not sustainable, are really offering... whether its a real alternative and under what conditions these might be real alternatives... I don't think that anybody has identified real viable alternatives yet. No matter what they say... [And buying up the land] not really viable either because nobody has the money.

This brings in the question of how to approach finding other alternatives. The coalition recognizes the need to involve communities in such decisions and a desire to know what the communities want, but up to this point they have made little effort to explore answers to such questions.

Funding/Economic Resources

The Osa Biological Corridor Initiative is funded by the CRUSA (Costa Rica-U.S.A.), a private foundation established in Costa Rica with money from the United States government. A prominent figure in conservation history in Costa Rica recently took a job with CRUSA and helped to convince the foundation that the Osa should be
their priority for funding. While CRUSA has identified the Osa as one of their primary areas for funding and is currently the only source of funding for the corridor project, coalition leaders maintain that they are not bound to CRUSA and that each organization has its own funds to contribute to the project.

There is a long history of projects in the Osa putting economic resources to poor use, leaving local residents feeling that their communities never see the funds raised to support them (Donovan, 1994). Anecdotally and through informal interviews, several people commented on this as an issue with the Corridor Initiative. There have been instances when coalition representatives arrive at community meetings in the corridor area in expensive rental cars. One community member involved with the corridor project commented that:

Some people have been very critical of [one organization in the coalition] and how much funding they have gotten over the past few years and how much they have directly impacted the community and involved the community.

This sends the message to community members that the organization has the resources for such luxuries. When they work in that community and the local people never see such resources, it perpetuates feelings of mistrust.

**Natural Resource Conservation**

The strategies the Corridor Initiative is currently taking are done with a strong sense of urgency. The natural resource base in the Osa is being depleted, and at some point it will be beyond repair. The Initiative focuses strongly on areas where forest cover remains and they can protect what is left before it is cut. Secondarily, it directs efforts to the populated areas where the forest is already cut and the land is used for agriculture, but
there is potential for reforestation and restoration. It was certainly acknowledged in my interviews that management plans are causing deforestation in the corridor area, as one community member put:

Well, it's a whole dynamic thing that goes on. The management plans are pretty much all organized by the loggers. They talk to the landowners; [the loggers] say okay we'll help you get title if you give us a management plan, or else [the loggers] pay [the landowners] to establish a management plan, or they pay them for taking the logs out illegally. It's just the whole business and that's how it's gone on for a long time. And sort of like it's all very gray.

The Cecropia Foundation recently conducted an extensive study of the effects of management plans in the Osa Peninsula and has worked to raise awareness and petition MINAE, who give out the permits, to better control the system (Cecropia, 1999). Several people also mentioned anecdotally that MINAE receives a portion of the profits from the wood sold from the management plan permits and therefore is encouraged to have looser control on their use.

This problem is especially grave in Piedras Blancas National Park where over half of the park land still remains in private ownership due to the government's lack of financial resources to purchase the remaining land. One of the three park guards in Piedras Blancas commented that:

There is a problem with wood. Right now if people ask for a permit within the park and the park has not paid for all its land, the park cannot deny the permit. So right now people are asking for permits to take wood from within the park and, because Piedras Blancas is in a political situation where they have not paid for all the land, they cannot deny the permit. The loggers go straight to the owners of the land.

Successfully carrying out the projects and conservation efforts necessary to protect the natural resources in the corridor area will be a complicate process.
Participatory Process

The Corridor Coalition has been working as an organized group for less than a year. Leaders within the coalition felt from the beginning that they must organize themselves within their group before taking the project to the local level and involving the communities. One project coordinator expressed his opinion on the coalition’s approach:

We're right now in the middle of a 9-month period where basically we are gathering information, trying to strengthen the coalition, basically get ourselves organized, figure out where we are, what strategies we should use. Basically we are trying to figure out what we should do. One of the things we're looking at is how we are going to involve the local communities.

However, this approach immediately proved problematic, when the project coordinators did finally present the idea to the local communities. Many local residents in communities in the corridor area were angry and hurt that they had not been involved in the project from the start.

The Coalition presented The Osa Biological Corridor Initiative for the first time to local community members at a forum in Golfito in August 2001. Many local people were irate at hearing about the project after the fact, and a heated discussion took place. In general, local community members at the forum were incredulous that they had not been informed of or involved in the design a project that directly affected their lives and their homes. A park guard from one of the parks in the corridor commented on this:
You have to respect the communities. If I want to create a corridor connecting this park to this one to this one, the communities won't understand what it is I'm doing if I don't take the time to explain it.

The coalition wanted to be organized themselves before taking their project ideas to the local level. However, it may be too late. The sentiments expressed at the Ecoforo and from community members I spoke with after the forum might undermine the project’s goals to gain community support. One resident in the corridor area was passionate and emotional about the deceit she felt by not being involved in the planning process of the project. With tears in her eyes, she explained:

The complaints that we had regarding the coalition at the Ecoforo were that they believe that we don't have the intellectual experience to be part of a coalition and we believe that as community representatives... we should have a seat within the commission. Not how they are calling upon us now, like last weekend when [one organization] had a course on the legal aspects of the corridor. This is not why we are here. And I wanted to go but at the last minute I said no, because this is not how I want to be called upon, not in the final work of the commission, not if it's not within the commission to see very general design and be represented there... And it's that I want a position...as I asked them in the Ecoforo. Does a person from [a local community organization] not meet the technical criteria to participate in the commission, a person in the community that has learned about nature from living with it? And I think that is the best school. Experience.

**Empowerment**

The structure of the Corridor Coalition serves to strengthen capacity and further empower the participating organizations through fundraising and collaboration. In terms of local people in the communities in the Corridor, many feel the project has been imposed upon them.
Right now the corridor is a subject of North American interest. And that is the mentality in the Osa.

Many local leaders, both in my taped interviews and informally spoke of the need to involve the communities. One woman who works for a local community organization commented regarding herself and other community leaders:

I believe it will come back around to help. And therefore at the table of the biological corridor, you have to see people from [local organizations], our people. Because we can see these things and say, well sir, you have to help. We are thinking of how to help the people. And what are we going to do. I don't see [community organizations] working on this alone. I see a coalition achieving a project of empowerment of people.

**Project Sustainability**

The Osa Biological Corridor Initiative is a long-term endeavor that will likely last many years. At the time of this study, the project was only 9 months old, and therefore its sustainability is difficult to look at critically. One important theme that emerged throughout the interviews was the project’s need to involve the local communities for the project to be sustainable. As one community member commented:

I imagine if they achieve this project it will set an example for the world, but realistically it is not a project that will be achieved tomorrow. And there are many people have to work on this and with respect to the communities, the people have to change their awareness. And we have to teach the people that the natural resources are an inexhaustible source of life if we manage them correctly. And we must learn to live from them and with them, and that Osa still has a huge natural wealth... The role of the communities has to be multiplied to empower the rest of the people in this subject.

In the area of funding, one positive action of the coalition is looking at the long-term when seeking out funding for the life of the corridor project. As the COPROSA
project demonstrated in Cañaza, the lack of diverse and secure funding sources can be the
demise of a project.

Lessons be to Learned

The Osa Biological Corridor Initiative outlined a broad-based, comprehensive
plan to protecting the natural resource base in the corridor area. The project coordinators
expressed the importance of the project focusing on both the ecological and the social
aspects of creating such a corridor. However, the way the project has played out thus far
has been very different. The coalition did not initially create a plan for working with the
residents of the communities in the corridor, and this mistake could undermine the
objectives of the project before it even gets off the ground.

One positive aspect of the corridor project is its goal of approaching the
complicated ecological and social realities in the Osa through multiple avenues. The
coalition does this by combining the efforts of organizations working in the legal, social,
biological and economic areas of conservation. The coalition also aims to tackle the
issue of land tenure in the Osa Conservation Area. This matter is huge, and many past
projects have pointed to insecure land titles as an obstruction to meeting their goals
(Donovan, 1994). But the coalition is faced with the question of how to address the
urgent environmental challenges happening in the corridor area while successfully
working with the local communities in the corridor area. As past top-down conservation
projects have shown, conservation projects that do not address the needs and desires of
local residents generally are not successful at protecting the natural resource base in the
long term (Western and Wright, 1994)
Chapter Six
Conclusions

The causes of unsustainable use and destruction of natural resources in tropical climates are highly complex, stretching from the local to national to global levels. According to Vandermeer and Perfecto (1995:7), “there are multiple causes of rainforest destruction, with logging, peasant agriculture, export agriculture, domestic sociopolitical forces, international socio-economic relations, and others factors intricately connected with one another in a ‘web of causality’.”

As described in Chapter 2, two major paradigms emerge throughout the literature, as current approaches to biodiversity conservation and protected area management. The first is the authoritarian or protectionist position, which has most recently emerged as a “new protectionist paradigm,” in response to critiques of people-oriented approaches to biodiversity protection. This position calls for strictly enforced nature protection, focused on biodiversity protection, and seeks to preserve key tracts of forest or water bodies for scientific research, sometimes combined with recreation and tourism development (Brandon and Wells, 1992; Wilshusen et al., 2002; Ghimire and Pimbert, 1997.) The second approach to protected area management and biodiversity conservation is seen most often throughout the literature as integrated conservation and development projects (ICDPs) (Belsky, 1999; Donovan, 1994; Western and Wright, 1994). This approach is generally people-oriented and seeks to improve environmental resources in or near inhabited areas to improve living conditions of certain social groups (Ghimire and Pimbert, 1997).
The three projects I profiled in this professional paper all worked toward the end of stopping the destruction of the tropical forests in Costa Rica through direct work in populated communities. To varying degrees, the projects sought approaches that are economically sustainable and reflective of the socio-economic needs of local community members, while also maintaining an overall objective of alleviating the stress on the surrounding natural resource base. They fit under the larger umbrella of integrated conservation and development projects (ICDPs) in that they introduce economic activities with the hope that those activities will lead to economic growth and therefore alleviate stress on the surrounding natural resources.

In the cases of Cañaza and La Gamba, the projects are geared specifically toward those two communities and focus on conservation at the community level. In the case of the biological corridor, the coalition supports existing ICDPs in addition to implementing other projects, both at the regional level. Throughout my analysis of the three critical case studies I present in this document, I focus on how nature protection can and should occur, in ways that are not just ecologically sound but also practically feasible and socially just (Wilshusen et al., 2002).

The COPROSA project in Cañaza aimed to improve existing productive systems, introduce ecologically friendly activities, and reforest certain areas to conserve the natural resource base in and around the community of Cañaza. However, due to the supporting foundation terminating COPROSA’s funding, the majority of its objectives remained incomplete, and it left participants in a state of limbo. Community members expressed frustration and displeasure regarding many facets of the project, such as the time they had devoted to systems that either did not work or could not continue, the poor
use of economic resources by the project administrators, and the lack of funding to complete project objectives. While participants also named several positive outcomes such as the educational benefits of COPROSA, increased environmental awareness, and COPROSA’s function as a pilot project that taught important lessons for the future, overall the project failed at meeting its proposed objectives.

The La Gamba Project also focused on the promotion of income generating activities combined with the improvement of productive systems with the overall goal of protecting the natural resource base surrounding the community of La Gamba. The La Gamba Project additionally focused on community capacity building and empowerment, with the goal of increasing the sustainability of its objectives. In general, interviewees expressed very positive reactions to their involvement with the project thus far. They reported that it served to lift many individuals out of a state of economic “crisis,” and provided alternatives to their previous sources of income. More than in the case of COPROSA, the La Gamba Project strived to empower participating community members with the skills to continue the activities into the future, and to give them the confidence in their capacities and knowledge of new options available to them. Participants expressed concern, however, that once the economic resources that Neotropica currently provides are no longer available, the activities will not be able to continue. Despite its efforts at empowering project participants to be able to work autonomously and independently in the future, Neotropica still created a certain level of dependence that may be inherent in any situation where people are supported economically and suddenly are not. Once Neotropica leaves and the resources go also, will the community actually be able to continue with the project activities? Or will participants revert to old practices or be
drawn to new ones that are less ecologically sound? Given the experience of COPROSA, these are real concerns that Neotropica must face in La Gamba.

The Osa Biological Corridor Initiative is a regionally based initiative, incorporating and drawing from current work by a coalition of organizations in addition to new projects. It is a relatively new endeavor, and, at the time of this study, the coalition had been operating for less than a year. The corridor initiative’s focus is on the areas linking the protected areas of the Osa Conservation Area by creating additional forest cover and protecting existing forest in these populated areas. The corridor initiative has been a buzzword since the 1980s, and has significant support from the international and national environmental communities of Central America and Costa Rica. Although the coalition has expressed its need and desire to work with the local communities in the corridor area, at the time of the study it had not done so thus far. The coalition’s perspective is that, as a group of conservation organizations with conservation agendas, it was necessary to organize themselves and be clear about their goals as a coalition before taking the project to the ground level.

Such an approach that does not incorporate input from the community in project design and goal setting may be problematic. A strong level of anger and even hurt among local community members emerged throughout my interviews regarding the corridor initiative. Many interviewees were angry and frustrated that a group of people, the majority of whom do not even live in the Osa, had designed a project that directly affects the communities where they lived, without including them in the process. This deep level of resentment that emerged in many interviews could have already created
enemies for the coalition, and could serve to undermine the work they hope to do before
the project even gets off the ground.

Throughout this project I have operated from the perspective that conservation of
the natural resource base in the Osa should happen. My overall research question
throughout this study asks how the three projects’ approaches to natural resource
conservation affect the projects’ success, sustainability, and the satisfaction of local
community participants. My analysis of the three projects profiled here suggests that
community participation through empowerment and a participatory process needs to
happen for natural resource conservation projects, focused on the populated areas of the
Osa Conservation Area, to be successful in meeting objectives. It must take place in a
way that is not only ecologically sustainable but also socially just. Past projects in the
area have shown that in the minds of many local community members, protecting natural
resources is generally secondary to economic development, or at least activities that
provide income sufficient for subsistence (Stem, 2001). Both COPROSA and La Gamba
projects incorporated this understanding into their objectives, although to differing
degrees. The La Gamba Project, more successfully than COPROSA, promoted
economically sustainable activities that would additionally serve to conserve the natural
resource base.

The challenge is determining how to implement projects with a combined focus of
conservation and development in ways that will be sustainable, will successfully conserve
the natural resource base, and will be socially just and fitting with the values, skills, prior
knowledge and wishes of the local community members. I assert that if a project does
not have the support of the local communities, the people who are interacting on a daily basis with the natural resource base, it will not be successful or sustainable.

The La Gamba Project approached project sustainability through empowering participants with skills and know-how to continue the project. This approach was successful in creating a sense, among participants, that they could continue with the project into the future. They were concerned, however, about the economic resources they would need to continue with the activities. According to project participants, COPROSA did not empower them with the skills and management structure necessary to continue the project. Therefore, it ended abruptly and the systems that were introduced did not continue. Thirdly, the corridor initiative initially did not incorporate local communities into the design process, which served to do the opposite of empowering the people; it stripped power from their hands. The outcomes of this approach were anger and hurt, and a lack of support from the communities in the corridor area could be detrimental to the success of the project as a whole.

Understanding the perceptions of the local community members living within the Osa Conservation Area is essential to any conservation effort. It is their land and they are affected by decisions whether they are made by foreigners in San José or by leaders in their local community organization. To carry out a conservation project, it is imperative to know the whole picture, to have input from all the players and to incorporate those ideas and needs into overall objectives. Without doing so may render a project ecologically sound but socially unjust.

Some conclusions from this study are:
Without support of local community members, conservation projects will not be effective or sustainable.

Conservation organizations tend to set unrealistic goals.

Defining what constitutes the “community” and who should participate in a project is difficult and can affect the sustainability of the project.

Conservation projects are embedded in a much larger political, economic, and social context that can affect project outcomes.

The results of this study agree with case studies in current literature. Why are project leaders making the same mistakes?

According some critics of integrated conservation and development projects (ICDPs), one pitfall of the approach is the apparent assumption that if a project provides economic alternatives then community members will inevitably stop using the surrounding natural resources (Wells, Brandon, and Hannah, 1992). In the case of Project COPROSA in Cañaza, it seemed that the participants still tapped into the surrounding resources for wood, food, or area to develop or expand agriculture. The project introduced activities that provided alternatives to using the resource base, but apparently did not successfully alleviate that use.

In the case of the La Gamba Project in La Gamba, most participants asserted that they did not use the surrounding natural resources and that the activities that the Neotropica Foundation had introduced through the La Gamba Project provided a diverse source of income. While this appeared to be the current state in the community,
according to interview responses, it is unknown whether participants will continue to focus on the activities introduced instead of the surrounding forests they previously used.

The projects studied attempt to integrate conservation with economic development by providing alternative activities that they will hopefully rely upon instead of the resources. In light of this reality, the findings from this study, and the pitfalls this approach has encountered in past case studies, I have several recommendations to guide approaches of conservation organizations operating in the Osa Conservation Area of Costa Rica. First, explore the opinions and needs of community members before carrying out a project. They are eager to share how they feel! It is essential to, at the very least, obtain this information, and more importantly, use the perceptions local community members to inform the structure and activities introduced by project. Not only can it make projects more politically feasible but also more socially just. A farmer is not likely to feel excited about raising hogs on his or her land when he or she is determined to plant it with African oil palm.

Secondly, interact directly and often with the local communities on the ground. Throughout this Masters project, I was continually amazed by the openness and willingness of project participants to share their opinions. I was continually open and honest about my goals and objectives and I felt that people responded similarly because of that. Organizations should do the same if they hope to work honestly and willingly with local community residents. Thirdly, no community situation is isolated. Each community is embedded in a much larger political, social, economic and legal situation, and it is essential to recognize that external factors can undermine a project’s success. It
is necessary for organizations initiating projects to examine each community on a case by case basis.

Some additional questions arose while doing this study but, because of the limited scope of the project, I was unable to address them specifically. These are potentially important areas for further study:

- How can short-term projects find long-term success once an organization stops funding and managing a project?
- Will projects that incorporate local empowerment have more sustainable results than those that implement projects through other methods?
- How might better understanding local residents' perceptions of projects increase organizations' abilities to meet proposed goals?
- Why is there a lack of coherency and collaboration with the work of NGO's and other organizations operating in the Osa Conservation Area?

The natural resource base of the Osa Conservation Area is threatened in numerous ways, as this document discussed. Non-governmental conservation organizations are in a unique position to combat these threats and have found both success and failures in doing so. As this study demonstrated, the success and sustainability of conservation projects, in the eyes of local communities, is a complicated matter. Addressing how to carry out such projects in a way that is both ecologically and economically sustainable and socially just must be a priority for conservation organizations endeavoring to do so. As this professional paper demonstrates, local community members are passionate and
opinionated about the land and the natural resources surrounding them. Just simply
taking the time to explore such ideas could have a powerful effect on future conservation
projects in this area.
Appendix A

Partial List of Organizations and Groups Working in the Osa

**Cecropia Foundation** is based in Puerto Jiménez on the Osa Peninsula and works in private conservation, sustainable productive activities, forest politics. It was founded in 1998 around a conflict involving the Latin American subsidiary of the North American Stone Container, Stone Forestal and is therefore a relatively new organization. It is one of the three organizations profiled in this study.

**CEDARENA** (Center for Environmental and Natural Resource Law) is based in San José however is currently tackling the extensive land tenure issue in the Osa. This undertaking consists of a study to determine property lines, ownership, and presence or absence of title and ultimately creating a digital map of the land ownership in the Osa Conservation Area. Other groups in the past, such as Neotropica Foundation have taken on this task but it has never been completed. CEDARENA is also working with a program to promote conservation easements on private land through the use of governmental incentives and tax breaks.

**CLACOSA**: The Local Committee of ACOSA, the government entity that governs the Osa Conservation Area. It is headed up by one woman from the peninsula, with other community members involved depending upon the issues at hand. The last time CLACOSA was strongly organized was around the conflict against Ston Forestal in the early 1990s. I was told by several people that they are currently in a fairly unorganized state.

**Corcovado Foundation** is based in Drake Bay near the northern entrance of Corcovado National Park. The foundation works primarily in private conservation with many of the tourism lodges in the area and has been largely successful in summoning community support for conservation in the Drake Bay area.

**COVIRENA** is an organization that was based in Puerto Jiménez until they moved offices last year to a location away from the Osa Peninsula. Most notably the group strongly organized around the conflict with Ston Forestal.

**Mesa Nacional Campesina** is the national organization of peasants in Costa Rica and is the organized voice for the “campesinos” in the country. It is based in San José but sends representatives to various meetings and is called upon by organizations to collaborate on projects or be present at meetings. I only met one member at several different gatherings and therefore am unsure of the number of members and just how representative of the campesinos the group actually is.

**Neotropica Foundation** probably has the longest standing involvement in the Osa. A national organization, founded in 1985, Neotropica’s general objective is to promote sustainable forest management along with sustainable community development through
productive activities. The foundation works primarily near protected areas in Costa Rica with special emphasis on the Osa Peninsula, Tortuguero and Tempisque regions. They are one of the organizations profiled by this project.

The National Biodiversity Institute (INBio) was created in 1989 by presidential decree as a nonprofit private organization. At the national level INBio is working to collect, inventory and catalog all of the plant and animal species in Costa Rica. They are doing this through training individuals to work as taxonomists and collect information on habitat, abundance and distribution. INBio possesses an extraordinary collection of plant and insect specimens at their headquarters outside of San José (Cuello, Brandon and Margoluis 1998).

The Nature Conservancy (TNC) is a U.S. based, international conservation organization that played an important role in the creation of Corcovado National Park and has collaborated with local organizations such as the Neotropica Foundation on various projects in the Osa and other areas of Costa Rica. They most recently worked on a conservation site-planning project to assess the land that hence became Piedras Blancas National Park and are working to help raise funds for the Costa Rican government to purchase the remaining private land within the park. They are also currently part of the Coalition for the Osa Biological Corridor Project.

Tropical Science Center (TSC) conducts scientific research and was more directly involved in the initial stages of creating Corcovado National Park but still carries out research in the area.

TUVA Foundation (Tierras Unidas Vecinales por el Ambiente) is based in Puerto Jiménez and works primarily with promoting conservation among indigenous communities, with coastal-marine management along the Golfo Dulce and also with a program to harness fallen wood as an alternative to logging. It was founded by a Spaniard and its current leadership is split among a couple of different people. I was told by several people that TUVA is currently struggling with defining its future goals, deciding whether it wants to continue working primarily with the indigenous communities or shift its focus more to protected areas and sustainable development projects.

The University of Costa Rica (UCR) is located in San José. Scientists from the department of Biology have conducted research and collaborated with NGOs on various projects, environmental assessments and publications.

ZOO-AVE is a project based along the northeastern coast of the Golfo Dulce. Its primary objective is to reintroduce the scarlet macaw to the Golfito area and around Piedras Blancas National Park.
Appendix B

Protected Area Management Categories

By way of recognizing the diversity of interpretations of the protected area concept, IUCN uses six categories for classification according to the management objectives of the sites (IUCN 1994: 17-23)

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

II.  *National Park:* protected area managed mainly for ecosystem protection and recreation.

III.  *National 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 and recreation.

VI.  *Managed resource protected area:* protected area managed mainly for the sustainable use of natural ecosystems.

Matrix of Management Objectives and IUCN Protected Management Categories

<table>
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<th>III</th>
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<td>2</td>
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<td>2</td>
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<td>3</td>
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<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
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<td>1</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Protection of specific natural/cultural features</td>
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<td>-</td>
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<td>1</td>
<td>3</td>
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<td>3</td>
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<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<td>2</td>
<td>2</td>
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<td>3</td>
</tr>
<tr>
<td>Sustainable use of resources from natural ecosystems</td>
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<td>3</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Maintenance of cultural/traditional attributes</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>2</td>
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<td>Key</td>
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</tbody>
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Source: IUCN (1994:8)
Appendix C

Map of Study Sites

(Modified from www.worldheadquarters.com or maps osa peninsula Modified on May 11, 2002)
Appendix D

Map of the proposed Osa Biological Corridor

(Modified from Propuesta1, Osa Biological Corridor presentation. Modified on May 11, 2002)
## Appendix E

### List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACOSA</td>
<td>Area de Conservación de Osa (Osa Conservation Area)</td>
</tr>
<tr>
<td>APAC</td>
<td>Asociación de Productores Agropecuarios de Cañaza (Cañaza Association of Livestock and Agriculture Producers)</td>
</tr>
<tr>
<td>ARC</td>
<td>Areas de conservación regionales (Regional conservation areas)</td>
</tr>
<tr>
<td>BOSCOSA</td>
<td>Bosque de Osa</td>
</tr>
<tr>
<td>CBM</td>
<td>Corredor Biológico Mesoamericana (Mesoamerican Biological Corridor)</td>
</tr>
<tr>
<td>CBPD</td>
<td>Corredor Biológico Paso de la Danta (Paso de la Danta Biological Corridor)</td>
</tr>
<tr>
<td>CEDARENA</td>
<td>Centro de Derecho Ambiental y los Recursos Naturales (Center for Environmental and Natural Resource Law)</td>
</tr>
<tr>
<td>CLACOSA</td>
<td>Comité Local de la Área de Conservación de Osa (The local committee of the Osa Conservation Area)</td>
</tr>
<tr>
<td>COOPEGAMBA</td>
<td>The Association for Well-being of La Gamba</td>
</tr>
<tr>
<td>COPROSA</td>
<td>Conservación y Producción en Osa (Conservation and Production in the Osa)</td>
</tr>
<tr>
<td>EEC</td>
<td>European Economic Community</td>
</tr>
<tr>
<td>FN</td>
<td>Fundación Neotropica (Neotropica Foundation)</td>
</tr>
<tr>
<td>GOs</td>
<td>Governmental organizations</td>
</tr>
<tr>
<td>ICDPs</td>
<td>Integrated conservation and development projects</td>
</tr>
<tr>
<td>INBio</td>
<td>Instituto Nacional de Biodiversidad (The National Institute of Biodiversity)</td>
</tr>
<tr>
<td>MINAE</td>
<td>Ministerio Nacional de Energía y el Ambiente (National Ministry of Energy and the Environment)</td>
</tr>
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<td>Acronym</td>
<td>Full Name</td>
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<td>---------</td>
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<tr>
<td>MIRENEM</td>
<td>Ministerio de Energía y Minero (Ministry of Energy and Mining) currently MINAE</td>
</tr>
<tr>
<td>NGOs</td>
<td>Non-governmental organizations</td>
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<tr>
<td>SPN</td>
<td>Servicio de Parques Nacionales (National Park Service)</td>
</tr>
<tr>
<td>TNC</td>
<td>The Nature Conservancy</td>
</tr>
<tr>
<td>TSC</td>
<td>Tropical Science Center</td>
</tr>
<tr>
<td>TUVA</td>
<td>Tierras Unidas Vecinales por el Ambiente</td>
</tr>
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<td>UCR</td>
<td>Universidad de Costa Rica (University of Costa Rica)</td>
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<td>UFCO</td>
<td>United Fruit Company</td>
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<td>WWF</td>
<td>World Wildlife Fund</td>
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