

HONDURAS:  
AN ETHNOGRAPHIC STUDY  
OF  
EL ARMADO NATIONAL WILDLIFE REFUGE  
AND  
GUAYAPE, OLANCHO

By  
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A THESIS

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## ABSTRACT

The El Armado National Wildlife Refuge is a cloud forest found 12 kilometers to the north of the Municipality of Guayape, Olancho, Honduras. This park is a protected area by law, but not necessarily recognized as such by the majority of the residents of the municipality. Migratory agriculture, the cultivation of coffee, hunting, and wood extraction are all human activities that affect the refuge. This area is a very important component to the lives of the residents, as watersheds found within the park's boundaries are the source of water for nearly 90% of the population of the municipality.

During my 27 month Peace Corps service in this municipality, I realized the importance of defining the park according to local perception. Therefore, I chose to conduct interviews with key informants in several towns positioned around the refuge.

Many inhabitants have heard of the economic advantages that come with ecotourist travelers from around the world. However, Olancho particularly, and Guayape itself, are fairly rugged areas with a history of violence and vigilance. How many people are willing to travel into this type of situation taking a dirt road 5 hours into the middle of nowhere? Would it be better, then, to protect this land for its water and its biological benefits to the livelihoods of the residents?

Two local non-governmental organizations and the Honduran Corporation of Forestry Development, AFE-COHDEFOR, have expressed interest in developing programs designed for the protection of El Armado. But, lack of resources and funding deter most action by these organizations.

Another factor whose implications have yet to be realized was Hurricane Mitch, which caused incredible damage to most of Honduras in late October and early

November 1998. Mitch destroyed the roads and the majority of the farms in the municipality and completely altered the lives of many residents for a yet undetermined time. However, Mitch also had an extraordinary affect on attitudes towards the environment. Men, women, and children all watched the rivers rage and hillsides fall away, and this visual expression of the powers of nature undoubtedly had an impact that will not be easily forgotten.

However, even though attitudes may have changed, no clear strategies have been proposed to realize the conservation benefits of El Armado National Wildlife Refuge. Therefore, I suggest several recommendations towards the future conservation efforts for this protected area. These include suggestions for the diversification of agriculture around communities situated near El Armado, strategies for the protection of the park's watersheds, and considerations for environmental education programs in the municipality. Throughout these recommendations, I address the importance for the organization of local communities and groups as well as the utilization of the knowledge found within.

Map 1: Honduras in Central America



(www.dirla.com 1995)

Map 2: Guayape, Olancho in Honduras



(National Geographic 1996)

## **Chapter One**

### **Introduction**

The Municipality of Guayape, Olancho is found on the far western edge of the Department of Olancho in Honduras. This is a rural municipality and most of the residents exist as subsistence farmers. Approximately twenty kilometers to the northeast of the municipality lies El Armado National Wildlife Refuge. The park contains the sources of water for almost ninety percent of the municipality. This park was declared a National Protected Area in 1987. However, this declaration was part of an across-the-board Honduran environmental policy that created 36 other protected areas at the same time. Rural residents of Honduras are not familiar with such laws, so El Armado remains a legal protected area in name only.

I spent two years serving as a United States Peace Corps Volunteer in the Municipality of Guayape. Almost exactly midway through my service, Hurricane Mitch destroyed much of Honduras. This hurricane greatly affected the municipality as well. However, after this major natural disaster, I sensed a change in attitude in the environmental consciousness of the residents of the municipality. Yet, the fact remains that no clear strategies currently exist that propose conservation of the protected area's watersheds nor promote future ecotourism endeavors.

This thesis is the result of interviews and observations during my two years living in the municipality. I chose to conduct an ethnographic study using key informants as a source to determine local knowledge and attitudes about the area, especially in relation to El Armado. I conducted interviews with several people scattered throughout the area; some who worked for local nongovernmental organizations, some who worked for state

agencies, some farmers, and some teachers. These informants are the members of the community who gave me the information to write a story about several towns that are rarely even dots on even the most detailed maps.

I begin the story by providing background information. This includes a definition of ethnography, information about the Republic of Honduras, and brief gleanings on Honduras' role in the global environment and education in Honduras. Likewise, I offer information about major organizations active in environmental policy in Honduras. These include the United States Agency for International Development and nongovernmental organizations. Presented, too, are a description of El Armado National Wildlife Refuge and a section describing Hurricane Mitch.

This rather lengthy section will be followed by a short description of previous works on El Armado National Wildlife Refuge. The brevity of this section is directly related to the substance of the two previous reports.

Afterwards, I discuss the methods of this paper. I will share the timeline during which this study was conducted, as well as describe why I chose to use ethnography to represent this area in a thesis. I will also describe the interview process, as well as the reasons I chose to use key informants.

The methods section will be followed by a description of the towns and the area I studied. This will include separate sections for the five towns around which I concentrated this study. I will also present information on the local nongovernmental organizations and state agencies working in the municipality. This section was developed by direct observation and is complemented by key informant interviews.

After the descriptions of the influential towns and organizations within the municipality in respect to the protected area, I offer a section devoted to excerpts from key informant interviews. These are presented to provide pieces of local knowledge and attitudes exactly as I heard them during my two years in this area.

Finally, I conclude the study with discussions and a section devoted entirely to recommendations for the Municipality of Guayape. The recommendations are presented with special consideration towards El Armado National Wildlife Refuge and the towns and organizations by which it is influenced.

## **Chapter Two**

### **Background**

The following sections are an overview of some of the physical and theoretical aspects of this thesis. I begin by describing what kind of thesis I have tried to develop, and then follow this with descriptions of physical entities influential in the area studied: the Municipality of Guayape, Olancho.

#### **Ethnography**

Ethnographic research involves the study of groups and people as they go about their everyday lives (Emerson et al., 1995). Much of ethnography consists of bringing ways of understanding people and situations into awareness, or making them explicit and public (Agar 1996). The ideas behind ethnography dictate that the researcher be able to enter into a situation and learn from it, or at the least, behave appropriately (Agar 1996). Then the ethnographer should be able to tell a good story about the field of research and the people who live there (Bernard 1995).

I chose to conduct this ethnographic study for exactly the above reasons. Peace Corps provided me with the uncommon time and framework to conduct research over the course of two years and integrate this study into my suggested work opportunities.

In order to attempt development work in foreign countries, it is imperative that the organization members who work at the grassroots level integrate their proposals with the local environment and population. Latinos with experience in these types of situations often say of any project in developing countries, “Hay que trabajar con El Hombre” or “One must be sure to work with the man”. “The Man”, of course, refers to starting and ending proposals and projects at the grassroots level.

Therefore, an ethnographic study seems to be the ideal type of research to conduct in the Municipality of Guayape at this early stage of its developmental associations with El Armado. Strictly because no proposals have been initialized in this area in respect to the park, it is obligatory that some type of research be done to describe the local situation at its own level.

### **General Description of Honduras**

The Republic of Honduras is a predominately Spanish-speaking country located in Central America. It is bordered on the north by the Caribbean Sea; the west by Guatemala to the northwest and El Salvador to the southwest; the south by the Gulf of Fonseca and Nicaragua; and the east by the Caribbean Sea. The geographic coordinates of the center of Honduras are 15 00 N, 86 30 W (Atlas Britanica 1996).

The nation's capital city is Tegucigalpa and the nation is divided into 18 departments each with its own departmental capital city. Each department is comprised of municipalities, the number of which vary in each department. Municipalities vary in size, but always have a county seat town where the mayor of the municipality serves. Each other town within that municipality is called in *aldea*. *Aldeas* are usually, but not always, smaller than the municipality town.

The total area of Honduras is 112,090 square kilometers, with land area totaling 111,890 square kilometers and water the remaining 200 square kilometers (Central Intelligence Agency 1999). Comparatively, Honduras is slightly larger than Tennessee. The lowest point is the Caribbean Sea at 0 meters above sea level and the highest is 2870 meters at Cerro Las Minas in Celaque National Park (Atlas Britanica 1996).

Although small, Honduras is a country rich in natural resources. These include timber, gold, copper, lead, zinc, iron ore, coal, fishing industries, and fruit production, especially bananas. The breakdown of land use is as follows: arable land 15%; permanent crops 3%; permanent pastures 14%; forests and woodlands 54%; other 14% (CIA 1999). However, the United Nation's Food and Agriculture Organization (FAO) states that in 1990, approximately 41% of Honduras was forested (Marcus 1998). Five years later, the FAO estimated this number at 35%, but most environmentalists find even this number quite generous (Marcus 1998).

According to the July 1999 estimate, the population of Honduras is 5,997,327. The annual population growth rate is 2.24% with the total fertility rate at 3.97 children born per woman (CIA 1999). Life expectancy at birth is 64.7 years compared to 76.7 in the United States and the infant mortality rate is 41 deaths per 1000 live births compared to 7 per 1000 in the U.S.A. (United Nations Development Programme 1997). The ethnic groups in Honduras are mestizo (mixed Amerindian and European) 90%, Amerindian 7%, Black Carib 2%, and white with 1% of the population (CIA 1999). Religion is predominately Roman Catholic; however, some Amerindian tribes retain traditional practices as well as languages. The literacy rate of those aged 15 and over is 72.7% (CIA 1999).

The estimates for Gross Domestic Product per capita vary between \$2400 (CIA 1999) and only \$806 (U.S. Department of State 1998) as compared to \$29,080 in U.S.A. (UNDP 1997). The United Nations estimates that 50% of Hondurans live below the poverty line, but in truth, that percentage would be much higher if that were the same gauge used in the northern Western Hemisphere (UNDP 1997). Honduras is the second-

poorest nation in this half of the world, with only Haiti a bit behind. The Honduran currency is the Lempira and the exchange as of December 1999 was 14.5 Lempiras per US\$1.

There are really only two seasons in Honduras. The dry season which runs from December until May, and the rainy season from June through November (Peace Corps Honduras 1995). Average temperature on the national level ranges from 25-33 degrees Celsius. The country receives an annual average of 2000 millimeters of rain on the North Coast and 1100 mm inland (PC Honduras 1995).

Three countries that have been considered fairly volatile in recent decades surround Honduras. Guatemala, Nicaragua, and El Salvador, whether it be from indigenous peoples uprisings or conflicts between Capitalism and Communism, have recently experienced political turmoil and even full-scale war.

Honduras was the central launching point for all counterrevolutionary, or Contra, activities and aggressions towards the Sandanistas of Nicaragua during the Iran/Contra conflict of the 1980's (Norsworthy and Barry 1994). Locals still describe that time as the "lost decade". This is appropriately named, as U.S. military presence preempted any independence the military government of Honduras previously had. The decade belonged strictly to the militaries of the United States and Honduras, essentially pulling the country into a full-scale war against a neighboring country whose politics contradicted those of the U.S. government.

Hundreds of millions of dollars began to arrive in Honduras at the same time when political control in the country was "officially" switched from military to civilian democratic leadership. Almost immediately Honduras was ranked as one of the world's

top ten recipients of U.S. foreign aid (Norsworthy and Barry 1994). Even so, this aid essentially covered only the counterrevolutionary exercises of the Contras even though promises were made for wide-sweeping social reforms. Marines and other armed forces representatives arrived in greater numbers (Shepherd 1988, Meza 1988). Peace Corps Volunteer numbers increased to over 400 during most years of this decade (Jorge Betancourt, personal communication). Ironic, yes, but the U.S. government can have no better ambassador to gauge the environment and attitudes of rural areas in any country.

This recent history, coupled with United Fruit Company's and Standard Fruit Company's dominance of the Honduran economy earlier in the century, contributes greatly to the social and economic depressions now faced by the Honduran population. As money poured into the country's military funds and lined the pockets of those with political power, poor urban and rural Hondurans were forced to continue to find a way to live amongst broken promises of social reform. This has contributed to an overwhelming national feeling of fatalism that may only be rooted in their history of outside control. Beets (1990) has noted this fatalistic sentiment to be present throughout many developing countries.

### **Education in Honduras**

More than 27% of the total population and 84% of Hondurans in rural areas are illiterate (Norsworthy and Barry 1994). Seventy percent of children drop out of school between the first and the sixth grade (Ibid.). Those students that continue on to secondary education may choose between two tracks: vocational education or preparation for higher education (Ibid.). Only 30% of Honduran children who enter the

first grade eventually study at the secondary level, and only 8% of those students continue their education at a post-secondary institution (Ibid.).

Educators, unless working for a private, often foreign institution, are very poorly paid, and therefore, rarely motivated. Memorization is the most common form of instruction (Norsworthy and Barry 1994). Rural schools lack the resources such as computers, photocopiers, projectors, or even maps and drawings to instruct large numbers of students. Yet, their class sizes are often twice as large as those found in the United States.

Unfortunately, my experience in rural Honduras confirms the above statements. High schools and, especially, the elementary schools are very often safe areas for the children to play, rather than educational facilities. Teachers, although respected, act more as baby-sitters than educators. I often found students and teachers playing full-fledged, albeit sloppy, basketball games only a few feet away from classrooms where students were studying or testing. The soccer games were usually much more precise. Regardless, this was not exactly an ideal environment to learn.

Education for children aged 7-14 years is, however, obligatory and free as written in the Honduran Constitution (Norsworthy and Barry 1994). Yet, this education usually excludes the poorest children because their families can not afford the required uniforms, as well as pencils and paper.

### **Deforestation in Honduras**

It is estimated that Honduras loses up to 225,000 acres of forests every year to deforestation (Marcus 1998). This often results in pastoral systems or agriculture changing the land use of previously forested areas. In fact, according to a recent study

conducted by the Honduran National Forestry School (ESNACIFOR) in Siguatepeque, the current rate of destruction to Honduran broadleaf forests will cause their disappearance by the year 2011 (Fiallos 1999). Broadleaf trees will continue to exist in the country, they just will not be within a forest environment.

I find the above numbers, especially the ESNACIFOR report, to be a bit rash. Yet, the fact remains that enormous areas of forested land are lost to “slash-and-burn” agriculture (Stonich 1993). This process of stripping the land with fire in order to clear space for crops can be seen in almost all parts of Honduras. The practice is violent and destructive; unfortunately, it is a too fast and too easy method of clearing lands. The nitrogen in the soil is burned away, rivers dry up because watersheds are no longer protected by trees, and soil more rapidly erodes. After three years of this intensive agriculture, the burned area of land is virtually wasted until it has had sufficient time to regenerate.

Slash-and-burn agriculture very often seems so brutal because it is rarely practiced by agriculturists in the developed world. Netting (1997) argues that in many poorer countries, slash-and-burn, shifting, or migratory agriculture (cultivation) is not necessarily a “primitive” way to farm, but very often as complex as local knowledge and culture.

However, when slash-and-burn agriculture is practiced on hillsides, as is usually the case in Honduras, soils are washed away unless protected by grasses, bushy plants, or land terracing, among other possibilities. This, in turn, affects fallow periods, or time in which the land is left plowed, but unseeded. Raintree (1986) explains several variations of fallow period activities that prove very beneficial to both the land and farmers.

However, these methods rely on active participation in agroforestry techniques that integrate trees into the area of land under fallow. These trees may be specifically chosen for their abilities to fix nitrogen in the soil, their root system expansion which may help in the conservation of soil, or their value as a timber or fruit tree.

Without doubt, these fallow systems described by Raintree are excellent remedies to straight slash-and-burn migratory agriculture where the farmer uses the land for only a few years and then moves on. Many large flat-landowners in Honduras have learned that these systems are beneficial to production. But, many of the rural poor who have moved to the mountainsides in search of land do not have the resources, nor, most likely, the technical knowledge to initiate such fallow systems. Whether or not a farmer chooses to practice shifting cultivation, migratory agriculture, or slash-and-burn—all accepted names for essentially the same thing—depends on social, but especially, economic pressures the cultivator faces.

### **Ecotourism**

Ecotourism is a fairly new word for our language. It is a word which is holding significant meaning for developing countries, especially those with tropical forests and the environs they contain. Perhaps ecotourism may best be defined as that which involves both tourism and the environment (Gollin and Mader 1998). Ecotourists generally visit a foreign country in order to participate in some sort of outdoor adventure. Kayaking, spelunking, hiking, rafting, birding, SCUBA diving, snorkeling, biking, and riding are all adventures in which an ecotourist may wish to experience.

There is a major distinction between what is good ecotourism and bad. Many nations where ecotourism is now becoming popular are developing countries with

struggling economies. Ecotourism should, in theory, contribute to these host country economies at the local level (Lea 1988). They should not exploit or destroy the natural resources, but rather use local information to strengthen the experience of their journey and preserve the local environment. This may be done easily by using local guides, or contracting through organizations that specifically express initiatives towards environmental conservation. It is not difficult to run a successful ecotourism business, as many foreign owners and investors have discovered throughout the World (Ibid.); however, ideally, consciousness will rise on a global scale to a degree where businesses that diminish or destroy natural habitats will fail to attract clients (Boo 1992).

Southgate (1998) discusses some of the considerations that must be addressed in relation to protected areas and ecotourism. He states that certain logistics must be considered when developing or implementing ecotourism. These include the park's attractions, accessibility, and the possibility of crime. He sites examples from Costa Rica where ecotourists tend to visit the protected areas that offer beaches and volcanoes rather than travel much farther for remote cloud forest parks. True, for some, the remoteness of the area is the original appeal, but for travelers on a two-week holiday, this is not often feasible. The possibility for crime and endangerment to tourists in the Department of Olancho and the Municipality of Guayape will be discussed in Chapter Six.

### **Honduras Protected Areas**

Honduras was the last country in Mesoamerica to establish an environmental protected area. They waited until 1979 to finally declare La Tigra National Park, located just outside of Tegucigalpa, the first Honduran national park (Norsworthy and Barry 1994). This hesitance is consistent with Honduran legislation and policy, but may

eventually prove to be advantageous. Honduras now has the opportunity to use Guatemala and, especially, Costa Rica as guides on how to manage, promote, and protect national parks and reserves. However, the country's meager economic resources continue to deter even minimal action towards the protection and management of protected areas.

Definitions and distinctions for protected areas vary. For example, an area may be designated as a preservation site where no human activity is allowed. Other sites may be considered conservation areas to maintain the key ecological functions of the immediate environment. This is the case in La Tigra, which is managed primarily for its value as a major watershed to Tegucigalpa. A third distinction is the social function of a protected area for the assumed sustainable use of its resources by local residents. However, these distinctions must be determined using local knowledge on its grandest scale (DeWalt 1994 and Bentley 1989).

On June 1, 1997 Honduras declared in Legislative Decree #87-87 that all land above 1800 meters in altitude will be a protected cloud forest (Harcourt and Sayer 1996, Norsworthy and Barry 1994). This, in turn, created 37 cloud forest protected areas out of the 101 total protected areas (Gollin and Mader 1998) in Honduras. This is not a well-known decree amongst the rural inhabitants of Honduras, so the majority of these protected areas are, like El Armado, protected in name only.

The nuclear zone of a protected area is, generally, land that has been designated for no human activity (Barnes et al., 1998). It is a preservation area. Meanwhile, buffer zones are those areas where human activity is often allowed, but controlled (Gradwohl and Greenberg 1988, Southgate 1998).

Officially, La Corporación Hondureña de Desarrollo Forestal (COHDEFOR, please see Chapter Four for full description) is the state's controlling organization over protected areas, but their propensity to overspend and succumb to corruption has forced rural communities to look elsewhere. Organizations have formed in many rural communities near protected areas so they themselves may work towards the management of the parks. Many of these groups are nongovernmental organizations.

## **NGOs**

Nongovernmental Organizations (NGOs) are groups of people who work together for a cause(s). They vary in size, location, and goal. They may be found lobbying in Congress, providing humanitarian relief, distributing aid, teaching illiterate adults, or supporting environmental values, among other things. A large number of NGOs may be found working in developing tropical countries, including Honduras.

Most NGOs in developing countries attempt to assist both urban and rural poor at the grass-roots level (Smith 1990). This is the case in Honduras. There are several environmentally focused NGOs working in Honduras. Most, but not all, receive the majority of their economic support from an organization called Fundación Vida (Life Foundation). Fundación Vida, in turn, was created and is funded by the United States Agency for International Development (USAID) whose role in Honduras is further discussed below.

In the Municipality of Guayape there are two NGOs. EDECO (Empresa de Desarrollo Comunitario, or The Community Development Group) operates out of Santa Cruz de Guayape. APREVISA (Asociación de Protectores del Refugio Vida Silvestre El Armado, or The Association of the Protectors of the El Armado Wildlife Refuge) works

out of Guayape. EDECO, aside from numerous other activities, has had one small and one large project supported through Fundación Vida. APREVISA has yet to acquire funds for proposals.

Smith (1990) states that many NGOs in developing countries are funded by agencies in foreign developed countries. Many of these NGOs work towards education, empowerment, and equality of poor residents in the host country. But, there is often a very sensitive political or socioeconomic balance surrounding NGO activities that are funded by foreign countries. Smith continues to raise interesting questions as to why a host-country government would let these NGOs form, but also why would those at the receiving end of the aid, the poor residents, accept this aid. While aid from abroad may not legally be given to armed insurrectionary groups, many host-country governments do not want NGOs indirectly encouraging significant political change. Meanwhile, most peasants would shudder at the idea of instigating action that could even possibly lead to political suppression or, perhaps worse, termination of government assistance in the area.

Although EDECO and APREVISA are by no means agitating political motives with their environmental and community based projects and proposals, the motives and agenda of the USAID-funded Fundación Vida must be recognized. Many NGOs have formed in the rural areas of Honduras out of necessity for some sort of development. However, others, and these are the ones that are usually most heavily funded, were formed by a decision made behind a desk in the foreign funding country. These “top-down” decisions are historically the downfall of sustainable development, something all NGOs usually claim to have at the top of their founding principals (Barkin 1998).

## **U.S.A.I.D.**

The United States Agency for International Development (USAID) is very active in Honduras. In 1997, \$29 million was committed to the country (United States Department of State 1999). Of this \$29 million, \$24.3 million were committed towards developmental assistance, while \$4.7 million went directly for foodstuffs (USDS 1999). This, in theory, would be a great deal of money for the NGOs trying to work in Honduras, and the Honduran economy, but as the U.S. State Department explains, \$16 million of that \$29 million committed in 1997 is spent directly on commodities from the United States (USDS 1999). It is interesting that the majority of money committed to the aid of less-fortunate countries continues to bolster the economy of the contributing nation.

USAID states their goal as having “The United States and Honduras work together on the common goal of a more democratic and prosperous Honduras” (USAID 2000). This includes the following objectives:

- Expanded and Equitable Access to Productive Resources and Markets
- Sustainable Management of Selected Natural Resources and Biodiversity
- Sustainable Improvements in Family Health
- More Responsive Democratic Processes with Greater Citizen Participation

This organization does not even try to shadow its political agenda. USAID’s activities in Honduras have only increased its dependency upon the United States.

Norsworthy and Barry (1994) extensively discuss USAID policy and activities in Honduras. They state that USAID is so rooted into Honduras that it seems no sector of society is untouched. However, although money flows through political parties, businesses, judges, churches, development groups, and many government ministries and

ministers, the positive developmental impact of this economic support is often difficult to see. They state that one high-ranking official in Honduras claimed that 30 percent of U.S. economic aid is lost to corruption, while another 50 percent is misdirected to business elite, rather than to assistance programs for the poor. My experience confirms that USAID dollars seem to just broaden the gap between the rich and the much more populous poor.

Rural NGOs receive very little support from USAID (Norsworthy and Barry 1994, Barkin 1998). The little funding that does reach the popular sector is often directed towards the most conservative business-oriented organizations that stress individual and export-oriented solutions (Ibid.). USAID is one of the most visible organizations in the world that consistently make top-down decisions based upon politics rather than the needs and knowledge of the local, peasant population.

A recent article in a national Honduran newspaper says that USAID is going to acknowledge a request by the Municipality of Guayape for over L69,000,000 (US\$4,900,000) (La Prensa 2000). The funds are to be allocated for the rebuilding of agriculture zones damaged after Hurricane Mitch and a campaign to control air-borne diseases (Ibid.). However, the article stated that the aid is for Guayape, Olancho, but did not distinguish whether the program is for the municipality, or the entire Río Guayape Valley, which extends into a large area of the department of Olancho. Many residents of the municipality are most likely anxiously awaiting how and where this aid will be distributed.

## **El Armado**

El Armado National Wildlife Refuge is a cloud forest created under decree 87/87, and occupies 10,000 hectares (100 km<sup>2</sup>) of land in the department of Olancho (COHDEFOR/AID 1994). This figure includes both the nuclear (35 km<sup>2</sup>) and buffer zones (65 km<sup>2</sup>). One half of the park sits within the jurisdiction of the Municipality of Guayape, while the other half is split between the municipalities of El Rosario and Yocón. This study will concentrate solely on the areas of the park whose side faces the Municipality of Guayape.

The highest elevation in the park is 1923 meters above sea level (msnn) found at Montaña del Armado (COHDEFOR/AID 1994). Soils in the park are generally reddish-brown laterites that may be placed under the order of Oxisol, but also Vertisols. Volcanic Andisols are most common in this area of the world (Buol et al., 1997), but Honduras, unlike neighboring Guatemala, El Salvador, and Nicaragua, has no volcanoes. The soils in El Armado are often fractured reddish clays, and many have a high concentration of calcium. Soil mapping and classification, however, is difficult, as one area of land may be moist clay while nearby soils are sandy.

The sources for three rivers and ten streams are found within El Armado. These rivers are the Río Jutialpa (which feeds into the Río Guayape), the Río de En Medio, and Río del Boquerón. These three rivers and the ten streams provide water for all the communities on the north and northeast side of the municipality. These include all the communities of this study.

The nuclear zone of El Armado is comprised primarily with deciduous tree cover, such as Liquidámbar, or Sweet Gum, and Mahogany, while pine and oak trees occupy the

majority of the buffer zone (COHDEFOR/AID 1994). The two tables found on the following page list some, but not all, of the species of flora and fauna found within the wildlife refuge.

The diversity of El Armado is profound, as is often found in tropical forests of the very humid sub-tropical and humid sub-tropical classes. The park is one of only three in Honduras to have a dwarf forest at its highest elevations (COHDEFOR/AID 1994). A dwarf forest, or elfin woodland, is a fully mature forest whose trees may be over one hundred years old, but whose heights rarely reach more than three or four feet (Barnes, et al., 1998). Yet, due to its proximity to three populous municipalities, El Armado is not without major environmental problems.

Personal trips into the nuclear zone of the park have revealed that migratory agriculture and the cultivation of coffee have encroached into this protected area. Agricultural pressures from *aldeas* such as El Coyol, El Carrizal, and Monte Grande, among others, have deforested much of the lower areas of the nuclear zone. Fortunately, the higher areas, in fact all three peaks of the wildlife refuge—Montaña del Boqueron, Montaña de La Cumbre, and Montaña El Armado—are still mostly forested.

The pressures on the park's vegetation do not come only from the smaller *aldeas* in the mountains. Through personal visits and interviews, it was learned that 144 people live in the nuclear zone of the park, within the Municipality of Guayape, in two small neighboring communities called La Vega and Piedras Negras. These two communities, which are not official *aldeas*, are fairly new. They were originally settled by *campesinos*, or peasant farmers, looking for land to farm. As more and more people moved up the

Table 1: Flora

Scientific Name	Common Name	Elevation
<i>Liquidambar styraciflua</i>	Liquidámbar	1100-1700 msnm
<i>Ardisia compressa</i>	Camaca	1600 msnm
<i>Calophyllum brasiliense</i>	Aciete de María	1580 msnm
<i>Chaetoptelea mexicana</i>	Cuero de Toro	1620 msnm
<i>Coussapoa panamensis</i>	Matapalo	1600 msnm
<i>Persea caerulea</i>	Aguacatillo	1600 msnm
<i>Phoebe mexicana</i>	Aguacate Negro	1560 msnm
<i>Pinus maximinio</i>	Pino	1600-1800 msnm
<i>Pinus oocarpa</i>	Pino Ocote	700-1500 msnm
<i>Quercus spp</i>	Roble	1100-1500 msnm
<i>Swirtenia macrophylla</i>	Caoba	1620 msnm

Table 2: Fauna

Scientific Name	Common Name (English)	Elevation
<i>Alouatta palliata</i>	Howler Monkey	1600+ msnm
<i>Cebus capucinus</i>	White Faced Monkey	1700+ msnm
<i>Cuniculus paca</i>	Tepescuintle	1100+ msnm
<i>Felis concolor</i>	Puma, León	1700+ msnm
<i>Odocoileus virginianus</i>	Deer	1500+ msnm
<i>Ototylomys phyllotis</i>	Wood Mouse	1000+ msnm
<i>Potos flavus</i>	Mico de Noche	1400+ msnm
<i>Elanoides forficatus</i>	Amer. Swallow-tailed Kite	1660 msnm
<i>Coragypus atratus</i>	Black Vulture	750 msnm
<i>Aspathes gularis</i>	Blue-throated Motmot	750 msnm
<i>Saltator maximus</i>	Buff-throated Saltator	860 msnm
<i>Dendrortyx leucophrys</i>	Highland Wood Partridge	1280 msnm
<i>Aulacorhynchus prasinus</i>	Emerald Toucanet	1540 msnm
<i>Centurus aurifrons</i>	Golden-front Woodpecker	1220 msnm
<i>Pitangus sulphuratus</i>	Great Kiskadee	750 msnm
<i>Geococcyx californianus</i>	Greater Roadrunner	660 msnm
<i>Sarcoramphus papa</i>	King Vulture	750 msnm
<i>Myioborus miniatus</i>	Slate-throated Redstart	1220 msnm
<i>Harpyhaliaetus solitarius</i>	Solitary Eagle	780 msnm
<i>Campylopterus</i>	Violet Sabrewing	1485 msnm
<i>hemileucurus</i>		
<i>Leucopternis albicollis</i>	White Hawk	800 msnm
<i>Tiaris olivacea</i>	Yellow-faced Grassquit	820 msnm

hills in search for land, the population increased due to the suitability of the area's streams and shelter for living. However, these people are living illegally within the nuclear zone of the protected area and live primarily by migratory agriculture and coffee cultivation. Honduran state law requires that no one be allowed to settle in the nuclear zone of a protected area.

Many *campesinos* have moved closer to the park in order to find land to farm. They have left the lower valleys because cattle grazing and large landowners occupy the land. This is usually the first step in migratory agriculture. The rural farmers search for a plot of land to farm, but these are often only available on the steep slopes of the mountains and hills. Because of soil erosion, this land is suitable for cultivation for only a few years. Soil erosion and nutrient deficiencies force the peasant farmers to relocate, or migrate, to another plot of land. Under normal circumstances, the plot would regenerate during an unspecified fallow period, but presently, the fallow periods for cultivated lands are not considered because the number of *campesinos* working in the protected area do not necessitate their return to previously used lands.

Coffee, corn, and beans are the three cultivated crops within the El Armado Wildlife Refuge. These crops, especially coffee, do not necessarily mean destruction to the protected area. But, how and why they are cultivated is of the utmost importance (Raintree 1986, Netting 1977, and Thurston 1997). Many systems of agriculture are sustainable, including agroforestry, slash/mulch systems, and swidden/fallow systems where the land is cleared for cultivation, and then plowed, but not seeded, and left to regenerate (Raintree 1986). However, these systems have not been integrated into the agriculture currently practiced in El Armado.

The corn and bean crops are strictly results of migratory agriculture. The *campesinos*, or peasant farmers, clear the land with fire and then plant their crops. The land is cultivated for as long as possible, yet this period rarely exceeds three years due to the amount of soil erosion caused by rains on such steep slopes. If this area were not so steep, this type of agriculture may be sustainable. But this is not the case in the El Armado zone; the slopes are too steep and the number of *campesinos* producing in this manner too great.

Coffee is widely considered a crop that is land intensive, rather than extensive, and is often cultivated under shade trees. These components would make it one of the least destructive human activities in a protected area. Yet, the farmers planting in El Armado have just recently been introduced to shade-tolerant strains of coffee beans (please see Chapter Four, El Coyol for further discussion). Previous, and almost all current, coffee cultivation is very similar to the corn and bean crop production. Land is cleared and then planted. When the soil has eroded, or lost too many nutrients to support a crop, the land is left for fallow. However, this fallow period should be much longer than the period for a plot of land that is not found on such a steep gradient. Simply, due to population pressures and soil erosion, agricultural practices are proving to be detrimental to El Armado.

I asked Teodoro, a key informant from Guayape, to explain why slash and burn agriculture is so persistent in and around the protected area. He explained:

“We have tried to stop burning so much. It’s hard to clear the land, though. Some men do not have oxen and tools to take out all the trees and things. What are they going to do? It’s easy to just burn. It’s so fast and then there is time to prepare the land by hand before planting.”

In these communities, it seems the ease of the burning process is the most likely reason to farm in this manner. But, this is not to say that the effects of this practice go unnoticed. Teodoro later said, “Rain carries away all the dirt. It’s not easy to grow corn on rock.”

Other than agriculture, wood extraction, and hunting, there are no other current human activities in El Armado. Many residents of the municipality, and especially members of COHDEFOR, have heard of ecotourism endeavors that have contributed greatly to the local economy where the protected area is located. Indeed, within the boundaries of El Armado lie a natural lagoon and numerous caves. One of the caves even contains a subterranean river, which spelunkers often treasure. And Quetzales, an endangered tropical bird that would excite most birding enthusiasts, have been spotted numerous times in the park. All of these attractions would, normally, draw ecotourists; however, the reality of this particular future for the park will be discussed in the final chapter.

### **Other works involving El Armado**

This thesis is the first study to attempt to describe the lives of the residents of the Municipality of Guayape in relation to El Armado National Wildlife Refuge. Previous projects involving the park concentrated on the state of the protected area. In 1992, USAID funded COHDEFOR to execute a rapid diagnostic study of El Armado. This was conducted from the other side of the protected area, from the Municipality of La Unión. In 1994, COHDEFOR, with the assistance of a Peace Corps Volunteer working out of La Union, completed another study of the state of the park called Informe Número Uno: Sobre El Estado del Refugio De Vida Silvestre El Armado. This report is a bit more

comprehensive than the first because they took three separate trips into the nuclear zone of the park.

Both studies found that human activity in the park, particularly migratory agriculture and the cultivation of coffee, was diminishing the amount of forest area. Both reports recommended reforestation efforts.

### **Hurricane Mitch**

On October 27, 1998 Hurricane Mitch appeared just off the north coast of Honduras. This day was the midpoint of Mitch's path around and through most of Central America (please see the map following this section). The hurricane originated from a tropical depression north of the coast of Panama. It then shot straight north towards Jamaica, but took a hard left west once it rounded the east of Honduras. From there, Mitch flirted with pounding the Bay Islands north of Honduras, but again took a left to the south and entered the country. With winds as high as 100 m.p.h., Mitch entered Honduras but was soon downgraded to a tropical storm. In reality, this was merely a technicality. Without the upward swells of air and water from the ocean, Mitch lost some velocity and power, but not much. The hurricane continued to hover over the mainland of Honduras, passing almost directly over Guayape on October 30. Mitch headed towards the south of the country, through the capital Tegucigalpa, and finally headed out towards Guatemala and Mexico on the first of November and began to disperse.

Mitch did damage to Honduras that is, even more than a year later, not fully realized. Some experts claim this was the worst natural disaster for the Western Hemisphere perhaps ever (Vogel, Jr. 1998). Mitch caused 10,000 deaths in Central

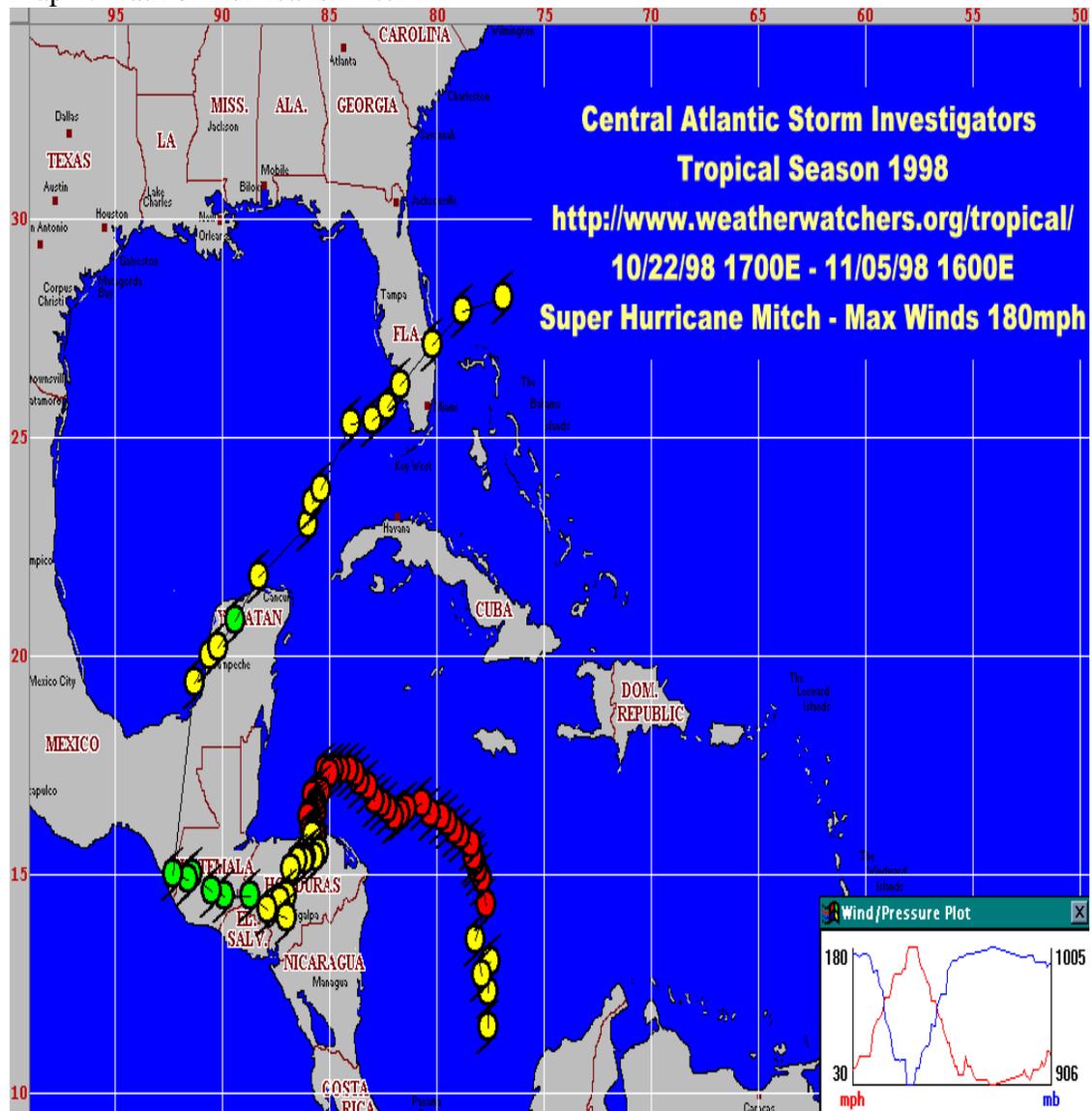
America, with more than 60% of those from Honduras (Vogel Jr. 1998). Estimates say that over one million people were left homeless (Towell 1998). The truth is that Honduras was a poor country with corrupt leadership, and inadequate resources and infrastructure. Mitch absolutely crippled these already weak systems. “In 72 hours, we lost what we had built, little by little, in 50 years,” said Honduran President Carlos Flores Facusse in a televised appeal for relief aid (Towell 1998). The United States pledged over \$300 million to the region, the majority of this figure to Honduras (Seeman 1999).

Experts continue to insist that the country will reel from the effects of the hurricane for some time. After Hurricane Fiji, which destroyed much of the north coast of Honduras in 1974, it took more than ten years before industries and agriculture could return to pre-Fiji productivity (Seeman 1999). However, Mitch moved throughout most of the country. More than 100 bridges were destroyed; small subsistence farmers watched as 35 inches (890 mm) of rain (Seeman 1999) washed away their fields, their work, and their lives; and those left homeless walked back to where their houses used to stand to try and salvage anything that remained, thankful they weren’t digging for family or friends.

Somewhat surprisingly, Mitch caused an extraordinary change in the minds and attitudes of most Hondurans. It became very clear that the inland devastation was so great because of harsh deforestation and in some areas, namely the south of Honduras, desertification. Communities and even small farmers began to express interest in tree nurseries and ways to combat soil erosion. Hondurans had seen nature at almost its fiercest and this, no doubt, gave them pause for thought. Suddenly, people weren’t saying “What was done to us?” but, rather, “What can we do about this?”

Unfortunately, however, the extreme destitution brought on by Mitch has caused many to turn to the forests for wood and sustenance. Reconstruction for houses and bridges amassed quite a toll on neighboring forests of communities throughout the country. And riverbanks were so completely washed out that it has proven even more difficult to reforest local watersheds due to the buildup of sand and silt. Although attitudes may have changed towards environmental consciousness, the repercussions of past actions has proved to be a major deterrent.

Map 1: Path of Hurricane Mitch



## **Problem Statement**

For my 27 months of Peace Corps service, I was placed in the town of Guayape, Olancho to work with a local NGO to develop projects towards the protection of El Armado National Wildlife Refuge. I found when I arrived that they were not organized nor even minimally prepared to begin concentrating their efforts towards the protection of the park. Some members of the group even expressed that they just thought if they said they were protecting the park, lots of money would be coming their way to use at their discretion. I found this to be a very frustrating experience. It became clear that the only reason they had asked for a Peace Corps volunteer was so that he or she could bring money to their group. That is not the mission of Peace Corps, nor the reality.

I decided the best way to learn about the park was to go up near it and speak to the people who see it everyday. Simply stated, the use of local knowledge would be the critical first step towards determining the future of El Armado. During several of these initial informative endeavors, I learned many residents had no idea the mountain was even a national wildlife refuge. They were completely ignorant that the government of Honduras officially protected it. Some did not even know the park was called El Armado. It was simply “the mountain” to them. This general unfamiliarity with government policy and conservation convinced me to concentrate towards environmental education for people of all ages, and, for the time being, forget about the possibilities of immediately working towards ecotourism endeavors with the wildlife refuge.

As the months went by and I was making more and more significant contacts and associations in the area, I was both dismayed and encouraged about the possibilities of working in this municipality. Dismayed by the slash-and-burn agriculture that plagues all

areas of Honduras, but encouraged that I had finally found a group of people that were happy to face the challenge of protecting the environment around their homes. Through such contacts, I was able to take on the challenge of becoming the first Peace Corps volunteer to ever finish two years in the town of Guayape.

My role as volunteer was to do just that: stay for two years and learn. This work has been more about investigating attitudes and expectations rather than involvement as a technical forester. I spent time talking with people to establish a base from which to work; to learn what the people of the Municipality of Guayape do; to learn what they want; and to lay the groundwork for environmental action to continue. I eventually understood that Guayape is a beautiful area, with wonderful people (some much more so than others) who are adaptable and open to appropriate outside influences. However, they are a people somewhat isolated, too. Good or bad, they have been farming and living the same way for generations.

Change does not come about overnight. Yet, it became clear from my observations of the municipality that some change was necessary to ensure the future protection of El Armado, particularly the watersheds that originate in the park and supply the surrounding villages. Slash-and-burn agriculture, migratory agriculture, an increase in the use of biocides, and the growth of coffee cultivation within the park were becoming noticeably detrimental to the environmental state of the mountain.

### **Hypothesis**

Key informants express that the majority of people in the Municipality of Guayape, Olancho seem to be greatly interested in the potential benefits of El Armado National Wildlife Refuge, whether as protection for future ecotourism endeavors or

protection for community watersheds; however, no clear strategy has been established to realize these benefits of the park.

Local knowledge of the social forces in this area will be the most important component of any future projects with the Municipality of Guayape. This should lead to the local residents' complete involvement in any sort of management plan that is developed. Unfortunately, this is not often the case with projects in developing countries.

### **Conclusion of Introduction**

Honduras is one of the poorest countries in the Western Hemisphere. Much of this may be attributed to its consistent problems with corruption and mismanagement of funds. In fact, a 1999 Corruption Perceptions Index rated Honduras the sixth most corrupt nation out of one hundred nations surveyed (Transparency International 1999).

During the majority of the 20<sup>th</sup> Century, Honduras was essentially economically dependent on the United States. From U.S. owned fruit-companies that dominated the Honduran North Coast in the early stages of the century, to the massive amounts invested in the Honduran military rather than socioeconomic reforms in the 1980's, the Honduran people have always seemed to have a reason to look upward. This has, literally, created an overwhelmingly fatalistic attitude throughout the country, based on a dependency caused by the fact that Hondurans have had very little opportunity to act upon situations themselves.

Groups such as USAID have only contributed to this phenomenon. Massive amounts of money flow through AID-funded projects, often to places undeserving but with a development proposal or endeavor that agrees with the politics of the funding nation, the United States. This has created much frustration with Honduran *campesinos*,

the rural peasant farmers who most need socioeconomic assistance. Due to superfluous land reform laws and a tendency for government aid to assist wealthier and more politically connected cattle owners, these *campesinos* have been forced into a life of migratory agriculture.

Each year, as towns and villages throughout Honduras watch their hillsides burn and the water levels of rivers lower, groups of villagers with vision are beginning to form. Many of these reach legal NGO status and are, therefore, entitled to apply for economic assistance from organizations such as USAID and Fundación Vida. However, politics and bureaucracy often mire the way for these small groups. Grassroots development in Honduras seems to continue to progress at a slow pace.

Education and environmental awareness are two important facets for developing countries. In Honduras, however, these are often overlooked. Education is provided by the state, but many of the poorest families cannot afford the required pencils and uniforms. Environmental awareness is atrocious. I once rode a bus on the north coast of the country that had a sign inside that advised the passengers, "This is your bus. Take care of it. Please throw all trash out the window." Signs in busses in Costa Rica suggest the exact opposite.

Towards the end of 1998, Honduras was hit by one of the worst natural disasters this hemisphere has experienced. The country was completely unprepared for the onslaught of Hurricane Mitch. The rains, flash floods, and mudslides crippled an already inadequate national infrastructure. Nearly 6000 people lost their lives, hundreds of thousands were left homeless, and even more landless. As the country reeled, massive amounts of foreign aid arrived on cargo planes and in the form of temporary military

bridges. But, much of the aid never reached the campesinos. They, however, seemed to pull together in an act of unity quite uncommon in the past. Farmers, teachers, and storeowners worked side by side repairing local roads and stabilizing or rebuilding fallen houses. Small agriculturists worked from daybreak to sunset re-plowing their land with oxen, or shoveling leftover silt away from their small plots of land. Although death and corruption defined Honduras after the hurricane, an often-forgotten contingent of rural farmers' prevailing attitudes of teamwork lit an otherwise dark tragedy.

Hurricane Mitch did have a surprisingly positive effect towards environmental awareness. *Campesinos* and their families could not ignore mudslides and flashfloods caused by deforestation. Requests were made for community tree nurseries to reforest watersheds. *Campesinos'* interest in soil conservation peaked. Many Hondurans began to realize the effects of nature and their role in this natural process. This, undoubtedly, increased the importance of determining the desired future of El Armado Wildlife Refuge.

All of the above information, including the history of Honduras, its protected areas, and the organizations that work within this realm, inspired my decision to develop a method which could adequately express the Municipality of Guayape's position around and in these local, national, and international forces. This led to the ethnographic study I developed to relate Guayape's existence within this larger arena.

## **Chapter Three**

### **Methods**

It was necessary to develop a method which could explore the knowledge and attitudes of the local community in an informative manner, but also one in which exchanges in this knowledge could be freely shared. My 27-month Peace Corps service gave me the uncommon opportunity to interview and observe while I lived in the midst of these rural communities. During this time, I selected key informants to function as my teachers to the knowledge base of this area. The remainder of this chapter will detail this approach.

### **Methodology**

There are several different ways to conduct research, but not all of them are appropriate for a specific situation. Questionnaires require random samples whereas other research may necessitate representative samples to properly describe a situation (Bernard 1995).

I chose a phenomenological approach. Phenomenology is the attempt to sense reality and describe it in words that reflect consciousness and perception (Bernard 1995). In order to do this I needed to create an ethnographic study that would give meaning to El Armado National Wildlife Refuge according to how the people of the Municipality of Guayape acted. By definition, an ethnography is a narrative that describes a culture or a part of a culture (Bernard 1995). This story may be developed through interviews, samples, participatory exercises, or key informants, among other possibilities. Due to the nature of my extended time and work through Peace Corps, I was able to develop relationships with several residents of the municipality knowledgeable in the park and

local practices. I decided the best way to tell the story of this area at this stage was to use many of them as my key informants.

However, Bernard asks, “Are a few key informants really capable of providing adequate information about a culture?” (Bernard 1995). In order to affirm this question, the researcher must choose good informants, or selected for their competence, and ask them about things they know (Ibid. 1995).

The key informants I chose are competent and representative. They include members of all the towns and organizations I studied. Some are women, some are men, and one is the only Black Carib living in the municipality. They are community leaders, teachers, government workers, and heads of such groups as local water boards or town councils.

I chose to work with these key informants because their leadership experience carries knowledge of all aspects of community life. Many of these informants have had experience in other areas of Honduras, so the idea of a “gringo” asking questions is not as strange or intimidating as it would be for many of the *campesinos*. Rather, they often understood that I was looking for information in order to describe their home to persons who would, otherwise, never know it existed. I suppose they saw me as an opportunity to make contacts that would be otherwise completely unattainable for them.

Therefore, I chose 15 key informants. Two are from El Coyol, one from El Carrizal, two from Monte Grande, and five each from Guayape and Santa Cruz. The ten from the two larger towns also represent the municipality, COHDEFOR, APREVISA, and EDECO. A list of questions I asked many, but not all, of them appears in Appendix I. Some informants had more to say about certain questions and situations, while for

others, the questions would not be particularly appropriate due to lack of experience or local knowledge and bias.

### **Stages of Research**

Observations and interviews were conducted on a continuing basis from January 4, 1998 until December 1<sup>st</sup>, 1999.

### **Interviews**

Interviews were often conducted in an informal setting. I would usually visit the key informants at their homes or offices, or they would stop by my house. Sometimes, I would visit them in the fields or in the schools. The lengths of the discussions would vary, as would the number of times I interviewed certain informants. Still, each informant was interviewed multiple times, although the discussion subjects would vary.

Interviews were never tape-recorded. Rather, I would take short notes on important points and elaborate them in private at a later time. Although I had a high level of “*confianza*”, or trust, with these key informants, it was my personal feeling that recording machines would bring a level of formality that would sacrifice the candid and open atmosphere from which we had built our relationship.

All interviews were conducted in Spanish and began with a conversation that would provide me with a brief personal history of the informant. I met with all 15 key informants multiple times. Although no written history of the Municipality of Guayape exists to check the validity of my key informants’ testimonies, I believe the stories to be accurate through contrast and comparison of the separate interviews.

For certain informants, such as the teachers and state employees, I would inform them that this information was for my thesis. For others, well, all of the *campesino*

farmers, I would say this was an informative report I needed to give to my superiors in Peace Corps. I felt it was not worth the confusion to explain advanced educational degrees, so I chose to express the situation in a manner they could understand. More often than not, they were not interested in the reasons, they were just happy that I had walked so far (several hours, at times) to speak with them.

Throughout these procedures, the interviews and observations have been supplemented with information from books, journal articles, national and international periodicals, government reports, and, at least once I returned to the States, information from the Internet.

## **Chapter Four**

### **Descriptions of Towns and Influential Organizations**

The physical settings and local structures assist in providing the scope of the attitudes, opinions, and knowledge of individuals and the communities. For example, the proximity of a community to the municipality town, or El Armado , will have an influence on attitudes and opinions regarding each.

Therefore, I have provided descriptions of the Department of Olancho, as well as the towns of Guayape, Santa Cruz de Guayape, El Coyol, El Carrizal, and Monte Grande. These are complemented by descriptions of the influential organizations, NGOs or state-operated, that are influential in the municipality, especially in regards to El Armado National Wildlife Refuge.

A table, complete with explanation, is placed after the descriptions for the department and municipality towns to present some of the critical variables for towns in Honduras. Preceding the section on the organizations, another table is presented to summarize the organizations and their responsibilities within the municipality. A map precedes the town descriptions to show the relative locations of the communities to each other and El Armado.

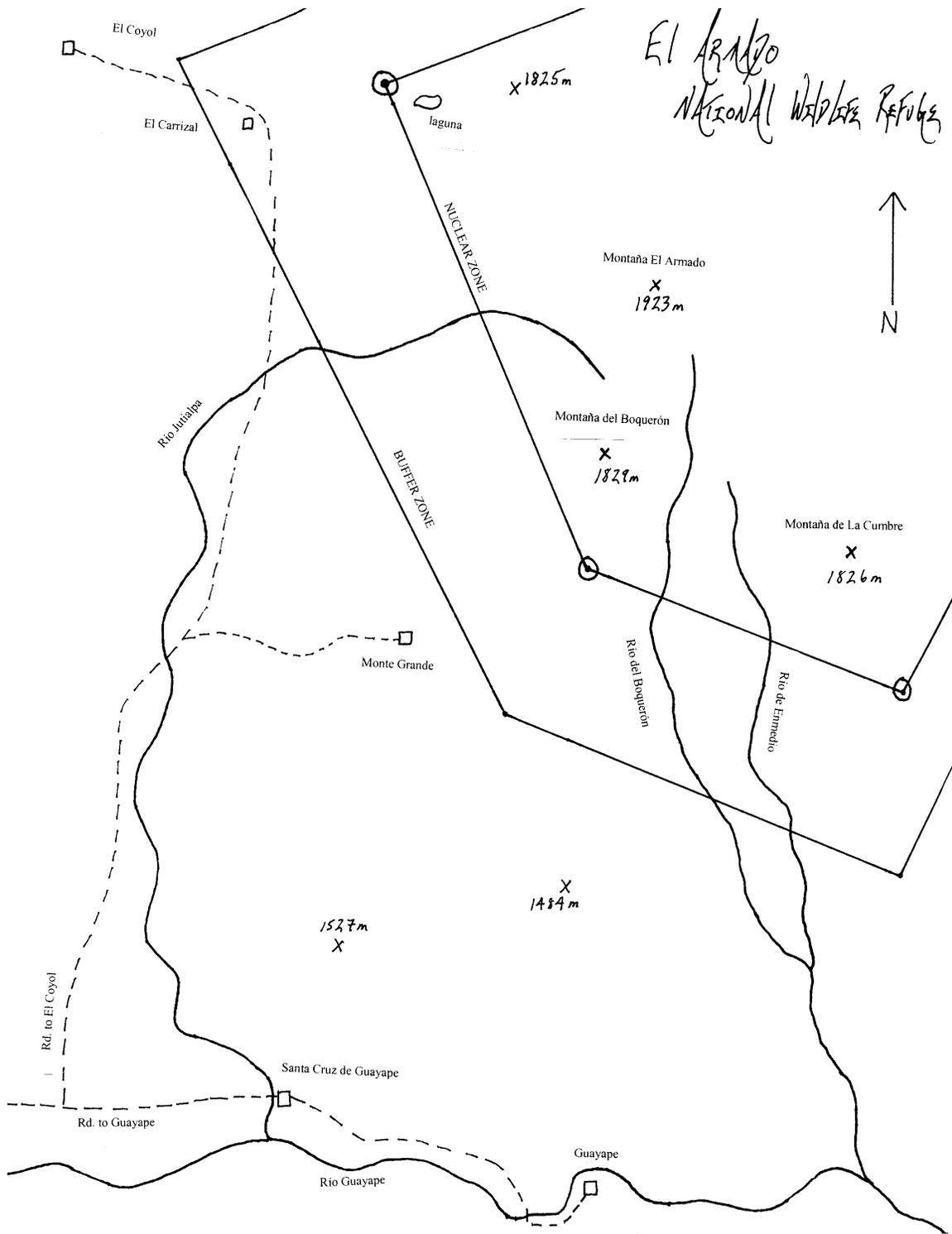
#### **Olancho**

Olancho is the largest of the 18 departments in Honduras. It covers 23,905 square kilometers, or 20% of the Honduran territory (Humphrey 1997). Olancho is referred to by many as the “Wild, Wild East” of Honduras. This is most certainly due to its similarities of the “Wild, Wild West” of the 19<sup>th</sup> Century United States made famous in

motion pictures. Olancho is where you will find cowboys complete with horse, hat, and weapon. True, these days the hat may be a knock-off Nike or Tommy Hilfiger, and the weapon may be a machete or AK-47, rather than the standard six-shooter, but the renegade images and attitudes are firmly established in this area of Honduras. A rather popular phrase in Olancho that is even posted on the welcome sign to the department is, “*Olancho: Entre si quiere, salga si puede* (Olancho: Enter if you like, leave if you can).

Olancho is a dream for environmentalists. Here you will find mountain ranges, spacious valleys, raging rivers, cascading waterfalls, caves, and towns and cities where men and children still commute by horseback or mule. There is also an indigenous group of Pech Indians who create bags, hammocks, and other handicrafts from the bark and fibers of trees in their area. Forested areas include pine and oak forests, as well as cloud forests in the upper levels of the higher mountains. Olancho was once almost completely covered with vegetation, but large areas of land have been deforested due to cattle ranching and an increase in slash-and-burn agriculture as the population increases.

Each department in Honduras has its own department capital. Outside of this capital city, towns are either municipalities of the department or small towns called *aldeas* that are under the jurisdiction of its municipality. Guayape is a municipality of Olancho with several aldeas, including Santa Cruz de Guayape, El Coyol, Monte Grande, and El Carrizal.



Map 4: The area studied within the Municipality of Guayape

## **Guayape**

Guayape, located at 86 50W, 14 80N (Atlas Britanica 1996) on the western border of Olancho, is the main town in the municipality. That is, it is where the mayor resides and where much commerce and business is conducted. Guayape is a rural municipality. Key informants say the town was first inhabited in the early 1800's. The majority of the residents are *campesinos*, farming red beans, corn, and occasionally peppers and onions. All other food is carried in from Tegucigalpa, or other larger cities.

Transport to and from Guayape is on one of three or four second-hand school busses brought down from the United States. Bus service to the capital begins at 4:00am from Guayape and averages between five and six hours for its journey. This, of course, depends on river depths, maintenance to the bus en route, and road conditions once the bus reaches the main highway to the capital. In perfect conditions, two busses leave Guayape and two busses arrive in the town daily. Most residents of the town and surrounding *aldeas* use these transports to carry goods back and forth to the capital, visit family, run errands, and connect to busses for other destinations.

Guayape sits in a narrow valley created by the Guayape River. However, the town's elevation is 805 meters, which makes it the most elevated municipality in Olancho. The average temperature is around 27 degrees Celsius and the town receives an average of 1200 mm/year of precipitation. The town, itself, is almost completely surrounded by the Guayape river. It flows around two-thirds of the town. The south side of the town faces forested pine/oak mountains. These conditions greatly limit Guayape's accessibility during the rainy season.

Guayape has no phones, but usually has electricity. There is a two-way radio in the COHDEFOR office. There are no banks, but there is an elementary and a high school. The mayor works in the municipality building, which is basically a large meeting room with a desk elevated a bit upon a tiled platform. There is also a State Register to record births, deaths, and marriages, as well as for voting.

Recreation revolves around soccer games and television. TVs are found in several, but not many homes. There are two Mexican channels pirated through an ingeniously constructed, but ancient, satellite dish. Men gather every afternoon in the shade of the trees in the central park, which is constantly under construction, near the entrance of the town to play cards. Most men in Guayape are true Olanchanos. They wear cowboy hats, travel by horse or mule, and carry guns. Because a high ranking political official has attended Alcoholics Anonymous meetings in the past, the town is officially dry, but several *cantinas* around town serve lukewarm national beers and the local moonshine, *aguardiente*, or *guaro*. Drinking has historically been a problem for many men in this municipality, but drastically decreased after Hurricane Mitch. Many men just no longer had the money to buy booze.

In the Municipality of Guayape, race is almost totally homogenous. With the exception of one male, everyone is mestizo. However, social classes exist to a degree, from the *campesino*, or peasant farmer, to the mayor and largest landowners. The *campesino* subsistence farmers clearly comprise the majority of the Guayape municipality, but many teachers, storeowners, and medium-sized landholders support a relative middle class.

Both the rich and the poor farmers plant beans, and often corn. The richer landowners, however, often plant green peppers, watermelon, and squash during one of the three growing seasons. On a national level, these are higher value crops.

Some of the farmers who have enough land transport their bean crops to Tegucigalpa to sell at markets. Others sell their excess in town or use it within the home. Men often rise at 5:00am to begin working in the fields. This is simply to beat the heat and the bugs. Once beans are harvested, they are piled upon large tarps to dry and then beaten so that the beans fall out of their husks. They are then wind-sifted to free them from left over husks and dust and then placed in large sacks. These are the sacks that are sold in town or in Tegucigalpa. Depending on the market and the time of harvest, bean prices have recently ranged from L450-L1300 (US\$30-US\$90) per sack. One sack will usually provide enough food for a family of five for 9 to 10 months. Meals are almost always red beans, corn tortillas, and sometimes rice. On special occasions, eggs, chicken, beef, pork, and vegetables may be added. Red bean soup with some vegetables is a common meal for the sake of variety.

Corn is almost always ground into meal for tortillas, but some is saved to consume on the cob. Grinding for tortillas is done in the home or brought to a nearby home to be ground for a very small fee. The tortillas are handmade by the women and female children. They are an absolute treat to eat when they are warm off the oven in the morning.

After watching women work in the developing world, there is little doubt that, on a global scale, they are the harder working of the sexes. Women in this municipality, as well as the majority of the country, are responsible for caring for the children, tending to

the house, washing laundry by hand, collecting water and firewood, and preparing meals. This very often equates to a 16-18 hour day, at least.

Cooking is most often done with firewood. Unless a family has enough money to purchase a two-burner electric stove, all cooked food is prepared in a wood-burning oven called a *fogón*. *Fogóns* are found in almost all houses because they are simple to construct. They are made from mud bricks to form a pod-like shape. In the upper parts of this pod, an area is open for the wood to be placed into the *fogón*. At the top of the *fogón*, a large hole, and sometimes a few smaller ones, are made and covered by iron or metal to serve as the cooking surface. The *fogón* is an effective way to cook, but not very efficient. Unless they are very well insulated, the *fogón* will use a lot of firewood that is, of course, extracted from surrounding forests. In order to earn a little money, small children, often between the ages of 5-15, are sent far away with machetes in hand to cut and haul firewood back to the town for sale. They are in search of a type of pinewood called *ocote* that serves as excellent tinder. If *ocote* is not found, they often forage for dry, downed wood, or cut branches and smaller-diameter trees to split. Many efforts to construct more fuel-efficient wood-burning stoves are being initiated by development organizations throughout the world (Joseph 1990), but have yet to be proposed in the Municipality of Guayape.

Guayape is a town economically and culturally poor. There are no local artisans. However, skilled labor may be found in a small group of carpenters who make doors, tables, chairs, beds, and cabinets for families that can afford them. All houses are constructed from adobe, or mud, bricks and often covered with a calcium base for appearance and climate management. Clay orange tiles are placed along arched wooden

supports for a roof. However, some of the nicer houses have asbestos laminate sheets below these tiles to diminish the amount of dust that enters the house from above. The houses have spaces between the walls and the roof for ventilation. It rarely becomes unbearably cold in Guayape, not even at its high elevation.

Many small subsistence *campesinos* have been forced to move from the local Guayape Valley up into the mountains towards El Armado in order to find land to farm. The majority of these farmers leave their families behind in the town and return after the crops have been harvested. They leave in search of enough land to provide them with the two or three sacks of beans that will support their family throughout the year. There are usually three harvests in the Guayape area; however, in order to sustain a crop during the dry season, the farmers need a gas-powered pump to move water in tubes from the river or stream to their bean field. The poorer farmers can not afford this and must resort to only two harvests.

Some of the more ambitious *campesinos* that have migrated to the uplands have chosen to attempt coffee cultivation. This is only risky because growing coffee takes up to three years and a healthy or profitable result is not assured. Many of these farmers have found that the highest mountain areas, or those that are within the borders of El Armado, are the best areas to produce coffee.

The mayor and the COHDEFOR office are both located in Guayape. The mayor owns the most land in the municipality and is, therefore, the richest resident. He is not originally from the municipality, but brought his family's wealth with him from a department in western Honduras. He has two 4 x 4 pick-up trucks, a large shipping truck called a *camión*, and one of the largest houses in town. To my knowledge, he lends no

money, but instead rents farmland to willing tenants. Residents who need to ship goods to the capital also compensate him. I found it especially difficult to obtain accurate information about the mayor. Townspeople are usually not willing to discuss too many details about the most powerful man in their life.

It would not be accurate to say that being mayor takes up much of his time. He must sit in on community meetings, but usually he may be found driving around his land or transporting goods to and from the capital. Although in terms of work and community projects he is not very effective, he has an authoritative position and this makes him a powerful man in the area.

Each year, community meetings are held in Guayape so the mayor may present the agenda for the following year. These are attended by community representatives from each *aldea* in the municipality. In 1999, I sat next to one of my key informants from Monte Grande. He expressed his frustration with broken promises from the state and the mayor. He told me:

“The municipality has said that they’re going to put a bridge over the river for cars and trucks. They’ve said the same thing for three years. Everyone claps when they say that, you saw the meeting. I’m not going to clap next year.”

Throughout discussions and plans of action for El Armado, the mayor has been absent, distant, or simply uninterested. He is considered reliable to remain very unattached to any sort of community or environmental development projects or proposals. I found him to be especially evasive towards me. We had a terrific relationship in that I rarely bothered him and he ignored me. His absence acknowledged

my worries that the municipality—an inept, but strangely powerful system—may be a deterrent in projects designed to improve the quality of life in this area.

### **Santa Cruz de Guayape**

Santa Cruz de Guayape is locally only known as Santa Cruz and is located four kilometers west of Guayape. This town is very much like Guayape, in that the majority of the residents are farmers. The interesting aspect about Santa Cruz is that its population is larger than Guayape's. Most likely, this is the case for logistical reasons. During the rainy season, transport to and from Santa Cruz is much more reliable. At this time, residents of Guayape usually must disembark the bus in Santa Cruz and walk 45 minutes to reach Guayape. When the road is muddy, the bus usually can not even carry its passengers to the Guayape River.

Life in Santa Cruz is very similar to Guayape. There are several small shops to buy amenities such as rice, flour, sugar, salt, margarine, and powdered milk. There are also trade shops for carpentry and auto repair. Santa Cruz has an elementary school, but the high school students must walk 45 minutes to Guayape for class.

The lives of men and women in Santa Cruz are identical to Guayape, as are the houses and dirt roads. However, Santa Cruz has better access to El Armado. In fact, a footpath that leads to the mountain, passing through Monte Grande and ending in El Coyol, originates in Santa Cruz.

Interestingly, although the two towns are very similar. Santa Cruz and Guayape maintain a major rivalry. This encompasses soccer, or any sporting event, education, economic standing, appearance, and especially rumors. They even have pet names for residents of each town. Residents of Guayape are called *Chapines*, while those that live

in Santa Cruz are called *Pulgosos*. I spent a year living in each town. My allegiance to either town was a constant topic of light-hearted debate. I told them I was a *Chapigoso*.

Not as many *campesinos* in Santa Cruz, as opposed to Guayape, cultivate within the borders of El Armado. The residents of Guayape are limited to the amount of high-elevation mountain area they may farm until they reach Montaña de La Cumbre in the nuclear zone of the park. Santa Cruz, however, sits at the base of the mountains that eventually rise up into the protected area. The *campesinos* of Santa Cruz have utilized this area, rather than move upward towards the El Armado zone.

### **El Coyol**

El Coyol is the largest aldea aside from Santa Cruz. It is easily the largest settlement in the mountains. El Coyol is at the top of the mountain. Aside from El Armado, one may not walk higher than El Coyol without going down. Its elevation is 1600 meters.

Although rural and extremely remote, El Coyol is a relatively wealthy town. This is due to the *campesino* organization led by the Cooperativa Agroforestal discussed below. Many residents of El Coyol produce coffee and sell it to distributors in the capital. Coffee is a major cash crop in Honduras and this greatly contributes to the economy of this *aldea*.

El Coyol also has a strong *patronato*. A *patronato* is a group of community political leaders, very similar to a community board. They manage relations between the *aldea* and the municipality. Their strength is notable because they essentially receive no support from the mayor. All accomplishments for this town come from within.

People began to settle in the El Coyol area around 1810. Although it is the *aldea* at the highest elevation, the town does have a health center with one nurse. There are two female elementary school teachers and three male skilled carpenters. Other than these people, the remainder of the men are *campesinos* and the remaining women care for the home. Many of the farmers in El Coyol are members of the Cooperativa Agroforestal.

El Coyol is only a 40-minute walk from the nuclear zone of El Armado. Residents of El Coyol cultivate the majority of coffee in the protected area. Likewise, the greatest amount of deforestation for both the buffer and nuclear zones of El Armado is around the El Coyol area. This is caused by the need for firewood. El Coyol is a very rural town with little to offer for recreation. Females often have children by the age of 14, 15, or 16. Therefore, the population is constantly increasing at a greater rate than in other areas. This increased population will continue to put great pressure on the wood resources of the protected area.

Since 1999, the Honduran Coffee Institute (IHCAFE) has been sending a technical trainer up to El Coyol to work with the coffee cultivators. This representative was able to convince one farmer to attempt producing shade coffee. This type of cultivation greatly reduces the amount of deforestation caused by coffee farms. The farmer who took a chance is one of the leaders of the Cooperativa Agroforestal. In two trials, he maintained 90,000 plants, with only a 20,000-plant loss. This type of success is contagious. Teaching through example with the local contingent, this IHCAFE representative may have a dramatic effect in reducing the amount of deforestation in El Armado that is caused by the cultivation of coffee.

## **El Carrizal**

El Carrizal is tiny. The *aldea* consists of only 11 houses. However, the town is critical for any study of this area because El Carrizal lies within the buffer zone of El Armado. This town is only two kilometers down the road from El Coyol, but in an even better place for access to the park. Only 30 minutes walk from this town lies the beautiful lagoon. A couple more hours up the mountain are the caves. El Carrizal also has a small, but beautiful, 10-foot waterfall next to the first house from the road. This is a wonderful place to relax and splash around when the weather or the work becomes a bit too hot.

Residents of El Carrizal are bean and corn farmers. They have enough land surrounding their *aldea* to support such a small population, but unlike El Coyol, they are not a wealthy community. No coffee production originates from El Carrizal. However, because of their close proximity, they too affect the protected area by extracting fuel wood from the nuclear zone.

Residents of El Carrizal use El Coyol for everything. All education and health services for this town must be done in El Coyol. Nonetheless, these families have managed the land around their area for generations and I was told tradition keeps them separate, but close, to El Coyol.

## **Monte Grande**

Although Monte Grande is closest in distance to Santa Cruz and Guayape, it is perhaps the most remote. There is a road to the town that breaks off from the road to El Coyol, but it is in such poor condition that only the most durable 4 x 4 pick-ups may negotiate it. There are only two trucks in the whole *aldea*. The majority of the residents

use the trail that leads directly to Santa Cruz. Food and goods are transported on foot, horse, donkey, or mule to and from Santa Cruz. It takes about 2 ½ hours to walk up to Monte Grande and 1 ¾ hours to walk down. The elevation of Monte Grande is 1450 meters.

Monte Grande, too, is a purely agricultural town. The majority of the *campesinos* farm near the town, however, a few have *milpas*, or cornfields, up in the park, only an hour walk away. Beans, corn, sugar cane, and sometimes tomatoes are grown in this area. The town has also been very conscientious about preserving fruit trees for a more nutritional diet. Bananas, oranges, grapefruit, and avocado are among the fruit trees in this area.

Monte Grande has 40 houses. It was founded in 1802. Like El Coyol, Monte Grande has a very strong *patronato*. However, unlike El Coyol, this *patronato* is closer to the municipality and regularly challenges the mayor for community improvements. These pleas are often ignored. Due to its remoteness, Monte Grande would seriously benefit from a community health center. Presently, unhealthy or injured residents must walk or mount for two hours down the hill in order to reach the health center in Santa Cruz. Monte Grande also has very few latrines. Residents defecate and urinate outside their homes, and most of them dig holes and cover them to prevent the pigs from eating the feces. However, this is not always successful. In this community, pigs primarily exist to be eaten, so the lack of sanitation in this system is obvious.

While El Coyol concentrates more on coffee production, Monte Grande is almost strictly grain-based agricultural. There are very few *campesinos* in Monte Grande that cultivate coffee. However, similar to the other two *aldeas*, the extraction of firewood is a

major cause of deforestation in the area. They, too, have reached the point where wood is beginning to be carried from the park.

Table 3: Critical variables for descriptions of the towns studied

<b>Community Name</b>	<b>Population</b>	<b>Water/Potable</b>	<b>Electricity</b>	<b>School</b>	<b>Road Access</b>	<b>Community Center</b>
Guayape	1874	yes/no	Variable	Yes	Variable	Yes
Santa Cruz de Guayape	3543	yes/no	Variable	Yes	Variable	Yes
El Coyol	467	yes/no	No	Yes	Variable	No
Monte Grande	210	yes/no	No	Yes	Variable	No
El Carrizal	64	yes/no	No	No	Variable	No

Table 4 is a general overview of some of the more important elements that project the nature of a town in Honduras. All of the above towns now have running water, whether that be inside the houses, as is the case in Guayape and Santa Cruz, or from faucets located outside of the house, as can be found in El Coyol, Monte Grande, and El Carrizal. However, this water is not safe to drink. This is not to say that the majority of townspeople do not drink the water, but the healthier option would be to treat the water by boiling or to use bleach droplets to sanitize the water from water-borne parasites caused by cattle fecal matter and poisons from biocide use.

Guayape and Santa Cruz installed their water systems in the early 1980's, but many repairs and additions have been necessary since then. El Coyol's water system was installed in 1994, El Carrizal's in 1997, and Monte Grande's in 1999.

The fourth column shows that the three smaller towns are without electricity. This will not be any different for some time. However, Santa Cruz and Guayape were connected to electricity in 1991. Although the poles and wires exist, this does not guarantee constant service. Especially after Mitch, electricity has been inconsistent, sometimes out for days at a time. The government has had problems with its central power plant called El Cajón and at variable times rations electricity to ease the demand placed upon this reservoir. When heavy rains occur, or when a pole is felled, lights are expected and accepted to be out for several days.

Guayape has the only high school, and residents of any other village in the municipality must either find someone to live with in Guayape, or commute. Many students in Santa Cruz make the 45-minute walking commute six days a week to study. School is a rather expensive endeavor for the majority of rural Hondurans. The family is responsible to provide the white top/blue bottom uniform, including socks and black shoes. Pens, pencils, and paper are not provided by the government. The education itself is free, but all resources outside of the actual opportunity to learn are the student's responsibility. Obviously, the poorer families are not able to send their children to school.

Each town, other than El Carrizal, has an elementary school (K-5<sup>th</sup> Grade). In El Coyol and Monte Grande, these institutions consist of one poorly lit room, several wooden desks, and bars on the windows. Guayape and Santa Cruz have many more poorly lit rooms and desks, and in the case of Guayape, the windows are not barred, they're fenced.

Access to Guayape is seasonal. That is, during the rainy season, access depends on the level of the rivers. All motorized transportation is attempted by two or three second-hand school busses brought down from the United States, a car, or ideally, a 4 x 4 pick-up truck. Once the vehicles leave the main highway of Olancho and enter the 2<sup>nd</sup> class dirt road that eventually ends in Guayape, they must cross three rivers. The first, La Joya, is a large river located 10 kilometers from the second large river, which originates in El Armado, the Jutiapa. The third river is the Guayape river, one of the 12 largest rivers in Honduras. There are no bridges that span these waters, rather the vehicles simply pass through them. This usually occurs without incident during the dry season, but when the rains are heavy, the water level can reach up to 3 or 4 feet in the middle areas of the river and the vehicles have no way to pass. Passengers and residents simply disembark, cross the footbridge that, since the hurricane, now span each of these three rivers and continue the rest of their journey on foot or in vehicles that wait for them on the other side.

About 3 kilometers east of Santa Cruz is a road that cuts off to the north. This road services several small communities, passes through El Carrizal, and eventually ends in El Coyol. No second-hand school bus can navigate this dirt road. In fact, only eight 4 x 4 pick-up trucks may be found in all of the 5 communities the road services. This road is even more susceptible to the rains. Groups of large trees buried deep into the dirt serve as bridges across cracks and crevices. Long, deep ruts are standard obstacles left over from vehicles that strained to climb the steep grades of this road when there was too much mud to pass. The municipality has recently tried to maintain this road by smoothing it with a state tractor, but with each rain, conditions worsen.

Other than El Carrizal, each town has a community center for meetings. El Carrizal is really too small and its proximity to El Coyol does not necessitate a center. The elementary schools function as the community centers for El Coyol and Monte Grande, but Guayape and Santa Cruz have separate one-story buildings set aside for community meetings.

**Influential Organizations**

The following table lists each of the organizations active in the municipality and their responsibilities. Following the table, detailed descriptions of each listed organization are presented. IHCAFE is not included in the following descriptions because its role was established in the section about El Coyol.

Table 4: Listing of Organizations active in the municipality and their responsibilities.

COHDEFOR (state)	Responsible for permissions to harvest wood; fire control
IHCAFE (state/USAID/project)	Offer credit support and technical assistance to local cultivators of coffee
Cooperativa Agroforestal (peasant cooperative) El Coyol	Public agriculture group to organize farming, especially the cultivation of coffee, near or in El Armado National Wildlife Refuge
Small NGO's	APREVISA-organize, coordinate, and execute protection of El Armado  EDECO-organize, coordinate, and execute protection of El Armado; continue with localized community development projects

## **AFE COHDEFOR**

AFE COHDEFOR, Corporación Hondureña de Desarrollo Forestal, (Honduran Corporation for Forestry Development) is, in Honduras, simply called COHDEFOR. The AFE refers to Administración Forestal del Estado (Forestry Administration of the State) and was added to the title with the passage of the Ley para la Modernización y el Desarrollo del Sector Agrícola (Law for the Modernization and Development of the Agricultural Sector) in 1992 (Jansen 1998).

COHDEFOR was created by the state in 1974 in order to regulate the exploitation of forest resources (Norsworthy and Barry 1994). The goal was to create industrial wood units to reduce the export of raw lumber in favor of finished goods. Ideally, wood and wood products would be provided by and sold in the country. Profits from these sales would support the modernization of the agricultural sector and the protection of forest resources (Griffin 1998).

It seems COHDEFOR was founded with noble ideals, but reality has proved to be much different. The Honduran government in general, but especially COHDEFOR, has simply been plagued with lack of funding, wasted funding, and blatant corruption (MacEoin 1999). Pushes towards the privatization of COHDEFOR, as well as other state-operated corporations, has been prevalent since the 1980's (Griffin 1998).

Kees Jansen (1998) describes problems with COHDEFOR in the Municipality of El Zapote, Santa Bárbara that he encountered while he studied the area in the early 1990's. The inhabitants of El Zapote believed that COHDEFOR was there to protect forests from harvesting and fire, as well as maintain state environmental laws. However, COHDEFOR allowed outsiders, often foreign, to cut trees, but fined local *campesinos* for

the smaller cuts they made to clear land for agriculture. Likewise, as coffee producers expanded their fields, they would often encroach upon local watersheds and cause great ecological harm by spraying biocides and eliminating the 150-meter wooded buffer zone around rivers, creeks, or springs mandated by state law (PC Honduras 1995). When asked by local residents to enforce this rule due to the degradation of their water sources, both for drinking and agriculture, COHDEFOR ordered the group of coffee cultivators to maintain only a 9-meter tree buffer on either side of these waters. These inconsistencies in treatment for the separate parties caused a tendency for distrust among the *campesinos* towards COHDEFOR authority (see Richards 1996 for this tendency on a national level). Although separated by many hours of travel, the experiences of the municipalities of El Zapote and Guayape are similar.

In Guayape, a COHDEFOR station was opened in 1982 and remained until 1984 when it was closed due to lack of funding. In 1995, the station was reopened, but with very limited funding. COHDEFOR retains a house/office on the outskirts of town and employs a director, a technical forester, a secretary and a chauffeur. The only clerical resources are a 2-way radio, a typewriter, and two file cabinets. They now have no mode of transportation, which, for obvious reasons, designates the chauffeur as useless. In 1998, the office used a 4 x 4 state-owned Toyota pick-up truck, but this vehicle was essentially destroyed trying to cross the Guayape River while the water level was too high. There is no funding to repair or replace the vehicle, so the station is left to cover 428 square kilometers and guard the park from deforestation without any sort of motorized transportation. Coincidentally, the chauffeur left Honduras to cross illegally into the United States. He now lives in Chicago.

The technical employees of COHDEFOR-Guayape often admit that they don't stop the forest fires and agricultural encroachment upon legally protected areas, but always blame lack of funding and resources. There may be a stronger reason, however. It is widely known throughout Honduras, and especially Olancho, that several COHDEFOR officials have been killed, and many more threatened with their lives, for their participation in strict enforcement of environmental policy (Personal Interviews, several Honduran periodicals, and Jansen 1998). More often than not, these COHDEFOR employees ally themselves with the more powerful members of the local society to ensure personal safety. Whether this means performing their civil duty as the law requires and upholding their responsibilities to the poorer campesinos seems to matter not.

### **Local Non-Government Organizations and the Agroforestry Cooperative**

A few groups have organized within the municipality to work in several areas of community life. APREVISA is based out of Guayape, EDECO was organized in Santa Cruz, and the Cooperativa Agroforestal (Agroforestry Cooperative) is found in El Coyol. General descriptions are placed below. Between 1998 and 1999, I met with each group to create lists of the strengths and weaknesses of each group. These lists are exactly what the members of these groups feel are their debilities as opposed to their abilities. These are presented in the tables that follow each general description.

#### **APREVISA**

The Asociación de Protectores del Refugio de Vida Silvestre El Armado (APREVISA) was formed in 1997 as a nongovernmental organization (NGO) to protect and rehabilitate El Armado National Wildlife Refuge. However, due to lack of funding,

APREVISA has yet to acquire its legal status as an NGO. APREVISA is comprised almost entirely of teachers from both the primary and secondary schools in Guayape. This would be a terrific scenario for the group to have the opportunity to work with children about environmental values. But, since its early days, APREVISA has been plagued with problems.

I was specifically sent to Guayape to work with APREVISA. I soon found this to be impossible. They had solicited Peace Corps to send them a Natural Resources Volunteer to provide technical assistance for an NGO eager to work in El Armado. They really wanted money, which I soon confirmed when I learned the current president of APREVISA has a Masters of Science in Honduran Tropical Forestry. I arrived in Guayape under the impression I was to spend a great deal of time in the protected area with these teachers. Instead, they asked me when I could get the money from Peace Corps to pay for their legalization as an NGO. That, simply, was not possible.

I continued to try and work with APREVISA, but their internal politics proved to be too much. We tried to design a project to get them money to build a community tree nursery with elementary school children in Guayape. The proposal also asked for enough money to assist them in their pursuance of legality. Eventually, this project was scratched because the members of the organization could not agree on many of even the simplest logistical considerations.

In two years, 1997-1999, APREVISA had three presidents. This has caused dismay and disinterest in many members of the group. After attending too many unproductive meetings, I found this environment unsatisfactory and chose to no longer work with them. I remained friendly with many of the members and the current president

has been a helpful informant, even though I clearly explained I would not participate in this group's conflicts.

The current president has been aggressive in designing proposals for APREVISA even though the group's number of active members has dwindled. Recently, he has designed a project for El Armado and is looking for ways to acquire foreign investment. The project's objectives are to initiate a scientific study of the park in order to define problem areas and create a work plan; find technical help to educate farmers in agroforestry techniques; develop a reforestation plan for the nuclear zone, eventually moving down to the buffer zone; create a map of soil type and use so the *campesinos* may have an understanding of the biological aspects of their work; organize the communities so that they may work together towards the conservation of the protected area; and delineate the park and watersheds found within the park. He estimates that this project will cost US\$6,041,462 (David Gomez 1999). COHDEFOR is asked to contribute US\$390,025 while foreign investment should cover the remainder.

APREVISA has never before executed a project, and this one is unrealistic. The most interesting item of cost breakdown is that several phases of the project call for local technical assistance. The local technical forester is scheduled to earn US\$22,000 dollars for the first year of the project. This, most likely, is the strong motivation this president has for being so aggressive in the development of the project.

APREVISA, however, continues to be an organization with widely respected members that have strong ties to the community. Although they have experienced internal conflicts, they remain a valuable group of individuals who care deeply for the town of Guayape and its surrounding communities.

Table 5: APREVISA

Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Group members are volunteers</li> <li>2. Good Communication</li> <li>3. Access to technical help</li> <li>4. Cooperation with COHDEFOR, Peace Corps, and the municipality</li> <li>5. Able to promote work through the members different jobs.</li> <li>6. Opportunity for anyone to join</li> </ol>	<ol style="list-style-type: none"> <li>1. No money</li> <li>2. Members often busy with other responsibilities.</li> <li>3. No legal representation/status</li> <li>4. Communities not familiar with APREVISA's purpose</li> <li>5. Not very familiar with El Armado Wildlife Refuge</li> <li>6. Not familiar with environmental laws</li> <li>7. No area to hold meetings</li> </ol>

## **EDECO**

The Empresa de Desarrollo Comunitario (EDECO), or the Community Development Group, was created in 1989 in Santa Cruz de Guayape when a group of town residents became interested in raising the standard of living of the town. They started by taking a census and prioritized community problems. In 1993, the group organized the Executive Board and in 1995, they obtained legal recognition as an NGO.

There have been two presidents of EDECO, both of whom have traveled outside of Honduras. They have a much broader knowledge base and scope of vision than many other residents of this municipality. I believe their experience abroad has given them the confidence to work towards the improvement of their towns from their own initiative. No person or organization searched these men out to start this NGO, rather, they work out of desire to improve all their lives.

According to their guiding principals, EDECO “works for community development by identifying problems and then executing projects that benefit the residents of Santa Cruz and raise the quality of their lives” (EDECO 1996). They have completed two major projects, as well as many smaller ones. The first large project was two-fold: Community Health and Community Production. They completed a major latrine construction phase, held classes for preventative health and natural medicines, and organized open health clinics. They also offered milk from the 27 heads of cattle they own to improve community nutrition. The second major project was a community library open to the public. This building houses the library, a room to play games and music, and a meeting room for their weekly organization meetings. Two members from the executive board have completed official education and training classes in

Socioeconomics and Environmental Action and Education. EDECO has executed projects with funding from Fundación Vida, Fundación Interamericana, and the Embassy of Holland.

During one of my interviews with the President of EDECO, another key informant, I asked him why the group was motivated to work so hard in these communities. He responded:

“Santa Cruz is a big town for this area, but most people can live alright without moving up to the mountains. The problem is, those people up in the mountains are farming and cutting our sources of water. You know what it’s like, we have to turn the water off all the time in the dry season. Hottest part of the year, and we don’t even have water to clean up with. Sometimes for four or five days. And I think it’s getting worse every year. We need to develop projects that not only stops the destruction of the higher areas, but also betters the lives of communities up there and down here.”

EDECO was the main reason I chose to move from Guayape down the road to Santa Cruz (and that I was a bit tired of wading through the Río Guayape every time I wanted to go anywhere). Their experience with self-conceived and completed projects is not common in such a rural area. I respected their desire to improve the quality of health in their community, as well as their diligence to seek funding for these ideas. I found them to be a capable group interested in working with El Armado. In fact, they requested my assistance as a technical forester to support their plan. I was delighted to accept.

The President of EDECO approached me and described the project they were interested in developing. However, he also explained the existing dilemmas for such a small, rural organization:

“We are trying to organize the communities around the park. The problem is money. We have such a problem because we are so far away from Juticalpa (the capital of the department of Olancho) and Tegucigalpa. I think people forget we’re out here. And it’s very expensive to go into town. I spend the money out of my own pocket. And I leave my family home alone for a night. Those are two things that are hard to do all the time.”

EDECO developed a report and work plan for a L250,000 (US\$17,250). The objectives were to organize seven communities around the protected area and conduct classes and training for Environmental Education and Agroforestry, including training on soil conservation. The proposal also asked for financing for a motorcycle. EDECO owns a 1988 4 x 4 Toyota pick-up truck, but it is beginning to have mechanical troubles.

In order to present a proposal for funding to Fundación Vida, EDECO needed to show technical and community support. I signed off for Peace Corps immediately. However, they could not get the mayor to sign for community support. They learned that a high-ranking member of APREVISA was telling the mayor he should not support the project. Rather, he said the mayor should support an NGO actually from the town of Guayape. The mayor is a true politician and did not want to choose sides and upset one group and their voting followers. So, as usual, he chose inaction and just ignored the situation. I walked to Guayape one day and asked him to sign and seal the proposal while he was eating breakfast. I explained the park was the only important factor in the current situation. EDECO was ready to work with the park, APREVISA was not. I informed him I would fully support any appropriate proposal from APREVISA once they were ready. Shirtless, and with his gun laying next to his plate of beans, eggs, and tortillas, the mayor signed and stamped the proposal and I left.

Between March and December 1999, EDECO and I traveled to the Fundación Vida office in Tegucigalpa six times to meet and discuss the plan. During the first four meetings, we organized the project and report and learned how to format it according to their standards. On the fifth meeting, we presented the report and the Director of Fundación Vida verbally approved the project, including the funding for the motorcycle.

On the sixth meeting we were informed that they would only offer L30,000 (US\$ 2,000). EDECO was simply crushed by this act of betrayal. Each trip to Tegucigalpa required seven hours of driving and we often had to stay overnight in hotels. These costs were absorbed entirely by EDECO (I paid for myself). The development and presentation of this report was an expensive endeavor for this small NGO. Fundación Vida's decision is further discussed in Chapter Six.

Table 6: EDECO

Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. Years of experience executing community projects</li> <li>2. Official office space for work/meetings</li> <li>3. Legal representation/status</li> <li>4. Support of community and Peace Corps</li> <li>5. Weekly Meetings</li> <li>6. Permanent employees with a board of directors</li> <li>7. Able to write and present proposals</li> <li>8. Personal experiences throughout the country and abroad</li> <li>9. Community library</li> <li>10. Experience in low-level environmental projects, i.e. community nursery</li> <li>11. Incoming monetary funds through small community store and 22 heads of cattle</li> </ol>	<ol style="list-style-type: none"> <li>1. Illiteracy in community and group</li> <li>2. No members less than 32 years old in the group</li> <li>3. Unequal delegation and execution of group work</li> <li>4. Lack of office equipment/computer</li> <li>5. Time constraints for many members</li> </ol>

## Cooperativa Agroforestal, El Coyol

The Cooperativa Agroforestal was created in 1993 in El Coyol. This group has members from El Coyol, Las Talanqueras, El Convento, Yorito, and El Carrizal. They receive their funding from the Honduran Agroforestry Cooperative Group (FEHCAFOR). The Cooperativa teaches sustainable agriculture practices and organizes transport of products to and from the capital. They have recently become involved with the Honduran Coffee Institute (IHCAFE) because many members of these communities have found the cultivation of coffee to be profitable. An IHCAFE representative travels to El Coyol once a month.

The Cooperativa Agroforestal must be considered for any possible work with El Armado. Their infrastructure and organization with people from so many critical areas near the protected area may not be ignored.

Table 7: Cooperativa Agroforestal, El Coyol

Strengths	Weaknesses
1. Legal representation/status	1. No written work plan for future
2. Agriculture experience	2. Lack of monetary funds
3. Forestry experience	3. Lack of equipment—agricultural and clerical
4. Cooperation of Honduran Agroforestry Cooperative Group—FEHCAFOR	4. Lack of good infrastructure—communication
5. Cooperation of COHDEFOR	5. No organizational experience
6. Legal right to extract 1000m <sup>3</sup> of wood from area	6. No experience with financial aspects of wood and wood products
7. Cooperation of surrounding communities of the municipality and Peace Corps	7. Lack of support from municipality

## Chapter Five

### Results of Interviews

In this section, I will explore six interviews. These are actual statements made by key informants throughout the course of my two years in the municipality. I will provide a few words with each passage to give context to the speaker and the subject. Different narratives from several other key informants have been scattered throughout this paper to solidify a statement or argument from the point of view of the community or organization in which they live or work. I have assigned pseudonyms to each speaker.

Each statement is translated directly from Spanish. These excerpts, which represent the many conversations I held with key informants, focus on three key ideas: Local life, Agriculture, and Ecotourism and the protected area. Following this interview section is a discussion, complemented with key informants' interviews, on Hurricane Mitch in the Municipality of Guayape. The agriculture sector was hit particularly hard, and this obviously affected the lives of many of the residents of the municipality. I offer this section here to continue expressing the attitudes of local residents.

Marco is a resident of El Coyol and one of the leaders of the Cooperativa Agroforestal. For that reason, I spoke with him many times. He is 38 years old. He was born in Santa Cruz, but moved up to El Coyol with his family when he was 10 years old. When I asked how the area was 20 years ago, he told me the following:

“When I was little, the trees were much closer to town. Deer would even walk through the town. I think they have all been shot by now. I remember three or four times when we had cows slaughtered by jaguars. They're all gone. I know one farmer killed one many years ago, but if there were more, I imagine they have moved on. They can't live with us, especially when we have guns and they kill an expensive cow.”

Antonio is 31 years old and has taken over the farming of his father's land in El Carrizal. He does not work a large plot, but it is enough to feed his family and usually sell one or two sacks of beans each harvest to someone in El Coyol. I always liked Antonio because he was extremely hesitant, but always respectful towards me. I met him one day my first year when I borrowed a horse and was running it down the mountain road. I was passing a house where several campesinos were drinking their afternoon coffee and talking amongst themselves. As I passed, the leather stirrup on the right side of the horse snapped and I found myself hanging off the horse desperately clutching to the saddle horn. I finally slowed the horse and rolled to a stop on the dusty road right in front of the path to Antonio's house. He set his coffee down and walked up to me with a smile. Then he fixed the stirrup with some rope he had laying around. From that moment on, we were friends. In this passage, he explained how he perceives the current situation near El Armado:

"I don't think farming has changed too much. I've been here all my life, so far. Now, we just have more people farming, that's all. They've had to move farther up the mountains to find land to farm. I don't know what's going to happen in the future. People are already farming in what you call the protected area, and those COHDEFOR guys say we can't be in there. Someone's going to have to figure out a way we can farm when these towns keep on growing larger."

Jose is 30 years old. He helps his father farm a large plot outside of Monte Grande. They have a gas-powered water pump and are able to utilize all three harvests. Once a year, they plant tomatoes hoping for high prices in the markets in Tegucigalpa. Jose usually drives his father's truck between Monte Grande, Santa Cruz, and Guayape. They have family in the capital, so Jose was able to complete one year of advanced education. He did not like the schooling, however, and returned to Monte Grande to farm

with his family. Below, he grumbled to me one day as we rode in his truck from Monte Grande to Santa Cruz and we passed the COHDEFOR vehicle on its way up to another *aldea*:

“COHDEFOR comes up here once or twice a year to tell us not to work in the park. Then we never see them again. No one listens to them. No one really likes them. At least you come up here and hang out. You don’t tell people what to do and then leave. It’s very frustrating.”

Geraldo is a 59-year-old man living in El Coyol. He was born there and has only been to the capital city “four or five times”. He does not like the noise or “smell” of the city, and prefers to live “at the top of the hill”. He has been a farmer all his life, but now his children tend to his land. He is active in the Cooperativa because he has the time to walk from farm to farm and speak with each *campesino* in the area. He has a wonderful, open, and humorous personality and would never greet me without offering to take me to his house for food, coffee, and conversation. I have heard that he is considered invaluable to the Cooperativa because his incredible personality maintains much of the organization that makes the group so successful. He told me the following when I questioned him about ecotourism in this area:

“Yes, we would like more of your people to come here and see our area. But, I am not sure know why they would want to. Sometimes the other *campesinos* laugh at you when you always say how beautiful it is around here. We just live here. So do you, I guess. I wonder why you see it different here. But if you come, we can feed you in my house. There are always houses that visitors can stay at. Or you can stay in that tent-thing you carry. It’s a little strange, but the lagoon is nice. I hear someone wants to put fish in it. We fish with nets. That’s o.k. in the river, but will be hard in the lagoon.”

I do not think Geraldo realized that the reasons he does not like the city are the same reasons many people are searching for someplace new and different to see; someplace very much like Geraldo’s home. However, Geraldo’s house “at the top of the hill” is

over seven hours away from a paved road. Perhaps the majority of people are not searching that hard for someplace new and different.

A teacher in Guayape named Angela (42 years old) asked me the following when we, too, were speaking about ecotourism:

“I heard people by national parks get money every day when the visitors come. Will that happen here?”

One of my favorite key informants was a man named Miguel in Monte Grande. Miguel was 45 years old and is a member of the *patronato*. He is very respected throughout the mountain, but the municipality politicians dread the sight of him. He is very vocal in municipality meetings and often questions the motives and actions of the state-funded organizations. He is a farmer with a medium-sized piece of land, but he has planted numerous fruit trees (Orange, Banana, Avocado, and Grapefruit) on his land throughout the years. The fruit from these trees are sold in Guayape and Santa Cruz and may almost always be counted on to alleviate any financial loss due to a bad bean harvest. I met very few people in the municipality that seize leadership and responsibility like Miguel. When he speaks, he does so with little restraint. I believe this is only because Miguel cares for his community so much. One afternoon, he told me the following after I had walked up to Monte Grande to explain to him that money for environmental education and a community tree nursery had fallen through:

“We have a lot of problems up here. Look at those kids there. No shirts, no shoes, and their teeth fall out until they grow new ones. That’s a problem, Andres. We do the best we can sometimes. I know a lot of people want to plant coffee because you can sell it for so much. Tomatoes are O.K., usually. But this year [1999] they weren’t worth enough to harvest and sell. The municipality does nothing up here. They only talk and tell us what they’ll do. It always turns out to be nothing. The road is shit. I’d rather walk than ride in the back of a truck on that thing. People say we have to stop farming coffee. That can’t happen.

And the fires, How are we to stop those? There is no equipment or assistance up here. Maybe we could all organize and blow on them?"

Miguel always seemed to be frustrated by broken promises from the municipality and COHDEFOR. He questioned how COHDEFOR workers could come up to his town and tell everyone they could not burn, but then never return when the dry season arrived. Although Miguel owns no coffee, he appreciates the need of many *campesinos* to produce some type of cash crop. Other *campesinos* respect the values Miguel upholds. He wants his community to improve to a higher standard, but he will not sacrifice the livelihoods of his neighbors. Rather, he prefers to raise issues until the state is willing to work towards the betterment of all aspects of their lives. He once told me, "The farmers will change, I know they will. But only if they have something to change for."

### **Hurricane Mitch in the Municipality of Guayape, Olancho**

On October 30, 1998, the eye of the storm passed almost directly over the Municipality of Guayape. Nobody in the municipality died from the storm, but it caused significant damage to the agriculture and transportation systems. Because rivers swelled to impassable depths, busses could not reach Santa Cruz de Guayape for over three weeks. Service to Guayape was suspended for even longer. The agriculture in the municipality has yet to recover. The Guayape River covered enormous tracts of land with sand and silt, causing the majority of farmers to lose at least two harvests.

Terreritos, a small *aldea* to the northeast of Guayape, was completely covered by a mudslide. Luckily, all inhabitants of the small town saw the slide developing and were able to escape. However, they lost almost all of their possessions and the town no longer exists.

Throughout the storm, there was really nothing to talk about other than what was occurring. Of course, these were desperate moments and the overwhelming majority of people only wanted to know when it would ever stop raining. Yet, throughout the storm, many members of the community pulled together to plan and work towards the reconstruction of the municipality. Each day, groups of residents would walk to washed-out areas of road to refill them with dirt and rocks. Meetings were held in the community centers of Guayape and Santa Cruz to develop a plan of action on procedures to reconstruct the land around the Guayape River. But, these were difficult times and the sentiment most often expressed to me remained, “The hurricane took away our land. It is going to be very hard for a while.”

I spent a lot of time with key informants during these days. Honestly, there was nothing else to do. The lights and water were out for 9 days and I found that this time was when I was able to truly see the character of many of my friends and neighbors. Each night, several men and women would meet in my house to listen to my short-wave radio. We would listen to the news from national radio stations and then I would translate the news from Voice of America and the British Broadcasting Corporation (BBC). After one of these sessions, a member of the Santa Cruz *patronato* approached me and said:

“The radio says the south [of Honduras, the Choluteca area] was destroyed because they have no trees and it’s like a desert. Well, it’s real wet now and all those people were killed. That landslide that ruined Territos happened because that place has no trees. We were lucky. We should make sure the trees stay here to protect us from things like that.”

EDECO held meetings throughout the storm. Their president began the first by stating, “We need some way to make sure this doesn’t happen again.”

After the fifth day of rain, representatives from Monte Grande hiked down through the mountain trail and entered Santa Cruz covered in mud. They told us that no houses had collapsed, but that, like the valley, agriculture had been decimated. One of my key informants came to my house to tell me that farmland within the park had been washed away. He also had heard of some instances of major tree fall. He continued on to tell me about their water project that was due to be inaugurated in two weeks:

“I don’t know if it would’ve helped with this damn hurricane, but I wish there were more trees up by the watershed. All the dirt and stuff from the river has filled up and ruined our water tubes. This is going to be hard to fix. And I don’t have time, I have to figure out what I’m going to do about my farm.”

Consequently, their water project inauguration was postponed.

Throughout the destruction of Mitch, I sensed that the communities were realizing a necessity to work together. In just over a week, Hurricane Mitch showed these communities that soil conservation and forested watersheds were critical to the future of this area. EDECO immediately began to develop their project with the mountain communities. And the responses we received from the communities were always positive. This was a major shift in attitude from the previous year.

## **Chapter Six**

### **Conclusion and Discussions**

In the following pages I will present a summary of the above information complemented by a discussion of some of the more critical points. Finally, a section for recommendations and the future of the protected area is placed at the end to build upon these ideas in respect to community structure and organization.

There were several common themes throughout my interviews with key informants. Many people emphasized traditional lifestyles and its difficulties. They understood their poverty and history of farming. However, I sensed that some people--those better educated and more traveled--understood the idea of a changing world and the implications these changes might have for the Guayape area. Yet, no matter the situation, the majority of the residents remain poor and believe they have no other option other than to continue with what they know. Hurricane Mitch passed through and left signs that were indifferent to individual thoughts or feelings. To an extent, these two groups of people, along with their worldviews, finally appeared to be fused by a forceful demonstration of nature.

### **Conclusions and Discussions**

While serving in the Peace Corps and working on this study, I had the unique opportunity to live in the Municipality of Guayape before and after Hurricane Mitch. Unquestionably, this disaster physically changed the country, and, to an extent, the attitudes of those that live and work with the land. Aesthetically, the municipality is beautiful because the level of deforestation that plagues other parts of the country is not as bad around Guayape. Still, a landslide wiped out one small municipal town, and many

people who had never thought of the consequences of cutting down trees realized this very personal tragedy might have been avoided if the hill had not been bare from deforestation. This sentiment was consistent throughout the country.

El Armado National Wildlife Refuge is a mysterious entity for many reasons. It is virtually unexplored, unless, of course, reference is given to those that live and work in it everyday. Also, it was conceived under an act, 87/87, that suddenly created 37 cloud forest national parks in Honduras. This seems to be the type of across-the-board decision made by Honduran politicians under pressure from foreign governments or organizations to perform some sort of environmental policy procedure. But, El Armado is only protected by law, not by practice. This is the reason I chose to develop this study. I wanted to discover and document how the inhabitants of the Municipality of Guayape view El Armado. What do they do in the park? and, What do they want to do in the park in the future?

The answers to these questions lie in the lives of the residents of the Municipality of Guayape. Interviews with key informants gave me the representative information regarding overall attitudes and general local knowledge.

No previous major projects have been conducted in the Guayape Municipality regarding El Armado or its social or economic influences. Local perceptions hold that there is no real problem. Very few people, in fact, only some members of EDECO or those that have traveled outside the municipality and have experienced other natural settings, realize the depletion of natural resources from this area. This was consistent throughout my interviews. I never felt that there was a desire to intentionally destroy the

land. Rather, these Hondurans were destroying the forest in an effort to improve their lives.

Due to its level of poverty, Honduras has historically acted hastily to exploit its timber resources (Norsworthy and Barry 1994). Roads have been cut into forests that had previously been extremely remote. This has opened the higher tropical forestlands to land clearing.

A trend that has proven true throughout developing countries is that landlessness and deforestation are simultaneously present. So, the greater the economic insecurity of the *campesinos*, the more they are forced to rely on, and therefore damage, the forests around them (Gradwohl and Greenberg 1988). These poor rural farmers have been pushed off the lowlands by the more powerful--economically and politically--cattle ranchers and large agriculturists (Norsworthy and Barry 1994).

A key informant from El Coyol explained this phenomenon in the municipality when I asked him why people move up the mountains to farm in the park. He answered:

“People farm in the park because they have to. There is no place else to go. We have no organization between communities in the mountains and the towns down there [municipality]. Each person farms where they need to. They don’t have to own it. If the land is open and they get a crop, then everyone just knows that is where that person farms. Sure, there are rules, but the mayor or COHDEFOR is not here. Why would a man walk all the way down to town just to be told they can’t farm where they’re already farming? It makes no sense.”

COHDEFOR is in a terrible situation. The Honduran Congress has, with increasing vigor, debated whether to completely dissolve this institution. This would simply be a move to cut their losses. If COHDEFOR is terminated, the country will still have to shoulder more than US\$240 million of the external debt the institution has

accumulated between 1977 and 1993 (Norsworthy and Barry 1994). This figure would be even higher today.

COHDEFOR has forever been associated with corruption, inefficiency, and carelessness with the environment (Norsworthy and Barry 1994). In Guayape, one key informant told me about two ways COHDEFOR representatives may break the law with little fear of punishment. The first situation is simple. The COHDEFOR employee sells less than 1000m<sup>3</sup> directly to whoever will extract the wood. This procedure is safe because the amount of wood taken is a comparatively small number, the extractor will hardly tell anyone for fear of his own persecution, and the COHDEFOR employee now has cash in hand. The second way is to organize a deal with the logging company to cut legally near populated areas, but send a crew and equipment farther into the area to extract wood from uninhabited wildlands. If no one sees them, they will not be caught, and the COHDEFOR employee will be compensated.

Key informants told me about a homemade sawmill that was constructed in El Armado by residents of El Coyol to extract mahogany. They said COHDEFOR had been informed about its presence, but did nothing. Eventually, mahogany trees were felled, but the majority of them were wasted because the loggers had no way to carry the trees out of the park and transport them to where they could be sold for a very large amount of money. Incidentally, several houses in El Coyol have mahogany furniture.

Jansen (1998) notes that COHDEFOR is expected to control burning for agriculture by *campesinos*. Yet, he quotes a contact he interviewed whose story is eerily similar to one of the COHDEFOR representatives I interviewed in Tegucigalpa. Essentially, they both state that they are not interested in controlling agricultural fires, but

only forest fires. That these are identical seems to allude these forest service employees. Jansen's contact acknowledges that the *campesinos* need to get permission to burn, but they do not because the expense to travel to the local office is often more than they can afford. My informant adds that the *campesinos* do not seek permission simply due to cost and inconvenience, but more because they know they will not get caught for burning. The enforcement is not there, nor will be. Jansen's contact adds that due to the *campesinos*' refusal to seek permission, the blame should be placed upon the municipality, whose inaction also perpetuates the agricultural fire problems. Deferments of blame are standard practice for all levels of Honduran politics.

This extends to official state reactions about people living within the nuclear zone of a park, as is the case in El Armado. COHDEFOR is responsible to remove them, but is unwilling to do so. This may be for several reasons. The strongest, most likely, is the local COHDEFOR employees' understandable reluctance to place themselves in a situation where they may be shot. Even if COHDEFOR were to ask these people to leave, locals would place blame upon them, and the technical forest employees would be the ones that would be in the greatest danger with no support from the state. Secondly, as one key informant explained to me, "Sure, they need to leave, but where are they going to go. Somebody has to help them resettle in another area. You can't take their life away and leave them someplace else with nothing." COHDEFOR simply does not have the resources, nor the experience, to relocate a whole town. Who, then, is going to do it?

USAID is another factor slowing efforts for conservation in El Armado. EDECO's L250,000 (US\$17,250) proposal with Fundación Vida for environmental education and organization of the influential communities around the park was denied

after months of meetings and promises that the money would come through. They decided to offer only L30,000 (US\$2,000). They reasoned that EDECO did not have the experience to execute the plan. They said the project would have to be downsized because the policy states that NGOs must first complete a small project with Fundación Vida before approval of a medium-sized project. However, Fundación Vida had already funded EDECO in 1989 to complete a community health education project. Fundación Vida was also concerned that EDECO did not have the technical forestry experience necessary for such a project. But, the project required only environmental education. I had previously met with EDECO members to discuss this topic and show them the information, pictures, and games we could use with each community.

Many of the people I spoke with in these towns, including a few key informants, expressed a sentiment I found troubling. They told me that many Hondurans, especially in the rural areas, do not believe they can do anything on their own. Rather, the day is acted upon them, not them upon it. One key informant said the following:

“Andrés, the life here is not easy. You know that by now. But who knows what we can do about it. This is a poor country and we are always poor. Where you are from it is different, right? I don't know why, *solo Dios sabe* (only God knows).”

My experience, shared by many other foreigners I have spoken with who have spent significant time in this country, has been that this attitude is pervasive throughout Honduras. This fatalistic attitude is a major obstacle when trying to empower individuals to work towards protection of their national environment. Beets (1990) has found this to be true in many tropical countries throughout the world. It is an attitude that expresses that they are poor people, placed on this world to remain poor, and privileges are reserved for those who live in, amongst other places, the United States.

Two fairly extreme examples of this belief came through conversations I had with local residents. During the dry season, the slash-and-burn practice increases due to the lack of rain. The smoke from these fires can become almost suffocating, affecting Honduras on a national level. During March 1998, national and international air traffic into the capital city of Tegucigalpa was halted for almost 3 weeks. The pilots simply could not see well enough to land. When night falls, orange lines may be seen appearing to float in the air. These are the fires on the surrounding mountains. Shockingly, many rural Hondurans would tell me that the smoke came from Mexico and the United States. My response was consistently one of doubt at that statement. I usually explained that the smoke was likely coming from the fire we could see burning up the mountain on the far side of the river.

The second example happened during Hurricane Mitch. After reports stated that Mitch had originated off Panama and had moved north towards Jamaica, Cuba, and the United States, but then had suddenly turned 180 degrees south towards Honduras, several men from my village asked me a question. They had “heard a rumor” that the U.S. military had missiles it would fire to deter hurricanes from reaching its shores. Rather, the missiles would alter the course of the hurricane and send it someplace else. In this particular case, the United States was somehow responsible for Mitch’s week of destruction upon the Republic of Honduras.

With all the aid that poured into the country after Hurricane Mitch, I find myself asking, “Where did the money go?” The rains towards the end of 1999 caused several problems that were residual from Mitch. The international aid has not reached the countryside where riverbanks are still so wide that flooding remains a dangerous and

destructive reality for any communities down stream. The USAID funds allocated for the Guayape area should finally allow the communities the ability to afford to incorporate a level of environmental values into their work. But, I am not sure this will be possible. It remains to be seen where the USAID funds may be used; perhaps the mayor will finally be able to build the bridge he has promised for so long.

I do not believe the future of this protected area lies in ecotourism. Southgate (1998) discusses the impact of crime on ecotourism. Essentially, tourists will tend not to go to dangerous areas. Undoubtedly, all the guns in Olancho make it dangerous. There is a state police unit in Guayape, but they never have anything to do. It is known throughout the area that if you steal something big enough, you will be shot. Almost all crime is thievery, and all murders are for vengeance. Two men from *aldeas* of Guayape attempted to rob my house with AK-47's. They left when I woke up because I imagine they did not know I was running out the back door and the house was theirs for the taking. Aside from this instance, I was safe. I believe that is because I actually lived there and knew many people. I am not sure if that would be true for strangers. In my two years in the area, twenty-two men in the municipality, often no more than 20 years old, were shot. Within the borders of Guayape, I was never confronted with a gun in a hostile situation. Perhaps it is because I also did not steal any cows.

But, this whole story is not intended to be negative. However slight, attitudes towards much of life have changed since Hurricane Mitch. The hurricane was a powerful sign that people need to work with, not against, the environment. Farmers spent 12-hour days in their fields trying to clear the sand and silt deposited by the receded waters. Many of them began to discuss and inquire about ways they could incorporate soil-

conservation practices in their fields. Many residents from the mountains asked me when EDECO's plan for environmental education and tree nurseries for watershed reforestation would begin. It was as if Hondurans had to start anew, and they wanted to be sure they did it properly.

In the Municipality of Guayape, both the human and physical environments are forever changing in time. Although attitudes may have been altered after Mitch, there are still no clear proposals aimed towards the conservation of the El Armado Wildlife Refuge. The conservation of the protected area, which includes the conservation of the quality of life for the surrounding communities, remains dependent on many human factors.

### **Outlook and Recommendations for El Armado**

Although the long-term impact of Hurricane Mitch is still unknown, many people have begun to realize the value of watershed conservation. Yet, the question remains whether the residents can work towards watershed conservation while continuing to meet their daily needs, such as farming and providing for their families. To answer this question, I have focused the recommendations on the institutional capabilities of local organizations and an integration of local knowledge of social systems and culture to suggest ideas where El Armado and its neighbors may continue to live for many more generations.

The following recommendations are based on the testimonies of key informants and personal observations. Some of these recommendations are offered for immediate consideration while others may need more time to be developed. The possibility of

trying to develop El Armado National Wildlife Refuge for ecotourism is not realistic at this time. Rather, I believe the protection of the park should coincide with the protection of the watersheds that service such a great number of residents of the Municipality of Guayape. The following recommendations will contribute to the protection and preservation of this protected area.

A key informant named Raúl explained a critical point in relation to the protected area. He asked, “Where is the park? That’s what people need to know. There’s not even markers or paint on the trees. You can’t keep people out of something they don’t know exists.”

The park needs to be completely delineated and marked. This is the responsibility of COHDEFOR. If they simply will not do it, the municipality should seek funding to have a Peace Corps Volunteer work with EDECO and APREVISA to not only mark the borders of the nuclear zone of the park, but also hold informational meetings in the *aldeas* to advise them where these borders are. This aspect should be coordinated with the municipalities of El Rosario and Yocón, as well. They, too, need to participate in the conservation of the entire El Armado area.

EDECO should continue to pursue their plan for environmental education in critical areas around El Armado. This should include education to *campesinos* and their families about the park, plants, animals, and water systems with which they live. If enough funding is available, community tree nurseries may be constructed in *aldeas* that are interested in contributing to the reforestation of their watersheds.

Before I left, I met with the members of EDECO. They told me they had spoken with a COHDEFOR forest technician in the Guayape office and asked him to assist their

group with the technical aspects of their future plans. They were very excited that he was interested and that, however little, they had bridged a sort of gap between their organization and the state. The President of the group added:

“I’ve been talking to other community *patronatos* and we think we can get all the organizations and towns to work together. That won’t be too hard. People see the water going away. If we talk about that, people will probably understand that something must be done. We will need help and support from the municipality, though.”

EDECO’s participation in any future projects with El Armado is critical. They have the experience and respect throughout the municipality to ensure the proposals are effectively executed. And they will be continuously working towards the improvement of the quality of life around their homes. It would be hard to find a stronger motivation than that for this group of people.

One of the greatest detriments to forests in developing countries is the extraction of fuelwood for cooking. This amount of wood may be decreased by the implementation of a project designing and constructing *estufa lorenas*, or more efficient wood-burning stoves. These projects would be very effective in Guayape and Santa Cruz, where population pressures are causing women and children to travel greater distances to find this wood. A community wood lot may be started to provide this firewood to area families.

There should be continued support for the IHCAFE representatives working in and around El Coyol. Several *campesinos* told me they noticed the benefits of shade coffee from the trial IHCAFE ran with a member of the Cooperativa Agroforestal. These farmers just did not have the technical knowledge to initiate similar practices in their land. The municipality should encourage IHCAFE to continue to work in this area.

The municipality may also utilize the Cooperativa Agroforestal's strong organizational network of the rural mountain *aldeas* to encourage diversification of agriculture with an emphasis on fruit production. Not only would this improve the diet and health of the residents, fruit production can often be a relatively lucrative endeavor. Even if the product were not transported to Guayape or Santa Cruz for sale, the fruit may serve as an option for income and sustenance during disappointing agricultural cycles.

Several key informants suggested the presence of guards, or *Vigilantes*, would be appropriate to protect the park. This, at times, could be effective. Yet, the question of who shall fund this aspect of park protection remains in question. Another important problem arose when I conducted an interview with an old man in Santa Cruz. He told me the following story:

"Yeah, [the *patronato*] decided that to decrease the level of infections and sickness in the town, we should keep a kennel where wandering animals, especially pigs, would be locked up until their owner proved that they would be penned. These animals would just walk around everywhere, eating anything, and [defecating] where ever and when ever the need arose. So we locked them up. One day, this guy who lived on the outskirts of town came in hopping mad. He said he'd been looking for his pig for two days and finally heard we had locked it up. So, he showed up at the kennel waving his gun and said he was going to shoot the poor boy that was watching the gate. Well, the kid had the sense to give him his pig back. We learned it was good to lock up the animals. The diseases seemed to decrease. But we also learned that with all these guns and macho guys around here, we'd never be able to maintain this policy once they learned they could just wave their gun in our face. I guess it never really worked out, and you can see all the pigs walking around today. Where ever they want."

It would be difficult to find more guards for the protected area once the first one is shot. This is not an unrealistic scenario. The municipality and COHDEFOR should, instead, work together to conduct regular visits to the park to observe and alleviate any human activity in El Armado. This would be only one small part of the necessary commitment from the municipality to ensure the protection of the park is a possibility.

I believe a very important part of the conservation process with El Armado is to involve local teachers. These men and women are very influential in the rural society. Many of them are originally from some towns in the municipality, but most of them are not. The one commonality is that they have all attended advanced studies in one of the larger cities in Honduras. This has given them experiences outside of rural towns such as Guayape. Many of them have been educated and trained to think critically on a broader scale. This is why, in almost all rural towns, teachers are often very involved in local social, political, and developmental programs and processes.

This, too, is the case in the Municipality of Guayape. Of the ten members of APREVISA, seven are educators in one of the two schools. Several teachers sit on the *patronatos* of both Guayape and Santa Cruz. In the smaller *aldeas* in the mountains, there is no question the teachers hold a position of leadership. They are very often the only residents who can read and write with proficiency.

I discovered these leadership traits early in my two-year service in the municipality and tried to concentrate my work around these educational institutions. I met with a group of teachers on a monthly basis to try and develop methods where we could incorporate environmental education into normal curriculum. For example, instead of mathematics story problems about trains and airplanes, we designed story problems based around plants, animals, and general environmental and agricultural practices. Another project was to increase the resources of the library in the high school. The teachers had previously had only one textbook from which to teach, and then to give to 30-50 students so that they could do their homework. With the help of outside funding, we were able to buy at least three more textbooks for most classes. We also found

bargains on children's literature, environmental books, and maps. Previously, many of the students could not find Honduras on a world map.

These projects were created with the educators of the municipality. They would not be possible without their past and present support. This, I believe, will also be true with any projects designed for El Armado. The teachers are our strongest link to the future: the children.

Perhaps the most important aspect to the future conservation of El Armado National Wildlife Refuge is the organization of all the communities and state or local groups that influence the park. The municipality should consider the organization of the *patronatos* for discussion and action towards the park a priority. Ideally, it would be an assumption that the municipality and COHDEFOR work together as two state-associated organizations.

I would like to see EDECO and APREVISA coordinate efforts towards environmental work. Honestly, I do not see this as a possibility because APREVISA's current president is convinced someone is going to give him enormous amounts of money just to say he is working with the park. However, EDECO has officially stated that they are willing to incorporate APREVISA into their proposals once APREVISA becomes a legal NGO and desires to work with EDECO.

The organization of these communities and groups will ensure that the *campesino* that lives and works near the protected area will not fall through the cracks. Future projects need to be structured in such a way that there is space for ideas to come from the bottom up (van Gelder and O'Keefe 1995). To work with "El Hombre" is a vital cultural concept in Honduras. This sentiment is especially true for the Guayape area due to its

location. The remoteness of El Armado and its surrounding communities necessitates the inclusion of local people. Development projects funded from the outside will be forgotten, or worse, ignored if local involvement is not considered a priority.

My observations and interviews have shown that *campesinos* work in the park and will continue to do so. Perhaps, then, a reorganization of the structure of the park would be appropriate. Several central core areas could be delineated within the nuclear zone to serve as preservation areas. This would mean no human activities would be allowed. These should be placed in areas that are currently untouched, but paying particular attention to the watersheds and river sources. Then, the remaining areas of the nuclear zone may be designated as reservation areas. These areas may be used for fuelwood extraction and low-impact agriculture, such as the cultivation of shade coffee. Finally, a buffer zone will continue to surround the area and would serve as a sustainable resource for the communities that currently live there. However, no future migration into the buffer zones would be allowed.

Recently a trend has developed recognizing that development projects which rely solely on scientific method and a western worldview are fundamentally flawed in their approach in developing countries (DeWalt 1994). So, interest in acquiring and investigating indigenous knowledge has been piqued. However, in order for these two knowledge bases to function together, they must have more opportunities in which they can inform and stimulate each other (Ibid.). In the Guayape area, the ideal end result is to create a social knowledge base that will restore and enhance all properties of the local environment (DeWalt 1994).

This is not unrealistic in the Municipality of Guayape, especially after attitudes have started to change following Hurricane Mitch. The local knowledge systems are present, they simply need technical and economic assistance to prepare themselves in their changing environment. Lives around El Armado National Wildlife Refuge are not as clear as black and white. They are integrated into complex systems with the surrounding environment. One group cannot stay while another goes. Rather, an alternative needs to be created that would allow for some settlement and some human activity around the protected area. These communities may need to compromise to an extent, but this needs to happen before the diminishing environment of El Armado compromises their own communities' existence.

## APPENDIX I

The following is a list of questions asked to some, but not all of the key informants. Each question was asked at some point, but not all were asked to each person.

How is the land used in this area?

How was the land used here 10, 20, 30 years ago?

What state is the land in now, 10, 20, 30 years ago? (very fertile, fertile, average, poor)

Where does your water come from?

How is the quality of the water?

How much water was there 5 years ago compared to now?

How many houses use this water source?

Is there water year-round?

What is the state of vegetation at the source of water for this watershed?

5 years ago?

How is El Armado forested now as compared to the past?

How has the population in this town changed in the last 5, 10, 15 years?

How many birds does there seem to be compared to 5, 10 years ago?

Mammals?

Reptiles?

Have there been past development projects here?

Do you use plants or animals in this area?

El Armado is a wildlife refuge, what does this mean to you, and your community?

Are the people here familiar with El Armado?

Where are the borders of the park?

How would you like to see the park developed? Or not?

Who should manage this park?

Is the park necessary for the communities?

Would you like tourism here?

What would a tourist come and see, do?

Are there places to eat, sleep, and is there transportation?

How could tourism affect your future?

How will the strict protection of El Armado affect this area?

How could El Armado's area be protected?

Is this worth the trouble?

What is there to gain or lose in protection?

Who is responsible for the park?

What does the park mean to you?

In what ways is your community or organization working towards the protection of the park?

What responsibility does Peace Corps have?

Why do people farm in the park?

What damage was there to the park or your community infrastructure due to Mitch?

How have attitudes changed since Mitch?

**APPENDIX II**  
**ACRONYMS and SPANISH TERMS or WORDS**

**Aldea**-a, usually, small town within a municipality. Each municipality has its government seat—in this case, Guayape—while each other town in the municipality is an aldea. Guayape has 19 aldeas.

**APREVISA**-Asociación de los Protectores de la Refugia de Vida Silvestre El Armado  
Association of the Protectors of the El Armado Wildlife Refuge

**Campefino**-a rural farmer, often with little or no landholdings. In this paper, this word is interchangeable with either poor farmer or peasant farmer to not use any of the three words too frequently.

**CIA**-Central Intelligence Agency

**COHDEFOR**-Corporación Hondureña de Desarrollo Forestal  
Honduran Corporation of Forestry Development

**Cooperativa Agroforestal, El Coyol**-The El Coyol Agroforestry Cooperative

**EDECO**-Empresa del Desarrollo Comunitario  
Community Development Group

**FEHCAFOR**—Honduran Agroforestry Cooperative Group

**Finca**-in this paper, a plot of land for coffee that often contains a small house or shed for storage of cultivation materials and a place to sleep during the harvest. Finca, in Spanish, most often means a farm, but in Guayape, the term was usually applied for land specifically used for coffee.

**Fundación Vida**-Life Foundation. A Honduran NGO umbrella group, funded by USAID

**Hay que trabajar con El Hombre**—literally, One must work with the man. A newly popular development theory, unfortunately not always initialized, where projects must be designed allowing for complete involvement by the local peasants.

**IHCAFE**-Instituto Hondureño del Café  
Honduran Institute of Coffee

**Lempira**-the Honduran currency. The exchange rate as of December 1999 in Honduras was 14.5 Lempiras to US\$1.

**Milpa**-agricultural land used, and often cleared by fire, for corn/bean production.

**NGO**-Nongovernmental Organization

**Patronato**—the community board of a town. The mayor is the head political figure in the municipality, but each community has their own group to handle local politics.

**USAID**-United States Agency for International Development

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