

SOCIO-ENVIRONMENTAL CONSEQUENCES OF MARKET INTEGRATION  
AMONG THE CHACHIS OF ESMERALDAS, ECUADOR

By

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by

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To the Chachis of La Ceiba and Loma Linda, who have shared with me their rainy worlds  
of laughter and welcomed me into their homes.

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By

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Indigenous people often live on land that conservationists value for biodiversity. While social science and natural science researchers continue to argue over the validity of “the Noble Savage” and the integral nature of indigenous contributions to conservation, communities become more integrated into local, regional, and national markets. A key question thus arises as to whether the economic activities performed by indigenous communities in these areas are detrimental to the conservation of the rainforest and its biodiversity.

I address *internal* socio-economic and socio-environmental dynamics of post-market integration that may determine whether or not indigenous communities will successfully collaborate in sustainable forest management. My investigation focuses on the Chachis, an indigenous group who live in the buffer zone of Cotacachi-Cayapas National Park in the Chocó region of Northwestern Ecuador. Their lives and livelihoods are in flux as a result of their increasing market integration.

The design of the thesis project is based on a comparative analysis of two Chachi villages, La Ceiba and Loma Linda, which predominately differ in terms of their relative isolation from urban centers and access to markets. I used qualitative and quantitative methods to determine empirically whether market integration creates a greater concentration on market activities (versus subsistence activities) and alters internal social dynamics and organization (social capital).

The results show that the village closer to an urban center (La Ceiba) spends more time on logging and cattle ranching (newer, environmentally threatening activities). The more isolated village (Loma Linda) spends more time working in schools and craft-making and sales (environmentally benign market activities). The concentration on distinct income generating activities in the two communities correlates with divergent levels of different aspects of social capital, or norms and social bonds that may contribute to the capacity to self-organize and sustainably manage natural resources.

On a theoretical level, the results can contribute to the literature on market integration and the determinants of social capital. On a more practical level, understanding the complexity of the shifting indigenous livelihood and social systems may be essential to design and implement natural resource management plans that will be conducive to the indigenous development and nature conservation. A better understanding of shifting market activities and social dynamics/organization of indigenous groups with improved market access may simultaneously foster environmental and cultural resiliency.

## CHAPTER 1 INTRODUCTION

The Chachis are an indigenous group whose lives and livelihoods in the Ecuadorian coastal rainforest are in flux, especially as the communities become more integrated into local, regional, and national markets. I embarked on my research among the Chachis because I was fascinated by my different experiences living in two of their communities—La Ceiba in 1997 and Loma Linda in 2000, which differ in terms of relative isolation from urban centers and access to markets. Currently, La Ceiba is located one hour by car from San Lorenzo and has a logging road traversing the village. Loma Linda, on the other hand, is moderately isolated. Located on the Cayapas River, it lies four hours by motorized canoe from the nearest town, Borbón. I have returned to both villages many times since I first lived in each, and I have witnessed many of the transformations that the Chachis have undergone. In particular, as logging roads criss-cross the forest, the lives of the Chachis have inevitably become more intertwined with the outside world.

### **Impressions of Change**

In 1999, the residents of La Ceiba had negotiated with a logging company, CODESA (Contrachapadas de Esmeraldas S.A.), to construct a one kilometer road connecting the community to the logging road<sup>1</sup> and the San Lorenzo-Ibarra highway.<sup>2</sup>

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<sup>1</sup> SETRAFOR, another logging company based in the nearby town of San Francisco, began to construct this timber extraction road in 1997.

<sup>2</sup> The construction of the San Lorenzo-Ibarra highway was constructed in 1995 and paved in 2002.

When I first arrived in La Ceiba in 1997, the community was only accessible by a two-hour canoe ride or an hour-and-a-half trek. Yet, when I returned to La Ceiba in 1999 I learned that, linked to the new road, were a host of changes. For example, the forest from San Lorenzo to the village had been replaced with African Palms. Sounds of machinery



Photograph by author.

Figure 1.1. Construction of the road that branches from the San Lorenzo-Ibarra highway and leads to La Ceiba (1997).

and chainsaws were heard all day long from the surrounding forest. The Chachis of La Ceiba used the river less because they had the road. There were more visitors to the village. The community members went to San Lorenzo much more often. More people

played their stereos late into the night and before dawn. Residents had bicycles. They sold arazá (*Eugenia stipitata*), borojó (*Borojoa patinoi*), rolinio (*Rollinia deliciosa*), and other tropical fruits from the fruit forest that they planted in collaboration with a Peace Corps member<sup>3</sup> between 1993 and 1997. Finally, they seemed to spend all their time cutting trees, and they had sold hundreds of hectares of trees to SETRAFOR (Servicios y Trabajos Forestales) Lumber Company.

Other aspects of La Ceiba also became especially vivid once I compared them to my experience of living and working in Loma Linda in 2000. Unlike Loma Linda, households in La Ceiba cooked their meals with gas stoves. Moreover, La Ceiba residents had more stereos and televisions. Houses with walls, doors with locks, and tin roofs were more common. In addition, community members had more plastic chairs and women used plastic containers for washing their clothes. La Ceiba appeared to exhibit a different village dynamic—one that was characterized by more problems, less solidarity between people, and new priorities for how people spent their time. Furthermore, when I went back to both Loma Linda and La Ceiba in 2001, I noticed that in one year's time Loma Linda had changed to a much smaller degree than La Ceiba.

I wondered what made my experiences in these villages so divergent. What was it that accelerated change so dramatically in La Ceiba? I believe what distinguished my experiences in the two places were their differing degree of market integration, which appeared to go hand in hand with logging. This is what led me to the premise of my comparative fieldwork in the summer of 2002. The foundational hypothesis in this thesis project is that the lives of the Chachi households and communities are not rearranged by

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<sup>3</sup> The name of the Peace Corps member is Todd Smith. He also helped with the implementation of the marmalade factory beginning in January 2000.

the roads themselves, but by access to the market and other socio-economic systems that roads entail.



Photograph by Author.

Figure 1.2. Chachi children from La Ceiba ready to hit the road in their home-built bus.

### **Organization of Thesis**

This thesis is organized into eight chapters. The next chapter reviews the literature from which my hypotheses are drawn. This second chapter introduces resilience theory, which is part of the Panarchy framework. Resilience theory is employed to review two bodies of literature concerning the social and ecological consequences of market integration. The first body of literature addresses the disruption or the increased resilience of indigenous social and ecological systems facing market integration. The second presents the literature on how development correlates with levels of social capital and vice-versa. These two bodies of literature are joined in a framework that guides the specific problems investigated in this thesis.

Chapter 3 explains the research design and presents the overall hypothesis. It is as follows: The village with greater market integration will have more environmentally destructive money-generating practices and a lower level of bonding social capital. In addition, I discuss why I chose the sites that I did, the methods of data collection that I used, and how I operationalized and measured market integration and social capital.

The fourth chapter lays out the environmental and the social context of the comparative analysis. The purpose of this chapter is to provide the ecological and social background that demonstrates that the two research sites vary mainly in terms of the degree to which they are involved in local and regional markets, and that they do not differ significantly in terms of other relevant variables. Although no two geographic places are identical, the fact that the people in both sites share a similar bio-geographical context, historical background, and ethno-linguistic heritage contributes greatly to the comparability of the two places, as noted in chapter 3. Such a comparison would be invalid if each were populated by a different cultural group since it would be impossible to know whether observed differences were due to market integration (the primary independent variable) or to cultural factors.

Chapter 5 discusses the Chachis' livelihood system. The first two sections of the chapter describe the Chachis' subsistence base and their past and present participation in the market. This leads to an explanation of the Chachis' current predicament of how to earn an income without participating in logging in a place that has few other options. I conclude this chapter with a description of the contemporary market and subsistence activities.

In chapter 6, I measure and compare the extent of market integration within and between La Ceiba and Loma Linda. The degree of market integration in these two villages establishes the basis for the rest of the thesis.

Chapter 7 presents the qualitative and quantitative analyses of the social dynamics and organization of the Chachis of La Ceiba and Loma Linda. Based on the results in chapter 6, I use logistic regression to test the principal hypothesis and other secondary hypotheses. I analyze the relationships between each village's participation in certain market activities and social capital. I run eight models in which I control for age, education, and gender. Cross tabulations are also run between the independent variables and other social capital variables.

The thesis concludes with chapter 8 in which I integrate and interpret the results from the preceding chapters. I close with a discussion of the implications and potential applications of this research.

## CHAPTER 2 PERSPECTIVES ON THE CONSEQUENCES OF MARKET INTEGRATION

Thus the global pattern of humanity and nature is a combination of a stormy atmosphere, swirling ocean, slowly cycling earth, life cycles of living organisms, ecological adaptations, and the complex interactions of human societies. (Odum and Odum, 2001, p. 5)

### **Introduction**

Indigenous people often live on land that conservationists value for biodiversity. They are often removed or restricted from nationally-declared protected areas that have been their ancestral homelands for thousands of years. A key question that arises is whether, or, to what extent the economic activities performed by indigenous communities in these areas are detrimental to the conservation of the rainforest and its biodiversity. Pretty (2003, p.1913) asks, “Could local people play a positive role in conservation and management of resources?” Variants of this question query: under what conditions could local people play a positive role in conservation and management of resources as their lives become more intertwined with demands of local, regional, national, and global markets; and how could biodiversity conservation efforts be designed to benefit indigenous communities by providing economic alternatives to environmentally harmful practices?

Researchers who investigate social and economic transitions within the theoretical context of cultural and environmental resilience have an important role in answering these questions. Holling and Gunderson (2002, p. 28) define ecosystem resilience as “the magnitude of disturbance that can be absorbed before the system changes its structure by

changing variables and processes that control behavior.” The Panarchy framework put forward by Holling, Gunderson and Ludwig (2002), which includes resiliency theory, links social and ecological systems under the assumption that humans have expanded their influence over nature so thoroughly that neither nature nor humans can be understood in isolation. Instead, nature and humans relate to one another in a feedback process: the economy imposes stress on the ecosystem, and the societal response depends on the state of the ecosystem and the economy.

A community’s nature-society system can be either adaptive, maladaptive, or a combination of both. A community can develop sustainably if its cyclical processes can create, test, and maintain environmental and social resilience, thereby enhancing diversity by incorporating changes at low levels. If it is maladaptive, each swing of the cycle requires more extensive and expensive inputs and can, therefore, be seen as non-sustainable (Holling and Gunderson, 2002). The concept of resilience can be invoked to sharpen the analyses of the consequences of market integration.

Researchers’ findings on the effects of market integration on indigenous communities (and their environments) fall along a continuum with respect to resilience or flexibility. The perspectives at one end of the continuum conclude that isolated indigenous communities, with their diverse livelihood strategies, tend to be more sustainable as self-sufficient and self-governing entities, and that these attributes are undermined by a greater integration into market exchanges (Bedoya Garland, 1995; Berkes *et. al.*, 1998, Bodley, 1999; Jodha, 1998; Rappaport, 1971; Schmink and Wood, 1987; Stonich, 1995; Wentzel, 1989). At the other end of the continuum there are those who believe that local or indigenous communities must remain open and flexible, or they

will become maladaptive to the changes in the outside world and will eventually collapse (Begosi, 1998; Garcia Canclini, 1997; Holling, Gunderson, and Peterson, 2002; Schefer, Westley, Brock, and Holmgren, 2002;). Most scholars' positions on this topic fall somewhere between the two extremes, depending on the emphasis given to the various factors involved. In the first and second sections of this paper, I will discuss these different positions on market integration relative to ecological and socio-cultural resiliency.

I will then conclude this chapter with a discussion of social capital. Literature on this topic examines the potential relationships between communal social organization and economic development.<sup>1</sup> The positive and negative aspects of social capital can also be interpreted as the advantages and disadvantages of closed communities and social systems. The foundation of cultural and ecological resilience, as well as economic success, may rest on how indigenous communities re-organize their social structures as they become integrated into the market.

### **Market Integration and the Disruption of Indigenous Social-Ecological Systems**

The authors who view the transition from subsistence oriented to market oriented economies as a disruption of indigenous social-ecological systems focus on the negative impacts and the potential shift to a maladaptive state of evolving socio-ecological systems. In Rappaport's (1971) ethnoecological study of the Tsembaga indigenous group of Papua New Guinea, he explains how the shift from subsistence-based to market-based agricultural systems (and how agricultural societies interact with these systems) leads to problems. Among the traditional intensive and diversified agricultural systems, subtle

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<sup>1</sup> In this study development is defined as the gradual incorporation of market activities into the Chachis' subsistence-oriented economy.

signs of rapid environmental degradation are easily detected; therefore, the systems are likely to be self-correcting. Nevertheless, he claims that when the Tsembaga began to grow cash-crops, their agro-ecosystem became more vulnerable to pests and diseases because it became increasingly more simple and less diverse. The system lost its ability to self-correct. And changes in the social system reflected those of the agro-ecosystem, as social systems are open to economic and political stress of distant events over which they have no control.

Other authors (Bedoya Garland, 1995; Bodley, 1999; Jodha, 1998; Schmink and Wood, 1987; Stonich, 1995; and Wentzel, 1989) conclude that the transition from a local livelihood system into a larger socio-economic system usually leads to maladaptive social and environmental practices. Their general view is that market integration is disruptive to a stable and socially and environmentally resilient system. Once a community is intensively integrated into the market, market activities reinforce themselves by leaving little time for subsistence activities. With less time for these subsistence activities, the indigenous people are compelled to buy products they would usually produce themselves. They then need to work more to earn money to buy these outside products, thus, introducing a cycle of dependence. The authors contend that it is partially this dependence on goods that is leading small rural communities to human impoverishment, environmental destruction and social instability.

An indigenous group's subsistence foundation and internal economy is weakened because less time is devoted to subsistence activities. Simultaneously, in the larger market, the pressure to engage in price competition with bigger firms (that policies favor) creates a stress on the forest. In time, a community's socio-economic and ecological

foundations eventually break down. Consequently, these authors conclude that cultural systems become maladaptive when they are integrated into the socio-economic policies and internal logic of capitalism (Schmink and Wood, 1987).

For Stonich (1995), the cycles described in the previous paragraph are inherent to the production of exported non-traditional and traditional cash crops. Yet, she takes the aforementioned conclusions a step further by describing how export crops create a split between rich and poor within peasant communities. Even if an introduced export crop is successfully grown in small communities, the sale of the commodity will be co-opted by large land holders, while small producers will be eliminated or marginalized to fragile lands (also leading to greater environmental degradation). Due to market fluctuations, local people are not guaranteed a steady salary, and communities lose their self-sufficiency. In sum, the majority of self-sufficient communities become “low paid forest producers” (Bodley, 1999, p.198).

Jodha (1998) provides an example from the Hindukesh-Himalaya Region of Southeast Asia. He notes that isolated, “traditional” societies are involved in a two way adaptation cycle: they adapt their communities to the harsh conditions of the Himalayas and they adapt their natural resource base’s needs into their society. Completely dependent upon their ecosystem, pre-market communities have a high stake in its health, and often maintain the integrity of the ecosystem with folk knowledge, appropriate technology, and community control over resources.

According to Jodha (1998, p. 298), “because of rapid and major changes, the local communities are left without sufficient lead time or control over their resources and community affairs to amend their age-old coping strategies or to evolve new ones.” The

dissolution of communal decision-making and social cohesiveness creates a rift between the community and resource use. As local autonomy becomes obsolete, external relationships play a bigger part in communal decisions over resources. This transition results in the modification of the two way adaptation process, which then produces a one-way adjustment of the resources being stretched to meet human demands. Ultimately, Jodha acknowledges that because people are no longer as intimate with their environment, they lack the driving force to recognize their stake in abandoning their once-sustainable resource use.

To gain a better understanding of the effects of market integration, Bedoya Garland (1995) shows how market integration affects four communities with different cultural backgrounds in lowland Peru. He compares three indigenous tribes (all in different stages of market integration) and colonists of the Central Selva. The results support his hypotheses: the colonists clear more land than all three indigenous tribes; and the more market-oriented an indigenous group becomes, the less the diversity of its subsistence activities become and the more forests are cleared.

Although the most market-oriented indigenous group cleared more land than the less integrated groups, Bedoya Garland claims that indigenous cultures generally cut short the logic of capital accumulation. The indigenous logic is based on satisfying the biological and cultural needs of the domestic unit. When able to do so, indigenous people become economically disengaged and no longer clear the forest. The more land that colonists have, on the other hand, the more forest they will clear. The colonists are generally more migratory and leave or sell their lands when they become unproductive.

Indigenous groups, however, are involved in a swidden agricultural system with rotating successive plots.

In another comparative study done in the Bolivian lowlands, Wentzel (1989) examines how market integration affects the two Amerindian Tacana communities of Santa Ana and Tumupasa, as well as one highland migrant community (of *colonos* or colonists) known as 25 de Mayo. The conclusions of Wentzel's work demonstrate that market integration leads to a lack of sustainable land practices and/or lower quality of life, depending on the community. Wentzel's findings show that although market integration endangered the dynamism of land use systems to an even greater extent among the *colonos*, who live in a different historical, cultural, and socio-economic context, it did help them attain a better quality of life. Yet among the Tacana, she finds that market integration decreases both the quality of life and the prospects for sustainable land use.<sup>2</sup>

Based on Holling's "new science of surprise," Berkes *et. al.* (1998, p.11) describe how negative consequences of market integration unfold in a community:

Typically, there is a sequence of events which starts with efficient exploitation that eventually leads to inadvertent loss of ecosystem resilience. To supply markets, resource management tries to control a target resource (e.g. supply of fish or timber) by reducing the variability of the target resource. This helps to meet production targets and economic objectives (e.g. revenue and employment). This management policy is successful in the short term, but in the long term its very success causes inadvertent changes in functioning and resilience of the ecosystem. Over a period of time management emphasis shifts to improving the efficiency of resource utilization, and the need for ecosystem support and services (e.g. water regulation capacity of a forest) and the loss of resilience is not perceived.

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<sup>2</sup> Wentzel also demonstrates that all three communities still participate to a certain extent in subsistence farming. She claims that this provides a secure foundation and a certain level of autonomy, and can be interpreted to be a form of daily resistance to market integration.

In other words, as local communities integrate into larger scaled markets, the environment becomes more vulnerable to surprise. Management becomes tied with rigid economic patterns that are less responsive to the environment's needs.

In summation, the lack of resiliency of the market-based socio-environmental system (Bedoya Garland, 1995; Berkes et.al.,1998; Bodley, 1999; Jodha 1998; Schmink and Wood, 1987; Stonich, 1995; Wentzel, 1989) is caused by the following conditions:

- involvement in markets increases vulnerability to market fluctuations;
- markets open up resources to be exploited;
- a market economy creates social inequalities in the community;
- and social and environmental problems that accompany markets produce communal stress and, therefore, more pressure for increased development, which in turn only deepens the socio-economic and environmental problems.

Bedoya Garland (1995), Bodley (1999), and Stonich (1995) contend that by making markets more sensitive to their cultural systems, the negative impacts of market systems may not be completely inevitable. Bodley's stance is that if indigenous people are "truly in control of their own resources, they can relate to the global culture on their own terms" (Bodley, 1999, p.198). Bedoya Garland states that indigenous people have specific roles in preventing environmental degradation. In sum, they view pre-market indigenous and local rural economies as reciprocally-based and stable. They become more vulnerable and less resilient with the incorporation of capitalist markets. "We must ask if a worldwide human organization can persist and elaborate itself indefinitely at the expense of decreasing the stability of its own ecological foundations" (Rappaport, 1971, p. 132).

### **Market Integration and the Resilience of Indigenous Social-Ecological Systems**

In the Panarchy framework, Holling and Gunderson (2002) contend that society-nature relations create and are created by an ever-changing landscape of fast and slow

variables that link micro to macro scales. These scales are all connected, and each scale has its own threshold of adaptive change and its own distinct cycles.

Holling, Gunderson and Ludwig (2002) emphasize the necessity of a mixture of livelihood strategies (characteristic of more self-sufficient communities) over a dependence on any one strategy for communal sustainability. Yet, the more ritualistic a society is and the more a community tries to close itself off from interaction with larger socio-economic systems, the more their system has potential of eventual collapse (Begosi, 1998; Garcia Canclini, 1997; Holling, Gunderson, and Peterson, 2002; Schefer, Westley, Brock, and Holmgren, 2002). In other words, the more closed a community is, the more conflict arises when the community finally confronts the changes that accompany the incorporation these larger systems into their own.

Begosi (1998) compares the resiliency of indigenous cultures with that of the Caiçaras (from the Atlantic forest of Brazil) and the Caboclos (Amazon, Brazil), both cultures of mixed heritage. He not only speaks of cultural resilience, but also of biological resilience. He claims that because the Caiçaras and the Caboclos are of mixed heritage there is more genetic variability within the communities and this creates immunity to diseases. Begosi (1998) claims that neo-traditional cultures (Caiçaras and Caboclos) have the advantage of mixing both traditional (indigenous) and newly emergent social systems. The joining of two cultural traditions allows them to maintain variability, to be open to new values, and to incorporate change. Therefore, the Caboclos and Caiçaras adapt more easily than traditional indigenous people. Begosi further points out that indigenous people experience an additional disadvantage in that their first language is not Portuguese.

Begosi perceives the lack of flexibility of indigenous people as a problem leading to maladaptation and/or the disappearance of their cultures when confronted with outside cultures or diseases. He points out that the indigenous peoples that have survived are those that are more flexible, while still maintaining their ethnic identity. His opinion is opposite to that of Bedoya Garland (1995), Berkes et.al.(1998), Bodley (1999), Jodha (1998), Rappaport (1971), Schmink and Wood (1987), Stonich (1995), and Wentzel (1989). Instead of thinking that integration into the economy creates dependence, exploitation, and breakdown, he believes that flexible responses to market forces increase a community's ability to cope with socio-economic and environmental changes, and ensures communal survival and evolution. In short, like the Caiçaras and the Caboclos, indigenous people need to develop the ability to continually reorganize themselves.

Others are more agnostic on the matter. For instance, Godoy (2001) investigates the effect of greater market integration on the life and habitat of indigenous people. His conclusion is: "markets seem to produce unclear, sometimes benign, and sometimes harmful effects on the quality of life and the environment" (Godoy, 2001, p. 204). At the same time, he makes two points: market integration generally worsens conservation before improving it; and regardless of the degree of market integration, if there is formal schooling in an area, there is less deforestation.

Garcia Canclini (1997) also notes that market integration (via the craft-making and performance in this case) in indigenous communities acts as a gradual process with different stages. He observes that communities change their ideologies and social structures, and they must constantly renew their dominant ideology by incorporating the new product in systems and social conflicts. According to this author, this process may

be necessary for indigenous communities as they reorganize and define themselves in relation to the outside world. My thesis research conducted in La Ceiba and Loma Linda during the summer of 2003 investigates the ways and the extent to which market integration “produce(s) unclear, sometimes benign, and sometimes harmful effects”(Godoy, 2001, p. 204) in social and socio-environmental dynamics within these villages.

### **Economic Development and Social Capital**

Social capital has been described as a “new language for an old debate” (Portes, 1998; Putnam, 2001, p. 24). The two-century-long debate to which Putnam and Portes refer encompasses two additional controversies over the importance of the individual relative to the community, and society relative to the economy.<sup>3</sup> A recent and generally accepted definition of social capital is offered by Robert Putnam<sup>4</sup> (2001, p. 67) as “features of social organization, such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit.” The following sections address the historical evolution of social capital and the various ways it has been approached and defined.

### **Historical Evolution of Social Capital**

The root of social capital lies in the progressive era of WWI as capitalism was just reaching maturity and people were migrating in increasing numbers to industrial cities looking for work (Roe, 2002). Noting the proximity of city neighbors as advantageous to

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<sup>3</sup> The debates about the importance of the individual to the community and the society to the economy (and vice-versa) date back to the nineteenth century writings of Durkheim (1893) and Marx (1894).

<sup>4</sup> Social capital as a network concept owes its inspiration to theories of Robert Putnam. Knack and Keefer (1995) have gone as far as to name the associations that facilitate growth by increasing trust as “Putnam effects”.

social intercourse, Lyda J. Hanifan (1916) referred to social capital as goodwill, fellowship of neighbors, and mutual sympathy (and essentially concluded that greater development would lead to higher social capital). Addressing the tension between individual and community, she noted that in urban environments individuals not only benefited from positive associations with others, but also developed a greater sense of community. The term, social capital, was not used between 1916 and the 1950's. When it arose a second time, it was used to describe the associations of immigrant suburbanites in Canada (Putnam, 2000). In 1961, Jacobs came up with the idea that social connections improved human and/or individual economic capital. He described neighborhood networks and how they led to the opportunity to borrow a cup of sugar during hard times.

According to Portes (1999), the first contemporary analysis of social capital was produced by Pierre Bourdieu as early as 1980. Bourdieu stressed the importance of social interaction or “the profits that accrue from membership in a group and on the deliberate construction of sociability, which makes them possible” (Bourdieu, 1985, p. 249). His interpretation of social capital was based on the idea that social networks led to individual economic benefits<sup>5</sup>, but that uncertain time scales upon the return of investment distinguished social capital from a “plain market exchange” (Bourdieu, 1979, 1980). Loury (1977, p. 1981) and Coleman (1988; 1990), who followed a few years later, also described social capital as generating human capital.

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<sup>5</sup> Bourdieu argues that elites reproduce the symbols and wealth that serve their own interests, keep them in a more powerful position, and give them the ability to manipulate others. Therefore, he concludes that social capital actually perpetuates class interests and divisions. This aspect of Bourdieu is not included in the social capital literature written by the World Bank. They have adopted and promoted Putnam's and Coleman's definition of social capital, which promotes it as a collective asset.

Today, Pope (2000) warns that because there are so many definitions and interpretations of social capital indicators, the measures of social capital all imply different things about a community. She demonstrates this by taking an example from Portes (1998) in which he defines three functions of diverse social contexts: 1) as a form of social control (e.g. to control the actions of children and youth); 2) as a source of family support (e.g. family and kin support for the raising of children) and; 3) as a source of benefits through extrafamilial networks.

### **Social Capital and Resiliency**

Although the precise definition and benefits of social capital are highly debated, social networks and reciprocity have been identified as essential components. One of the principal arguments in social capital literature is whether or not facilitating cooperation is mutually beneficial for individuals and communities. There are three basic stances on this debate. One position hypothesizes that higher investments or stocks of social capital produce a greater ability to attain collective goals such as economic development or collective resource management. This perspective concentrates on the “public goods” (Portes, 1998, p.12) that result from high stocks of social capital, or greater reciprocity and cooperation (cognitive social capital) that then influence the creation of more closed social networks.

The second stance notes “the downside of social capital” (Portes and Landolt, 1996; Portes, 1999) and the exclusionary consequences of some networks. From this viewpoint, social capital is not a political concept to be promoted but rather a phenomenon to be discouraged. This position reveals the influence that outside connections may have over a community’s ability to self-organize and self-manage its inner village dynamics.

Together these two stances suggest three types of social capital. The first type is an exclusive form of intragroup association called *bonding* social capital. It emphasizes the relations of trust that act as a lubricant to ease the continuation of reciprocity and exchanges, and offering them common rules, norms and sanctions, and connectedness in inner group networks. Advocates of bonding social capital are in a category of their own because they reinforce the idea that these intergroup associations are key to development.

The second and third types of social capital (known as bridging social capital and vertical social capital respectively) recognize that bonding social capital can be limited. Their proponents emphasize the strengthening of outer group networks as the key to development. Researchers who emphasize these types of social capital often take separate positions regarding the benefits and costs of social capital. *Bridging* social capital emphasizes horizontal or intergroup associations. Lastly, linking (or vertical) social capital (Narayan, 1999; Putnam, 1995;) also encompasses intergroup associations, but it includes the ability to interact, draw useful resources, and influence policies of external agencies.

The third stance turns social capital on its head and uses social capital as the dependent variable. Researchers who take this position state that social capital erodes with economic development.

### **Higher bonding social capital; higher potential for development**

The World Bank exemplifies the first stance on social capital. The bank has identified social capital as an “integral component” of economic development because it leads to an improvement in the economic standard of living by “mobilizing resources and working for common goals” (World Bank, 2000c). Reinforcable trust is a concept described by Portes (1998) as obligations that are enforceable through the power of

community and bounded solidarity that guarantee repayment and group approval. This reinforcing trust is an essential aspect of a type of social control that may also have the potential to be limiting. Bonding social capital, or tightening inter-communal networks, is promoted to enhance economic success. An example of this is Colombian rural agro-enterprises that use the information networks of social capital to build trust and strengthen forces of collective action to further the economic goals of the firm itself (Johnson *et al.*, 2002). Here bonding social capital is stressed and there is little preoccupation about whether the strengthening of the company structure will be inflexible and/or open to outside networks.

More recently, conservation researchers (Bray, 2003; Narayan, 1999; Pretty, 2003; Schefer *et al.*, 2002;) have treated bonding social capital as a resource to be tapped to strengthen the capacity of communities to collectively manage their resources. The World Bank (2003) has indicated social capital to be important in sustainable development and conservation because human organization and trust can help turn natural resources into physical assets and protect common property from degradation.

Pretty (2003, p. 1912) explains:

The term social capital captures the idea that social bonds and norms are critical for sustainability. Where social capital is high in formalized groups, people have the confidence to invest in collective activities, knowing that others will do so too. Nearly half a million groups have been established since the early 1990s for watershed, forest, irrigation, pest, wildlife, fishery, and microfinance management. These offer a route to sustainable management and governance of common resources.

“Cognitive social capital refers to values, beliefs, behavior, and social norms. “Structural” social capital refers to the degree to which informational and material networks organize social interactions.

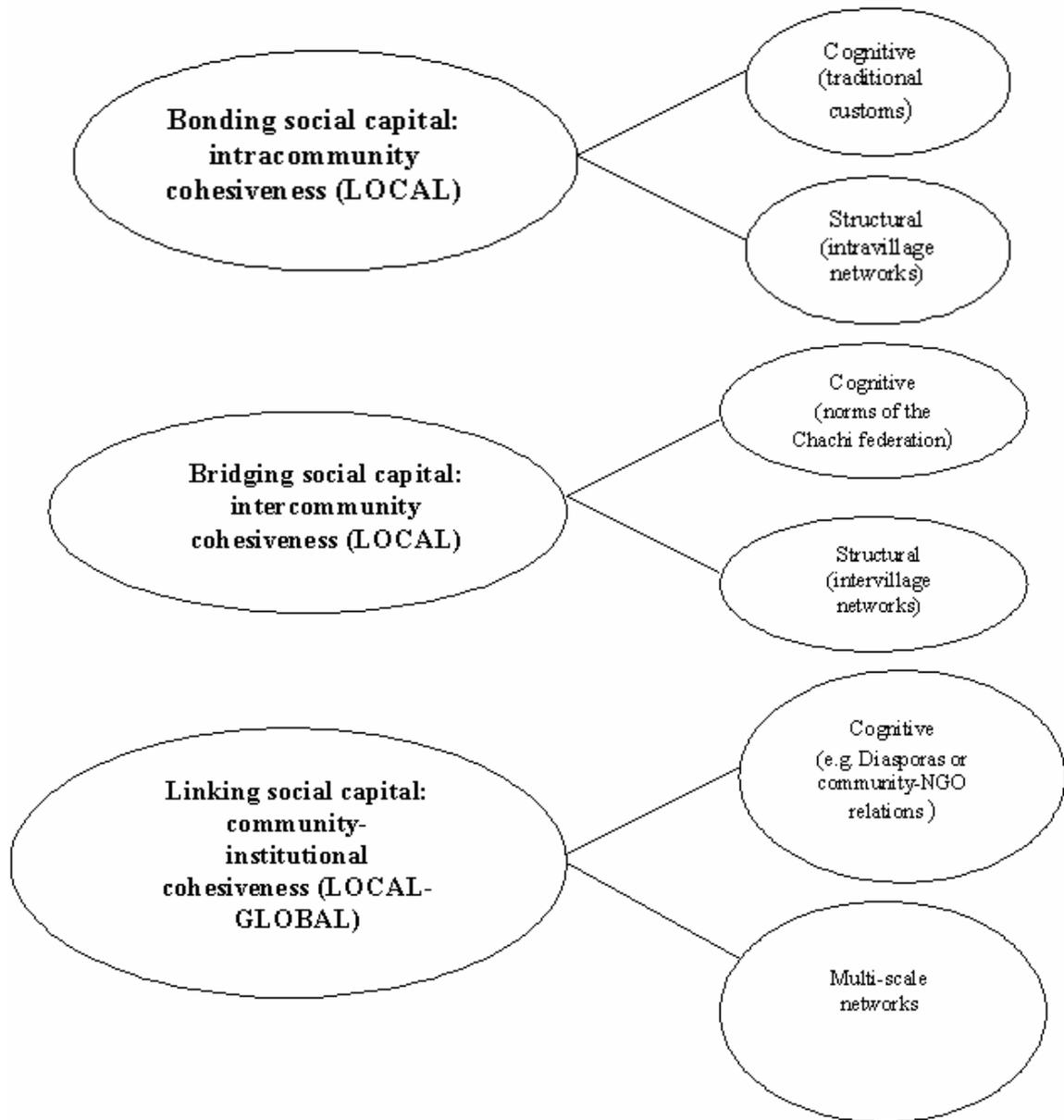


Figure 2.1. Social capital model.

Bray (2003) also cites the importance of cooperative village social dynamics as the responsibility for resource management is passed from bigger agencies to the communities themselves. He uses the 290 to 479 Mexican community forest enterprises as examples of communities that are able to harness their social capital to gain social and economic justice, good forest management, and biodiversity protection. Adopting a definition from Fox (1995; 1996), he describes social capital as “the capacity for self-organization and ability to respond to outside organizing efforts.”

**Higher bonding social capital; lower potential for development (the need for bridging and linking social capital)**

For Portes (1999), the over-enthusiasm and unrealistic expectations about bonding social capital can be problematic. He lists the following four negative effects of the closed networks: “1) the exclusion of and lack of connection to outsiders; 2) the prohibition of individual success as certain individuals seek a free ride and demand equality; 3) restrictions on individual freedoms and creation of inequity via social control; 4) the collective adversity to mainstream norms and a solidarity based on the experience of subordination, and thus ‘the self-reinforcement downward leveling norms.’” (Portes, 1998, p. 12; Pretty, 2003) Some examples mentioned are inner-city gangs, prostitution, gambling rings, and other social circles that have turned out to have “less than socially desirable ends” (Portes, 1998, p.12; Pretty, 2003).

Robert D. Putnam (1993a; 1995; 2000) claims that through participation and reconnection we can reverse the erosion of social capital that presumanly began in the U.S. in the 1960’s. He proposes that social capital is a collective asset and a public good that cannot be appropriated by individuals. His logic is that this may bridge the gap between the rich and poor by spreading GNP more evenly through greater political

participation and expanding social networks. This position could, thus, conclude that closed or bonding social capital is less likely to lead to economic development than bridging social capital and is therefore less resilient.

As mentioned in the previous section, Bray (2003), Narayan (1999), Pretty (2003), Scheffer *et al.* (2002), and some researchers from the World Bank (2003) agree that social capital may contribute to common property resource management by encouraging cooperation among community members and even among various communities. Scheffer *et al.* (2002) highlight that bridging social capital (particularly social networks) is key to conflict resolution and conservation. These researchers have pointed out that the social capital dynamics of a community can adapt to a changing ecosystem by scattering (implying the inclusion of outside organizations and stakeholders), remobilizing and redefining community, polarizing, and institutionalizing. The recreation of collective values and norms as communities experience socio-economic transitions may reduce surprises, and therefore, contribute to the resiliency of a system. The World Bank encourages the transcendence of closed networks to access additional resources and achieve common goals. This is a necessary aspect of development and of the poor “lifting themselves out of poverty” (World Bank, 2000b; World Bank, 2000c). The World Bank draws on the example of the Secoya Amerindians of lowland Ecuador who have mobilized local social capital. They have also formed alliances and have made valiant efforts at protecting their lands and cultures from oil exploitation.

### **Greater development; lower bonding social capital**

The third stance is exemplified by Pena and Lindo Fuentes (1998) who compared social capital with levels of poverty among indigenous rural people, mestizo rural communities and inner-city mestizo communities in Panama. They found that indigenous

people, who lived in the greatest poverty and with the least access to public services, had the highest levels of social capital. They explain this by noting the importance of collective identity and cultural norms in indigenous communities, which lead to more and stronger communal organizations. They describe social capital as an asset or resource of the poor people. Within rural communities, they show how poorer, less educated rural individuals (who have attained primary education or lower) participate in groups that work for the well-being of the community; while the wealthier and more educated people participate more in co-ops that provide individual economic returns. In conclusion, Pena and Lindo Fuentes demonstrate that higher levels of economic development correlate with lower levels of bonding social capital. This position parallels the conclusions of the researchers who state that market integration leads to a disintegration of traditional social organization (or social resilience). It is also the foundation of my hypotheses about social capital, which will be elaborated in chapter 7.

### **Applications of Social Capital**

The World Bank has developed a packet of methods called the Social Capital Assessment Tool (SCAT)<sup>6</sup>, which measures quantitatively and qualitatively both cognitive and structural social capital (Uphoff, 2000) across macro and micro levels.<sup>7</sup> *Structural* social capital analysis examines information and material exchange via people's established roles, social networks, and other social structures. *Cognitive* social capital analysis develops indicators of values, beliefs, behavior, and social norms. Godoy (2001) examined one measure of cognitive social capital: indigenous people's tendencies

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<sup>6</sup> The SCAT was used as a reference in the development of the social capital questionnaire implemented in interviews with the Chachis.

<sup>7</sup> SCAT is an attempt to create universal measures of social capital. Krishna and Shrader (1999) argue that social capital is only a useful concept if a universal measure can be established.

to practice reciprocity in times of medical need as people become more integrated into the market. He found weak support for the idea that markets erode inner village reciprocity, but he urges that further research be done.

Social capital can be critiqued for reducing the social dimensions of life into the economic concept of capital, reducing economic factors to social networks, ignoring the importance of social class (Durrenberger, 2002; Lin, 1999), and relying on circular logic (Portes, 1998).<sup>8</sup> Nonetheless, social capital is a concept that reemphasizes the debates on the relative importance of: individuals versus communities; and economic versus social values. Identifying social capital as the main glue that holds communities and greater societies together, Narayan (1999) and Portes (1998) stress that social capital should be used as a systematic way to untangle and analyze social forces at work. Since economic growth models are no longer satisfactory in explaining inequality between groups of people and their countries, social capital holds particular promise. The authors acknowledge the importance of the term, social capital, because it attempts to encompass and value social phenomena (such as networks and reciprocity), and it gets away from purely individualistic and economic explanations of and contributions to success. In summary, Narayan emphasizes the value of social relationships and their contribution to a positive economic outcome.

The analysis of social complexity and its value may be crucial for two reasons.

First, it may be useful to catalyze discussions about and emphasize the importance of:

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<sup>8</sup> Portes (1998) notes that Putnam (1993b) introduces social capital as both the dependent and independent variable in relation to political organization and participation (“civicness”), as well as economic development. Another example of this is how the World Bank promotes the investment in social capital as rooted in social networks and the product as reciprocity, social inclusion, trust, and shared values and norms (World Bank, 2000c).

pre-market social conditions and social consequences of market integration in local communities; and how these changes contribute to or take away from conservation and development efforts. A better understanding of social dynamics may be crucial to efforts to eliminate poverty, and may also represent “prerequisites for long-term improvements in natural resources” (Pretty, 2003, p. 1914). Secondly, indigenous groups and/or communities may find it useful to create a self-awareness of their socio-cultural circumstances and processes as they integrate into a more market-oriented economic system so they can self-organize more efficiently and effectively.

The social capital literature provides a useful set of empirical indicators that can be used to measure the nature and the degree of social change within a community. By comparing social capital indicators in the two Chachi communities, it is possible to draw inferences regarding the effect of market integration on the social networks and cultural values that influence the relationships between people and the natural environment.

### **Statement of the Problem**

Though today the Chachis still depend largely on subsistence agriculture, fishing, and hunting, the purchase of Western goods has increased with their growing involvement in the market. The earliest documentation of their involvement is from the 1920’s with the harvest and sale of tagua nuts, commonly known as plant ivory, which were used for European buttons. Similar cycles of exploitation included the rubber boom, the post-WWII Ecuadorian banana boom, and the demand for coffee and cacao. The Chachis report that they have always exploited wood, but for the purpose of making and selling canoes, which is one of the principal ways that their grandfathers participated in the market (along with the sale of pigs). Today logging, cattle ranching, working as school teachers, and the sale of women’s craftwork take center stage in Chachi cash-

generating activities. Based on the debates in the literature, this thesis addresses the question of whether or not greater participation in market activities causes intensification of land exploitation and negative social effects. The design of the thesis research will be discussed in the subsequent chapter.

## CHAPTER 3 RESEARCH DESIGN AND DATA COLLECTION

### **Introduction**

This study is a comparative analysis of two villages (La Ceiba and Loma Linda) in the Chocó rainforest along the Northwest coast of Ecuador. This chapter outlines the design and methods of data collection used among the Chachis in the summer of 2003. After explaining why these particular sites were selected for research, this chapter will detail the methods used in data collection and the strategic decisions made. The chapter will then end with the operationalization of two terms used frequently throughout the text: market integration and social capital.

### **Site Selection**

La Ceiba is located on the Tululbí River, a tributary of the Santiago River. The community's land borders the Awá Ethnic and Forest Reserve. Loma Linda is located on the Cayapas River and within the buffer zone of Cotacachi-Cayapas Ecological Reserve. Loma Linda is four hours by motorized canoe from the nearest town, Borbón. After the implementation of a logging road in 1999, La Ceiba is now less than one hour from San Lorenzo. Both the residents of La Ceiba and Loma Linda live mostly from subsistence activities. Yet, with a greater need for income generation as social and ecological circumstances change, the people in both villages participate in market activities more and more. These two villages were selected for research because it was thought that the differences between the two sites could be attributed to the greater degree of market integration in La Ceiba. Hence, in keeping with a “natural experiment” design, a

comparative analysis of the two places generates empirical evidence of the various ways (and the degree to which) involvement in the market influences behavior, attitudes, and internal organization.

### **Methods of Data Collection**

I used two main methods of data collection: a two-part formal interview; and formal and informal interviews with key informants from both villages. Moreover, I drew on previous years' experience in the communities and the three month period when I was researching this topic.

### **Sample Selection**

The sample was chosen randomly, using a two digit table of random numbers. I chose twenty-two out of thirty three households in La Ceiba and twenty out of thirty-nine households in Loma Linda.

### **Informally Structured Interview**

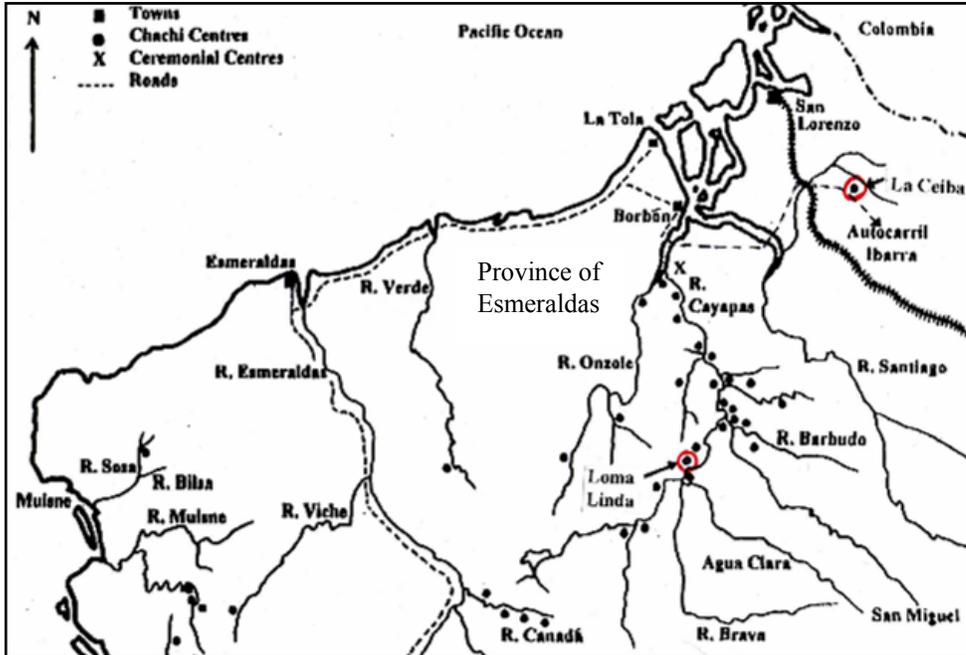
The informal and unstructured interviews consisted of in-depth conversations. We talked about a range of topics including: the mines in the area, forestry networks and laws, the effectiveness of logging, and changes in seasonal fishing techniques.

### **Formally Structured Interviews**

The formally structured interviews included economic and social questionnaires. The economic interviews were held jointly with the household head and the spouse. The social interviews were conducted with the household head and the spouse separately. The economic questionnaire included various measures and indicators of market integration. Key indicators were the productive activities performed, the time devoted to each, and the income earned for their efforts. Measures of subsistence and market activity were based on: the amount of time spent on each activity; where materials were



Figure 3.1. Map of Ecuador (United States Central Intelligence Agency, 1991). The Esmeraldas province, which is the area of study, has a box around it.



Source: adapted from Medina, 1992. Circled dots indicate study sights.

Figure 3.2. Map of Chachi village locations; La Ceiba and Loma Linda are circled in red. obtained and how much they cost; the frequency of the sale of goods; and the estimated income generated from the sales. The section on agriculture and logging contained many more questions further discussed in the fifth chapter.



Photograph by Ladna Miller.

Figure 3.3. Author conducting a formally structured interview.

The general social questionnaire had four main sections. The first section asked about housing and the tools and household items owned.<sup>1</sup> The second section asked about respondents' demographics and level of education, as well as that of their parents. The third part measured structural social capital (organizational density, networks and mutual help organizations, networks with NGOs and other outsiders, exclusion, collective action, and conflict resolution). The last section focused on cognitive social capital, which includes inter-community solidarity, trust, reciprocity, and cooperation. The general questionnaire that began with sixty-seven questions was reduced to forty-one questions due to time constraints.



Photograph by Author.

Figure 3.4. Respondents during an interview.

A separate formally structured interview was used with key informants. Four leaders in each village (two women and two men) were asked detailed questions about

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<sup>1</sup> This section could have been part of the economic interview, but because the economic questionnaire was so extensive already, I decided to make it part of the social interview.

the social organization and dynamics in the village. The questions in section three on structural social capital that were cut for the majority of households were used for key informants. These detailed questions dealt with the organizational history and social structure of the village. Key informants were also qualified to answer questions on general knowledge (i.e. instances of collective action in the last year) and more qualitative issues.

### **Time Frame**

Certain activities, such as logging, making canoes, making crafts, and hunting, do not fit into the weekly schedule. After pre-testing the questionnaire, I concluded that the best way to capture the time frame perceived by respondents was to use one standard time frame for all activities. A month was chosen because it was a good compromise between the activities that can be measured on a weekly basis, and the activities practiced more infrequently such as canoe-making and logging.

### **Measuring Market Integration**

Market integration is measured by Godoy (2001) as the sale of goods or services, the portion of annual crops sold, value of credit, and earnings from wage labor. Other ways of measuring the degree of market interaction include taking inventory of the number and kind of household items such as radios, guns, kitchen knives, tin roofs, and rubber boots (Henrich, 1997).<sup>2</sup> In this thesis, a market activity is defined as an activity in which goods and/or services are given a certain value and exchanged for money. In the

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<sup>2</sup> Henrich chooses to measure market “incorporation” in this manner based on the fact that thirty-nine of the forty respondents who he interviewed said that they bought “things they need” and listed such items as those above with the money they earn. Godoy (2001) discusses how this measure of market integration overlaps with and could also be confused with a measure of acculturation, modernization, and urbanization. The measure of market integration employed by Heinrich would not be appropriate to the Chachis who responded they spend the majority of their money each month on food (as demonstrated in chapter 5).

comparative analysis of the two sites, the “degree of market integration” is a community-level concept that can be operationalized in terms of one empirical indicator: time spent on market activities versus subsistence activities.

### **Measuring Social Capital**

The varying definitions of social capital mean that a single, “true measure is neither possible nor desirable” (World Bank, 2000a, p.1). In this study I have adopted two measures of social capital drawn from the World Bank’s social capital assessment tool (SCAT). The indicators refer to “structural” and “cognitive” social capital. Structural social capital assesses the degree of organization within a group and with other people. Cognitive social capital refers to the bonds between humans.

#### **Structural Social Capital**

In keeping with the social capital literature and the World Bank questionnaire, I integrated selected aspects of structural social capital analysis into the surveys. The original questionnaire that was later geared towards key informants included fourteen questions on organizational networks, mutual benefit networks, egocentric networks, exclusion, collective action, and conflict resolution. Aspects of structural social capital that were included in the general questionnaire pertained to organizational density, exclusion, and conflict management.

Organizational density included the internal and external organizations that are important to a village. Coupled with the external social networks in nearby towns (number of friends they have via organizations or market exchanges), these indicators measured differences between the villages in terms of dependence on external people or organizations in their day to day lives.

The section on exclusion and conflict management asked respondents about differences between people that may divide the village. Examples include levels of education, ownership of material possessions and land, religion, politics, and age. I then asked if current problems mentioned also existed ten years ago, but these results were not conclusive and were excluded from the final analysis. I also asked the interviewees how they resolve these problems; if they think their village is generally peaceful or conflictive; and how much influence they believe they have to make a change in the village.

### **Cognitive Social Capital**

Measures of cognitive social capital were taken from the questionnaire written by the World Bank. The indicators of cognitive social capital included the following concepts: solidarity, trust, reciprocity, and cooperation.

The solidarity questions asked respondents who they could rely on in case of personal or economic emergency. The section on trust queried participants on: whether people in the village generally trusted one another; if the level of trust had changed in the last ten years; if the majority of people are honest and deserve trust; and whom they would leave their farm and children with if they had to go on a trip. In the section on reciprocity and cooperation, only two questions were asked: 1) “all in all, what do you think of the level of cooperation in this community?” 2) “ten years ago, what do you think of the level of cooperation in this community?”

### **Conclusions**

The research methods described in this chapter are used to systematically compare La Ceiba, the village with road access to the market, and Loma Linda, the more isolated village. In chapters 5 and 6, I will test the following overall hypothesis: *The village with*

*greater market integration will have more environmentally destructive money-generating practices and a lower level of bonding social capital.* Because it is necessary to test more specific hypotheses to draw overall conclusions about the relationships between market integration, environmentally destructive activities, and social capital, other more specific hypotheses follow:

*Hypothesis 1 (tested in chapter 6).* People living in the Chachi village nearer to a town center and connected by road will spend more time on market rather than non-market activities, and will be engaged in a less diverse range of subsistence activities.

*Hypothesis 2 (tested in chapter 7):* The Chachi village that spends the most time on logging and cattle ranching (environmentally destructive market activities) will have lower levels of both structural (social networks) and cognitive (norms and levels of trust) types of *bonding* social capital.<sup>3</sup>

*Hypothesis 3 (tested in chapter 7).* The effect of market integration on levels of bonding social capital will vary by gender (sex and age) and level of education.<sup>4</sup>

This next chapter will discuss the comparability of environmental and the social contexts of the two communities. The comparability of the two research sites is a necessary condition for a research design that seeks to test the general and specific hypotheses noted above.

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<sup>3</sup>Simultaneously, communal bridging and linking social capital (both of which include external cognitive and structural) will increase.

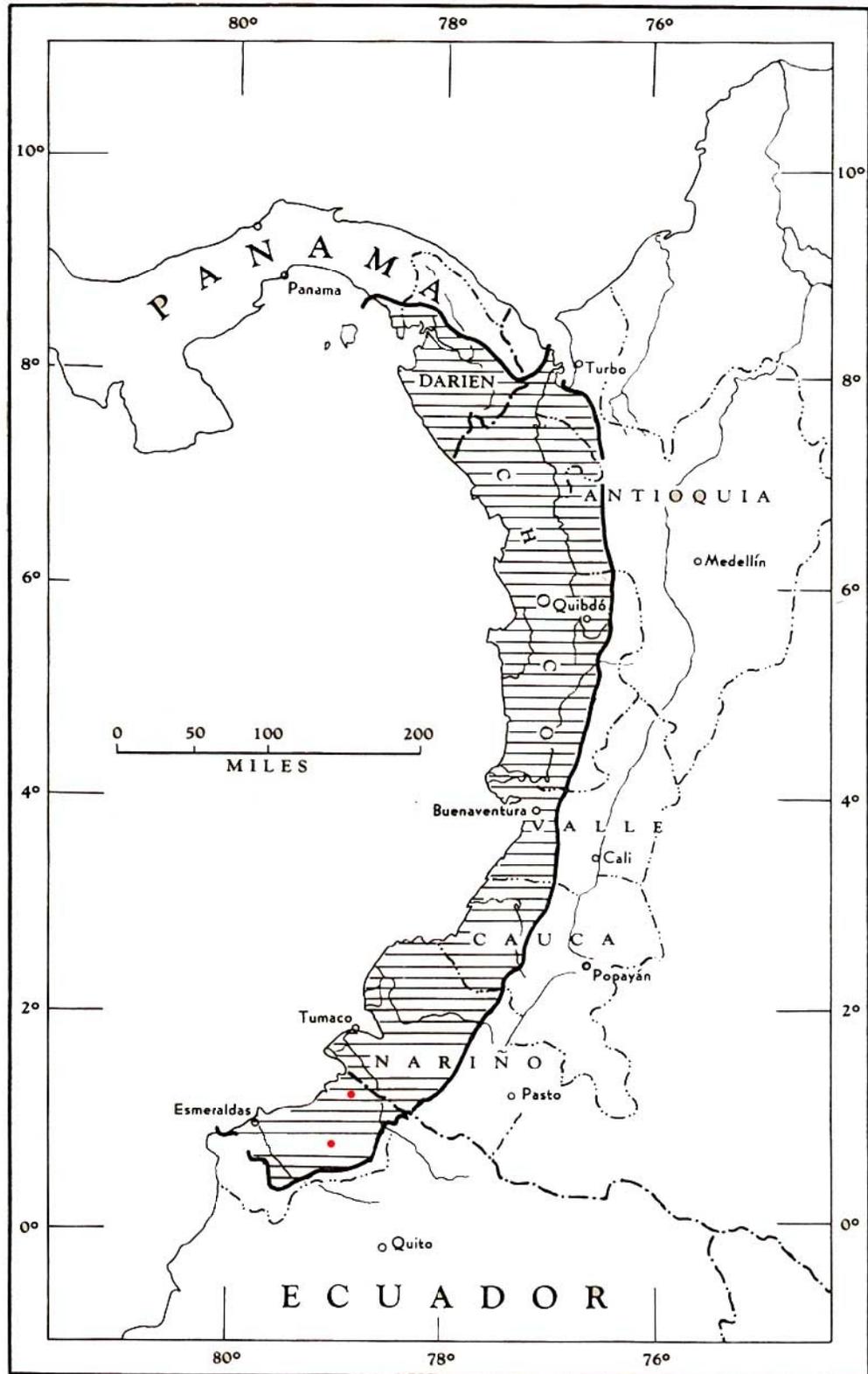
<sup>4</sup>In a study done by Bolaños (2003), there is a striking difference between men and women's relationships with the environment. There may be a difference between older and young people who have differing levels of education and different degrees of interaction with the market. Godoy (2001) notes that higher levels of education lower deforestation rates.

## CHAPTER 4 COMPARABILITY OF THE TWO COMMUNITIES

While no two geographic places are identical, the cornerstone objective in this study is to verify that the main difference between the two communities is the degree to which they are integrated into the market. Before comparing the degree of market integration between the two sites, it is important to examine the socio-environmental context in order to verify that the two sites do not differ significantly in terms of soil quality, temperature and humidity gradients, rainfall, proximity to the river, and other variables that could affect environmental characteristics, agricultural output, and the socio-economic system. Secondly, it is important to review the historical background and the cultural heritage of both villages, as well as the political and economic structures in each context.

### **The Chocó**

The bottom tip of the Chocó Rainforest comes down from Panama and Colombia into the northeast of Esmeraldas, the northernmost province of Ecuador that stretches from the Western flank of the Andes Mountains to the Pacific and includes seven counties. The Ecuadorian Chocó, an area of 4500 square km., is also referred to as the *Region Noroccidental* (Valverde, 1998). It was once known as *la provincia verde*, the green province, and thus its name, Esmeraldas, meaning emerald. Although the Ecuadorian Chocó officially includes some of the Andean foothills, the lowland evergreen rainforest will be the section of the region that is referred to in this document.



Source: West, 1957.

Figure 4.1. The Chocó Region. Study dots indicated study sights.

The Ecuadorian Chocó has been marginalized from the Colonial Period until the middle of the twentieth century (Arguello, 1995). Due to its harsh climate and remote location, it was classified as unsuitable for the settlement of colonists and economic development. In 1958, the construction of highways began (Juncosa, 1988). At this same time, the Agricultural Reform and IERAC-Instituto Ecuatoriano de Reforma Agraria y Colonización (now INDA- Instituto Nacional y Desarrollo Agrario) promoted colonialization in these areas, which accentuated forest destruction (Dodson and Gentry, 1991; Ecociencia *et al.*, 1996; Sierra, 1999). The area was most affected from 1960-1980 with the construction of roads and population growth.

The Chocó of Ecuador has been pinpointed as one of the two most important places for biodiversity in this rapidly changing and highly diverse country. In the Esmeraldas province there are 341 endemic species, which represent 45.8 % of the endemic coastal species in Ecuador (Valencia *et al.*, 2000). Currently, this diversity is at great risk due to the massive extinction of plant species resulting from deforestation and other human activities (Dodson and Gentry, 1991; Josse *et al.*, 2001). Only 19% of this lowland area of the Chocó remains, and it has been declared a biodiversity “hotspot” by the World Bank and the World Wildlife Fund (Dinerstein *et al.*, 1995; Sierra, 2002). The lowlands of Esmeraldas have been promoted as a provider of domestic timber in the last decades. According to McIlvaine (2000, p.92), “approximately 80% of Ecuador’s domestic timber is extracted from the lowland communities surrounding the Reserva Ecologica Cotacachi-Cayapas.” African palm plantations and gold mining have also affected the area.

### **La Ceiba**

La Ceiba is legally a commune (as opposed to a community that must be part of a center that unites various communities). It is located in San Lorenzo County, on the

Tululbí River, an hour from San Lorenzo by bus or truck. As of 1999, La Ceiba has benefited from a road that was constructed by CODESA (Contrachapadas de Esmeraldas S.A.)<sup>1</sup>, a logging company with whom the community made their first communal wood sale. The land owned by La Ceiba borders the Awá Ethnic and Forest Reserve (1300 square km.), a binational reserve.<sup>2</sup>



Photograph taken by Author.

Figure 4.2. Chachis from La Ceiba on the Tululbí River.

### **Loma Linda**

Loma Linda is situated within the county of Eloy Alfaro. It is 75 km. southeast from the nearest town of Borbón. It takes on average four-and-a-half hours to travel upriver from Borbón to Loma Linda by motorized canoe. Consequently, the people of Loma Linda go to town much less frequently than those of La Ceiba. The community

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<sup>1</sup> CODESA and SETRAFOR are the main logging companies in the San Lorenzo area.

<sup>2</sup> Both Colombia and Ecuador work with the Awá on conservation and development projects (Neill, 1997).

borders the biggest natural reserve in the Northwest of Ecuador, the Cotacachi-Cayapas Ecological Reserve (2040 square km.).<sup>3</sup>



Photograph taken by Author

Figure 4.3. Loma Linda on the Cayapas River.

### **Environmental Features**

Both villages differ only very slightly in terms of environmental features. The key indicators to be discussed are rainfall, humidity gradients, temperature, topography, soil quality, and proximity to the river.

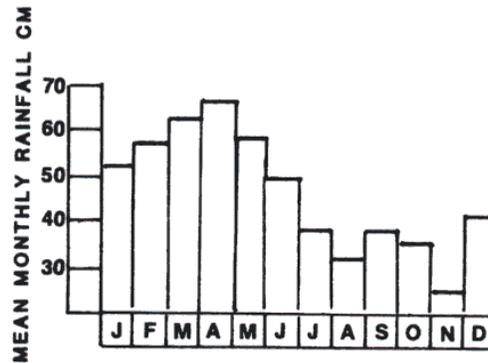
### **Climate and Rainfall in the Ecuadorian Chocó**

The lowland Chocó is the wettest lowland forest in tropical America and the world. Its climate is created because the El Niño<sup>4</sup> current holds sway over the cold Humboldt

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<sup>3</sup>The park includes Andean *paramo*, cloud forests of the Cordillera Occidental (the western flanks of the Andes that traverse Ecuador), and humid evergreen ecosystems that are at the altitude of 200 m. Forty percent of the reserve is below 900 m in the lowland forests (Neill, 1997).

current in the Pacific Ocean. El Niño creates warm air that blows across cool land. As the warm air hits the Andes Mountains, it cools, produces rain and, therefore, a humid rainforest climate (Forsyth and Miyata, 1998). The relative humidity is 87% with 78% cloudiness; this means that this area almost always has cloud cover (Ecociencia *et al.* 1996).



Source: DeBoer, 1996.

Figure 4.4. Average monthly rainfall at Zapallo Grande during the period 1961-1984.

Unlike Colombian sections of the coastal rainforest, the climate of the Ecuadorian Chocó includes a definite “dry” season. Figure 4.4 shows that the average monthly rainfall varied between 25 cm (250 mm.) and slightly less than 70 cm (700 mm.) at Zapallo Grande (half-hour by canoe from Loma Linda) during the period 1961-1984.

The heavy rains fall at Christmas time and continue until June. Although the climate of Esmeraldas is becoming drier due to greater deforestation, rain falls year-round on both

<sup>4</sup> Centuries ago, El Niño, meaning “the boy” and referring to Christ child, was named by the fishermen of Piura, Peru due to its activity around Christmas time. They recognized the warm current especially because it brings a different catch of fish, more tropical fish and declines of local stock. During El Niño years, the current that originates off the coast of Colombia, forces the Humboldt Current out to sea. It causes more rain and flooding further south along the Pacific coast, and even to Ica, Peru. Only recently has its sporadic oscillating movement, which in “El Niño years” is an exaggeration of usual seasonal cycles, been recognized as a phenomenon or an event. The term phenomenon (often referred to as the ENSO phenomenon) took hold when El Niño’s cycles were understood to work through the trans Pacific (indeed global) Southern Oscillation. (Earls, John, pers. comm.; Gommers *et. al.*; National Oceanic and Atmospheric Administration, 2004 )

the Tulubí and the Cayapas Rivers, with the most rainfall in April and the least rainfall in November. During the winter months there is heavy rainfall (which usually occurs daily from the late afternoon through early morning) and strong sun. Consequently, the rivers rise and carry increased sediment.

The rainfall map (Figure 4.5) shows that La Ceiba and Loma Linda are in the same rainfall zone. Rainfall estimates for this area are said to be between 4000 mm and 8000 mm per year (Sierra, 1996), with the average rainfall in Borbón at 3,486.9 mm/year. Other estimates have been more conservative. One NGO employee who has worked with communities in the Chocó for the last 12 years reported that the climate in the Esmeraldas province is becoming much drier with deforestation. He explained that the farther south one travels from the Colombian border, the less rainfall there is, but really rainfall varies from hillside to hillside. He estimated that La Ceiba has an average of 2700 mm. per year and that Loma Linda has perhaps 2,500 mm. per year. He explained that the climate of La Ceiba is actually a bit more humid than that of Loma Linda, which is why cacao is widely cultivated in Loma Linda rather than La Ceiba. <sup>5</sup>

The average temperature on the Cayapas River is 25.6 degrees Celsius (McIlvaine, 2000). It has been estimated to be the same in the San Lorenzo area.

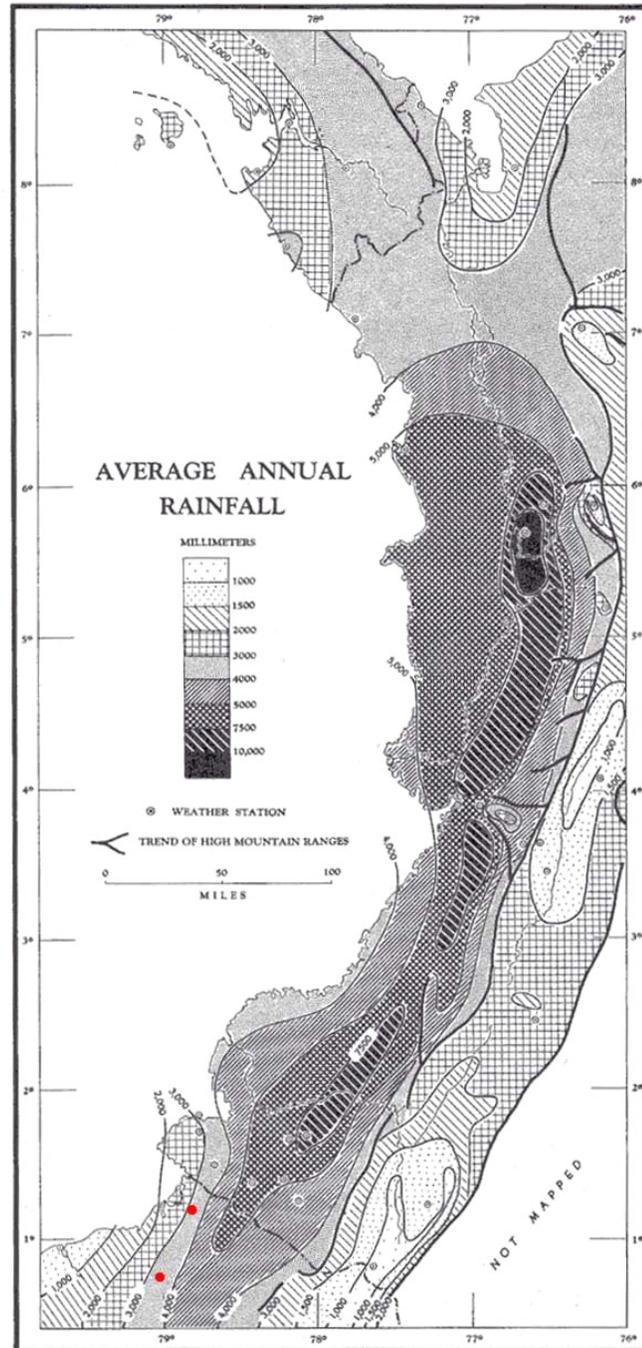
### **Physical Features**

The Chocó reaches 900 meters and has landscapes varying from deep river beds and canyons, flood lands with moderate slopes, and flat lands. The altitude of La Ceiba is 80 m above sea level. Yet, the land in their territory quickly rises to steep ridges with an altitude of 120 meters. On the other hand, Loma Linda is located slightly higher at an

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<sup>5</sup> Apparently, cacao is a good indicator of relative humidity because they rot in areas that are too humid.

altitude of 90 m, but local ridges are thought to rise more gradually to a height of 100 meters.



Source: West, 1957.

Figure 4.5. Average rainfall of the Chocó. The dots indicate study sites.

Footpaths still follow these ridges throughout the Chocó. The forested slopes are residual remains of the *esteros* (varying from large streams to small creeks). As the *esteros* branch out, criss-cross, and twist through the forest, they have shaped the landscape. The slopes can be as steep as 70 degrees, and contain shallow and acidic soils (McIlvaine, 2000). The Chachis generally do not plant on these steep slopes; they have chosen strategically to settle on the banks of the rivers, including the residents of both La Ceiba and Loma Linda. The rivers act as a system of transport, exchange, a place of bathing, a place to wash clothes, a source of sustenance, and a source of “valuable strips of fertile alluvium” (DeBoer, 1996, p.12).

La Ceiba and Loma Linda are located in two different geological zones. Loma Linda is located on Quaternary diluvial soils as well as soils from the Tertiary geologic period that formed during the last ice age (Solis, n.d.). These latter soils are predominately marine soils from the Pliocene and Miocene time periods. Soil types include *Entisols* and *Oxisols*, except along the rivers where one may find *Inceptisols*.

McIlvaine (2000)<sup>6</sup> explains that alluvial soils found by river banks are one of the two major soil types in the Cayapas-Santiago area, which were classified by a French-Ecuadorian team of ORSTOM-PRONAREG (Office de la Recherche Scientifique et Technique OutreMer Acuerdo Mag-Programa Nacional de Regionalización Agraria) as *Distropepts*, suborder *Tropepts*, order *Inceptisols* (McIlvaine, 2000). These *Inceptisols* are sedimentary soils that contain clays, sandstone, conglomerate slime, and small, water-rounded pebbles.

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<sup>6</sup> McIlvaine did her comparative fieldwork in San Miguel, a negro commune, and Loma Linda during the summers of 1996 and 1997.

The second type of *Tropepts*, *Oxisols*, contain sandstone, clays, slime and no pebbles, and are susceptible to water-logging and aluminum toxicity. DeBoer (1996) suggests that when choosing an agricultural plot (which the Chachis most commonly refer to as a *chacra*), the Chachis especially avoid these yellow to red, clay soils, and search out ‘sandy’ or ‘black’ earth (in their own terminology ‘*tierra llena de humo*’). These soils are located inland and along the rivers. The inland black soils occur frequently enough and in conjunction with archeological sites, so that DeBoer suspects they are in part anthropogenic.

La Ceiba is located on lands formed in the Quaternary geological period, which has alluvial soils with the most recent terrestrial and marine sediments (Solis, n.d.). This means that one is more likely to find *Inceptisols* and *Entisols*, but *Oxisols* are still predominant away from the riverbanks. The former are rich for agriculture, which makes sense since the Chachis of La Ceiba said the reason their grandfathers left the Cayapas River and settled on the land where La Ceiba is located is because they were looking for better agricultural lands.

### **Vegetation**

The forests of the Chocó lowlands have three stories, or strata. The top story has trees that rise up to 40 meters and have buttressed roots. It is dominated by five families: *Myristicaceae*, *Moraceae*, *Arecaceae*, *Fabaceae*, and *Meliaceae* (Sierra, 1999). Some common species are *chanul* (*Humiriastrum procerum*)<sup>7</sup>, *cedro* (*Cedrela odorata*), *guayacán* (*Tabebuia guayacan*)—used for the foundations of houses and often remains when all other wood has rotted, *damagua* (*Poulsenia armata*)—the source for bark cloth,

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<sup>7</sup> Chanul, a slow growing species, has been greatly affected by deforestation.

and *ceiba*—after which La Ceiba is named (McIlvaine, 2000). The second story includes abundant species of palms that prove to be very useful for construction. Examples include: vegetable ivory or *tagua* (*Phytelephas auquatorialis*), which is used for palm thatching; and *pambil* (*Socratea sp.*), which is used for the floors of their homes. The third stratum, namely the understory, has a great deal of plants from the *Rubiaceae* plant family and palms. Tree trunks are covered by epiphytes that are in the *Cyclanthaceae* and *Araceae* families, woody vines, ferns, mosses, and lichens (Neill, 1997). Other species characteristic to the area are: *moral bobo* (*Clarisia biflora*), rubber or *caucho* (*Castilla elastica*), *cuangaré* (*Otoba gordoniiifolia*), *guadaripo* (*Nectandra guararipo*), *jigua* (*Ocotea floccifera*), ice cream beans or *guaba* (*Inga spp.*), and *flor de mayo* (*Brownea multijuga*) (Sierra, 1999).

Just as rainfall and humidity vary based on the topography of the Chocó, so too does the vegetation vary slightly from hillside to hillside and from ridge to ridge. Consequently, in La Ceiba and Loma Linda, there are distinct forests some variation. Nevertheless, forests surrounding both communities have similar vegetation, as mentioned in the aforementioned paragraph.

### **Socio-Cultural Features**

After confirming that La Ceiba and Loma Linda only differ slightly in their environmental features, it is important to examine their socio-cultural background. The following sections will describe the Chachi population, their cultural history, and their socio-political organization, as well as the specific socio-cultural and political backgrounds of both La Ceiba and Loma Linda.

## Population

The most recent census conducted by the Chachi Education Department estimated the Chachi population to be 9,500 people, spread throughout the coastal province of Esmeraldas in Ecuador (Wiebe, Neil, pers. comm.).<sup>8</sup> Although they were often referred to as the Cayapas in the last century, in 1978 the Chachis declared that they prefer to call themselves the Chachi, which means people in their language (Añapa Cimarron, 2003).<sup>9</sup> Although many live along the banks of the Tulubí, Verde, Canandé, and Muisne Rivers and in cities, an estimated 2000-2500 of the Chachis live along the banks of the Cayapas River and its headwater effluents, the San Miguel, Onzolé, and Grande Rivers (Deboer, 1996; Medina, 1992).

In 2002, La Ceiba had 33 families and 160 people. There were 90 males and 70 females. The majority of the population consisted of children under 9 years old. There were three times as many people under 9 years old as there were people aged 40 to 69 (Altropico, 2000). According to the 22 households interviewed during fieldwork in the summer of 2003, the average number of people per household in La Ceiba was 5.7.

Loma Linda is slightly bigger than La Ceiba. The community has 39 families and about 256 people. The average number of people per household is also slightly bigger. There is an average of 6.3 people in each family.

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<sup>8</sup> The exact population size is questionable, as different sources give different numbers. For example, Medina (1992) gives the approximation of 4,776 Chachis.

<sup>9</sup> The Chachis have referred to themselves as the Chachis since they can remember. One informant believed that they (and the main river on which they live) were called the Cayapas because a priest may have thought that was their name when he heard them referring to one another as *kaa apá*, meaning little father. According to the informant, the Chachis speak to another in these diminutive and affectionate ways.

### Chachi Cultural History

The Chachis are a branch of the Chibcha tribe that today includes such tribes as the Awá and Tsáchila of Ecuador, the Kuna of the San Blas Islands of Panama, and the Kogui of the Sierra Madre of Colombia. Chibcha origins began in Bogota, Colombia and spread north into Nicaragua and Panama (Von Hagen, 1939). This cultural group arrived to Ecuador via the Putamayo and Pimampiro Rivers in the Amazon Basin. Once in Ecuador, they mixed with the Caribes and Hazauacos, settled near Ibarra, and populated the coast and the Ecuadorian Amazon (Añapa Cimarron, 2003; Medina, 1992).

The Awá (the Kwaiker or Coaiquer) and the Tsachila (the Colorados) are other Amerindian groups of the western lowlands of Ecuador. Their languages, Awapí and Tsáfiquí, respectively, are related to Cha'palaa, the Chachis' language. All languages are part of the Barbocoan linguistic group. Barbacoa, sometimes called "Malla", is a Sindagua dialect of the Chibcha language (Moya, 1998; West, 1945).<sup>10</sup>

When conducting field research interviews in 2003, household heads were asked what language they spoke in their homes. In La Ceiba, the village that is connected to San Lorenzo by road, all households spoke Cha'palaa at home except one. In Loma Linda, the majority of households also speak their native language in the home with the exception of five household heads who *sometimes* speak Spanish to their children. Among the Chachis of Loma Linda, Spanish is emphasized as important as education takes a priority. According to one professor, one must be bilingual to graduate.

Ethnographic studies of the Chachis include different versions of their history (Añapa Cimarron, 2004; DeBoer, 1996; Medina, 1992;). Exactly when the Chachis

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<sup>10</sup> Karsten (1924) suggests that Cha'palaa, Awapí and Tsáfiquí are simply different dialects of the principal Chibcha language, although they cannot understand each other's language.

began to identify themselves as a distinct cultural group from the Chibchas, and how long it took them to arrive from Nicaragua to the Western flank of the Ecuadorian Andes, are unknown. Perhaps what is best known about the Chachis is their move from the Andes region to the Ecuadorian Chocó about 200 years ago.

Although they are considered indigenous to the lowland Chocó area, in a sense they represent some of the first colonists (bringing their own culture and learning from the other cultures in the area to which they have migrated) to the Santiago-Cayapas area. Chachi culture today represents a recent adaptation of the Chachi people to the coastal lowlands. This cultural image is as follows:

If one had to give a thumbnail sketch of the Chachi ethnography, one should emphasize that they are river people, equally at home in a dugout canoe as on land, that they tend to live in single-house settlements dispersed along rivers, that plantains and fish are staples of their diet, and that they speak a language related to the Colorado and Kwaiker. (DeBoer, 1996, p. 176)

Upon arrival in the Andes, the Chachis first settled near Ibarra (2250 m), which is located north of Quito (2850 m) (Barrett, 1925; DeBoer, 1996;). Yet, there is further uncertainty as to when or why the Chachis left Ibarra to migrate to Pueblo Viejo (*Tutsa'* in Cha'palaa). It is unknown whether they moved in response to the Inca, or in fear of the Spaniard's horses, or because of modifications of lifestyle due to colonization (DeBoer, 1996). The Chachis lived communally in Pueblo Viejo and grew mostly corn and potatoes. This is the earliest Chachi village that is documented.<sup>11</sup> It was located at the head of the Santiago River.

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<sup>11</sup> It is also documented that some of the Chachis left *Tutsa'* because Catholic priests wanted to cut their hair. Today the Chachis refer to those who left *Tutsa'* as the *Paj unduula*, shamans who speak different dialects. The *Paj unduula* are believed to walk around at night and to have the ability to hypnotize people or turn themselves into bamboo if they are in danger of being seen (Añapa Cimarrón, 2003).



Figure 4.6. *Kaa shinbu* (Chachi woman) in “traditional” dress.

Barrett (1925) reports that when the Chachis lived in Tutusa’ (Pueblo Viejo), their biggest threat was the Malabas or Malaguas (called this on a map drawn by Maldonado in 1750).<sup>12</sup> The Chachis called this indigenous tribe the *Watsú* or *los Indios Bravos*, and the mestizos called them the *Caribes*. (DeBoer, 1996; Von Hagen, 1939). Often, the Malabas have been described as cannibals (Salazar, 1979; West, 1945), and the Chachis report that they were often attacked and preyed upon by this group.

Sometime between 1749 (when missionary records last show the Chachis living in Espiritu Santo, or Pueblo Viejo) and 1809, the historically peaceful Chachis put together war bands (which according to the Chachis were guided by jaguars). Armed, they entered the Cayapas River basin by way of the Zapallo River, the San Miguel River, and then down the other headwater rivers.

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<sup>12</sup> In 1809, Stevenson (1825) took two Chachis to speak with the Malaguas and he reported that their language seemed like Quichua. He believed they were descendents of the Puncays of Quito who escaped the Incas or corralled by the Christian priests.

They expelled or killed the *Indios Bravos* along the way, removing their crops by the root to make sure they would not return (Barrett, 1925). An Englishman named Stevenson reported that the Malabas moved to the San Miguel River in 1809 (DeBoer, 1996). The Malabas have now disappeared, and the land where they once resided is now Chachi land. Yet, according to the Chachis, smoke seen in the hills provides evidence that the *Indios Bravos* may still be found on the Grande River (DeBoer, 1996).

The first Chachi village in the lowlands was called Punta Venado, where they installed a bell they had brought from their village near Ibarra; the bell remains today. The Chachis adapted a whole new way of life when they settled in single-family households in the lower Cayapas River (Barrett, 1925). Upon arriving in the Cayapas basin, the Chachis concentrated on fishing and agriculture more than hunting (Holm-Nielson et al., 1983). Thought to be primarily hunters, fisherman, and foragers, they gradually focused more on fishing and horticulture. They also shifted from growing corn and potatoes near Ibarra to principally growing plantains and other crops introduced by the Spanish and other cultural groups of Ecuador (e.g yuca, *Manihot esculenta*, comes from the Amazon Basin).

It has been reported that in the beginning of their time in the Cayapas Basin, the Chachis also settled near La Tolita and Pampa de Oro on the upper banks of the Cayapas River near the Pacific Ocean. Villavicencio (1858) reported that the Chachis there were wealthy from the gold<sup>13</sup> and pitas (a plant from the *Bromeliaceae* family that they used

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<sup>13</sup> West points out that there is a narrow belt of placer deposits of gold that are at the foot of la Cordillera Occidental, the Western Flank of the Andes in Colombia and finishes in Esmeraldas. It is now buried in streambeds, and the Santiago Drainage is named as an important mining district. In February 2000, with the backing of the Catholic Church, FECCHE (the Chachi Federation) and the Federation of the African Ecuadorians organized against the presence of a gold mining company in the Santiago-Cayapas River Basin, and the company was forced to leave.

for fiber). At that time they still communicated back and forth with small villages from Cotocachi and Otovalo, and the Chachis went back and forth between



Photograph by Tanya Fisher.

Figure 4.7. “Traditional Chachi” single-family dwelling raised on guayacán posts with woven tagua palm fronds as the roof. The Chachis use no nails in the construction of their traditional homes.

Tutsa’ and their new location. San Miguel de los Cayapas, which is a half-way point, was also one of their earliest establishments.<sup>14</sup> By 1908, the Chachis no longer lived along the headwaters of the Santiago River in Pueblo Viejo (Tutsa’) or in La Tolita; instead, they had settled in Punta Venado, Zapallo Grande, and San Miguel (Barrett 1925). Nevertheless, Añapa Cimarrón (2003) states that a Chachi named Ambu Rucu, meaning good old man, was the last man to leave Tutsa in 1935.

In the eighteenth and nineteenth centuries, many Africans were brought to work in gold mines around Cartegena, and they began to settle on the Esmeraldas shores

<sup>14</sup> Chachis lived at the head of the Zapallo and San Miguel Rivers (Basurco, 1844). San Miguel de los Cayapas was recorded on a map of the Esmeraldas province done by Wolf in 1879 (Altropico, 2000).

(Thurston, 1997). During the late 1700's, the *Negros*, marooned Africans, escaped from a slave ship. In the late nineteenth century more *Negros* migrated to the Cayapas/Santiago area from Colombia, which may explain why the Chachis gradually moved upriver to their present location. Today it is said that 85 percent of the Ecuadorian Chocó population are “maroons” from Africa (Thurston, 1997).

Historically the Chachis and the *Negros* have always had problems and even violent disputes over land (Medina, 1992). Despite their differences, both groups have learned to live together and have adapted some aspects of one another's cultures. Between the tributaries of the Ónzole River and the San Miguel River, the Chachis and the *Negros* both reside along the Cayapas River. Some *Negros* speak Cha'palaa, and the Chachis play African marimba music at their most important celebrations. They trade with another and in some ways live interdependently (sometimes even in the same village and even intermarrying), but each group still maintains distinct traditions.

Because of further changes (due in part to population and logging in the area) in the Cayapas basin, the Chachis now fish and hunt as supplemental subsistence activities (Medina, 1992). Instead, they depend more on their plantain-based *chacras*. These *chacras* are called *platanales* in Spanish and *panda pala* in Cha'palaa. The Chachis boil the plantains-*verdes* in Spanish and *panda* in their native language-and then, with a flat river rock, smash them into a sticky mass (called *bala* in Spanish and *pandalujta* in Cha'palaa). All meals include *pandalujta*, and everyone in the village knows when other families are eating because they can hear the rocks smashing the *verdes*.

Today the majority of Chachis identify themselves as agriculturalists, but they also claim to do “*un poco de todo*” (a little of everything) (McIlvaine, 2000: 97). Within their

complex livelihood systems, the acquired lowland agricultural practices allow them: to provide the “bread of each day” (the plantains), to be relatively self-sustaining, and to also produce cash crops (McIlvaine, 2000).

Shifts from the rainforests of Nicaragua and Panama to the Amazon, the Andes, and then the Ecuadorian Chocó, demonstrate that the Chachis have not had a ‘static’ culture. What is considered Chachi culture is actually a hybrid of ideas and livelihood practices adopted from the many cultures they have encountered. For example, in the 1500’s (well before the Chachis arrived), Pedro Cieza de Leon and Miguel Cabellos de Balboa described the “traditional” Chachi homes with stilts. They also reported the use of slash and mulch techniques (called *tapado* in Spanish). Since the Chachis arrived later, they obviously adopted the traditions of the tribes that Pascual de Andagoya called the Barbacoas<sup>15</sup> in 1540 (West, 1945). The Barbacoas lived in the Chocó before the arrival of the Chachis (Patino, 1965). Another example of the Chachis adaptive culture involves the Spanish-introduced plantains, which now dominate their slash-mulch system.

Their religion, too, is a mixture of myths based on the jungle environment and Catholicism. Their first documented contact with priests and missionaries was in Pueblo Viejo. Over the last century, and especially with the advent of schools, religious groups have had a big impact on the Chachi culture.

The Chachis have constantly mingled with other cultures. While they have exchanged ideas and traditions, their language, Cha’palaa, is still commonly spoken and they strongly identify themselves as Chachis. Their language seems to be the common

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<sup>15</sup> Contrary to Stevenson (1825), West (1945) reports that the linguistic group to which the Malaguas (or the “Indios Bravos”) and the Chachis belong is called Barbacoa.

thread that weaves them together as a culture and ties them to the past. All of their migrations and imports (e.g. belief systems, musical instruments, agricultural systems, and food plants) indicate that the Chachis have always been a culture that is open to change and diversity. Their ability to live in different environments, adapt to the people around them, and import what will benefit their livelihoods and enhance their culture, is further evidence of the resilience and dynamism of Chachi culture.

### **Historical and Socio-political Background of the Chachis**

The Federation of Chachi Centers of Ecuador (FECCHE: Federación de Centros Chachi del Ecuador) is the unifying political body of the centers, and its office is located in Esmeraldas City. They were established in 1978. The communities were then divided into zones and centers.

The Chachis are divided into three major zones within the Esmeraldas province: the North, Central, and Southern zones. Each of these zones contains a number of centers that include a number of villages. Today there are 28 centers. Each center has a president, a vice president, a secretary, a treasurer, and representatives for the board of health, education, and commerce. The center's government is in charge of the political organization of the communities that lie within its boundaries. A general assembly elects new officers to the community center every two years. At the village level, the traditional governor or *uní* is the leader—generally a village elder. This position is not rotational.

The North zone includes the Tululbí River (with only one community, La Ceiba) and the Cayapas and Onzolé Rivers (19 centers). The Central zone includes four rivers: the Canandé River (four centers), the Viche River (the center of Chorera Grande), the Verde River (the center of Medianía), and the Esmeraldas River. The Southern zone

includes two centers and one community in Muisne County. One center is called Nueva Esperanza and it is located on the River Balzar. The other center is called San Salvador and it, along with the community of San José, are on the Sucio River.

The Chachis function as single-family households especially in terms of agriculture. The Chachis traditionally farm individual plots and maintain communal forests for hunting and extraction activities (McIlvaine, 2000). Land is passed down from one generation to the next and divided between the sons in a family. Women usually move to other villages to marry. Consequently, household land holdings are getting smaller.

Currently four different types of land tenure affect the Chachis: “Patrimonio Forestal” or ancestral forest, communal non-legal tenure, private legal tenure, and communal legal tenure (McIlvaine, 2000). Ancestral forest refers to government-owned land that has been designated as a protected area. The Chachis of Loma Linda are in the process of trying to gain ownership of a great deal of this land. Communal non-legal tenure is land that is illegally designated for household use. Up until 2001, Loma Linda’s 4,524.69 hectares were under this type of land tenure and incorporated 81% of all households (McIlvaine, 2000)<sup>16</sup>. The other 19% of households legally owned private lands (the third type of land tenure) because they were the only three families in the community during the land reforms of the 1960’s and 1970’s. These families are free to

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<sup>16</sup> Actually, at the time of McIlvaine’s study, the land of Centro San Miguel was all illegal communal land tenure, but CARE helped them legalize their communal land and an ex-peace corps member who lived in Loma Linda helped them legalize 800 more hectares. Now they legally and communally own 5500 hectares. Before this legalization of land, some of the conclusions of McIlvaine’s study showed that 100% of the Loma Linda households reported harvesting timber in non-legal communal tenure land versus only 20% of the households on private legal tenure in the year-long period from July 1997 to July 1998 (note that this is before the certification law was passed by CARE/Subir).

buy and sell land plots without the consent of the community. The fourth type of land is communal legal tenure, of which the Chachis of both La Ceiba and Loma Linda now take part.

### **Historical and socio-political background of La Ceiba**

According to Altropico (2000), Juan Niño lived in Majua on the Cayapas River and raised pigs. Apparently, he was having problems in doing so. After asking permission of the First Lieutenant in Borbón, he moved to and settled on the banks of the Palabí River (which is now part of Awá territory) in 1930. Together with Juan Niño came Cristobal de la Cruz, Manuel San Nicolás, José Maria Niño, and Chapiro Añapa. Although they did not form a community center and lived as separate families, they did act as a community. After a while, the men searched for better soils for growing plantains. They bought four hectares from a man named Casanova and all the families moved there and established themselves.

Due to land invasions, in 1979 descendants surveyed and legalized 1530 hectares and received a land title from IERAC (INDA). At that time the Chachis of San Lorenzo County decided to call their community La Ceiba after a stream by the same name. In 1982 Juan Niño officially founded the village of La Ceiba. La Ceiba is legally a *recinto* as opposed to being part of a center like Loma Linda. Currently none of the original inhabitants of the Tululbí River are still alive.

The principal questionnaire translator in the study, Samuel Añapa, explained that it would be much more advantageous for all villages to become their own centers. According to Añapa, a commune has affiliated laws that are outdated by 60 years, and a *recinto* has laws that are even more outdated. La Ceiba wanted to be a *recinto* because they wanted an *inspectora*, a connection to the county's public administration system.

The basic difference is that being a center, commune, or a *recinto* creates different power structures in relation to the state, to FECCHE, and even within the community. Each also abides by different laws. For example, under La Ceiba's present legal status as a *recinto* or a commune, the presidency rotates on a yearly basis. Unfortunately, by the time a president is accustomed to his office the term is over.

Within the village, all land is owned communally, except for 640 hectares that are divided evenly among the households; so that each household owns a 20-hectare lot that may be returned to communal hands if it is not worked. Because of the equal allocation of land, land distribution is currently a minimal problem (certain community members were not there when the land was allocated because they were out working in other parts of Ecuador and so they were not given land). In 1999, each household sold the majority of their lot's primary forest. The sale of lumber and timber, communally and individually, is exacerbated in La Ceiba, as it is in all of the county of San Lorenzo. Many Chachi neighbors are selling their timber to wood companies and their land to African palm companies. This is leading to many social problems, not only in the village, but with their neighbors as well.

With a road connecting them to the outside world, the social, economic, and environmental problems of all the other cultural groups have now begun to affect the lives of the Chachis of La Ceiba. There are land tenure struggles among different ethnic groups who live in the vicinity of La Ceiba. People of these communities sell their land to logging and oil palm companies. In 1999, the Chachis had to bring in the military to remove squatters from their territory. In addition, as more land is deforested by logging companies and planted with African oil palms, these companies put more pressure on the

Chachis. As one teacher in La Ceiba said, “we are surrounded. We are surrounded by palm companies and they do not let us leave”<sup>17</sup>.

African palm companies<sup>18</sup> are especially problematic in terms of deforestation and creating land pressures. These companies actually want to buy land from the communities, not just the trees, and they put pressure on communities to sell. Another reason is because, as a man from SETRAFOR told me, “they want the forest gone once and for all in order to expand their plantations”. He explained to me that the difference between African palm companies and wood companies is that the latter will only cut trees over 50 cm. Their goal is to keep the forest producing so that they can cut trees again in ten years. The wood companies usually work in conjunction with the African palm companies. For instance, if an oil palm company buys land that is still forested, they sell the trees to the wood companies by giving them an allotted amount of time to cut as much as they can.

With all these outside pressures, the Chachis of La Ceiba seem to be isolated and unsure of who to trust. In La Ceiba, there is miscommunication within the village and a willful lack of communication with the outside agencies and NGOs on which they simultaneously depend. There are questions of corruption and distrust in the community as community presidents make deals with outside institutions.

Ironically, the sale of their forest to logging companies constitutes one of the principal bases of their individual and communal decisions. In fact, since 1988, the

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<sup>17</sup> I think what he is trying to say is that the Chachis feel blocked in.

<sup>18</sup> African palm oil is used for cooking oil and soap. The first African palm company entered the lowland coastal area in 1953 in Santo Domingo de los Colorados. The Awá and the Chachis have denounced the African palm companies to the Ministry of Agriculture for illegal deforestation.

Chachis have sold 1100 hectares of their trees from the 1500 hectares of communal forest reserve that borders the Awá Ethnic and Ecological Reserve. During the summer of 2003, the Chachis received \$54,768 for the sale of 200 hectares of trees (\$16 per cubic meter x 3423 cubic meters) to SETRAFOR. \$16,500 of this money went back to SETRAFOR for payment on a truck. One week before they were to receive the \$54,768 they called a meeting to decide how they should spend the money. They decided to give \$500 to each household head and use the rest of the money to buy a house in San Lorenzo so the young people would have a place to live while they study. Students could also sell fruit and juices from the first floor to pay for living expenses.

Their communal agroforestry project provides another context where community members have had to collaborate with outside institutions as well as with one another. This project was established by a Peace Corps member and has 22 hectares with 103 species. With the assistance of UTEPA, the Chachis and the Peace Corp member began planting fruit trees in 1992. In 2000, with the assistance of the World Wildlife Fund and International Organization for Migration (OIM), a marmalade factory was constructed. *Borojó* marmalade has become one of their major products. However, the Chachis of La Ceiba still struggle to market these products.

Field research questionnaires showed a continued lack of planning and organization for the future by the Chachis. The majority of households did not reinvest the money they received from previous forest sales. They just bought clothes for their children, pots and pans, and stoves. A few people bought chainsaws and cattle, which are an investment, but definitely do not contribute to forest conservation.

### **Historical and socio-political background of Loma Linda**

Like La Ceiba, Loma Linda is in the Northern zone but within Eloy Alfaro County. Yet, Loma Linda is part of the Centro de (center of) San Miguel. The Center of San Miguel is made up of seven communities and covers an area of approximately 4524.69 hectares (Marchan, 2001). The Community of Loma Linda includes thirty-nine households. Loma Linda is one of seven villages that participate in the larger political group of El Centro Chachi of Loma Linda/San Miguel, through which all major political decisions must be passed.

Families who were living in Loma Linda in 1974 had their land demarcated and legalized by IERAC with the help of SIL International (formerly known as the Sumer Institute of Linguistics) and the Evangelist Mission of Zapallo Grande. At the time there were only nine or ten families living there. Therefore all the people who live in Loma Linda today are borrowing land from these original landowners.

Loma Linda was originally called Lema Pí, named for the *estero* that branches off from the river where the community was located. The community was named Loma Linda 1963 when the SIL International established the first bilingual school in Chachi territory. The school was funded by the Ecuadorian Ministry of Education, and it was supervised by the SIL International with the help of John and Carrie Lindskoog. In 1970, when Loma Linda became an *association del centro* (center association), Neil and Ruth Wiebe took over as supervisors; they have been translating the bible into Cha'palaa and studying their language ever since. With the establishment of the school, more people moved to the community so that their children could attend school. It became a legal village center in 1992 when the school was moved from the north bank to the south bank of the river. At the time there were only two houses on the south bank, where the

majority of the thirty-nine Loma Linda households are now situated. The center of San Miguel began to demarcate their land in 1996. As mentioned earlier, the center received a land title in 2001. (Añapa, Santiago, pers. comm.)

Although the Center's land is now legalized, everyone, except the few private landowners, borrows land from the community and/or center or from the private owners, who have the right to usurp the land at any time. Land problems were pinpointed as one of the major causes of social differences in the community, and this will be discussed in chapter 7.

One development in Loma Linda is that in 2001, the son of one of the Chachis married a woman from Los Angeles, where they currently live. They are in the process of creating a luxury ecotourism lodge that is privately owned by their family. They decided to manage it this way because of the potential organizational complications of working with the entire community. To proceed with this lodge, it will be necessary to move two families, whose livelihoods have been dependent on cultivating that land for decades. Currently, many Chachis are working for this family by helping to build the lodge for \$5 a day. The goal is for all Chachis to benefit. The lodge will bring tourists to their village and residents will earn a certain percentage of the profits if they agree to maintain a "green" tourist attraction. In addition, the lodge will expand the market for selling handicrafts and other products.

Because of in the strength of their cultural practices, the women still weave baskets from *rampira* (*Carludovica palmata*), weave cloth, and even process *rampira* for sale to Panama hat makers in Cuenca (a project initiated by Ecociencia- Fundación Ecuatoriana de Estudios Ecologicos, a local partner to CARE). Women also make purses, tablecloths,

wallets, tapestries (which are derived from traditional skirts), and belts. The women are well organized in a co-op called *Maria de Sol*, which is considered one of the more important communal organizations. Handicraft production makes a significant contribution to a household's economy. Yet, just recently, middlemen come less frequently for the baskets they used to demand regularly. Now the price has fallen to \$0.50 for each basket, which takes one day to make.

CARE/ Proyecto Subir was funded by US AID and the World Conservation Society, and they established a ten-year project in the Cayapas and Santiago River basins (1992 until 2002). Local organizations such as Ecociencia and Fundación Jatun Sacha took part in the project. In 1997, with the support of German technical assistance, CARE, Jatun Sacha, and an Ecuadorian governmental organization helped to create the Community Forest Network for Sustainable Management (Red Forestal Comunitaria para el Manejo Sostenible). The organizations associated with the network promoted a series of courses and training, as well as an exchange of experiences with Quintana Roo, Mexico. In 2000, there was a reformation of the law of conservation of natural areas and wildlife that was established in 1982. The new law was called "la Normativa para el Manejo Forestal Sustentable para el Aprovechamiento de Madera de Bosque Húmedo y Plantaciones Forestales". The latter required a certified forest management plan on lands where timber is extracted. Therefore, a Chachi informant reported that most people who sell wood in the Santiago-Cayapas River Basin are currently selling wood illegally because they cannot afford the investment in initial certification fees.

There are currently other changes on the Cayapas River. CODESA, the principal logging company in the area, has moved up from the river mouth and has made deals

with Chachi communities on the way. Part of these deals includes roads and electricity access. Just in the last three years, electricity has been put into villages extending to Santa Maria, which is three hours from Borbón. When this author left Loma Linda in 2003, having finished fieldwork, there was a timber deal in the process of negotiation with Zapallo Grande, a half-hour away by canoe. If this deal goes through there will be a road out of Zapallo Grande that will create major lifestyle changes in Loma Linda as well. In addition, CODESA has begun to move downriver from the headwaters. On October 17, 2003, FECCHE put an embargo on all logging on the river, and companies were only allowed to remove the wood that had already been cut. This embargo has been lifted.

### **Conclusion**

This chapter describes the similarity between Chachis of La Ceiba and Loma Linda in their climatic, geographic and ecological features. Regardless of some expected differences in their historical and social contexts, the two villages are enough alike to be compared systematically. The next chapter provides the descriptive background of both villages' livelihood activities.

CHAPTER 5  
SUBSISTENCE AND MARKET ORIENTED LIVELIHOODS IN LA CEIBA AND  
LOMA LINDA

“Since at least the mid seventeenth century, local indigenous communities have participated in an economic system in which part of the production satisfies subsistence needs while the rest, the surplus, enters circuits of commercial exchange. Contemporary indigenous communities are thus not uncontaminated citadels of precapitalist economy. They ruled first by the system of moral economy founded on the logic of reciprocity and on the ‘right to subsistence’, and second, by the necessity of exchange with the surrounding capitalist market.” (Kearney and Varese, 1995, p. 215)

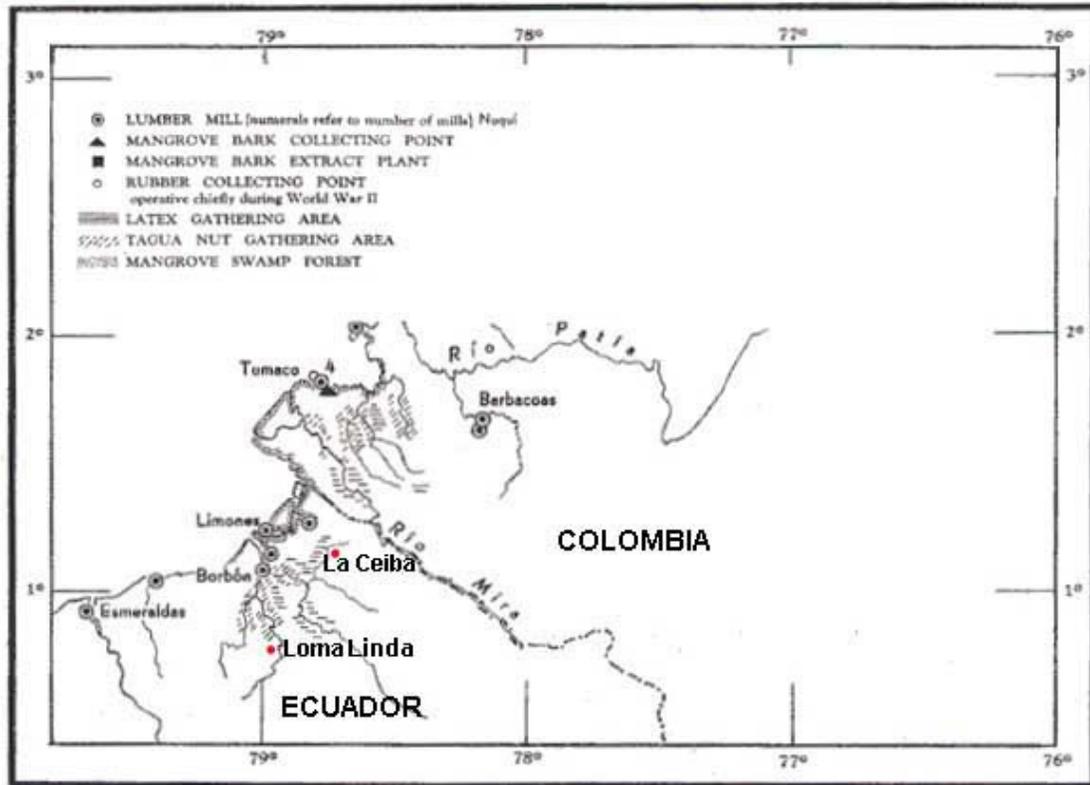
Because the Chachis’ livelihood system is complex and seasonally variable, this chapter describes how market and subsistence activities are intertwined in the daily lives of the people of La Ceiba and Loma Linda. In sum, an informal descriptive analysis of Chachi activities will be presented. The first section discusses the history of market integration within the Chachi culture and the people’s perception of change. In the second section the contemporary livelihoods of the Chachis will be addressed, noting the present predicament in which the Chachis find themselves. Moreover, information on how they spend and invest their household money is included as well as data on whether or not logging is improving their quality of life. The third section discusses activities such as agriculture, fishing, hunting, craft production, and canoe production. The fourth portion will describe newer and more market-based activities such as agroforestry, cattle-ranching, logging, contractual labor, and school employment.

**The Evolving Chachi Economy**

West (1957) documents that, at least for the last century, people of the Pacific Lowland areas have supplemented their subsistence livelihoods by gathering forest

products for international markets. He comments that gathering industries in tropical rainforest areas have been unstable and included boom and bust periods. Figure 5.1 shows the presence of three industries-rubber, tagua nuts, and wood-in the Santiago Cayapas River Basin in 1954. West concluded that rubber-gathering in the Chocó began around 1858, after the Goodyear vulcanization process created a demand for *caucho negro* (*Castilla panamensis*). This demand ended with the success of the Malaysian rubber plantations at the turn of the twentieth century. Tagua-gathering in the Chocó began around 1850 and lasted until the development of synthetic buttons in the 1930's. Initial logging is documented as early as the turn of the twentieth century, but apparently tropical hardwoods were exported at a greater rate after the 1930's. West (1957, p. 166) notes, "lumbering of tropical woods is the latest phase of forest exploitation, but its life may be shortened by the rapid depletion of forest reserves."

According to McIlvaine (2000), the communities of the Cayapas region have also long experienced a type of integration into the market that includes periods of expansion and contraction; these periods correlate with the aforementioned market demands as well as the political and economic conditions at the local, national, and international level. The Chachi's participation in the tagua market has been documented as early as the 1920's with the harvest and sale of vegetable ivory or tagua nuts (*Phytelephas auquatorialis*), for use as European buttons. Similar cycles of exploitation of the Chachis can also be applied to the rubber boom, wood extraction, the post-WWII, Ecuadorian banana boom, and the demand for coffee and cacao. What currently makes the Chachis' interaction with these processes more pertinent is the increased intensity and frequency of present economic, conservation, and political interests.



Source: West, 1957.

Figure 5.1. Map of resource extraction in Chocó, made in 1954 by Robert West: Southern Colombia and northern Ecuador. It indicates that around this time there were lumber mills, latex-gathering areas, and tagua-nut-gathering areas within the vicinities of the two study sites, La Ceiba (the dot above) and Loma Linda (the dot below).

In interviews with household heads, many individuals from both villages reported that they had always exploited wood for making and selling canoes, *bateas* (wash trays), and *canaletes* (paddles). These wooden crafts were thought to be one of the principal ways that their grandparents participated in the market. In Loma Linda, however, household heads said their grandfathers did not sell timber or lumber because there were no buyers, chainsaws, or logging companies in the area at that time. In La Ceiba, when answering why their grandfathers did not sell timber/lumber, they spoke about their logging market context. La Ceiba residents believed that a limited timber market was due to: a lack of buyers, an absence of tractors, roads, and logging companies. One

household head mentioned that his grandfathers only knew which trees were good for canoes, not for lumber. An elder of La Ceiba laughed while explaining the following: “when they (his grandfathers) made their farms the cow tree or *Sande (Brosimum utile)*, one of the most marketable woods of the present, rotted because they did not sell them. The new generation has contacts.”

Answers from household heads in La Ceiba and Loma Linda indicated different market participation by each community’s grandparents. In Loma Linda, residents reported that earlier generations had sold plantains and bananas (*Musa x paradisiacal*), vegetable ivory or *tagua (Phytelephas aequatorialis)*, the source of bark cloth in the Pacific lowlands or *damajagua (Poulsenia armata)*, cacao (*Theobroma cacao*), coffee (*Coffea arabica*), and crafts and baskets. Some reported that they had extracted rubber (*Castilla elastica*).

One Chachi from Loma Linda, in particular, said that the banana company came and bought bananas. This informant told me that before there had been a plentiful amount of fish and meat, so they needed less money in the past. Another claimed they needed less money because they bought less food and the children did not study then. Yet, others disagreed and explained that their grandfathers needed as much money as they need now, and that things in the past cost less. The governor of the community (in the traditional government) surprisingly responded, “Before they needed money, and in the present we need money. How can we live without money?”

A few household heads in Loma Linda told me that their grandfathers had sold trees, but only soft woods as trunks four meters long. Moreover, they indicated that their grandfathers had sold trees to *mestizos* in Limones (an island where the delta of the

Santiago River meets the Pacific) and San Lorenzo. They said that the city of Borbón had not existed then, so they had sold and traded goods in Limones. No one in La Ceiba mentioned the sale of these large trunks, and this may be due to the fact that La Ceiba's grandfathers would have had to travel a greater distance along the river to reach Limones.

Before the late 1960's and early 1970's there were no roads in Northern San Lorenzo. Altropico (2000) reports that when the Chachis first settled on the Tulubí River, they sold pineapples, manioc, rice, corn, sweet potatoes, and *rascadera* (*Xanthasoma ssp.*) in Limones, which was then a two-day trip downriver and a three-day trip upriver. They continued to sell products in Limones until the railroad was finished in 1959. Elder members of La Ceiba report that once the train began running, residents began to travel to San Lorenzo (taking first a one-day canoe trip to La Boca and then a half-hour train ride to their destination). Yet, since the early 1970's La Ceiba inhabitants have traveled three hours by canoe to Ricaurte and taken a truck into San Lorenzo. It is only since 1997 that people from La Ceiba have begun to walk out to the San Lorenzo-Ibarra Highway to get transportation.

In La Ceiba it seems that pig sales were also a large part of their previous economy, which was confirmed by various informants. One of the teachers who moved to La Ceiba from the southern zone, Muisne, said that a decade ago his grandfathers worked as day laborers and sold plantains, manioc and cacao. Yet, only two other people in this village mentioned the sale of plantains. Instead, every household, except two, seems to have focused on making and selling canoes. One household head said, "through canoes they received their economy, since there is no economy without money." Another declared that carving canoes from *Copal* or *Pulgande* (*Dacryodes spp.*) was an art. A few

household heads also mentioned that they had mined gold with their *bateas* or wash trays (perhaps these trays became marketable for this reason as well as their utility for washing clothes).<sup>1</sup>

Currently, the outside economy and the Chachis economy are in flux and largely inseparable. The average household in La Ceiba earns \$247 per month, while households in Loma Linda earn about \$252 per month.<sup>2</sup> This means that, despite the distance to market, households are probably earning approximately the same. Although, in La Ceiba the distribution of income between households is more even. Most households earn between \$200 and \$350 monthly. No households earned less than \$25 per month, and only one home reported earning \$500/month. In Loma Linda, on the other hand, the distribution is much more skewed. There were three households that reported earning less than \$25/month and four houses that reported earning over \$500/month. These high salaries might be due to the fact that: one of these households contains two schoolteachers; two households transport passengers to Borbón for \$12/one-way ride; and the fourth home includes a school teacher who sells canoes and many other goods. Low incomes are probably due to the fact that it is easier to live off the land in Loma Linda if one chooses because there is more game meat and bigger fish.

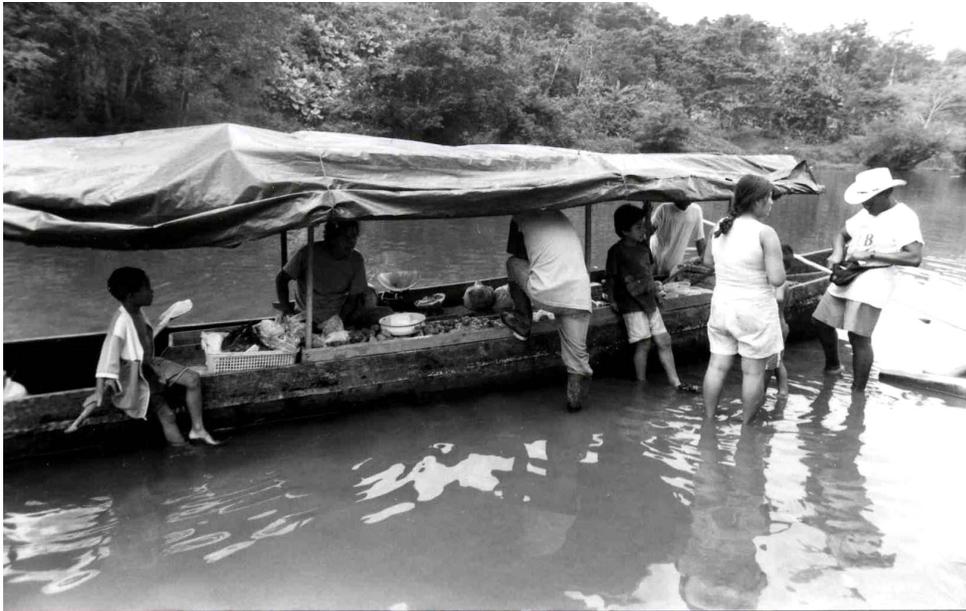
Another indicator of communal market incorporation is how often residents go to town to buy or sell products. On average, household heads of La Ceiba go 5.47 times per

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<sup>1</sup> The first time I traveled up the Tulubí River in 1997, I remember hearing African Ecuadorian women's singing voices coming around the bends. The Chachis who moved the canoe with palanka (a long stick) told me they were mining gold as the Chachis also used to do. There is more gold mining on the Tululbí River than on the Cayapas River in the present.

<sup>2</sup> These numbers are calculated *without* including investments, which definitely vary, especially if a person is paying four people \$5/day for four days to carry wood. It was too complicated to include the investments, which is the reason why income was not chosen as the main measure of market integration.

month, while in Loma Linda household heads travel 1.17 times per month. These numbers show that, on average, household heads of both villages interact often with the outside market. But, due to the convenience of the road, La Ceiba household heads travel to the market four times more than their Loma Linda counterparts. At the same time, however, middlemen frequent the Cayapas River. People can buy and sell produce from these mobile markets. The next section will discuss the constituents of the present Chachi economy in greater detail.



Photograph taken by Author.

Figure 5.2. Chachis from Loma Linda buying produce from the mobile market.

### **Contemporary Market and Subsistence Activities**

Market-related activities are defined as those in which goods, labor, or services leave or enter the household with their exchange value determined by a pricing mechanism, the market (Godoy, 2001; Korten, 1996; Wentzel, 1989;). In both Loma Linda and La Ceiba, people participated in nine different principle market activities. These included families and raising small animals, fishing, hunting, carving out canoes,

making crafts, raising cattle, logging, working for the community schools, and contractual labor (see Figure 5.3). Only La Ceiba had a communal agroforestry plot of 22 hectares in which all the households participated; and only in Loma Linda were there households that sometimes sold fish.

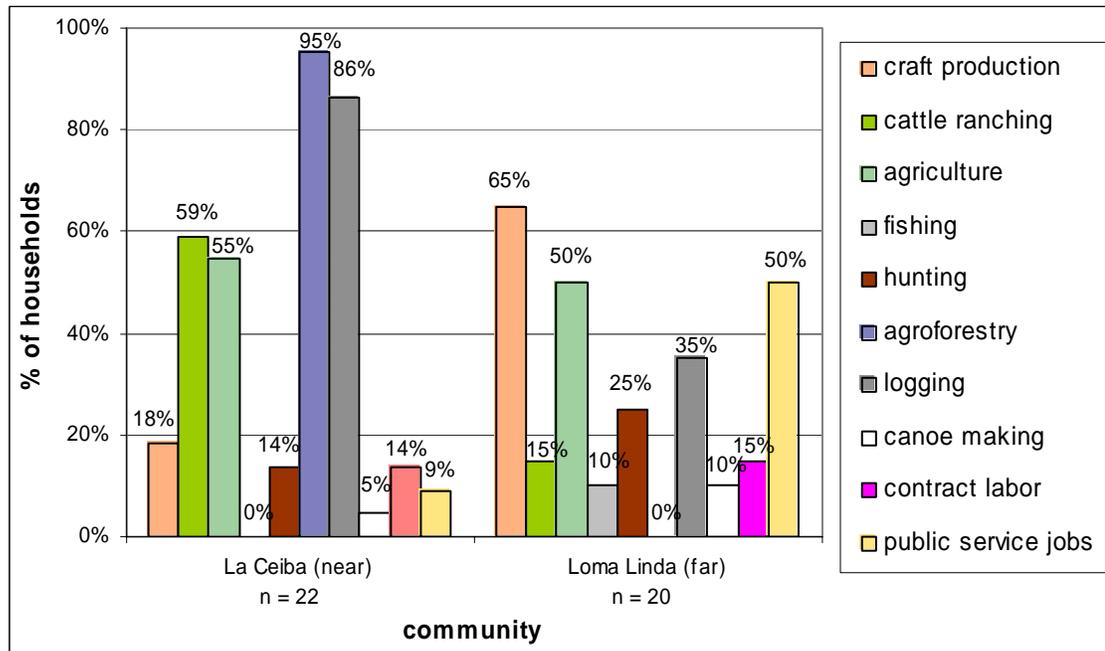


Figure 5.3. Household participation in market activities.

Figure 5.3 demonstrates that out of the 22 La Ceiba households that were interviewed, the most predominant market activities were the community forest project and logging. Almost all of the households participated in the community fruit forest project (95%) and in selling wood (86%). More than half of the household heads from La Ceiba participated in raising and selling cattle (59%) and selling certain agricultural products (55%). And less than half of the households participated in: making and selling crafts (18%) and canoes (5%), selling game (14%), and working as contracted labor (14%) and teachers (9%).

As a village, Loma Linda's manner of integrating itself into the market varies more among households; there are no activities in which almost all the 20 households that were interviewed participate. Most households participated in craft production (65%), while 50% of households worked in market-oriented agriculture and public service jobs. Less than one-third of the households in this farther village participated in all other activities (raising cattle, working as contracted labor, and selling fish, game, canoes and wood).

Subsistence activities are those activities that contribute to household reproduction. Under subsistence-oriented agricultural and extraction systems, individuals usually have goals of food security and the minimization of labor (Varese, 2001; Baksh and Johnson, 1990). In both La Ceiba and Loma Linda, it was found there were no longer any activities that everyone in the village did purely for home consumption. Craft production, cow, chicken, and pig production, fishing, hunting, farming, and canoe-making were and continue to be primarily subsistence activities. Nevertheless, in both villages, there were always a few people who sometimes sold some of their surplus products.

By comparing Figures 5.3 and 5.4, it is clear that there is less diversity of household subsistence activities than there is of market activities. Figure 5.4 shows that in both communities almost all households participated in agricultural production (100% in both villages) and fishing (100% in La Ceiba and 95% in Loma Linda). A majority also participated in making and using crafts in the household (73% in La Ceiba and 90% in Loma Linda) and hunting (55% in La Ceiba and 65% in Loma Linda). The least common subsistence activity among households was raising cattle for household consumption (18% in La Ceiba and 10% in Loma Linda).

What is notable is the divergence between the number of households in La Ceiba that raise cattle for market (59%) and the number that produce cattle for subsistence use (18%). In Loma Linda 15% of households produce cattle for market and 10% also consume the meat.

In La Ceiba all the households sell (except one household that is not officially a member of the project) and consume the fruit from the communal agroforestry project. As mentioned earlier, in Loma Linda there is no communal fruit project.

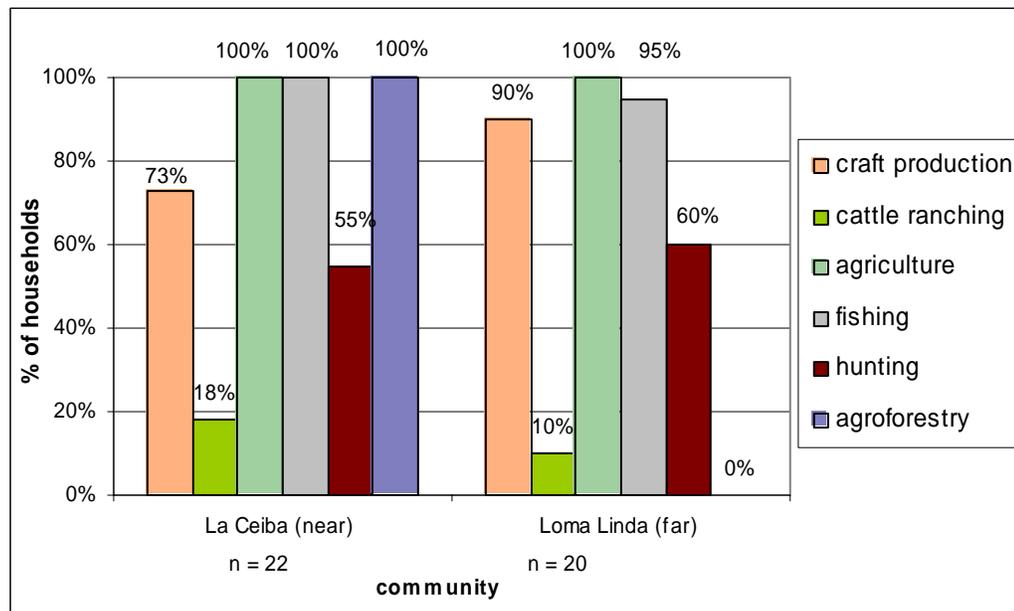


Figure 5.4. Household participation in subsistence activities.

As far as division of labor in regards to the different activities, women participate with men in the main subsistence activities, fishing and agriculture. Men alone are solely involved in logging, raising cattle and pigs, hunting, communal agroforestry cleanings (in La Ceiba), contract labor, and working for the school (except in one case). The women raise chickens, harvest crops, take care of all reproductive activities, and do crafts. (There is one case in Loma Linda where a male household head also does crafts.) Together,

household heads and their spouses participate in both market and subsistence livelihood activities, which allow them to create functioning households.

### The Predicament

The majority of households in Loma Linda and La Ceiba participate in most subsistence activities and largely depend on subsistence agriculture, fishing, and hunting as their food sources (as shown in 5.4). Nevertheless, people in both communities search for the means to meet the changing socio-economic requirements of their families, such as paying for food, transportation, health, and education. Some of the most common products they report buying are oil, salt, sugar, vegetables, spices, noodles, rice, kerosene, tuna, sardines, eggs, dried fish, cookies, popsicles, and matches. To buy these items they sell timber, lumber, and cash crops, take on contract labor and jobs in schools, and

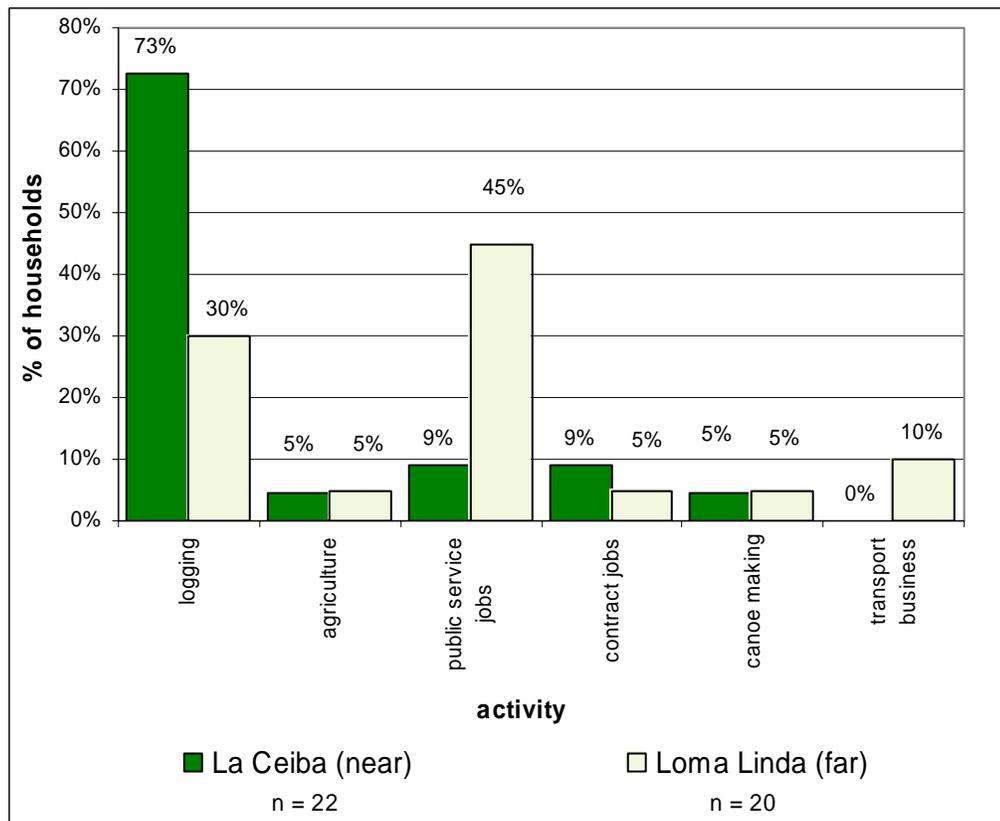


Figure 5.5. Principal income-generating activities.

generally do whatever they can to earn money. With the recent advent of roads and improved access to the market, some Chachis rely less on diverse subsistence activities and more on environmentally destructive market-oriented activities, such as logging and cattle-ranching, to meet their needs.

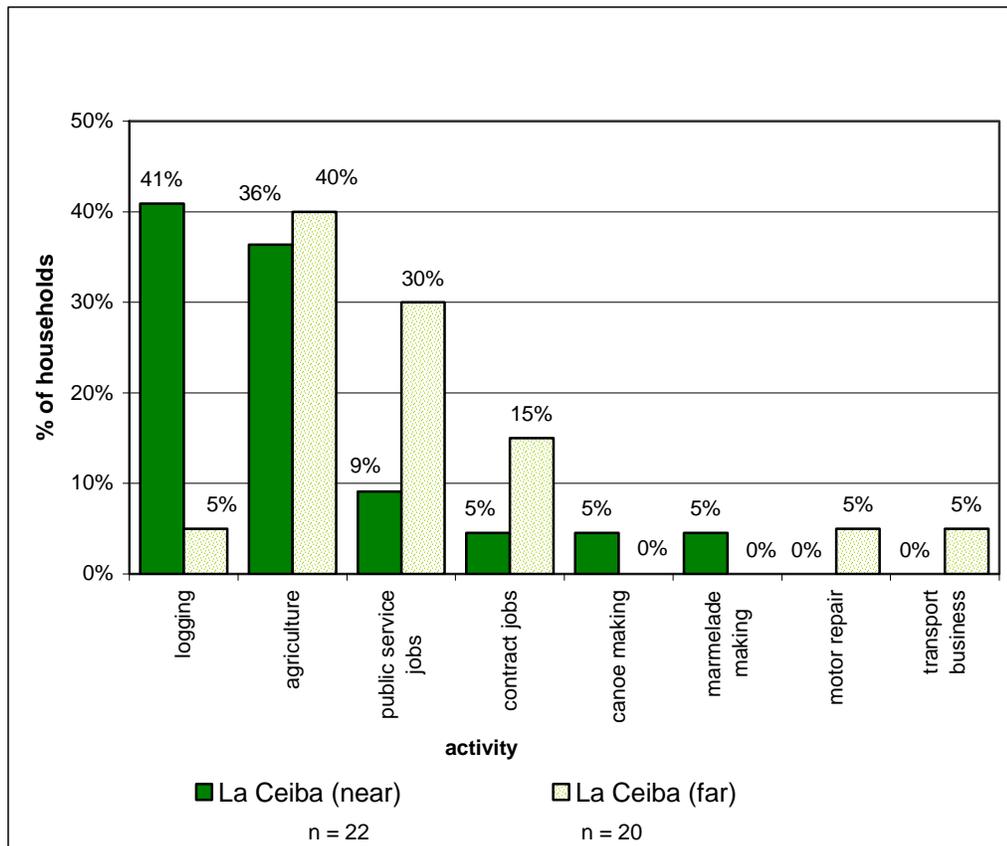


Figure 5.6. Principal activity.

Consistent with past studies that found that men principally earned their money through timber extraction (Ecociencia et al., 1996; Marchan, 2001; McIlvaine, 2000), Figure 5.5 shows that one of the main money-generating activities in both communities is logging. La Ceiba is much more integrated into the market via lumber/timber extraction than Loma Linda. In La Ceiba, 73% of household heads' principle income-generating activity is logging, compared to only 30% in Loma Linda (which is most likely due to road access and the ease of logging and transportation). In Loma Linda, there are 15%

more household heads who earn money by working as professors.<sup>3</sup> Of the forty-two households in both villages interviewed about their economic situation, the main money-generating activity for twenty-two households (or 52.4%) is logging.

Although 73% of the household heads in La Ceiba and 30% of the household heads in Loma Linda responded that their principle income-generating activity was logging, when asked to which activities household heads are generally dedicated, only 41% of households in La Ceiba and 5% of households in Loma Linda listed logging first (see Figure 5.6).

Respondents in the service industry were those in which there was the greatest consistency between the main source of income and the activity to which the respondents dedicate most of their time. Part of the reason for difference is some household heads in Loma Linda just work for the schools. All teachers dedicate themselves mostly to teaching. Note that all the remaining correlations between the main money-generating activity and the job to which households were most dedicated fluctuate.

In each village only 5% of household heads earn their money mostly from agriculture. Yet, 36% of household heads in La Ceiba and 40% of respondents in Loma Linda responded that they are generally dedicated to agriculture.<sup>4</sup> This means that in more than a third of the households in both villages, food-generating activities still take

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<sup>3</sup> Although many people raise cattle, when they were asked to which job they are generally dedicated or in which activity they make the most money, people did not respond cattle ranching. They did not respond that they are generally dedicated to raising cattle (see Figure 2.4) because actually only a small amount of time is spent on cattle-raising (see Table 2.1 later in the chapter). They also did not respond that cattle ranching brings in the most income (see Figure 2.5) because raising cattle is based more on the investment of money for times when they may be in financial need (Loker, 1993) and often does not bring immediate or frequent returns.

<sup>4</sup> In a workshop done with Altropico in 2000, six members of La Ceiba acted as key informants. They said “los hombres se dedican a la agricultura y pesca , y de vez en cuando, tambien buscan oro” (the men dedicate themselves to agriculture and fishing, and once in a while they also look for gold). Neither panning for gold nor fishing was mentioned by anyone in either La Ceiba or Loma Linda.

about as much precedence as their main money-generating activities (except in the cases of professors).

When asked about their biggest expenditure per month, 93% of household heads interviewed in La Ceiba named food (see Figure 5.7 above). In Loma Linda, 84% of the

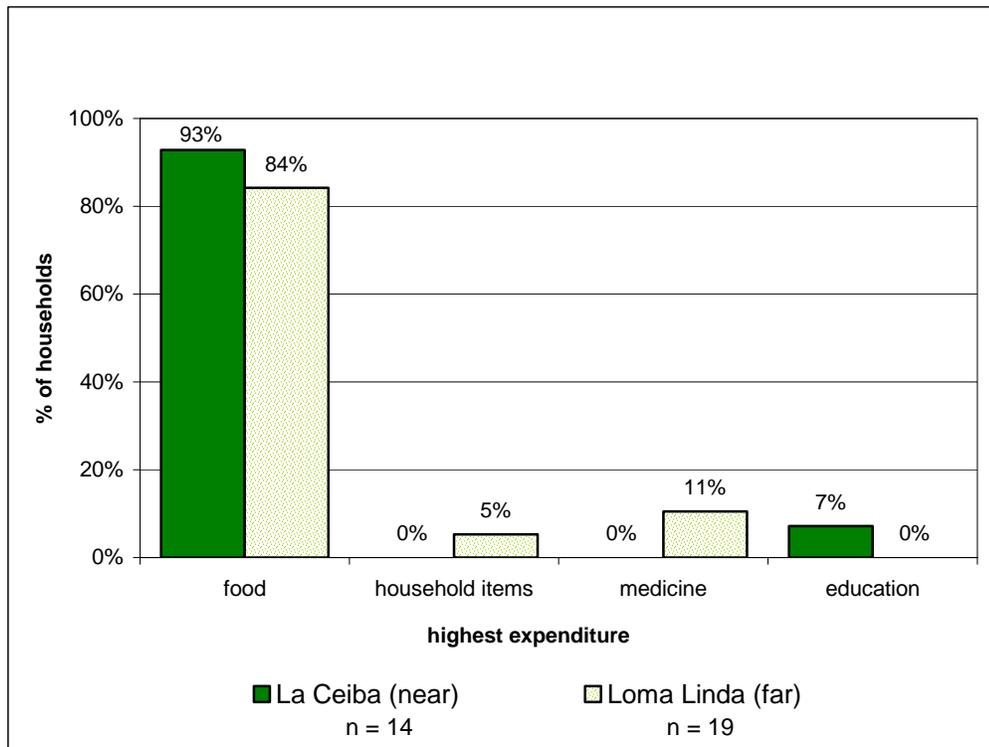


Figure 5.7. Highest expenditure per month.

interviewees spend the majority of their money on food each month. Reasons why food represents the greatest monthly expenditure in villages where 100% of households practice subsistence agriculture need to be further investigated.

Figure 5.8 illustrates how household heads would spend two thousand dollars if they won it. By looking at the diversity of choices, it is clear that peoples' needs and wants greatly vary by village. What is interesting is that 36% of households in La Ceiba

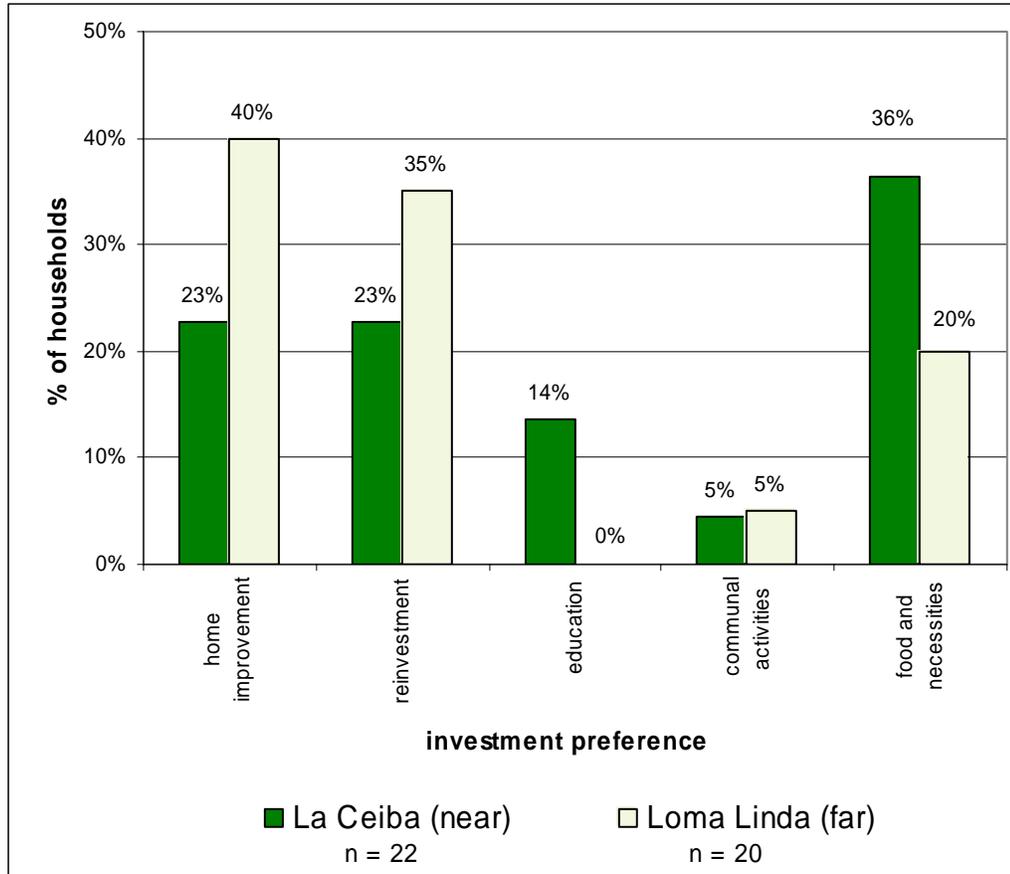


Figure 5.8. Investment preferences given a windfall profit.

said that they would first buy food and basic necessities, while only 20% of household heads in Loma Linda said they would do the same. In Loma Linda, the most popular choices were home improvement<sup>5</sup> and savings. This figure reflects that given a sudden windfall of \$2000, more household heads in La Ceiba would immediately consider their immediate needs; while in Loma Linda, more household heads would think of investment (35% compared to 23% in La Ceiba) or of buying non-necessary articles for their homes (40% compared to 23%). Perhaps the reason is because many houses in La Ceiba have already been able to buy stoves and tin roofs and rebuild their houses. Regardless, the

<sup>5</sup> Home improvement included the purchase of gas stoves, refrigerators, stereos or televisions, kitchen supplies, and fixing the house. Loma Linda responded mostly gas stoves (3), fixing the house (2), kitchen supplies (2), and the only refrigerator. La Ceiba answered mostly kitchen supplies (3) and one response for each of fixing the house and purchase of a stereo.

fact that a large number of households in La Ceiba would spend prize money on basic necessities does not correlate with responses from the next question.

It is clear that a large majority of the households participating in market activities would spend prize money to pay largely for food. Thus, they were spending their money earned in part from cutting wood on subsistence products they once grew or collected themselves (as opposed to buying products that might ameliorate their lifestyles).

Household heads were, therefore, asked if they believed cutting trees improved their quality of life. In total, twenty-six of the forty-two respondents said wood extraction did not improve their life. In La Ceiba, more than half of the respondents (55%) thought that wood extraction was improving their quality of life (see Figure 5.9). In La Ceiba, every household that admitted that cutting wood improved their quality of life said that the reason was because logging allowed them to generate money they could not earn otherwise. By cutting wood, household heads could buy necessities for their children. For example, one man indicated: “yes (cutting wood improves the quality of life), it creates money for food, clothes for the children, stuff for the kitchen, all that we lack.” Another expressed: “yes, a little better. There is no other work source. There are no other options.”

One elder in La Ceiba who said that their quality of life was just slightly improving said the following:

They have made the cultural house, bought the car, but we do not see anything else. You only see the people buying groceries and the money goes outside the village. The future generations are going to live badly. They are not going to have resources. They take out artifacts like stereos and chainsaws by credit. The money is not enough.

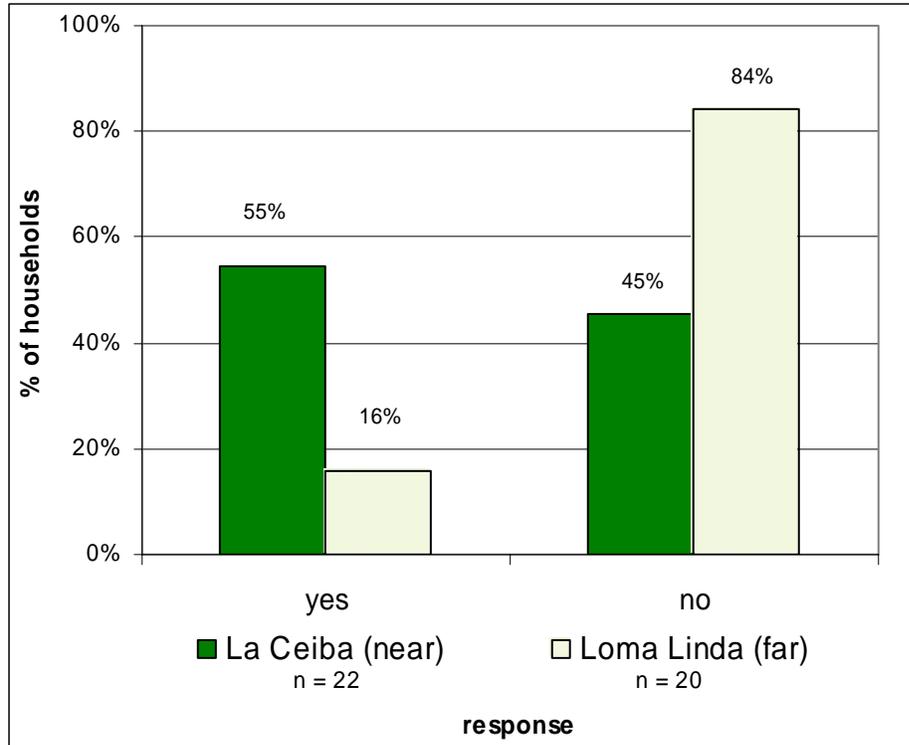


Figure 5.9. Responses to whether or not wood extraction is improving their quality of life.

Of the twenty-two people interviewed in La Ceiba, 45% (or nine households) mentioned their worries over the quality of life for future generations. A community member said, “no, the quality of life is not improving. The forest is ending; cutting wood is destroying everything.” One of the professors in La Ceiba expanded on these ideas:

Cutting wood is not improving the quality of life of the community. To sell plywood or logs is satisfying the immediate necessities. If we think of the future, there is going to be no more wood. To improve the quality of life is to look for associated alternative work.

In Loma Linda, only three (16%) of the twenty household heads interviewed believed it was improving their quality of life, and 84% worried about future generations. One of those individuals said, “Yes, cutting wood is improving the way of life; one has to buy things for the children—food and clothes.” Another Chachi from Loma Linda

agreed: “I do not cut wood now, but when I cut wood before I lived better; I could buy all our necessities.”

The majority of people in Loma Linda who said that cutting trees was not improving their quality of life, generally seem to have had clear ideas and strong feelings about cutting wood. This perspective was also seen in the professors of La Ceiba. For example, one individual commented:

We are not improving the quality of life. It is only for the moment. One cuts wood and one uses the money for one’s necessities, but it does nothing to help us live better. And then we are left without wood.

Someone else in Loma Linda was able to explain the environmental effects that he had noticed:

We are not improving the quality of life because before there were more animals and fish. Now there is contamination. The plantains don’t produce as before and there are no animals to hunt.

Part of the reason there is such a disparity between villages over whether or not cutting the forest improves the way of life, involves the fact that La Ceiba receives greater economic benefits from treefelling due to their location. In Loma Linda, cutting wood has few communal benefits and it is much more difficult to do. Thus, fewer households of the latter spend their time on logging – a topic that will be expanded later in the chapter.

In order to meet increasing needs in their immediate environment, the Chachis have reorganized their manipulation of the natural resource base and their production efforts. This, in turn, has forced the reorganization of the social foundations of their culture. Market activities may further alter social and environmental behavior and economic priorities, which could lead to further deforestation of the remaining Ecuadorian coastal rainforest as well as cause major alterations to the Chachi culture. To examine these

latter questions, the *degree of* market integration between the two villages can be compared, which will be undertaken in chapter 6. The following two sections of this chapter will detail the various types of subsistence activities and market activities in which each village participates.

### **“Traditional” and Subsistence-oriented Activities**

These activities are defined as efforts that are necessary for the maintenance of the household, regardless of whether surplus items are sold or not. Although recently these activities are undertaken with an eye towards market participation, the products generated also continue to fulfill the day-to-day needs of the Chachi people. These activities include agriculture, fishing, hunting, craft production, and canoe production.

#### **Agriculture**

Although subsistence agriculture is a fundamental basis of the Chachi livelihood system, just about half of the households that were interviewed in each village sell their surplus items. Figure 5.4 shows that all households participate in agricultural production for the household. Yet, 55% of the households in La Ceiba and 50% of the homes in Loma Linda participate in agricultural production for the market (Figure 5.3). 50% of Loma Linda households also work in public service jobs. And, all of the households in Loma Linda participate in subsistence agriculture.

The Chachis use a system of shifting agriculture. Harold Conklin defines shifting agriculture as: “any continuing agricultural systems in which impermanent clearings are cropped for shorter periods in years than they are fallowed” (Thurston, 1997: 10).

Shifting agriculture is also known as swidden agriculture, in which the swidden is the impermanent plot. In Spanish, the Chachis refer to all swidden plots as *chacras*.

Swidden sizes typically tend to be less than one hectare (Medina, 1992). Most residents can easily walk to theirs, but some must cross the river or take a canoe to their plots. Some households also travel seasonally up-river to *chacras* at varying distances (McIlvaine-Newsad, 2000).

Excavations of soil in the area have been free of charcoal, which indicates that the more well-known slash and burn practices have not been used in this region. Because of heavy precipitation and lack of a real dry season, the Chachis use a method called slash and mulch.<sup>6</sup> Slash/mulch, unlike the slash/burn method, is a system in which cultivators broadcast some of the seeds, cut back the vegetation, and allow the decomposed vegetation to serve as mulch (or fertilizer) for seed germination.<sup>7</sup> After this process has been completed, seeds generally begin to appear in a week to ten days (Deboer, 1996).

Slash and mulch is used to produce plantains (*platano* or *verde* in Ecuadorian Spanish; *panda* in Cha'palaa), which are planted after the vegetation is cut back. A verde-oriented<sup>8</sup> slash/mulch *chacra* involves a carefully designed planting scheme with carefully designated roles for men and women. Multiple functioning components and intercropped swiddens indicate that the Chachis emphasize saving energy while

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<sup>6</sup> Slash and mulch systems have a long history in the Chocó Region of the Colombian and Ecuadorian coasts and are thought to have been invented by the indigenous people. (Thurston, 1997) cites Patino (1965) when describing the first report of slash and mulch by Pedro Cieza de Leon in the Colombian Chocó in the 1500's.

<sup>7</sup> This differs from slash and burn in that the vegetation is cut back and burned, and then the seeds are planted. The mulch is a layer on top of a planting area made up of matter different than the components of the soil (Thurston, 1997). Some of the other positive benefits of mulching are cited by Thurston (1997) as follows: water absorption rates in the soil increase; there is less evaporation and moisture is contained during dry periods; the soil is covered and thus erosion, soil temperature, and water runoff is reduced; soil nutrients are increased; young seedlings are protected from too much sun or rain; rain splashing is reduced and thus the growth of fungi and bacteria is discouraged; weeds are shaded and outcompeted; nematodes sometimes can be suppressed; and organic matter and earthworm populations are increased.

<sup>8</sup> Since the plantains are cut when they are still green to avoid losses to the birds and bats, they are given the Spanish name, *verde*. These plantains are boiled and eaten with salt.

producing sufficient food for the household (which differs from the market-oriented goal of high-yield production). These planned and intensive strategies better assure the family of food throughout the year and for years to come. The Chachis plant up to twenty varieties of food crops on their *chacras*. The Chachis plant up to seven varieties of plantain. They also plant cassava (*Manihot esculenta*), corn (*Zea mays*), beans, *rascadera* (*Xanthosoma ssp.*), *chirma* (an unidentified local root crop), *naranjilla* (*Solanum quitense*), and sweet potatoes for home consumption. In addition, they plant sugar cane (*Saccharum sinense*) to make *Gaurapo*, the base of *aguardiente*, and *achiote* or lipstickplant (*Bixa Orellana*), to name just a few important species (Allum, 1997). Fruits are also an important part of the Chachi diet and agricultural systems. Holm-Nielson and Barford (1984) collected 48 different species that the Chachis enjoy in their households. Some are domesticates, some are transplanted into their agricultural plots, and some are eaten from the wild (Allum, 1997). They plant pineapples along the paths or in open areas on the way to or between swidden plots. Avocados (*Persea Americana*), *pepe pan* or breadnut or seeded breadfruit (*Artocarpus altilis*), *chontaduro* or peach palm (*Bactris gasipaes*), *tagua* (*Phytelephas aequatorialis*), *caimito* or golden fruit of the Andes (*Chrysophyllum caimito*), papaya (*Carica papaya*), and other more durable tree crops are also planted in the *chacras*. The women of Loma Linda plant *rampira* (*Cardulorica palmata*) along the paths closer to the village in order to acquire weaving material for their baskets, sleeping mats, hats, and fans.

Specific cash crop activities on a *chacra* consist of growing cacao and coffee (McIlvaine-Newsad, 2000; Medina, 1992). Cacao, which has been grown and sold since at least the turn of the twentieth century, has a sweet white flesh around the seeds that can



Photo by Author.

Figure 5.10. A Chachi from La Ceiba resting in his platanal with some papaya trees in the foreground.

be made into drinks. Then the dried seeds are sold to make chocolate. The Chachis have not planted coffee for over five years due to low coffee prices. Cash crops and subsistence crops are usually inter-planted but not necessarily in the same area. Usually cacao (one of the principal market crops in Loma Linda and the Cayapas River area) is planted with the other tree crops in a separate field. In Loma Linda, some have abandoned their cacao because of the low prices. In La Ceiba, residents do not grow much cacao because they claim it does not produce well.

The Chachis also have home gardens that surround their houses. These gardens are complex and intensive, and serve multiple uses, and are cared for by women. Gardens often contain fruits from the *Passiflora* genus (one endemic to the area and the others not), coconuts, limes, oranges, *naranjilla*, hot peppers, and other commonly eaten fruits like madrona (*Rheedia madruno*), a relative to the mangosteen and mamey. These plots may also include medicinal herbs, herbs for cooking, seedlings that need to be cared for, and some vegetables like squash, garlic, and onions. Gardens supply perishable fruits, vegetables, and herbs, while *chacras* provide food that can be stored. Contrary to the research of McIvaine (2000), the Chachi women on the Cayapas River also use *canoeras*, which are either old, bored canoes or interlaced, bamboo straps in a trough-like shape. The advantages of planting in *canoeras* include protection from floods and improved drainage. In Loma Linda, most houses have *canoeras*, while in La Ceiba this practice is less common.

### **Cycles: planting, weeding and harvesting**

In September or October, when the rainier season begins, families broadcast corn and bean seeds. That same day they cut back vegetation with machetes and chainsaws so that the forest rat and other small rodents will not eat the crops. The next step involves planting the plantain and banana corms (that are brought from other fields). Cultivators choose September and October to plant so that they can cut weeds and plant at the same time. Moreover, apart from nourishing the seeds, the additional rainfall makes the herbaceous growth easier to remove.

Chachi *chacras* have four stories. According to Medina (1992), the Chachis leave big bushes and trees untouched in the aforementioned cutting process because they provide shade and humidity for the smaller plants. The Chachis, themselves, have

another reason. They do not cut trees from which they may be able to harvest wood later. These trees, which form the highest story, are used for timber/lumber and act as banks for times of need (McIlvaine, 2000). Medina reports that the people of Loma Linda also do not cut other useful trees (like cacao, coco, avocado, or lime) that were planted in previous swidden cycles; these trees form the third story.

Maize can be intercropped with the bananas twice, which form the second story, before the bananas begin to block the sunlight (DeBoer, 1996). The Chachis start to harvest the beans and corn (that form the first story along with the root crops) four months after planting, during the second *limpieza* (or field cleaning). At this time they also plant cassava cuttings, sweet potatoes, *chirma* roots, and *rascadera* rhizomes (DeBoer, 1996). The Chachis plant three varieties of cassava that can be harvested in four months, six months, and eight months, respectively. They also make a point of completing the *limpieza*, planting the root crops, and harvesting the beans and maize together so that cultivators return home with food. The plantain and banana plants usually take nine to eleven months to yield a crop (DeBoer, 1996). The women always cut the entire fruiting stem so that the remaining baby shoots can continue to grow and be harvested after an additional few months (Barrett, 1925). Generally, families combine *limpiezas* and harvests every four months (although harvest takes place every one to two weeks).



Photograph by Author.

Figure 5.11. A Chachi girl from Loma Linda taking the *panda* harvest home.

One swidden usually yields crops for about two-and-a-half to three years, which correlates with optimal plantain productivity. Depending on family size, the Chachis of Loma Linda plant a new swidden every one to two years so that there is a continual supply of *verdes* and other staples. Again, depending on family size, households usually have two to three fields in various stages of development at the same time. When families transition to a new plot, men will often plant some cacao and other useful trees in the new plot and set up traps to catch small mammals in an old one. Medicinal herbs and other wild foods can also be found on old plots, which are usually left fallow for ten years.

There are no agricultural celebrations in Loma Linda. Nevertheless, during Lent, Christmas, and on Sundays, the Chachis do not work the fields for fear that they will not get a good harvest.

### Tools and technology

According to McIlvaine (2000) as well as this author's field observations, the Chachis of Loma Linda generally do not use any chemical inputs (e.g. commercial fertilizers, pesticides, herbicides) and do not need to invest cash into their systems. Yet in La Ceiba, residents do use fertilizers and pesticides. The Chachis from both villages collect seeds and cuttings from previous harvests. Although they rarely buy seeds, they do like to trade within and between villages.



Photograph by Author.

Figure 5.12. A Chachi from La Ceiba preparing fertilizer mix in the village to take to his swidden plot.

The Chachis tend to leave for their *chacras* before sunrise and return to their homes before lunch (unless the men are working on an all-day project like tree-cutting, in which case they take their lunch or the women take it to them). They try to finish what they can in the early morning because it often rains in the afternoon. The only energy source in the system is human energy, and the work is extremely labor intensive, especially in the hot sun.

The only tools used are machetes, sticks for holding back vegetation, hoes, axes, and chainsaws (McIlvaine, 2000). The Chachis never go into the forest or to their *chacras* without their machetes, which are utilized in almost every task. Children, both male and female, seem to have a mastery of how to use a machete by the age of six.

### **Pests and other problems in the system**

Medina (1992) notes that the Chachis lose 50% of their crops to pests. He also mentions that because they plant their coffee and cacao so close together, both crops cannot grow fully. The main pest problems involve nematodes in banana or cassava plants, and leaf cutter ants that eat fruit tree seedlings. The Chachis have not really developed any techniques to combat these problems, except through the occasional use of pesticides by some La Ceiba families.

### **Gender and Agricultural Production**

Division of labor between males and females within a household is important in providing for the needs of all family members. The division of labor is particularly important in agriculture as this activity represents the cornerstone of the Chachi subsistence system.

### **Women's role in agriculture**

The women of Loma Linda are the principal food gatherers in the family. They are in charge of the production and harvest of plantains. Depending on the size of a family and how many women are available for work, women may harvest *panda* (plantains) anywhere from twice a week to every two weeks. In order to carry plantains: women cut banana leaves, shave off a layer of the stem, and attach both ends of each leaf to a bunch of plantains. This way women (depending on age and strength) can carry up to four

bunches of plantains draped around their forehead, but resting on their back. Surplus *verdes* may be sold.



Photograph by Tanya Fisher.

Figure 5.13. A Chachi woman from Loma Linda is tying on a banana-stem strap. This will wrap around her forehead as she carries the plantains back to the house. Although women are generally in charge of harvesting plantains, it can be a family event.

Apart from plantains, women plant and harvest cassava and pineapple, and they collect wild edible plants in the *chacra*. Although rare, sometimes pigs are kept in pens, and these animals are also taken care of by women. Furthermore, women are in charge of household gardens as well as the production and harvest of *rampira* used in crafts.

Women are also responsible for *apuntalando*—the bracing up of bananas or plantains with a long stick. *Apuntalando* involves cutting a two to three-meter stick from a nearby tree, and jabbing the stick into the banana plant so that it supports the weight of the panda bunches. This procedure keeps the plant from falling over in the wind and

exposure to the forages of the *raton de monte* (forest rat) and *churin* (a smaller forest rat). Women usually undertake this activity when they are harvesting and/or cleaning.

Women's other duties also include feeding and caring for chicken. Some families buy *balanceado*, a mixed grain meal for their chickens, while others feed them a small variety of bananas (called *chiros*) or corn. Regardless, all the Chachis throw feed around their homes twice a day to roaming chickens.

In Loma Linda, residents mostly sell chickens to other families; whereas in La Ceiba, people often sell their chickens in San Lorenzo to make more money. The women's group in La Ceiba organized a chicken-raising project in 2001, but it fell apart less than a year later for unexplained reasons.

### **Men's role in agriculture**

Men usually help in clearing an area, planting, and clearing the weeds from the *chacras*. Specifically, they help plant cassava and plantains. Men are also in charge of the production and harvesting of cash crops such as cacao. When coffee was in higher demand and had a better price, men were also in charge of this; although women sometimes helped with the harvest. Both men and women grow and harvest rice.

As mentioned before, the Chachis of both communities reported that their grandfathers' economy was greatly based on the sale of pigs. It appears that pig-raising is the responsibility of the male head of household.

### **Mingas**

A *minga*, a cooperative labor group, is usually called together in order to help a family accomplish a task. It is a tradition that has been adapted by the Chocó Amerindians and the African Ecuadorians from the Andean groups (Thurston, 1997), and it is very likely that the Chachis brought this Andean tradition with them from Tutsa'.

In return for work, the family usually provides a meal for the labor participants or supplies gasoline for the motor generator during a community dance. Generally, the Chachis only call together *mingas* when a family has missed a field cleaning or when the weeds are too tall and dense for a family to eliminate alone.

*Mingas* are now becoming less and less common. As of now, three out of sixteen Loma Linda respondents pay other people in the village to help them clean their fields. (These three individuals are professors who do not have time to accomplish this task alone.) In La Ceiba, there is only one household head (out of ten) that pays other people to clean his fields; he is not a professor. There are seven people (out of sixteen) who hire others to help them haul plywood (that they cut with chainsaws) to the road for sale to intermediaries.

### **Fishing**

The Chachis have also been described as a fishing culture (DeBoer, 1996). This is partly due to the great diversity of fish found in tropical Ecuador (Allum, 1997). This section describes the Chachis' fishing and crustacean-collecting practices. All of the households interviewed in La Ceiba participate in subsistence fishing, and all but one of the households interviewed in Loma Linda (95%) fish for the same reason. Two households in Loma Linda participate in fishing for the market (10%), but no households in La Ceiba practice this (See Figures 5.3 and 5.4). Hence, subsistence fishing is fundamental to the everyday life of the Chachis, while the sale of fish is sporadic.



Photograph by Ladna Miller.

Figure 5.14. A Chachi boy from Loma Linda with one of the Chachis' favorite fish, known as *wakuko* (Spanish) or *waawalu* (Cha'palaa).

Fishing greatly differs from summer to winter since wintertime witnesses a rise in water level and sediment. As a result, household heads spend much less time fishing in the winter than in the summer. Both men and women fish (often together), and they use three types of nets and fishing lines (Allum, 1997). At sunrise they place the nets and return in the afternoon to retrieve their catch. Otherwise, both men and women will use fishing poles. Sometimes they (mostly women) will trap freshwater shrimp in the tributaries with baskets. In La Ceiba, residents also use nets and fishing poles, but their practices are not as influenced by the winter rains.

In the summer, the Chachis of both villages also: use hooks to fish, wear goggles to look for freshwater shrimp in shallow areas; search for shrimp under rocks; and go out with their *petromax* (gas lamps) at night to spear bigger fish (called *mariscar*). One key informant from Loma Linda told me that in the last ten years, people go out to *mariscar* much more often because the modern gas lamps attract much more fish than the old kerosene lamps. On the other hand, some people reported that they no longer went out at night because they were afraid of being bitten by a snake.



Photograph by Ladna Miller.

Figure 5.15. Chachi women from Loma Linda with a goggle collecting freshwater shrimp or *aabishu* (Cha'palaa), and *guaña* (Spanish) or *quivilo* (Cha'palaa).

There are also additional methods that are used in summer and winter, such as the use of fish poisons. The Chachis cultivate four different plant species for this purpose. After grinding up the required plants, the Chachis place the poison under a rock or in a log, and then wait for an intoxicated fish to float to the surface (Allum, 1997). A more recent fishing practice involves the detonation of dynamite.

Medina (1992) reports that many fish have been wiped out because of the use of dynamite. Allum (1997) suggests that the increasing frequency with which the Chachis eat river shrimp is directly related to the increasing difficulty of finding fish, as opposed to an innate preference for shrimp. Some people in La Ceiba reported that many fish were dying because a gold extraction company was polluting the water upstream. According to the questionnaire responses, people in Loma Linda went out in their canoes many more times per week than their La Ceiba counterparts. A greater dependence on the nearby road may be influencing responses and behavior in La Ceiba.

### **Hunting**

In both villages men reported that they were hunting much less now than they did before because the destruction of the forest has led to scarcer animals. Nevertheless, Figures 5.3 and 5.4 show that in both villages more than half of the household heads that were interviewed hunt (55% in La Ceiba and 60% in Loma Linda). Yet, only three household heads in La Ceiba hunt for the market (14%), while five households in Loma Linda participate in hunting for the market (25%). In both villages men hunt mostly on weekends. One of the most successful hunters in La Ceiba (who always brought back the most game during my visits since 1997) is an exception since he combines hunting with *mariscando* in the summertime.

Hunting is very seasonal. Unlike fishing, the Chachis hunt more during the winter when animal tracks are easier to see. (This complementarity between fishing and hunting is beneficial for the Chachis as it supplies protein during both seasons). Although they rarely sell the meat they have captured to markets, the Chachis do sell (or exchange) meat within both villages. Game meat almost always merits a gathering of many community members, and there is rarely enough to go around.

### Canoe-making

As mentioned above, according to the interviews in both villages, selling canoes was a big part of the economy of the interviewees' grandfathers. They did not (and do not) use chainsaws, but instead rely on axes, brushes, big fishhooks, chisels, and galopas. It is a craft of patience, and Altropico (2000) recorded that it takes a Chachi 15 days to finish making one canoe. Currently, in La Ceiba one household head carves canoes for the market (5% of the interviewees); while in Loma Linda 10 % of household heads carve canoes for the market. At the same time, with fishing and transportation



Photograph by Ladna Miller.

Figure 5.16. Chachis from Loma Linda canoeing down the Cayapas River.

being so important, canoes represent an essential aspect of subsistence life. Yet, canoes do last a long time, which may be why no one reported making a canoe in the last year, unless it was for sale. A few key informants told me that the only time they make new canoes is when the river takes them. In La Ceiba, there are actually very few owners of

canoes. Residents go out on the river less and less because they now rely on road transportation.

### **Craft-making**

Craft production is a Chachi livelihood activity that is mostly done by women. They use *rampira* (*Carludovica palmata*) to make baskets, different sized mats for sleeping, and fans for the fire. In Loma Linda, women also make woven bags, belts, wallets, placemats, and tapestries to sell; but this requires capital to buy the yarn, so it is



Photograph by Ladna Miller.

Figure 5.17. A Chachi woman from Loma Linda weaving a purse strap.

done less often. In the past, women used to also weave skirts, and men used to make drums and *marimbas*. However, these traditions are quickly fading. Only elderly men

know how to play the aforementioned instruments, and of the forty-two men interviewed, only one reported making drums and *marimbas*.

Four households (18%) in La Ceiba participate in craft production for the market, while ten households (73%) participate in craft production for the household. Thirteen (73%) of the twenty households in Loma Linda participate in craft production for the market, making craft production the activity in which the greatest number of households participate. Eighteen households (90%) participate in craft production for the household (See Figures 5.3 and 5.4).

The small number of households participating in the craft market in La Ceiba may be due to their location. Although La Ceiba is closer to San Lorenzo, residents reported that there is not much of a demand for their crafts there. In Loma Linda there is a “mobile market” for baskets, which means that every two weeks a man comes from Colombia to buy baskets for \$0.40 each. As a result, Loma Linda women are constantly making baskets.

Noticing the difference between the low price that the women were earning for the baskets and their market potential, CARE/Subir (1992-2002) encouraged the women of San Miguel (the CENTRO of seven villages of which Loma Linda is part) to form a craft co-op. The creation of this co-op fostered “traditional” craft revitalization. Women were given money to create *la casa de las mujeres* (the women’s house)—a traditional Chachi house on stilts with *tagua* palm fronds located in Loma Linda. Along with many other projects, Ecociencia organized a workshop (to learn how to process the *rampira* in a particular way) and established a connection to sell *paja toquilla* to Panama hat makers in

Cuenca (located in Southern Ecuador). Ecociencia also set up classes for revitalizing old designs and teaching younger Chachi women how to weave. In addition, simply being a part of a center (Centro San Miguel), or in other words, being closer and more influenced by other Chachi villages, may provide positive reinforcement for the continuation of women's craft production in Loma Linda. La Ceiba is at least an hour-and-a-half by car to the closest Chachi village, and craft production there seems to have lost its central place in the daily lives of women.



Photograph by Ladna Miller.

Figure 5.18. Chachis from Loma Linda selling baskets to a Colombian middleman.

### **Market-oriented Activities**

These activities are those that the Chachi households began primarily to generate cash to buy products that they do not produce themselves. These activities include agroforestry, cattle-ranching, logging, contractual labor, and school employment.

## Agroforestry

As mentioned earlier, only La Ceiba has a communal agroforestry project and this is the activity in which the most households participate (95%). The project was implemented as part of a UTEPA (*Unidad Tecnica para el Ecodesarrollo de la Amazonia y region Awá*, a governmental organization of the Department of Foreign Affairs) project from 1992-1996. The agroforestry project was coordinated by Todd Smith, a Peace Corps volunteer. Located a half-kilometer from the village center, the fruit forest contains 105 different species of tropical exotic fruits that have brought much joy to La



Photograph taken by Author.

Figure 5.19. Chachi children from La Ceiba enjoying breadfruit (*Artocarpus altilis*) from the agroforestry project.

Ceiba. Of these 105 species, only 22 are harvested, and only 3 (*arazá*, *Eugenia stipitata*; *rolinia*, *Rollinia deliciosa*; and *borojó*, *Borojoa patinoi*) are commonly marketed. Of these three, the Chachis mostly just sell *borojó* or *borojó* marmalade.

As mentioned earlier, all twenty-two of the respondents in La Ceiba participate in the community fruit forest for subsistence, and twenty-one of the twenty-two (95%) households sell the products in the market (see Figures 5.3 and 5.4). As a community, the Chachis supposedly rotate obligations so that five households are in charge of the harvest each week. These five households are responsible for packing the *borojó* in boxes and sending the produce to Guayaquil every Monday. What has actually happened, however, is that the Chachis have abandoned the rotation scheme. Instead, they bring fruit to the village on their way home from their other daily activities, which may be more efficient.

Their market connection to Guayaquil was established via a friend, who brought a journalist, who then wrote an article on the Chachis' agroforestry project. The Chachis maintained this market in Guayaquil with the assistance of an NGO called Altropico. It was also with the assistance of Altropico that they created a micro enterprise around the establishment of a communal marmalade factory. The idea is that they will make and ship *borojó* marmalade domestically each month.

Altropico sent some marmalade to Spain but has not heard anything since. One problem centers around the Chachis' inability to uphold strict health regulations. Although the community earned \$2150 from September 2001 to November 2002, no marmalade was shipped from November 2002 through June 2003. The community members and the NGOs who work with them have expressed a great deal of frustration in relation to the fruit forest and the marmalade production because the village has had a hard time organizing itself. Both outsiders and community members recognize the

potential benefits, but the Chachis are not willing to dedicate their time to an activity that may help feed their families. While the villagers claim they cannot find more markets for their marmalades, they also recognize that markets will bring more benefits through better organization. As of now, they sell small amounts to small businesses in the Esmeraldas province. One community member expressed frustration saying: “before the fruit rotted. Now we have invested in a truck and there is no fruit being harvested. What more do you want?”



Photograph by Author.

Figure 5. 20. Chachis from La Ceiba packing *borojó* marmalade.

Members of the village only reported spending time working in the fruit forest when it was time to have a *minga* (communal work exchange). Such *mingas* occur every three months to cut back the weeds and give the trees fertilizer. There have also been added problems because community members take the *borojó* to their houses and sell them in

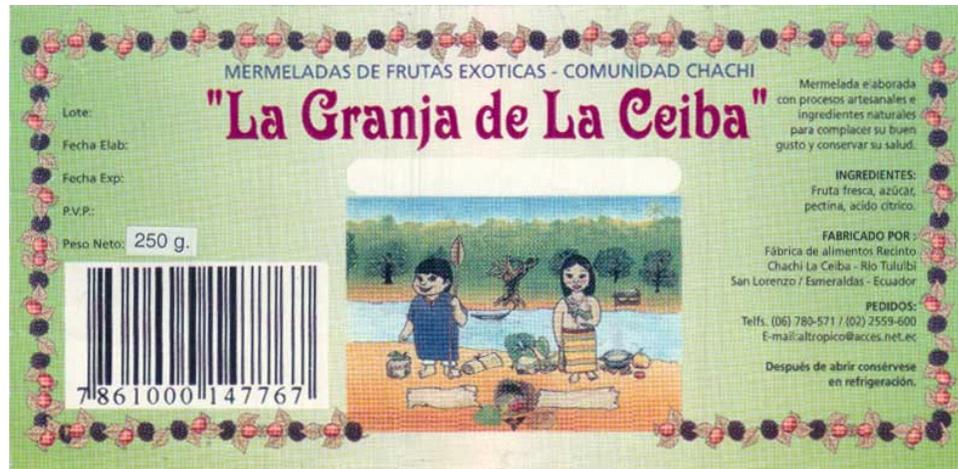


Figure 5.21. *Borojó* marmalade label from La Ceiba's communal marmalade factory.

San Lorenzo. If confronted, residents claim that the *borojó* came from their land (since individual households have now planted *borojó* on their land as well).

### **Cattle-ranching**

Cattle-ranching, which began in the early 1990's, is a recent introduction to Chachi livelihood systems. As noted earlier, Figures 5.3 and 5.4 show that of the twenty households interviewed in Loma Linda, only three (15%) spent time on raising cattle for the market, and thirteen out of twenty-two households in La Ceiba (59%) spent time on cattle-raising. In La Ceiba, 18% of these twenty-two households consume the meat in the household, while in Loma Linda 10% of the aforementioned twenty households consume the beef they raise. This may be because in La Ceiba residents sell the cattle to buyers who purchase whole animals (because they have a road), while in Loma Linda the Chachis sell the cows within the community. There were more cattle in La Ceiba than in Loma Linda because of the proximity of the market and the easy access to buyers.

Since men tend to the cattle, more often than not these animals are owned between fathers and sons of a family (including sons-in-law). Relatives often pool their money, purchase cattle, and put all the animals in one person's pasture in exchange for

agricultural land or wood from the other relatives. In one of the cases noted in Loma Linda, two brothers and a father raise cattle on the father's land. There are also two cases where cattle are owned individually. In La Ceiba, although thirteen households claimed to spend time on raising cattle, no one raises cattle by themselves. There are actually only eight family-owned operations/pastures among the people interviewed.

One of these eight households in La Ceiba first acquired cattle *a medias* more than ten years ago. *A medias* means that a man borrows some cattle from a cattle owner, and then he breeds them and takes care of them on his land. He is able to keep the offspring, but he must give back one calf for every cow borrowed. Two household heads in La Ceiba acquired cattle *a medias* over twenty years ago and one just five years ago. No household heads in Loma Linda reported acquiring their cattle *a medias*.

La Ceiba, as a community, has sold 1100 of their 1500 hectares of forest to a logging company from SETRAFOR in three different stages. They have also sold much of the trees on their individual lots to SETRAFOR, which then allows more space for cattle. The questionnaires asked each household what they had done with the money from the three tree sales in 1998, 1999, and 2000. Eight of the twenty-two household heads invested their money in buying more cattle in those years.

Cattle-ranching has the largest impact on the environment because cattle need pasture, which means a greater invasion of monocots and longer term deforestation than if this land were used for selective logging or swidden farming. Wood describes cattle-ranching in the frontier region of the Amazon as follows: "the small and mostly temporary clearings made by traditional Amazonian dwellers, like the roads and clearings made by loggers, stand in sharp contrast to the clear-cutting carried out by newly arrived

settlers who deforest large areas of land for annual and /or perennial and crops and for pastures to raise cattle” (2002: 11).

The large areas of cleared land can be demonstrated when comparing the cattle-raising in La Ceiba and Loma Linda. In La Ceiba, the average amount of land per cow is 1.19 hectares, with about 72 cows in the village. The average amount of land per cow in Loma Linda is 0.67 hectares, with 12 cows in the village. That means that in La Ceiba approximately 85.68 hectares is used for pasture, while in Loma Linda 8.04 hectares is destined for pasture. In other words, La Ceiba uses twice the amount of land for pasture per cow, and over eleven times more land has been cleared for pasture in La Ceiba than in Loma Linda.

### **Logging**

In both La Ceiba and Loma Linda, soft wood is usually taken to the market as timber (log sections called *trozas*) and hard wood is taken as planks of various sizes (called *tablones*, *tables*, or *tabletas*). To process the hard wood trees (and certain soft woods, such as *Sande*, for local markets) the Chachis use ink to mark the fallen trees and chainsaws to cut the trees into planks. Both hardwood planks and softwood logs must be moved from their location in the forest, thus, they are tied to balsa trunks to form a raft. The Chachis then paddle the rafts down stream. With bigger rafts on Cayapas River, the local people sometimes attach a motor (if they have access to one). At one time La Ceiba household heads took their rafts to Ricaurte, a few hours downriver from La Ceiba. More recently, the custom of making balsa rafts has been replaced by placing the wood at a roadside for intermediaries to take to the market. Loma Lima residents still make rafts or sell wood to middle men who make balsa rafts and take the wood to Borbón, located two

to three days downriver. In the latter case, they build a temporary shelter on the raft, and the women often come along and cook (they also bring racks of plantains to sell).

Figure 5.3 demonstrates that due to the difficulty of certification and because of distance to the market, only seven out of twenty respondents (35%) reported selling wood in Loma Linda. It is much less a priority for Loma Linda than La Ceiba. As of 1998, selling wood on the Cayapas River, where Loma Linda is located, has been illegal unless land is certified, which people do not have the capital to do. In contrast, nineteen out of twenty-two respondents in La Ceiba reported selling wood. Clearly, the majority of the households in La Ceiba participate in logging, and it is the activity in which the second most households participate (86%).

Another factor that might add to the difference in number of households that participate in logging between the two villages is that in Loma Linda, people usually extract soft wood only in the winter (when the creeks are high enough to transport the large trunks more easily). Surely this limitation is accentuated when compared to the road access in La Ceiba, which allows household heads to sell wood year-round to logging companies who extract wood with greater ease and convenience. This road (built by CODESA in 1998, but connecting to the road built by SETRAFOR) leads directly to the front door of many households in the village and connects La Ceiba to the main San Lorenzo-Ibarra highway. It also establishes a direct relationship between La Ceiba and SETRAFOR.



Photograph by Author.

Figure 5. 22. Hardwood that the Chachis from La Ceiba have carried from the forest. It is then sent down a small river, and brought up to this roadside, where intermediaries will come get it.

As mentioned in the section on cattle, since the implementation of this road, La Ceiba has worked in partnership with SETRAFOR to sell 1100 of the 1500 hectares of their communal land. In 2003, they were advanced a new communal truck that cost \$20,000, which they paid for in trees. In the summer of 2003, the community received another \$60,000 check from SETRAFOR. Most households have also sold most of their trees from their individual plots.

In La Ceiba, few households said they reforested in 1997 when SETRAFOR brought them some trees from the Andes; most of these trees have already died. In Loma Linda, the only time many of the households reforested was in conjunction with Proyecto

Subir in 2000. Otherwise household heads have not reforested their land in Loma Linda, except in one case where a single household head reforested in 1988.

### **Contract Labor**

Three households in both Loma Linda and La Ceiba (15% and 14%, respectively) participate in outside labor exchanges (see Figure 5.3). A *colono* (migrant peasant) who owns all the land to the east of La Ceiba has a huge amount of cattle and pigs. He pays a few of the La Ceiba Chachis \$5/day to cut back the secondary growth in his pastures.

In La Ceiba, lives a Chachi whose son married an American woman from Los Angeles, California. This family has decided to work in partnership to build a privately-owned, luxury ecotourism resort that is meant to be beneficial to the village. Eight of the Chachis from Loma Linda work for the owners six days a week for five dollars a day.

### **Public Service Jobs**

Education has always been an essential part of all indigenous cultures, just not in its current form (with paid teachers and students in uniforms sitting at desks). The role of the current education and teaching has important consequences in the Chachi livelihood system and culture on a household and communal level. First, the Chachis who earn a salary from school positions then buy their household products, partly because they have less time to contribute to other activities. People who attend school and teach in schools also have less time to participate in logging. Such employment can be considered apart of the service industry because teaching contributes to the subsistence of the communities' culture as well as to their understanding of the outside world.

Public service jobs include: working as teachers or substitute teachers; and building and doing maintenance. The first school in the Chachi territory was established in Loma Linda in 1963 by the Summer Institute of Linguistics (now called the SIL International),

who sent a couple of Loma Linda residents to the Amazon to study to become professors. In Loma Linda, there are currently three schools, and people come from up and down the river to attend. Of the twenty households interviewed, there were seven respondents that teach in schools. In one of these households, both the husband and wife work as teachers. In another three homes, the household heads work for the schools (one builds desks, one substitute teaches, and one does odd jobs around the schools). In sum, Figure 5.3 shows that 50% of the interviewees work in schools in Loma Linda. Yet, beyond the limited population of the questionnaire respondents, there are actually eleven male and four female professors that are trained by the Ministry of Education in Loma Linda.



Photograph by Ladna Miller.

Figure 5.23. School children playing soccer on a cement playing field in Loma Linda. The closest structure and the two farthest structures to the right are all school buildings.

In general, then, education is a high priority for the heads of the households in Loma Linda. In 2002, the Chachis from six centers, including the Centro San Miguel of which Loma Linda is a part, formed an organization called the Education Network or the

Friends Network (*Red de Educación y Red de Amigas*, respectively). They were given a loan of \$180,000 from the Interamerican Bank in order to improve their educational facilities and San Miguel received \$30,000 in 2003, for institutional infrastructure. Loma Linda has two elementary schools, one high school, and even classes for adults. Currently, there are more than 200 students, and 15 of the 39 households in Loma Linda make their living by working for the school system.

La Ceiba, on the other hand, has one school with only two professors. In 1981 with the help of the Ministry of Social Well-Being, the first president of the community, Crisencio Tapuyo, and the people of La Ceiba established the first school called Estero Bartola<sup>9</sup>. In 2000, there were forty-four students (Altropico, 2000). Only 9% of the household head respondents there work in schools (see Figure 5.3). Although La Ceiba is considered a Chachi center as well, they are isolated from the center and have yet to see the money for Red de Amigas.

In general, men usually have more opportunities and a greater probability to further their education. This is because women need to take care of the house and be with their children.

### **Conclusion**

Chapter 5 demonstrates that inter-village and intra-village networks and social networks with outsiders and NGOs, influence the number of households that participate in particular market activities. For example, agroforestry, contract labor, and cattle-ranching are practiced more frequently in La Ceiba due to social connections with outsiders. The agroforestry project and the accompanying marmalade factory exist

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<sup>9</sup> Before 1981, the children had to travel one and a half hours by canoe down river and three hours upriver to Ricaurte or La Boca to study

explicitly because of the assistance of the Peace Corps volunteer and UTEPA. People are able to do contract labor because their neighbor needs assistance in pasture maintenance. One could also conclude that logging and cattle-ranching are activities in which more people in La Ceiba, than Loma Linda, participate because of the convenience the road provides. Also because of the road, La Ceiba has tighter connections with SETRAFOR and cattle buyers.

In Loma Linda, women are well organized and sell crafts because of the middlemen and the project with Ecociencia. Residents are able to work in contract jobs because one Chachi married an American and established a resort. A few house holds occasionally sell fish because the fish are bigger and more of them are found in the nearby river. (La Ceiba is especially limited now because Tululbí River is being contaminated by a gold mining company upstream.) Loma Lima sells less wood than La Ceiba because of the certification laws and the difficulty of hauling large logs without easy road access. Yet in Loma Linda, cacao can be grown, whereas in La Ceiba cacao trees do not produce well.

While chapter 4 demonstrated that there were some expected differences in the historical, socio-political, and environmental contexts of La Ceiba and Loma Linda, this chapter has shown that the livelihood backgrounds of La Ceiba and Loma Linda are also divergent in some regards. It has revealed that residents of both villages participate in the same market and subsistence activities, but household heads from each village concentrate on different activities to provide for their families needs and earn money. The next chapter will examine the concentration on divergent market activities in La Ceiba and Loma Linda, while testing the difference in the degree of market integration (the number of hours dedicated to market activities) between these two communities.

## CHAPTER 6 TESTING COMMUNITY DIFFERENCES IN MARKET INTEGRATION

This chapter compares the degree of market integration of two Chachi villages, La Ceiba and Loma Linda. I hypothesize that the degree of integration of the market, measured by the hours spent on trading goods and/or labor in exchange for money, is the principal difference between La Ceiba and Loma Linda. This chapter will highlight the more pertinent findings, and show how they lead to the discovery that these two Chachi villages do not differ in terms of degree of market integration so much as the *type* of market activities in which they participate.

### **Time Spent on Market and Subsistence Activities**

An Analysis of Variance (ANOVA) was applied to the economic data to test the statistical significance of the difference between the amounts of time spent on market activities versus the time spent on subsistence activities in each village. Although the analysis achieved the principle goal of comparing household-level market integration in each village, it also permitted the identification of the particular activities that connect the Chachi households to the market. Specifically, the following hypothesis was tested:

*The Chachi village that is nearer to a town center and connected by road will spend more time on market activities and will decrease time spent on and diversity of subsistence activities.*

Table 6.1 shows the average amount of time household heads spend on market and subsistence activities per month in the two Chachi villages. The statistical significance indicates the probability of finding the observed difference by random error. The

conventional limit is .05 or less. This means that if repeated random samples were drawn from the population, 95 out of 100 times, one would find the observed differences between the two villages. By this criterion, only six of the twenty-two principal market and subsistence variables showed statistically significant differences between communities.

Regarding market activities, the differences between villages on the time spent on crafts, communal agroforestry, cattle-ranching, logging, and school are all statistically significant. This means the hypothesis can be accepted with respect to these specific activities.

Yet, it is interesting that community differences in the total hours spent on market and subsistence averages were not statistically significant. This reinforces the idea that the two villages spend more or less the same amount of time on market activities. Especially interesting is the fact that the market activities on which the people of La Ceiba spend the most time (logging, cattle-ranching, and agroforestry) are mostly extended-family-oriented and/or community or group-oriented. The market activities (teaching and craft-making) that are statistically significant in Loma Linda are not group-activities, although there is a teacher's committee and a women's craft co-op.

The major difference between La Ceiba and Loma Linda is that people in La Ceiba spend more time on communal agroforestry (communal activity), cattle (extended family activity), and logging (communal activity). Residents of Loma Linda spend the most time on crafts (through the women's co-op, Maria del Sol) and working in service industry jobs. (The teachers as a group form an important communal resource: el comite

de professors.) In sum, it is not market integration per se that distinguishes the two villages from one another; rather, is the type of market activities on which they depend.

Table 6.1. Average amount of time spent on market and subsistence activities in two chachi villages.

Activities	La Ceiba (near)	Loma Linda (far)	Significance
<b>Subsistence</b>			
Agriculture	61.73	53.01	0.340
Crops	56.31	46.8	0.298
Chicken	4.19	6.04	0.028
Pig	1.23	0.18	0.216
Fishing	52.92	63.77	0.338
Hunting	17.5	15.2	0.72
Communal agroforestry	3.13	0.001	0.001
Cattle-ranching	2.3	0.34	0.145
Craft-making	6.15	14.27	0.046
TOTAL	143.74	146.58	0.88
<b>Market</b>			
Agriculture	9.03	14.09	0.389
Crops	4.67	13.3	0.086
Chicken	0.9	0.26	0.086
Pig	3.45	0.53	0.326
Fishing	0	1.23	0.135
Hunting	1.7	1.08	0.582
Canoe	3.64	0.5	0.417
Craft-making	5.53	18.77	0.019
Communal agroforestry	10.17	0	0.001
Cattle	23.73	1.41	0.019
Logging	39.7	5.74	0.001
Public Service	9.09	50.2	0.014
Contracted Labor	20	28.8	0.645
TOTAL	122.57	121.8	0.972

\* Completed in the province of Esmeraldas, Ecuador, 2003.

\*\* Number of cases: 42; 22/33 households in La Ceiba and 20/39 households in Loma Linda.

What the results also demonstrate is that household heads of both villages spend more time on subsistence activities (La Ceiba 143.74 hours and Loma Linda 146.58 hours) than on market activities (122.57 hours and 121.48 hours, respectively). Hence,

both villages are still highly dependent on a subsistence economy based on agriculture and fishing. As far as time spent on subsistence activities is concerned, the null hypothesis can be rejected and my hypothesis can be accepted for three out of eight variables. Households in Loma Linda devote more time to crafts and chicken-raising for subsistence use, compared to people in La Ceiba. Again, because there is no agroforestry project in Loma Linda, people in La Ceiba spend more time on communal agroforestry. These are the only three subsistence variables that are statistically significant.

Households in both villages spend time on an equally diverse amount of subsistence activities. The hypothesis that stipulates that the diversity of subsistence activities decreases with greater market integration can be rejected. This may be because both villages are still adjusting to the market system. Further into the market integration process, there may be less time for certain subsistence activities, especially as they specialize on producing certain commodities. This process may be more accentuated by the fact that with better market access and greater incomes, they may be able to buy the household products they now produce themselves.

The following discussion, and the remaining chapters of this thesis, will concentrate primarily on the different *types* of market activities in which the communities participate. The original hypothesis is reworked and the new hypothesis supposes that: the principal differences between the two villages involves increased participation in certain kinds of market activities, and this divergence between La Ceiba and Loma Linda influences levels of social capital. What directly follows is a discussion of the results from the analysis between more subsistence-based activities versus market-integrated activities.

### **Traditional and Subsistence-oriented Activities**

This section focuses on the original subsistence and market activities that were the first activities through which the Chachis interacted with the market. These are essential aspects of what is considered today as Chachi culture. They include craft production, agriculture, fishing, hunting, and canoe-making. Out of these activities, only subsistence and market craft production are statistically significant.

#### **Craft-making**

The results show that the women of Loma Linda spend three times more time on market-oriented craft production and more than twice the amount of time on subsistence-oriented craft production than the women of La Ceiba. In La Ceiba, they spend almost the same amount of time doing subsistence and market crafts each month, and in Loma Linda the women spend more time on market goods than on subsistence crafts (which are sometimes traded in San Lorenzo or Esmeraldas for clothes for their children). The average household time spent on making crafts for the market in Loma Linda is 18.77 hours per month, while the average in La Ceiba is 5.53 hours per month. The results also demonstrate that in Loma Linda the household average for making crafts for the household is 14.27 hours per month, and the average for La Ceiba is 6.15 hours per month. The differences between the villages as well as the differences between market and subsistence production results may be due to various factors. These factors were discussed in earlier sections about crafts and will be expanded upon in subsequent chapters.

#### **Agriculture**

Originally it was thought that crop production, chicken production, and pig production were three separate categories because each activity results in separate

marketable commodities. However, the Chachis grow corn, bananas, and manioc to feed their chicken and pigs. This example emphasizes the interconnections that exist between the aforementioned practices. Therefore, it was decided to combine all three categories and test for statistically significant differences. Results indicated no significant differences between the two communities in terms of average household times in agricultural subsistence or market activities.

When focusing on crop production, the average amount of time spent per La Ceiba household is 4.67 hours per month on market production and 56.31 hours per month on subsistence. The average household in Loma Linda spends 46.8 hours on crop production. Yet, in Loma Linda they spend an average of 13.3 market hours on market crops. The comparatively large amount of time dedicated to market agriculture in Loma Linda is mostly because of the sale of cacao, which they grow primarily with CARE's influence. As mentioned already, cacao is not reported to grow as well in La Ceiba. The market and subsistence agricultural averages spent by households are not statistically significant.

### **Raising Chickens and Pigs**

Table 6.1 shows that women in La Ceiba spend 0.9 hours and women in Loma Linda spend .26 hours dedicated to chicken-raising for marketing purposes. The difference between the villages is not statistically significant. And this is somewhat surprising considering that the commencement of the women's group in La Ceiba in 2002 was based on the production of chickens to sell in San Lorenzo. Yet, many chickens died and then the women of La Ceiba embarked on a new type of project. Perhaps for this reason very little time is spent on raising chickens in both villages.

In both villages they mostly produce chickens for household consumption, but in Loma Linda more time is dedicated to raising chickens than in La Ceiba. In Loma Linda the household average is 6.04 hours a month on raising chickens for subsistence, while in La Ceiba they spend 4.19 hours per month dedicated to chickens for household consumption.

As the numbers on Table 6.1 reveal, currently very few people interviewed in La Ceiba or Loma Linda had pigs or spent any time on pig-raising for sale or consumption. This may be due to the fact that pigs take very little care, regardless of their present or previous importance in each village.

### **Fishing**

The data reveal that the majority of livelihood time is spent on fishing in Loma Linda, and that in La Ceiba the average household time spent on subsistence fishing (since nobody sells fish) is only four hours less than subsistence agriculture. In Loma Linda they spend much more time fishing for home consumption (the household average is 63.77 hours per month) than for sale (1.23 hours per month), while in La Ceiba they only spend a household average of 52.92 hours per month fishing for home consumption. Again, the differences between the household averages spent on fishing are not statistically significant.

### **Hunting**

In both villages households spend more time subsistence hunting than hunting for market. In La Ceiba the Chachis spend more time on both subsistence hunting (17.5 hours per month) and market hunting (1.7 hours per month) than in Loma Linda (15.2 and 1.08 hours, respectively). The differences between the two communities are not statistically significant.

**Canoe-making**

In La Ceiba, the household average for hours spent on making and selling canoes was 3.64, whereas in Loma Linda the average amount of time per household spent on canoe making and marketing was 0.5 hours per month. The differences between the average household times dedicated to market-oriented canoe-making in the two villages are not statistically significant. Actually more people reported selling canoes in Loma Linda, but less frequently. In La Ceiba there was just one man who reported canoe-making, but he made two small canoes (because he said there are no large trees left) every other month.

**Market-oriented Activities**

This section will discuss subsistence and market activities that have come about as a result of increasing Chachi interaction with the outside world in the last fifty years. These include participation in the communal agroforestry project, contract labor, logging, cattle-ranching, and working in schools. As market activities, these are all statistically significant except contract labor. Agroforestry and cattle-ranching are not statistically significant when the products are used for subsistence ends.

**Agroforestry**

Although agroforestry has been practiced by people living in the forest for about as long as the Chachis have lived in the Chocó, the idea of a community coming together to produce communal commodities is new. All together, the average household time per month dedicated to the communal agroforestry project in La Ceiba for market production was 10.17 hours, while households dedicated 3.13 hours to subsistence production (which is why it is included in the more market-based activities). Due to the lack of a communal

agroforestry project in Loma Linda, the difference in time spent on agroforestry activities per month is statistically significant.

### **Cattle-ranching**

The results show that La Ceiba spends much more time on both subsistence and market-oriented cattle raising activities than Loma Linda. La Ceiba spends an average of 2.3 hours per month on subsistence cattle-raising, while Loma Linda spends an average of 0.34 subsistence hours per month on cattle-raising. This difference in time spent on subsistence cattle-ranching is not statistically significant. In both villages, more time is dedicated to market cattle-raising than subsistence cattle-raising.

As far as market-oriented time spent on cattle, La Ceiba spends 23.73 hours per month on cattle-raising activities, while Loma Linda only spends 1.41 hours per month; the divergence between villages of the average amount of time dedicated to cattle-ranching for the market is statistically significant. The large difference in average hours spent on market cattle-raising compared to subsistence cattle-raising in La Ceiba was discussed earlier in the chapter. To reiterate, it is due to the fact that La Ceiba cattle owners mostly sell their cows to buyers in San Lorenzo, who purchase entire cows. As a result, owners and their families usually do not eat the meat from the cattle they sell. In Loma Linda, the smaller difference between the amounts of time spent on market versus subsistence cattle-ranching is due to the fact that the few families that do own cattle sell beef within the village and smoke it for their family as well.

### **Logging**

In the past year, the average time spent per household on cutting wood in La Ceiba was 39.7 hours per month, whereas in Loma Linda it was only 5.74 hours per month. These results are statistically significant. Causes for these differences were discussed in

earlier chapters; the primary being access to market via the road from La Ceiba to the Ibarra-San Lorenzo highway.

### **Contract Labor**

In Loma Linda, the average household time spent on contracted labor is 28.8 hours per month, while in La Ceiba it is 20. The variance between Loma Linda and La Ceiba is not statistically significant.

### **Public Service**

In Loma Linda, the average amount of hours per month per household spent on public service is 50.2 and in La Ceiba the average is 9.09. The difference between La Ceiba and Loma Linda regarding the average time dedicated to working in schools per month is statistically significant.

## **Discussion**

The data in Table 6.1 demonstrates that the main difference between the villages is not the overall degree of market integration, and therefore my hypothesis is not accepted. However, taking into account the variance between villages of the different activities that are statistically significant, Table 6.1 demonstrates that the principal difference between La Ceiba and Loma Linda is the *type* of market integration.

This is a crucial finding because this means that market integration is not just one vector of outside influence that affects a village. Instead, market integration may come in different forms and each village may choose to integrate into the market in different ways, depending on their socio-environmental context.

Since the results show that it is the type of market activities that creates the major difference between the villages, statistically significant market activities are also of primary importance as factors that influence social capital. Thus, the remaining parts of

this chapter will concentrate on the differences between the amounts of time dedicated to the particular statistically significant market activities: craft production, cattle-ranching, the agroforestry project, timber/lumber extraction, and school employment (see Table 6.1).

Figure 6.1 shows the percentage of households that participate in the five statistically significant market activities in each village. It shows that in La Ceiba 95% of households participate in the communal agroforestry project, 86% participate in logging, and 59% participate in cattle-ranching. This figure highlights those households in Loma Linda that concentrate on other market activities. In the latter community, 65% of households participate in craft production and 50% work in public service jobs. A discussion of the findings about the significant and diverse livelihood activities will lead into the final observations about the variance in forms of market integration between La Ceiba and Loma Linda. This figure also demonstrates that a far greater percentage of households in La Ceiba participate in market activities than in Loma Linda.

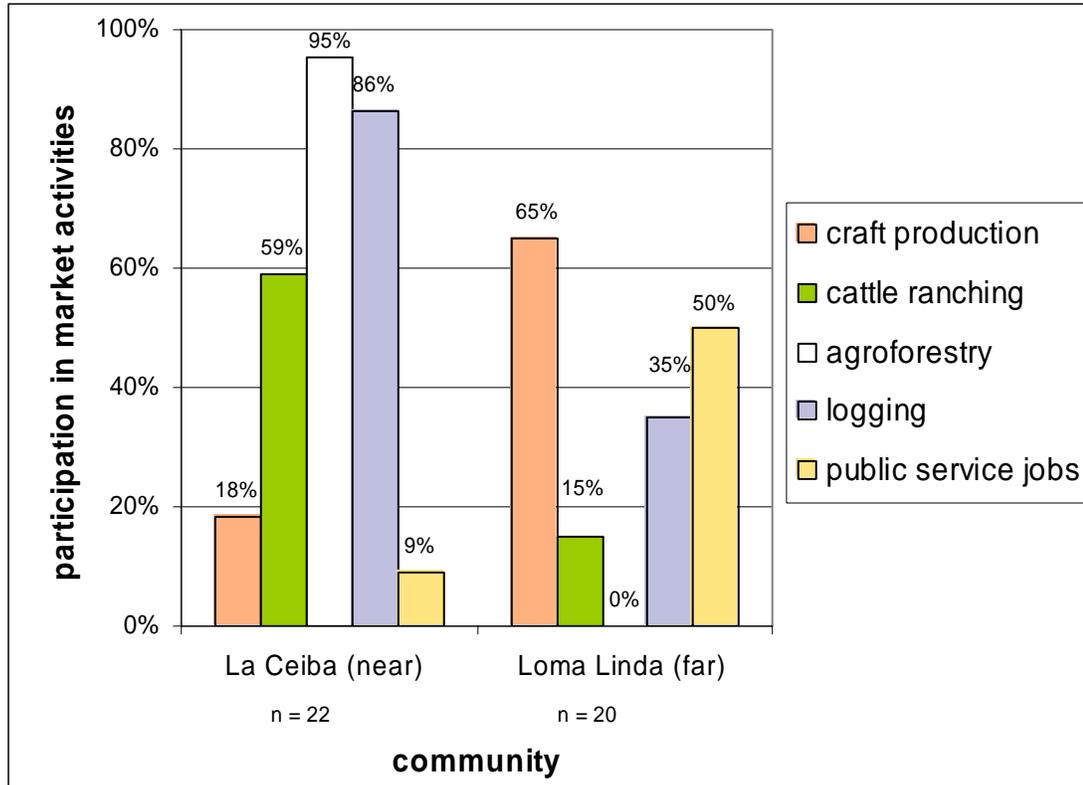


Figure 6.1. Household participation in significant market-oriented activities.

Activities that are statistically significant are shown in Table 6.1 and are highlighted again in Figure 6.1. Important observations about the communal and household differences in market activity participation between Loma Linda and La Ceiba are as follows.

1. The people of La Ceiba concentrate on market-based activities such as logging and cattle-raising (more environmentally destructive activities) and agroforestry. The main market activities in Loma Linda are working in schools and crafts, which are potentially culturally relevant and less environmentally destructive.
2. The activities in which most households in La Ceiba spend the most time and earn the most money (e.g. cattle-ranching, logging, and participation in the agroforestry project) are extended-family and communal projects. Craft-making and working in schools, which are the main activities of Loma Linda do not require family or community collaboration (although there are community groups for both of these activities).
3. Since subsistence and market-oriented craft production play such a major part in the Loma Linda economy, women play a larger role in market integration.

One can see from the results of the ANOVA tests that, indeed, the road in La Ceiba seems to make access to certain kinds of markets (such as timber/lumber and cattle) easier. Moreover, these newer activities tend to occur on a larger scale. Yet, some newer and market-based activities have the potential to be more environmentally benign.

Clearly, working for the school system, or an extractive activity, or even a communal agroforestry project are activities that are less damaging than clear-cutting and setting-up large areas of forest as cow pasture.<sup>1</sup> Therefore, Loma Linda's main activities may be considered more environmentally benign, whereas La Ceiba's activities are more environmentally harmful.

### **Conclusion**

This chapter showed that the two communities differ in terms of the *type* of market activities in which each participates (by economic activities). The next step in the analysis is to explore the social consequences of market integration. The chapter that follows tests the statistical significance of the differences between the communities (and individuals within them) in terms of social capital.

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<sup>1</sup> Of course, whether an activity is environmentally benign may also depend on how wages are invested or whether craft materials are harvested sustainably. Extraction techniques and wage investments will not be explored further in this thesis because in this case we know wages are going towards food and the craft materials that come from plants that women grow in their *chacras*.

## CHAPTER 7 TESTING COMMUNITY DIFFERENCES BETWEEN MARKET ACTIVITIES AND SOCIAL CAPITAL

“Now navigating their way through the context of contradictions by negotiating the permanent contradiction between the culture of use value and the culture of exchange value (profit), the question becomes how much of the indigenous social principles and logic are still present in contemporary indigenous societies? In other words, how much and in what ways has the capitalist economy and world view affected indigenous groups?” (Varese, 2001)

This chapter focuses on the social consequences of market integration. Previous pages have shown that the two communities that are the focus of this research—La Ceiba (the closest village to an urban center) and Loma Linda (the farthest village to an urban center)—do not differ in terms of the number of hours that that people devote to market versus non-market activities. Despite this overall similarity, the two do differ significantly in terms of the kinds of market activity that prevail. People in La Ceiba are much more likely to engage in ranching and logging for income.

The concern here is whether the economic differences between the two places are associated with significant difference with respect to social capital. The notion of social capital can be conceptualized in at least two different major ways. “Cognitive” social capital refers to values, beliefs, behavior, and social norms. “Structural” social capital refers to the degree to which informational and material networks organize social interactions. “Bonding” social capital, which includes both structural and cognitive

social capital, refers to intra-village cohesiveness and is the overall type of social capital that I address in my hypothesis.<sup>1</sup>

Using various measures of social capital as dependent variables, the objective is to test the hypothesis that, other things being equal, people in La Ceiba—the community in which ranching and logging are more evident—will have lower levels of both forms of bonding social capital. If the data support this hypothesis, we can conclude that social capital is a unitary concept that is affected by the kind of economic activities that are performed. Alternatively, if the hypothesis is supported for some measures of social capital, but not others, the results suggest that the processes that link economic activity to social organization may be more complex.

The following items—and the questions from which they were derived—serve as operational definitions of social capital.

***Cognitive social capital:***

- **Trust about money.** Do you think that in this community the people generally have trust in each other in questions of borrowing and lending money?
  1. Yes, they have trust
  2. Some
  3. There is no trust
  4. I do not know/ I am not sure
  5. No response
  
- **Personal trust.** How many people in this community are honest and deserve to be trusted?
  1. the majority are honest and deserve to be trusted. la mayoría son honestas y merecen confianza
  2. some are honest and deserve to be trusted

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<sup>1</sup> The other two types that also include cognitive and structural forms of social capital are bridging and linking social capital. Bridging social capital is intra-village cohesiveness and linking is multi-scaled organizational cohesiveness. See Figure 2.1 in chapter 2.

3. only a few are honest and deserve to be trusted
  4. people are not honest nor deserve to be trusted
- **Level of cooperation.** All in all, how does the level of trust in the community seem to you?
    1. very low
    2. low
    3. normal
    4. high
    5. very high
  - **Personal help.** Suppose that something unfortunate happened to you , you're your father or your child suddenly died (something that makes you feel sad), who could you ask for personal help (to talk about your sadness).
    1. nobody would help
    2. family
    3. friends
    4. neighbor
    5. a religious leader or group
    6. a community leader
    7. a marketing or business leader
    8. a political leader
    9. a community organization to which you belong
    10. a community leader to which you do not belong
    11. governor or traditional government
    12. other
    13. I do not know/ I am not sure
    14. no response
  - **Economic help.** Suppose that you lose a lot economically, for example a crop failure, who could you ask for economic help?
    1. nobody would help
    2. family
    3. friends
    4. neighbor
    5. a religious leader or group
    6. a community leader
    7. a marketing or business leader
    8. a political leader
    9. a community organization to which you belong
    10. a community leader to which you do not belong
    11. governor or traditional government
    12. other

- 13. I do not know/ I am not sure
- 14. no response

***Structural social capital:***

- **Most important organizations.** Of these organizations, choose three that are the most important for you.

1. Catholic Religion
2. Evangelist Religion
3. the center's government
4. FECCHE
5. agricultural cooperative
6. women's cooperative
7. parent's committee
8. health committee
9. cultural association
10. environmental association
11. traditional government
- LA CEIBA ONLY
12. Altropico
13. OIM
14. SETRAFOR
15. Plan Chocó
16. COMOFOR
17. forestry committee
18. sports committee
19. agroforestry committee
20. marmalade committee
21. water committee
- LOMA LINDA ONLY
22. professors' association
23. youth sport's club
24. Redes Amigas

- **Number of people known outside.** How many people (friends) that are not Chachis do you know in the following places?

1. On the Tululbí River (or San Miguel for Loma Linda) \_\_\_\_\_
2. San Francisco (Borbón) \_\_\_\_\_
3. San Lorenzo \_\_\_\_\_
4. Esmeraldas \_\_\_\_\_
5. Quito \_\_\_\_\_
6. Other places (Santo Domingo) \_\_\_\_\_

In the places 1-6 above how many people do you know through the following?

1. Through ONG's?
  2. Through government positions?
  3. Through selling agricultural products?
  4. Through selling crafts?
  5. Through logging?
- **Influence.** How much influence (ability to influence or motivate) do you believe you have to make this community a better place to live?
    1. a lot
    2. some
    3. not much
    4. nothing
    5. I do not know/ I am not sure
  - **Land, Political and Religious disputes.** Many times there are different positions among people who live in the same village. How much do you believe that these differences divide the people?

**A little      Some      A lot**

**Land disputes**

\_\_\_\_\_

**Political disputes**

\_\_\_\_\_

**Religious disputes**

\_\_\_\_\_

- **How problems are resolved in-village.** How do people resolve problems?
  1. There are no problems
  2. Differences do not cause problems
  3. The people resolve their problems by themselves
  4. The family or household intervenes
  5. The neighbors intervene
  6. The community leaders intervene
  7. Religious leaders intervene
  8. Political leaders intervene
  9. violence
  10. governor or traditional government
  11. all the community
  12. someone from the outside
  13. I do not know/ I am not sure
  14. No response

### **Methods of Social Capital Data Analysis**

To measure bonding social capital is to measure the degree of group cohesiveness. Procedures for testing the differences of bonding social capital between the two communities fall into two general categories: logistic regression and cross tabulations. Between the two, I tested community and other differences in 12 bonding social capital variables.

#### **Logistic Regression**

Logistic regression is the appropriate technique when the dependent variable is a dichotomy (coded 1 when the attribute of interest is present, and coded 0 when it is not). In this case the measures of social capital were recoded into dichotomous variables, even though the questionnaire originally allowed for a greater number of responses. The decision to dichotomize the dependent variables was based on an analysis of the distribution of the responses (which were often highly skewed), and because ordinary least square analysis (OLS) does not perform well when the number of categories is small.

Like OLS, logistic regression allows the introduction of multiple independent variables. In this case, the independent variable of primary interest was place of residence (La Ceiba, coded 1; and Loma Linda, coded 0). Additional variables were introduced as controls, such as age, sex, and years of education.

Logistic regression produces a set of  $b$  coefficients that predict the probability of an outcome (e.g., the presence of a particular kind of social capital). When the coefficients are exponentiated (exponent  $B$ ), the  $b$  coefficients can be interpreted as an odds ratio. More specifically, an odds ratio of 1 for a given independent variable shows that the independent variable has no effect on the odds of the dependent variable. An

odds ratio greater than 1.0 indicates that the independent variable is associated with a greater probability of social capital. Thus, an exponentiated coefficient for, say, community of 1.37 means that odds of finding social capital in the community that is coded 1 is 37% greater than the odds of finding social capital in the community coded 0 (after removing the effects of other variables in the equation). Similarly, an odds ratios of less than one, say, .80, means that the probability of finding social capital in the effect community is reduced by 20%. The odds ratios produced by logistic regression are therefore an easy way to assess the association between the independent variable (e.g. community of residence) and a number of dichotomous dependent variables (various indicators of social capital).

The tests for each of the dependent variables were carried out in eight consecutive steps. An efficient way to explain the logic of the research design, and to present the hypotheses, is to construct a summary table, as follows.

The cognitive social capital variables tested by logistic regression include trust about money matters, honesty and personal trust, and levels of cooperation. Structural social capital variables tested by the same method of analysis include land disputes, political disputes, religious disputes and the amount of influence the household heads and their spouses believe that they have in a community.

Table 7.1. Summary table: logistic regression (models 1-8).

Model	Independent variables	Predicted effect (Exponent B)	Rationale
1	Community of residence (La Ceiba=1 Loma Linda=0)	<1	The closer village (coded 1) will have less social capital.
2	Age (15-40=1 41-65=0)	>1	The older generation will spend more time in households and therefore have lower social capital.
3	Community Age	<1 >1	Tests if the community differences in social capital remain after controlling for age.
4	Education (7-16=1 0-6=0)	>1	Greater education is associated with greater ability to act collectively rather than individually.
5	Community Education	>1 >1	Tests if community differences in social capital remain after controlling for educational level.
6	Sex (Male=1 Female=0)	<1	Men are more likely to participate in market activities, and therefore have lower social capital.
7	Community Sex	<1 >1	Tests if community differences in social capital remain after controlling for sex.
8	Community Age Education Sex	<1	Tests if community differences in social capital remain after controlling for all variables.

### **Cross Tabulations**

Cross tabulations are used to test the relationship between two nominal variables. Chi Square tests the significance of each relationship. As with the logistic regression tests, to be significant the Chi Square must be 0.10 or below. The *cognitive* social capital variables tested using cross tabulations and Chi Square include who household heads and their spouses would refer to if in need of (1) personal help, and (2) economic help. *Structural* social capital includes other variables: which organizations hold the most importance in each village, the number of people residents consider to be friends outside the village, and how inter-village problems are solved when they arise.

### **Cognitive Social Capital**

This section discusses the factors associated with *cognitive* social capital – the norms of trust and the feeling of confidence among group members. Specific characteristics of cognitive social capital include values, beliefs, behavior, and social norms. The cognitive social capital variables tested in this chapter are trust in money matters, presence of honesty and trust in each village, and existence of cooperation. Two cognitive social capital variables are tested using cross classifications and Chi Square tests: who provides help in times of personal need; and who provides help in times of economic need.

### **Trust about Money Matters**

Trust is an important concept in the literature on social capital. In this study, one of the items in the questionnaire asked respondents whether they trust others in their community when it concerns money. Tests for community difference are presented in Table 7.2.

The analysis begins by including only the dummy variable for the community. As predicted, the exponentiated B of the community dummy variable is less than 1.00, and is statistically significant. Hence, the odds that individuals trust one another in matters of money is about 62% lower in the community that is engaged in ranching and logging (La Ceiba).

The key question at this point is whether the community effect is actually the result of the effects of other variables hypothesized to influence trust in monetary affairs. Model 2 shows that age has an independent effect on trust. However, the effects of education (model 4) and sex (model 6) are not statistically significant.

For the purposes of this study, the most important model is the last one, model 8, which controls for all of the independent variables simultaneously. The findings indicate that the community variable continues to be statistically significant, other factors being equal. In fact, the odds of finding trust in La Ceiba are 78% lower compared to Loma Linda.

The pattern of results suggests additional conclusions worth noting. First, age is the most important predictor of trust in money matters. The exponentiated B coefficient for age (model 2) is nearly 4 times greater for younger compared to older individuals. This means that the younger people are 4 times more likely than the older generation to trust their fellow members in the community specifically in terms of money matters. The effects of being younger actually increase when the community variable is added to the equation. Note that the R square for Model 3 is 13.6 percent, which is nearly identical to the R square for the full model (model 8).

### **Honesty and Personal Trust**

Table 7.3 shows that the likelihood that households will perceive other community members as honest and trustworthy is affected by living in a certain community. Control variables include age group, education level, and the sex of the respondent. Model 1 demonstrates that people in La Ceiba are three times more likely than people in Loma Linda to believe that the people of the village are honest and deserve to be trusted. Models 2, 4 and 6 show that the effects of age, education, and sex are not significant there. And models 3, 5, 7 and 8 demonstrate that even after controlling for other variables (age, education, and sex), the effect of living in La Ceiba remains more than three times greater in terms of the levels of personal trust. These coefficients remain statistically significant. This means that in terms of this variable, La Ceiba has higher bonding and cognitive social capital. In sum, belonging to one community or the other is the only variable associated with indicators of honesty and trust. When taking into account all the variables, the R square in model 8 is nonetheless low (only 7%).

### **Level of Cooperation**

Table 7.4 shows that the likelihood of cooperation in La Ceiba is about 7.4 times higher than in Loma Linda (model 1). Like Table 7.2, with the exception of community, none of the other independent variables is significant. When controlling for age and sex in models 3 and 7, the perceived cooperation level increases in La Ceiba. Model 5 shows that the relationship between place of residence and the likelihood of cooperation is not statistically significant. Similarly, when the effects of age, education, and sex are included in the logistic regression analysis in Model 8, the difference in cooperation level between villages is no longer statistically significant. Yet, living in La Ceiba as opposed to Loma Linda is an important and significant factor in four of the eight models.

Table 7.2. Trust about lending and borrowing money in the community regressed on community, age, education level, and sex, The Chachis of Esmeraldas, Ecuador (logistic regression: exponentiated B coefficients).

		<b>Model</b>							
<b>Independent variable</b>		1	2	3	4	5	6	7	8
Constant		3.214**	2.375**	2.546**	3.225**	3.148**	3.010**	3.282**	2.457**
Community	La Ceiba	0.387**		.254**		0.364		0.386**	0.223**
	Loma Linda (ref)	1.00		1.00		1.00		1.00	1.00
Age	15-40 years		3.916**	5.643**					5.886**
	41-65 (ref)		1.00	1.00					1.00
Education	0-6 (ref)				1.00	1.00			1.00
	7-16 years				1.538	0.880			0.782
Sex	male						0.644	0.639	0.980
	female (ref)						1.00	1.00	1.00
<b>R square<sup>1</sup></b>		.039	.075	.136	.007	.039	.009	.047	.137

\*\* Statistically significant at 0.10 or less.

Note: La Ceiba is the village closest to the market and Loma Linda is more isolated.

Table 7.3. Community members that are honest and deserve to be trusted regressed on community, age, education level and sex, The Chachis of Esmeraldas, Ecuador (logistic regression: exponentiated B coefficients).

Independent variable		Model							
		1	2	3	4	5	6	7	8
Constant		2.327**	2.169**	2.317**	2.084**	2.366**	2.244**	2.321**	2.303**
Community	La Ceiba	3.143**		3.137**		3.315**		3.136**	3.193**
	Loma Linda (ref)	1.00		1.00		1.00		1.00	1.00
Age	15-40 years		1.176	1.018					1.071
	41-65 (ref)		1.00	1.00					1.00
Education	0-6 (ref)				1.00	1.00			1.00
	7-16 years				0.589	1.113			1.051
Sex	male						1.160	1.140	1.146
	female (ref)						1.00	1.00	1.00
<b>R square</b>		.065	.001	.065	.014	.065	.001	.065	.066
** Statistically significant at 0.10 or less.									

Note: La Ceiba is the village closest to the market and Loma Linda is more isolated.

Table 7.4. Cooperation level in the community regressed on community, age, education level and sex. The Chachis of Esmeraldas, Ecuador (logistic regression: exponentiated B coefficients).

Independent variable		Model							
		1	2	3	4	5	6	7	8
Constant		0.074**	0.107**	0.076**	0.077**	0.069**	0.096**	0.063**	0.050**
Community	La Ceiba	7.398**		7.527**		6.308		7.510**	4.460
	Loma Linda (ref)	1.00		1.00		1.00		1.00	1.00
Age	15-40 years		1.154	0.879					1.305
	41-65 (ref)		1.00	1.00					1.00
Education	0-6 (ref)				1.00	1.00			1.00
	7-16 years				0.269	0.703			0.375
Sex	male						3.171	3.242	4.086
	female (ref)						1.00	1.00	1.00
<b>R square</b>		.060	.000	.060	.023	.061	.026	.084	.091
** Statistically significant at 0.10 or less.									

Note: La Ceiba is the village closest to the market and Loma Linda is more isolated.

## **Personal Help**

Question 5.1 in the social questionnaire asked respondents the following: “suppose that something unfortunate happened to you, such as hurt feelings because your husband or wife left you or something similar to this, to whom could you refer for personal help?” The results of the cross tabulation in Table 7.5 indicate that there is a statistically significant relationship between people living in different communities. However, there are no significant differences in responses to the “personal help” question when the respondents are classified by age, education, or sex.

In La Ceiba (the close community), as opposed to Loma Linda (the far community), almost two times more respondents said that they would not go to anyone (31% compared to 18.4%). In turn, in La Ceiba 38.1% of people compared to 13.2% of people in Loma Linda said that they would go directly to the community. Yet, more than twice the number of respondents in Loma Linda responded that they would go to family and friends (63.2% as opposed to 26.1%). Furthermore, 2.6% of Loma Linda residents, and 4.8% of La Ceiba inhabitants, said they would turn to outsiders if they were in need of personal help.

In terms of measuring bonding social capital, the five different categories can be reduced to two: insiders and outsiders. The village with the most people who refer to family and friends and community is the village that has the most bonding social capital. In Loma Linda, 76.4% look to family and friends and community in the case of a personal problem, while in La Ceiba 64.4% refer internally if they have a personal problem. In other words, people in the farther community are more inclined to look to families and friends for help with personal problems.

Table 7.5. Personal help cross tabulations. Esmeraldas, Ecuador.

	Community		Age		education		sex	
	close	far	15-40	>41	0-6	7-14	male	female
nobody	31.0	18.4	31.0	9.1	22.2	30.8	26.8	23.1
family/friends	26.1	63.2	41.5	50.0	42.6	46.2	36.6	51
community	38.1	13.2	24.1	31.9	31.5	15.4	29.3	23.1
outsiders	4.8	2.6	3.4	4.5	3.7	3.8	4.9	2.6
religious groups	0.0	2.6	0.0	4.5	0.0	3.8	2.4	0.0
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chi square	.009		.172		.358		.622	

### **Economic Help**

Table 7.6 shows the results of asking the Chachis of La Ceiba and Loma Linda a similar question, this time in terms of economic help: “suppose that you lose a lot economically, for example a crop failure, to whom would you turn for help?” The cross-tabulation results are parallel to those in Table 7.5. The only statistically significant differences are associated with place of residence. In La Ceiba, the close community, almost four times the amount of respondents said they could not ask anybody (28.5% as opposed to 7.9%). While just about the same amount of respondents in both villages said they would talk to family and friends, almost six times the amount of people in La Ceiba than in Loma Linda said they would ask the community. Although the table shows that one-third of La Ceiba does not want to ask anyone for help, the other third would ask the community. Consequently, 47.7% of the respondents in La Ceiba would look internally to family and friends and community, as opposed to only 21.1% in Loma Linda. In turn, in Loma Linda one-third would refer to outsiders and more than a third will turn to religious groups.

There are clearly differences between the villages in terms of this aspect of bonding and cognitive social capital when it concerns economic assistance. Nevertheless, there are various potential historical and social explanations that may influence the responses

in both villages. First, La Ceiba has a community fund from selling communal trees while Loma Linda has very little money. Loma Linda has a much tighter relationship with the Catholic and Evangelist organizations in the area; both churches have provided economic help in times of need. .

Table 7.6. Economic help cross tabulations. Esmeraldas, Ecuador.

	community		Age		education		Sex	
	close	far	15-40	>41	0-6	7-14	male	female
nobody	28.5	7.9	20.7	13.6	22.2	11.5	19.5	17.9
family/friends	16.7	15.8	17.2	13.6	16.6	15.4	12.2	20.6
community	31.0	5.3	19.0	18.2	20.4	15.4	19.5	17.9
outsiders	16.7	31.6	19.0	36.4	20.4	30.8	29.3	17.9
religious groups	7.10	39.4	24.1	18.2	20.4	26.9	19.5	25.7
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chi square	.000		.585		.653		.678	

### Structural Social Capital

This section discusses the effects of living in La Ceiba on *structural* social capital variables. “Structural” social capital refers to the degree to which informational and material networks organize social interactions. It includes roles, social networks, and other aspects of social structure. The structural capital variables tested by logistic regression in this chapter include: the perception of the incidence of land conflicts, political strife and religious disputes, and the amount of influence an individual perceives that he or she has in the village.

Structural social capital indicators that were subjected to cross tabulations and Chi Square are the following: how inner-village problems are solved, number of people known outside the village, and the most important organizations in the village (whether they are internal or external organizations).

### **Land Disputes**

The logistic regression results presented in Table 7.7 indicate very large differences between La Ceiba (close to the market) and Loma Linda (more distant) with respect to the perception of the severity of land disputes. The values in Model 1 suggest that the odds that people perceive land disputes is 99 percent lower in the closer village. This effect is not influenced by the introduction of other variables, which are statistically insignificant (except for education in model 4). Moreover, the R square reaches 55.1 percent, which is the highest variance explained in the entire study.

What these findings clearly show is that spatial location has a decisive effect on people's perception of land disputes (and, presumably, on the actual incidence of land disputes). Although both communities have legal titles, struggle over land is a much greater problem in distant places where land assets are poorly demarcated and there is a lower degree of control. The need for greater regulation and the lower incidence of land disputes are evident in places that are distant from market and other population centers.

### **Political Disputes**

The regression analysis that includes political disputes shows greater differentiation between independent variables (see Table 7.8). Once again, the probability that one will perceive political disputes in their community when living in La Ceiba as opposed to living in Loma Linda stays statistically significant after controlling for age, education, and sex. Model 1 demonstrates that the people of La Ceiba are 80% less likely to think that political disputes are a problem. This result could be related to the fact that representatives of political parties are more likely to visit those villages located on the larger rivers.

In terms of age, education level, and gender category, people who are between the ages of 15 and 40 were 65.4% less likely than the older generation to respond that there were political disputes (Model 2). Household heads and spouses were 271% more likely to report political disputes if they had received education beyond the seventh grade (Model 4), and the odds remain the same for women and men (Model 6). The only statistically significant effect is the coefficient for community. Model 8 shows that there is a 73.8% increased chance of finding political disputes in Loma Linda than in La Ceiba, and 16% of the variance is explained.

### **Religious Disputes**

Table 7.9 shows that a researcher is about two-and-a-half times more likely to encounter religious disputes in La Ceiba when testing for this variable without any controls (Model 1). The same is true when controlling for age, education, and sex separately (Model 3, Model 5, and Model 7). Yet, none of these independent variables are significant in relation to religious disputes. After controlling for all three variables (age, education, and sex) together, even the effect of living in one community as opposed to the other is no longer significant. Still, it is safe to conclude that by belonging to La Ceiba one is more likely to find religious disputes; therefore, one has greater odds of encountering higher bonding and structural social capital in Loma Linda in terms of this specific characteristic. Because both villages have Catholics and Evangelists, it is unclear why there are more people who perceive religious disputes in La Ceiba. This is an area that merits further research.

Table 7.7. Land disputes regressed on community, age, education and sex regressed on land disputes. The Chachis of Esmeraldas, Ecuador (logistic regression: exponentiated B coefficients).

Independent variable		Model							
		1	2	3	4	5	6	7	8
Constant		1.124	1.104	1.154	1.483	1.198	0.975	1.118	1.204
Community	La Ceiba	0.009**		.009**		.010**		.009**	.010**
	Loma Linda (ref)	1.00		1.00		1.00		1.00	1.00
Age	15-40 years		0.584	0.890					0.919
	41-65 (ref)		1.00	1.00					1.00
Education	0-6 (ref)				1.00	1.00			1.00
	7-16 years				8.799**	1.455			1.352
Sex	male						1.053	1.323	1.185
	female (ref)						1.00	1.00	1.00
<b>R square</b>		.550	.014	.550	.196	.551	.000	.551	.551
** Statistically significant at 0.10 or less.									

Note: La Ceiba is the village closest to the market and Loma Linda is more isolated.

Table 7.8. Political disputes regressed on community, age, education level, and sex. The Chachis of Esmeraldas, Ecuador (logistic regression: exponentiated B coefficients).

Independent variable		Model							
		1	2	3	4	5	6	7	8
Constant		0.466**	0.605**	0.522**	0.564**	0.478**	0.50**	0.466**	0.610
Community	La Ceiba	0.195**		0.208**		0.215**		0.195**	0.262**
	Loma Linda (ref)	1.00		1.00		1.00		1.00	1.00
Age	15-40 years		.366**	0.417					.361**
	41-65 (ref)		1.00	1.00					1.00
Education	0-6 (ref)				1.00	1.00			1.00
	7-16 years				2.714**	1.205			1.546
Sex	male						1.000**	0.993	0.672
	female (ref)						1.00	1.00	1.00
<b>R square</b>		.127	.046	.154	.050	.128	.000	.127	.160
<ul style="list-style-type: none"> <li>** Statistically significant at 0.10 or less.</li> </ul>									

Note: La Ceiba is the village closest to the market and Loma Linda is more isolated.

Table 7.9. Religious disputes regressed on community, age, education level, and sex. The Chachis of Esmeraldas, Ecuador (logistic regression: exponentiated B coefficients).

Independent variable		Model							
		1	2	3	4	5	6	7	8
Constant		0.988	0.945	0.960	0.947	1.024	0.990	0.978	0.923
Community	La Ceiba	2.5**		2.465**		2.811**		2.498**	2.438
	Loma Linda (ref)	1.00		1.00		1.00		1.00	1.00
Age	15-40 years		1.286	1.140					1.301
	41-65 (ref)		1.00	1.00					1.00
Education	0-6 (ref)				1.00	1.00			1.00
	7-16 years				0.714	1.263			1.008
Sex	male						1.495	1.493	1.582
	female (ref)						1.00	1.00	1.00
<b>R square</b>		.050	.003	.051	.006	.052	.010	.059	.062
** Statistically significant at 0.10 or less.									

Note: La Ceiba is the village closest to the market and Loma Linda is more isolated.

**Influence in Community**

Table 7.10 shows that, after controlling for age and testing for community effects in Model 3, the probability that younger respondents believe they can influence decision-making in the community is 2.4 times higher than among older people. Even more prominent in the table are the B coefficients of Models 4, 5 and 8, in which education is a main predictor of the respondents' belief in his or her ability to influence decision-making in the community. These models reveal that the people who received a seventh grade education and above are 4.5 to 7 times more likely to believe that they can influence community decisions than those with less education. Interestingly enough, after controlling for community, age, and sex, education takes even more of a priority in relation to residents believing they have influence, while everything else becomes insignificant. Therefore, education is an important predictor of bonding and structural social capital.

Table 7.10. Influence in the community regressed on community, age, education level, and sex. The Chachis of Esmeraldas, Ecuador (logistic regression: exponentiated B coefficients).

Independent variable		Model							
		1	2	3	4	5	6	7	8
Constant		1.454**	1.212	1.209	1.975**	1.996**	1.430	1.460**	1.834**
Community	La Ceiba	0.572		0.497		1.153		0.574	1.225
	Loma Linda (ref)	1.00		1.00		1.00		1.00	1.00
Age	15-40 years		2.114	2.422**					2.124
	41-65 (ref)		1.00	1.00					1.00
Education	0-6 (ref)				4.523**	4.896**			1.00
	7-16 years				1.00	1.00			7.004**
Sex	male						0.799	0.806	0.536
	female (ref)						1.00	1.00	1.00
<b>R square</b>		.018	.027	.053	.097	.098	.003	.021	.144
** Statistically significant at 0.10 or less.									

Note: La Ceiba is the village closest to the market and Loma Linda is more isolated.

### How Inter-village Problems are Resolved

There are 14 possible responses to this question of how problems are resolved on page 134. I grouped these responses into three categories to demonstrate the dependence on inside and outside people. Religious group was kept as its own category to show the number of responses (especially in comparison with the questions of to whom one refers for economic or personal help). The cross tabulation results of Table 7.11 indicate that the differences between the two communities, as well as differences by age and education, are not significant. What the cross classification does point to is that females are more likely than men to turn to their respective communities when a problem arises (89.9% versus 70.7%, respectively). Men are five times more likely to turn to outsiders to solve problems. One potential explanation is that the majority of women in both La Ceiba and Loma Linda do not speak Spanish very well because they often drop out of school earlier than men to take care of their children. Sex is nonetheless a more important determinant than community in terms of this measure of bonding social capital.

Table 7.11. How problems are resolved cross tabulations. Esmeraldas, Ecuador.

who	community		age		education		gender	
	close	far	15-40	>41	0-6	7-14	male	female
community	81.0	78.9	77.6	86.4	85.1	69.2	70.7	89.8
religious group	0.0	7.9	3.4	4.5	1.9	7.7	2.4	5.1
outside	19.0	13.2	19.0	9.1	13.0	23.1	26.9	5.1
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chi sq.	.153		.559		.196		.029	

### Number of People Known Outside a Village

Table 7.12 investigates the amount of people known outside the village. This serves as a measure of the degree of linking and bridging social capital. Greater linking and bridging social capital (external networks) does not necessarily correlate with lower

bonding social capital (internal networks). Nevertheless, this variable was included to investigate if there is a positive or negative relationship between these types of social capital. The results show that none of the independent variables—community, age, education, or sex—have a significant relationship with the number of people known outside the village.

Table 7.12. Number of people known outside the village cross tabulation. Esmeraldas, Ecuador.

number	community		age		education		sex	
	close	far	15-40	>41	0-6	7-14	male	female
zero	9.5	23.0	16.9	13.6	16.6	14.8	11.9	20.5
0 thru 5	26.2	43.5	33.9	36.4	35.2	33.3	26.2	43.6
6 thru 10	26.0	10.3	20.3	13.6	22.2	11.1	18.9	17.9
11 thru 20	23.7	15.4	16.9	27.4	18.5	22.3	31.0	7.7
21 thru 30	4.8	2.6	3.4	4.5	3.7	3.70	4.8	2.6
31 thru 50	4.8	2.6	3.4	4.5	1.9	7.4	4.8	2.6
50 or more	4.8	2.6	5.2	0.0	1.9	7.4	2.4	5.1
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chi square.	.212		.854		.625		.163	

### Most Important Organizations

Table 7.13 identifies the most important external and internal organizations in each village. The organizations listed in this table are based on the responses to the questionnaire. The cross-classification results show that the only statistically significant difference is between communities. Yet, the differences between La Ceiba and Loma Linda are slight. While 73% of the respondents in La Ceiba consider external organizations more important than communal organizations, only 68.4% of the respondents in Loma Linda responded similarly (row 8).

Loma Linda presently does not work with any NGOs. This could be a potential reason why nobody in this village listed an NGO as the most important organization. In turn, the Catholic Church and Evangelical Church have helped Loma Linda more than La

Ceiba in the past, which may explain why 39.5% of the people in Loma Linda named religious organizations, as compared to 17.1% in La Ceiba.

In relation to internal organizations, 18.4% of the respondents in Loma Linda considered their women's group to be the most important, while nobody responded that the women's group was most important in La Ceiba. Perhaps the reason why the women's group in Loma Linda holds such respect as compared to the one in La Ceiba is because the former has a longer history and has generated substantial income by revitalizing and creating a market for traditional crafts. Furthermore, it is interesting that 9.8 % of the respondents in La Ceiba, and nobody in Loma Linda, consider the tribal government the most important organization.

In sum, although community is the only significant determinant of the relative importance of organizations, there are only small differences between the communities in terms of prioritizing internal and external organizations. Both communities regard external organizations to be more important than their own organizations.

Table 7.13. Most important organizations cross tabulations. Esmeraldas, Ecuador.

organization	community		Age		education		sex	
	close	far	15-40	>41	0-6	7-14	male	female
External								
religious groups	17.1	39.5	25.4	35.0	21.2	40.7	36.6	18.4
Centro or FECCHE	31.7	28.9	28.8	35.0	30.7	29.7	22.0	39.5
NGOs	19.5	0.0	11.9	5.0	13.5	3.7	12.2	7.9
wood companies	4.9	0.0	0.0	10.0	3.8	0.0	2.4	2.6
Total external (%)	73.20	68.4	66.1	85.0	69.2	74.1	73.2	68.4
Internal								
community	9.8	7.9	10.1	5.0	7.7	11.1	12.2	5.3
women's org.	0.0	18.4	8.5	10.0	7.7	11.	4.9	13.1
traditional gvnt.	9.8	0.0	6.8	0.0	7.7	0.0	2.4	7.9
professor org	0.0	5.3	3.4	0.0	1.9	3.7	4.9	0.0
fruit forest group	7.2	0.0	5.1	0.0	5.8	0.0	2.4	5.3
Total internal (%)	26.8	31.6	33.9	15.0	30.8	25.9	26.8	31.6
Total (%)	100.0	100.0	100.0	100.0	100.0	100.00	100.	100.0
Chi square	.000		.212		.303		.218	

### **Social Capital and Community**

Combining the results from the twelve tests above, this section will address the second hypothesis of the thesis: The Chachi village that spends the most time on logging and cattle-ranching (environmentally destructive market activities) will have lower levels of both structural (social networks) and cognitive (norms and levels of trust) types of *bonding* social capital.<sup>1</sup> The results from the previous twelve tables will be reordered so as to more easily address the aforementioned hypothesis. Logistic regression results shown in Tables 7.14 and 7.15 refer to Model 8 (testing for community while controlling for age, education, and sex together) of the preceding logistic regression tables when the b coefficients are significant, and to the other models (testing for community but controlling for age, education, and sex separately) when Model 8 is not significant. Tables 7.14 and 7.15 extract the given data from columns two and three in all the previous cross tabulations tables. Again, the results will be categorized by cognitive and structural social capital.

#### **Cognitive Social Capital and Community**

Table 7.14 shows the *cognitive* social capital results from the Logistical Regression and cross tabulation tests. The findings indicate that household heads and their spouses from La Ceiba (as compared to Loma Linda) perceive that there is a greater probability of personal trust (Table 7.4: 3.19 times higher) and a much higher likelihood of cooperation (referring to Models 1, 3 and 7 in Table 7.5: 7.53 times higher). Also, La Ceiba residents

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<sup>1</sup>Simultaneously, communal social bridging and linking social capital (both of which include external cognitive and structural) will increase.

are more likely to refer to friends and family and their community for economic help (Table 7.7: 47.7% in La Ceiba and 21.1% in Loma Linda).

Table 7.14. Community cognitive social capital.

Variables	La Ceiba	Loma Linda
Trust about money		<b>X</b>
Personal trust	<b>X</b>	
Cooperation level	<b>X</b>	
Personal help		<b>X</b>
Economic help	<b>X</b>	

Note: **X** indicates a higher value of the social capital component.

On the other hand, the responses in Table 7.2 show that the odds are greater that the people in Loma Linda perceive there to be more trust in the community about lending and borrowing money (87.7% more trust in Loma Linda versus La Ceiba). Also, more people of Loma Linda responded that they would turn to friends or family or the community if they were confronted with personal problems (Table 7.6: 64.2% in La Ceiba and 76.4% in Loma Linda).

It is interesting that the results regarding money-related questions and questions related to personal matters are contradictory. The people in La Ceiba are less likely to perceive that there is trust concerning questions of lending and borrowing money from the community, family, and friends. Nonetheless, compared to Loma Linda, two times the percentage of respondents would refer to family and friends and their community if they were in financial trouble. This may be because there are more communal funds in La Ceiba, which actually may cause more suspicion in terms of lending and borrowing.

When taking into consideration these different variables, one could deduce that respondents in La Ceiba perceive there to be greater cognitive and bonding social capital on three accounts and greater cognitive and bonding social capital in Loma Linda on two accounts. Therefore, there is slightly greater cognitive and bonding social capital in La

Ceiba. This means that the second research hypothesis that stated that the Chachi village that spends the most time on logging and cattle-ranching (environmentally destructive market activities) will have lower levels of both structural (social networks) and cognitive (norms and levels of trust) types of *bonding* social capital can be rejected. The null hypothesis can therefore be accepted because, ironically, bonding cognitive social capital is in fact greater in the village that participates most in logging and ranching (environmentally destructive activities).

### Structural Social Capital and Community

Table 7.15 includes a summary of logistic regression and cross tabulation tests in terms of seven *structural* social capital variables. The results indicate that the differences between responses from La Ceiba (the closer village to the market) and Loma Linda (the more isolated village) were *not* significant in terms of four of the seven structural social capital indicators: 1) ability to influence the community; 2) whether problems are solved within the village or with the help of outsiders; 3) the number of people known outside the village; and 4) the most important organizations.

Table 7.15. Community structural social capital.

Variable	La Ceiba	Loma Linda
Land disputes	<b>X</b>	
Political disputes	<b>X</b>	
Religious Disputes		<b>X</b>
Influence	--	--
Problems solved in-village	--	--
Number of people known outside	--	--
Most important organizations	--	--

Note: **X** indicates a higher value of the social capital component. Two dashes mean that the results were not statistically significant.

The tests that produced statistically significant results included the logistic regressions of land disputes, political disputes, and religious disputes. The people of La

Ceiba were 99% less likely to perceive land disputes and 74% less likely to perceive political disputes. On the other hand, the residents of La Ceiba were 2.5 to 2.8 times more likely to report religious disputes (referring to Models 1, 3, 5, and 7). These results can then be reversed in order to be able to interpret the degree of bonding social capital. For example, if there is a greater likelihood of the perception of inner-village problems resulting from disagreements over land and politics in Loma Linda, there is more bonding and structural social capital in La Ceiba on these two accounts. The same is true in relation to religious disputes; if there are more respondents who view internal conflicts resulting from differences in religious beliefs in La Ceiba, than there is more bonding and structural social capital in Loma Linda in terms of religion.

In summary, counting the two components of bonding and structural social capital that were higher in La Ceiba (land and political disputes) versus the one component that was higher in Loma Linda (religious disputes), it appears that structural and bonding social capital is once again slightly greater in La Ceiba. On the basis of these results, similar to cognitive social capital, the second null hypothesis is accepted. The second research hypothesis that states that lower social capital will be a consequence of greater communal involvement in logging and ranching (environmentally destructive market activities) can thus be rejected.

### **Social Capital and Age, Education Level and Sex**

This section will review the results presented in Tables 7.2-7.13 to draw conclusions in regards to the third and final hypothesis. The hypothesis is the following:

The effect of market integration on levels of bonding social capital will vary by gender, age, and level of education.<sup>2</sup>

To address this hypothesis, Tables 7.15 and 7.16 summarize the results from the previously presented twelve tables. When referring to the logistic regression tables, the results of testing for age, education, and sex are presented in Models 2, 4, and 6. In the cross classification tables: columns three and four illustrate the results of the cross tabulations including age, five and six show education, and seven and eight demonstrate the affects of sex on the given social capital variable. Results will be categorized by cognitive and structural social capital.

### **Cognitive Social Capital and Age, Education Level, and Sex**

Table 7.16 includes a synopsis of logistic regression and cross tabulation tests in terms of structural social capital variables. Contrary to my third hypothesis, the results in this table indicate that cognitive social capital does not vary by age, education, or sex, except in one account. Row two, column two points out that trust about lending and borrowing varies by age. Compared to the older generation, the odds are 3.92 times greater that the younger generation perceives their respective community members to be trustworthy in terms of lending and borrowing money (Table 7.1). Nonetheless, because

Table 7.16. Cognitive social capital by age, education and sex.

Variable	15-40	>41	0-6	7-14	male	female
Trust about money	<b>X</b>		--	--	--	--
Personal trust	--	--	--	--	--	--
Cooperation level	--	--	--	--	--	--
Personal help	--	--	--	--	--	--
Economic help	--	--	--	--	--	--

<sup>2</sup> In a study done by Bolaños (2003), there is a striking difference between men and women's relationships with the environment. There may be a difference between older and young people who have differing levels of education and different degrees of interaction with the market. Godoy (2001) notes that higher levels of education lower deforestation rates.

Note: X indicates a higher value of the social capital component. Two dashes mean that the results were not statistically significant.

the majority of the cognitive social capital results are not significant by age, education, and sex, the null hypothesis can be accepted. In other words, the third hypothesis—that the effect of market integration on levels of cognitive social capital will vary by gender, age, and education—can be rejected.

### **Structural Social Capital and Age, Education Level, and Sex**

The final table in this chapter, Table 7.17, points to how the independent variables of age, education, and sex affect structural social capital levels. Age only affects one structural social capital variable: the likelihood that the Chachis from La Ceiba (the closer village to a city center) will perceive that there are political disputes. Individuals 40 years of age and below are 63.4% less likely to believe that political disputes cause internal problems in the village, as compared to older people (Table 7.5).

Table 7.17. Structural social capital by age, education level and sex.

Variable	15-40	>41	0-6	7-14	male	female
Land disputes	--	--		<b>X</b>	--	--
Political disputes		<b>X</b>		<b>X</b>	<b>same</b>	<b>same</b>
Religious Disputes	--	--	--	--	--	--
Influence	--	--		<b>X</b>	--	--
Problems solved in-village	--	--	--	--		<b>X</b>
Number of people known outside	--	--	--	--	--	--
Most important organizations	--	--	--	--	--	--

Note: X indicates a higher value of the social capital component. Two dashes mean that the results were not statistically significant.

Being more educated affects more structural social capital variables than either age or sex. By belonging to the more educated group, the odds that land disputes and political disputes will be perceived to cause disjuncture in the respective community of the respondent increase 8.8 times and 2.7 times, respectively (Tables 7.4 and 7.5). More

interestingly, the likelihood that one believes himself/herself to have a strong influence in the community increases 7 times when a respondent is more educated (Table 7.7).

Comparatively, odds of perceiving political disputes as a problem remain the same for males and females who perceive political disputes (Table 7.5). The only independent variable that is affected by sex is that of the organization that is considered the most important. If there were a problem in the village, 89.8 % of the women, compared to 70.7% of the men, would turn to their community before outsiders (see Table 7.10). By contrast, 26.9% of the men would turn to outside organizations in the case of a problem in the community, while only 5.10% of the women would do the same. Surely the reasons for this are in part due to the language barrier that women confront.

In summary, besides community, education may be the only other key socioeconomic variable that really has important implications in terms of structural social capital. Education causes significant differences in three of the seven structural social capital variables (perception of land, political disputes, and religious disputes). Only one structural social capital component differs in terms of age (perception of communal political disputes) and one component in terms of sex (the most important organizations). Therefore, it appears that structural social capital (operationalized as seven variables) does not vary by age and sex. Finally, the research hypothesis concerning structural social capital's variation by age, education, and sex, can be rejected on two accounts, but accepted in terms of education.

### **Conclusion**

Tables 7.14 through 7.17 provide compelling empirical evidence in support of the conclusion that community—as opposed to age, education, and sex—is the variable that most affects both cognitive and structural bonding social capital (hypothesis 3).

Moreover, the results from this chapter point to the conclusion that comparatively speaking, La Ceiba, the community that is more integrated into the market via logging and cattle-ranching (environmentally destructive activities)<sup>3</sup>, has greater cognitive and structural social capital (hypothesis 2). The principal hypothesis of the thesis can be addressed after having tested the two preceding hypotheses. It is as follows: *The village with greater market integration will have more environmentally destructive income-generating practices and a lower level of bonding social capital.* This will be done in chapter 8, which presents the overall conclusions of the thesis.

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<sup>3</sup> The results from chapter 6 demonstrated that La Ceiba (the closer village) is not more integrated into the market than Loma Linda per se, but instead La Ceiba is more integrated into the market via environmentally destructive activities than Loma Linda.

## CHAPTER 8 REFLECTION AND FUTURE DIRECTIONS

Need for a change and consciousness of it accumulate bit by bit in more and more people until a threshold is reached when the whole group discusses and switches attitude, using the energy from the unified focus to change institutions. (Odum 2001: 11)

The final chapter begins with my initial impressions at the outset of this project, and how these impressions changed based on the lessons learned in the course of the comparative investigation. What follows is a discussion about the limitations of the research design, as well as the alternative methods. I then note how the study can contribute to literature on market integration and social capital, as well as its practical implications for conservation policy. I conclude by addressing the possibilities for future conservation and development initiatives in Chachi communities.

### **Reflections**

After living in both La Ceiba and Loma Linda but before doing my research, I had little doubt that the degree of market integration would be greater in La Ceiba than Loma Linda. The integration would be associated with negative environmental and social consequences. “After all”, I reflected, “the intra-village social relationships of La Ceiba had become increasingly fragmented and conflictive.” Each time I returned to La Ceiba, it appeared that the people had traded more of their tranquility for greater chaos. Yet, in the process of writing this thesis, I began to question whether their lives were really getting any more chaotic or if, by having spent more time with the Chachis of La Ceiba

(as opposed to Loma Linda), I was simply becoming more aware of the complexity of the lives of local people.

Within this self-dialogue, I thought, “No, but look at Loma Linda. It really seems that these two villages are profoundly different in unambiguous ways.” These latter thoughts reaffirmed my dedication to my study and to this topic. Executing a comparative analysis would be feasible and practical because of the similar cultural and environmental contexts of La Ceiba and Loma Linda.

In the literature review (chapter 2), I summarized the work of authors who wrote about the negative consequences of market integration, and those who wrote about the positive consequences. These entailed theorists who proclaimed that social capital leads to increased development, and those who state the reverse.

This comparative design was adopted in my research design and data analysis as well. I split the time the Chachis spent on their livelihoods into market and subsistence activities. I dichotomized each of the responses from the social capital questionnaires, and even collapsed the main independent variables (age, education and sex) into dummy variables.

It is easy to neaten the ever-dynamic multiplicity of the world by creating clear-cut categories. With all these simplifications it was nonetheless impossible to avoid the inevitable complexity in which the communities of La Ceiba and Loma Linda were entwined.

The comparative design of this thesis led me to understand that market integration does not move through a village like a tidal wave, a single vector rearranging everything in its course in the same way. I soon learned that the manner in which markets are

incorporated into a village and the social consequences of this integration are just as complex and diversified as the lives of the local people in La Ceiba and Loma Linda. Although I maintain that the two villages are enough alike to compare them systematically, it was the comparative aspect of this thesis that accentuated the wide-ranging paths that multi-scaled and interactive socio-economic and environmental processes can take.

Chapter 6 showed that households of La Ceiba (the <closer village> [village closer] to urban centers) were similar to those of Loma Linda (the more isolated village) in terms of the overall degree of market integration. Nevertheless, they differed in terms of the average amount of time devoted to different *types* of market activities. While people in La Ceiba were more devoted to environmentally destructive activities such as logging and cattle ranching, people in Loma Linda were integrated into the market via public service jobs and craft production. Participation in these different types of activities affected social capital in distinct ways.

To test my hypothesis that the village where more people participate in logging and cattle-raising will correlate with less social capital, I chose to use 12 measures of social capital variables (out of the hundreds that exist), and run Logistic Regression tests and cross tabulations. The social capital variables differed between the two villages. Nonetheless, by considering the variables collectively, the results ironically indicated that the members of the Chachi village that spend the most time on logging and raising cattle have greater levels of social capital.

The results of the social capital tests were contrary to my research hypothesis, which had to be modified after considering the results of chapter 6. The original

hypothesis is as follows: *The village with greater market integration will have more environmentally destructive money-generating practices and a lower level of bonding social capital.*

At the outset of my research, I thought that the Chachis had always lived in tightly knit communities. I therefore anticipated that greater market integration would promote greater competition in the villages. As it turns out, the Chachis have lived in extended family homes spread out on the riverbanks since they migrated from Pueblo Viejo (Tutsa') more than a century and a half ago. Since the late 1950's, the increased infrastructure and assimilation of the Esmeraldas region into the Ecuadorian economy has coincided with greater market integration of the Chachi people. The Chachis are now gathered into village centers and organized into clusters of villages under the umbrella of the central Chachi federation, FECCHE (formed in 1978).

I conclude that greater bonding social capital was associated with market integration in La Ceiba, not because environmentally destructive activities promote social capital, but because of the village's historical and socio-economic contexts. On one hand, La Ceiba has easier access to nearby Negro, Awá, and mestizo communities, as well as the urban center of San Lorenzo via its connection to the recently constructed San Lorenzo-Ibarra highway. On the other hand, it is more isolated from the other Chachi centers. Due in part to its isolation from the Chachi cultural network, La Ceiba has become a target of NGOs, logging companies, and, currently, African palm companies. To confront these organizations and companies, they have had to come together as a community to decide what they want to do and to reap benefits from governmental and NGO projects. More specifically, market integration and group cohesiveness may be

encouraged by NGO and outside organizational affiliations. When I asked La Ceiba residents why communal organization is important they gave such responses as “to attain projects that benefit the community” or “because the institutions help us more.”

The people of La Ceiba have signed contracts with wood companies to build their road and pay for their communal truck. Since 1997, La Ceiba has earned over US \$100,000 by selling wood from the communal forest. They have had to come together as a village to decide what to do with this money. They have worked together to create their communal agroforestry project and to run their own marmalade factory, and now they have bought land in San Lorenzo to build a house so their children have a place to stay to pursue higher education.

The residents of Loma Linda are more closely affiliated with FECACHE. Hence, Loma Linda is more integrated via the service industry (working as school teachers) than La Ceiba because the former is part of a political center. The women from Loma Linda also spend a lot of time on crafts because the middleman comes to them, and because Ecociencia (The Ecuadorian Foundation for Ecological Studies) helped them to organize as a co-op and to create a market. Road access to Zapallo River, a half-hour downriver from Loma Linda will give them new options. Although it is difficult to determine what kind of changes this road will bring to Loma Linda, just like La Ceiba, they will be confronted with new predicaments and new opportunities that will come and go at a faster speed. What they decide to value and how they choose to organize themselves will be based on the opportunities they perceive. At the same time, it is important to bear in mind that logging companies and African palm companies (and even gold mining companies), NGOs, and other institutions may have a critical role in the creation of the

options from which the Chachis choose to design their livelihoods and futures. If there are alternative markets to environmentally destructive activities, participation in these activities may be the option that the people choose to feed, clothe and educate their children. Yet, as seen in La Ceiba, even in the midst of forest destruction and potential crisis, there is hope for social organization.

A road is a gateway for new problems as well as new solutions to old problems. A road brings exploitive markets that may be environmentally destructive. Yet, it also brings opportunities for organization and development. I do not think that the conclusions of my thesis necessarily show that environmentally destructive activities are the cause of higher social capital. Instead, options to participate in environmentally destructive market activities, and the greater incentive to self-organize, are both associated with the newly constructed road.

Holling, Gunderson, and Ludwig (2002) and Holling (January 2004, class lecture, University of Florida) describe a self-organizing adaptive cycle. The model is one of natural or social systems that are constantly repeating figure 8 or infinity sign-like processes with four main stages. According to Holling and his colleagues, the initial stage of a system is marked by the rapid exploitation of resources. This is followed by a second stage characterized by conservation and accumulation. The third stage begins when the conservation stage eventually becomes unstable and vulnerable to rapid change. Lastly, there is the reorganization of the system itself.

Holling emphasizes the importance of people or a community within a system recognizing when their ecological and social system is in the release and reorganization stage, for it is then that the course of the system is the most uncertain and unpredictable.

He states that knowing where a system is positioned in the adaptive cycle is central to knowing one's (or community's) next move. According to Holling, when a social system enters the release/reorganization stage, a shared vision, an environment of trust and cooperation, and strong leadership (all components of social capital) become essential.

It is difficult to assess with certainty whether La Ceiba and Loma Linda are located at different stages in the kind of adaptive cycle Holling describes. Nonetheless, one can infer that the road leading to La Ceiba has opened the way to an unpredictable future that may have positive and negative outcomes.

In the beginning it was the tranquility of life in Loma Linda that led me to believe that this village was less market-integrated and would have greater social capital than La Ceiba, but my research hypothesis was not accepted. Perhaps in social and cultural systems, like waves in formation, there is an attraction towards the chaos of the breaking and the reformation of their crests. Perhaps it is not stillness and traditional ways that contribute to community cohesiveness. Instead, it is continual transformations that push people to grow and reorganize themselves in new ways. With every gain, there is a loss. As indigenous people learn how to incorporate costs and benefits of the market into their daily lives, it is then that their communities and cultures become more resilient.

### **Limitations**

In discussing my thesis, I have realized that there are different ways that I could have designed the research methods and the analysis. It was suggested to me that I could replicate the findings by including more villages in my study (Bushbacher, Robert, pers. comm.). I was, therefore, doubtful of whether two cases were sufficient to test my hypothesis and draw conclusions about the social consequences of market integration. Yet, expanding the scope of the analysis would have come at the expense of an in-depth

understanding of the two communities. Regardless of the number of cases, I believe I would have come to the same conclusion that market integration does not have uniform socio-environmental consequences. The effects of market integration depend on historical, social (the level and type of organization and the capabilities of communal leaders), and ecological contexts, and how a community decides to incorporate markets into the organization of daily life.

I also realize that there are different ways to measure market integration. One could measure and compare income or compare the amount and price of purchased household goods. If time had permitted, I think it could have been valuable to add this information.

In addition, I could have analyzed the data differently. I could have measured market integration at the household level by assessing each household's degree of market integration. I could then have scaled the results according to varying levels of market integration. From there I could have tested the correlation between degrees of market integration and social capital at the household level (Bernard, Russell, pers. comm.). Once I discovered that the villages differed significantly in terms of the type of market activity in which they participate, I also could have tested the relationship between households that participate in certain market activities and levels of social capital.

Lastly, when analyzing the social data I am unsure of whether I can say with confidence that equal weight should be given to each of the questions in the World Bank's questionnaire. Although the social capital questionnaire provided a strong and an exhaustive framework to analyze communal social capital, the literature on the topic provides little guidance as to the relative important of each indicator. Consequently, in

chapter 7, I assigned equal weight to various indicators of social capital, and concluded that La Ceiba has greater structural and cognitive social capital than Loma Linda. It might have been more productive to have pointed to the differences between the different components of social capital without coming to a conclusion about the level of social capital in one village compared to the other.

Although my thesis has its drawbacks, all of the previously mentioned methods also have their limitations. As one professor at UF told me, “Science makes incremental contributions to knowledge via design features. There is no silver bullet. There is no perfect design” (Bernard, Russell, pers. comm.).

### **Contributions to Literature**

Much literature has been devoted to social capital and the effects of market integration in indigenous communities, but the findings are largely ambiguous and inconsistent. The findings presented in this thesis underscore the importance of accounting for the way in which communities are incorporated into market systems.

### **Market Integration**

Although it is clear that in many cases participation in the market has negative consequences in small communities, it is difficult to generalize about the impacts of market integration. This study demonstrates that the severity of socio-environmental effects depends on the type of market activity (service industry jobs, artisan crafts, logging, cattle ranching, or agroforestry).

Godoy (2001) and Henrich (1997) assert that indigenous people are not helpless victims of market integration, but have a choice about how and to what degree they will participate. They claim it is not an external event that selects some people more than others, but instead people choose what they want to buy and sell. This research shows

that even the participation in environmentally destructive markets can lead to higher social capital. In other words, parallel to the contentions of Bedoya Garland (1995), Bodley (1999), and Stonich (1995), the results of this study demonstrate that the negative effects of market systems may not be inevitable. Regardless of the type of market integration, there is potential for greater communal resiliency and, thus, counteraction of negative consequences of market integration.

### **Social Capital**

In sum, this study indicates that there is a correlation between greater market integration (via logging and cattle ranching) and higher social capital in the Chachi village of La Ceiba compared to Loma Linda. This observation does not negate the importance of taking into account characteristics that are unique to each context. While both places have similar cultural backgrounds, each village's participation in economic activities is based on previous and present external social networks (bridging and linking social capital). For example, my study demonstrates that it is difficult to determine the direction of the causal relationship between market integration and social capital.

Outside connections influence which type of markets are integrated into a community and, therefore, a community's ability to self-organize and self-manage its inner village dynamics. Moreover, the direction of the causal relationship between development and social capital depends on the socio-economic, political, and environmental background, as well as the particular definition of social capital. This highlights the problematic circular reasoning often found in the literature on social capital.

Social capital can be measured in different ways. In addition, many social capital researchers do not include differentiations between cognitive and structural, or bonding,

bridging, and linking social capital. Social capital has so many different definitions, if one is not explicit about the definition, measuring social capital could be a great deal like taking the temperature with six different thermometers and not being clear about which type of temperature measures were used (Oliver-Smith, Anthony, pers. comm.). Because social capital is defined and measured in different ways and includes many variables, it is difficult to draw general conclusions about its relationship to social change and development. Improving on much of the literature, this research demonstrates that it is a better idea to break social capital down into its components and investigate the elements separately.

### **Practical Implications**

Currently, the expansion of local, national, and global markets is penetrating the most remote human settlements. It is clear that markets have both positive and negative effects on natural resource use and on the social dynamics of communities. Thus, it is important to try to understand each social group, case by case. This study has the advantage of carrying out comparative analysis, based on a natural experiment design that allows one to identify and quantify the effects of market integration on the way people interact and exploit the natural environment. With the current studies done that focus on the land use and livelihood systems of the Chachis (Allum, 1997; McIlvaine, 2000), the local implication of this study is encapsulated in the understanding of the linked environmental and socio-economic processes that illustrate how the Chachis are adjusting to market forces.

The results of this project point to social processes that enhance social organization in an effort to develop economic alternatives (to logging and cattle ranching) that may counteract the current destruction of lowland forests. Conservation and the development

of subsistence food systems, along with improved educational and health infrastructure, may be vital in assisting people to meet their economic needs without greater deforestation. Similarly, this study concludes that social issues greatly affect conservation, and that social factors are crucial to the design of sustainable development and conservation projects. In sum, “The rebuilding of social systems is a prerequisite for developing or restoring effective linkages with the ecosystem” (Jodha 1998: 307).

The results of this study may have the potential to provide policy-relevant insights of value to community-based conservation efforts. Only by understanding the socio-environmental dynamics of the people in this endangered region, and how they are meeting (and could potentially meet) their shifting socio-economic needs, can policies be designed that will conserve the remnants of the Ecuadorian coastal rainforest.



Photograph by Nicole Marchan.

Figure 8.1. Sunset on the Cayapas River.

Local implications of this study demonstrate that market integration is a choice made by each household and each individual. As new roads connect indigenous people to markets, the challenge is that the indigenous groups recognize, confront, and reject the dangers, and that they cultivate the opportunities that could be advantageous to the community. Yet, in the case of the Chachis—as with the Honduran peasant caught in the cycles of the market who admits “I am destroying the land” (Stonich 1993), the people from both villages are aware that logging is destroying their forests and their children’s livelihood. With a lack of economic alternatives (or in the case of La Ceiba, lack of motivation to organize themselves to pursue the alternative of marketing the communal fruit forest products), the Chachis—and indigenous people in general—may not be able to provide for their family’s current needs.

### **Future Directions**

As demonstrated in this study, market integration is contextually based and is not a simple process. The people of La Ceiba access urban centers and markets more easily and have the alternative of selling fruits and marmalades from the agroforestry project. Simultaneously, they are more isolated from the Chachi infrastructure and support system, which includes access to bilingual secondary education opportunities. Thus, the people of La Ceiba seem to be greatly influenced by the same motives and values as the people who live closest to their communities, who are colonists, Afro-Ecuadorians, wood companies, and most recently, African Palm companies. My impression is that it is the combination of cultural isolation and lack of access to higher levels of bilingual education that lead to greater participation in environmentally destructive market activities, and undermines the motivation to pursue economic alternatives. On the other hand, because people in Loma Linda are strategically located within a *centro*, they have

received governmental assistance to develop their educational system. Consequently, 15 professors are being educated about the importance of their culture. They also gain a



Photograph by Ladna Miller.

Figure 8.2. Chachi children of Loma Linda.

monthly salary and do not have time to sell trees. In Loma Linda, they consider education for their children to be a priority for their children, which may lead to alternative ways of market integration.

In addition, the results of the cross tabulations in chapter 7 show that greater education increases Chachis' belief that they can influence decision-making in their community by seven times. Hence, perhaps social capital enthusiasts should focus on education to cultivate human capital. Higher human capital in a community may lead to stronger self-organization and negotiating capabilities, both of which are components of social capital that may be vital to sustainable forest management and cultural resilience.

Education may also facilitate information exchange and collaboration between scientists and indigenous people. Indigenous groups have been acknowledged by the

scientific community to have “traditional environmental knowledge”, a potentially valuable resource as non-local/global organizations want to learn more about local environments. Educational settings could be a good medium for indigenous people to cultivate their traditional environmental knowledge to solidify and refine their resources, and thus, their role in collaborative management projects. A curriculum that is more attuned to cultural and environmental concerns could also bridge the rift between indigenous people and NGOs that has arisen due to the exclusion of indigenous people from technical terminology commonly used by various conservation and development organizations. With a better understanding of the language used by outside institutions, a middle ground can be better negotiated that may be key to “balancing their multiple interests and values with the demands of market-oriented forest management” (Schmink 2003, p. 6). By conscientious resource management and active collaboration in larger scale political and economic decisions, the Chachis can potentially prevent hazardous conditions and vulnerability and maintain or re-establish practices that lead to long-term sustainability of their lands and culture.

APPENDIX A  
ECONOMIC QUESTIONNAIRE

**I. Cuestionario de Economía del Hogar**  
***I. Yasha lushinu naakemu deeñu bain pake'mera***

Translated from Spanish to Cha'palaa by Samuel Añapa Chapiro

**Manejo de Dinero en efectivo**

**Lushi yandaapunchi**

1.1. ¿Cuántas veces a la semana Usted va a la ciudad (San Lorenzo en el caso de La Ceiba, y Borbón en el caso de Loma Linda) Y para qué?  
*¿Semana-mee nan bijee ñu San Lorenzo pebulusha jimuyu (Ceiba' chumu), tsenmala Borbón pebulusha (Loma Linda' chumuya)? Tsenmin tyeengenu.*

- \_\_\_\_\_ 1. vender productos.  
*Bui ai'nu*
2. comprar productos  
*bui ati'kanu*
3. vender y comprar productos  
*bui atike, bui ati'kakenu*
4. visitar amigos o familia  
*paandelanu, llajchalanu yaa nenu*
5. todo lo de arriba  
*kumuinchi padetyeshu juntsa kenu*

1.2. ¿Suponga que Usted gana \$ 2000 en la lotería, cómo gastaría el dinero?  
*¿Tengai'tu ñu lotería aike' 2000 dólares katu, naake kastangechuyu tengen?*

1.3. ¿ Cuando el dinero no está disponible, Usted usa un sistema de trueque?  
*¿Tsaandenna lushi jutyuuñu, ñu ti vee bulibaañuuba ne vete kemuu?*

1.4. ¿Usted vende o compra productos de otras personas en la comunidad? ¿Qué cosas?  
*¿ Vee comunidad chullanu ñu bulli ati'kamuu, bulli ai'muu? ¿Ti bulli?*

1.5. ¿Usted recibe bono mensualmente? ¿Cuánto?  
*¿Ñu chu'chayamee bono kamuu? ¿Nan kamuyu?*

## **Gastos, Consumo, e Inversión**

### **Lushi eranchi, tiiñuba kanchi, tyebangenu lushi eranchi.**

1.6. ¿En la última semana, que productos usaron, cuánto de cada uno, y cuánto gastó para los productos?  
 ¿Entsa pullaishu juntsa semana-nu, entsa yanu nan lushi de'eeyu entsa' mitya?

1. En alimentación?  
*Pandanu*
2. En salud o medicinas?
3. En educación y materiales didácticos  
*Kiika paatenu*
4. En transporte  
*Pasaje paatetala nunbalaa jitu*
5. En diversión (bailes, juguetes, pelotas, cerveza, etc.)  
*Aiketu*
6. En aseo personal?  
*Lu'tsa' bulu naraa tananu kuidangetu*
7. Inversiones (semillas, gallinas, maquinas, gasolina, aceite, fertilizantes, pesticidas)  
*Taawasha kendu tiiñuba ati'katu*
8. Otro \_\_\_\_\_  
*Kayu tiiñuba vera ati'katu \_\_\_\_\_*

1.7. ¿En la última semana ha ocurrido algún evento que le hizo gastar más que lo usual?  
 ¿Qué pasó? ¿Cuánto gastó más (o menos)?  
 ¿Entsa pullaishu semana-nu tiiñuba ketu ne tsange lushi eetyuren kayu yapa eree?  
 ¿Tyeengeyu? ¿Pensangikeñu naake lushi eeyu?

1.8. ¿Qué productos compran en cada mes? ¿Cuánto? ¿Dónde? ¿Y cuan frecuentemente?  
 ¿Challa pullaishu chu'chayanu ti bulliee ati'kayu? ¿Nan kayu? ¿Naa naake den kayu?

1. En alimentación?  
*Pandanu*
2. En salud o medicinas?
3. En educación y materiales didácticos  
*Kiika paatenu*
4. En transporte  
*Pasaje paatetala nubalaa jitu*
5. En diversión (bailes, juguetes, pelotas, cerveza, etc.)  
*Aiketu*
6. En aseo personal?

*Lu'tsa' bulu naraa tananu kuidangetu*

7. Inversiones (semillas, gallinas, maquinas, gasolina, aceite, fertilizantes, pesticidas)

*Taawasha kendu tiiñuba ati'katu*

8. Otro (gasoline, uso de casa) \_\_\_\_\_

*Kayu tiiñuba vera ati'katu* \_\_\_\_\_

### **Preguntas Generales de Producción**

#### **Pake'mera taawashketu tyeenajuaa ke' faawaamu deeñu bain**

- 1.9. ¿Generalmente, a qué trabajos dedica Usted?

*¿Ti taawasha juuya ñu den kemuyu?*

- 1.10. ¿En qué actividades gana más dinero? Mencione 3 actividades.

*¿Tinaaju juuya ketuaa ñu juntsanu kayu lushi den laamuyu? Tsaandene pema wainka*

- 1.11. ¿Qué trabajo Usted ha hecho en el último mes?

*¿Ti taawashaa keyu ñu challa pullaishu juntsa chu'chayachi?*

- 1.12. ¿Cuánto dinero Usted tiene guardado?

- 1.13. ¿Usted participa en los siguientes cooperatives?

- La comuna de la granja y elaboración de mermeladas
- Red Forestal
- Grupo de mujeres
- Red de Educación
- 

- 1.14. ¿Cuánto dinero gana Usted en un mes?

*¿Ma chu'chayunu ñu lushi na laamuyu?*

- 1.15. ¿Cuánto dinero gasta en un mes?

*¿Ma chu'chayanu ñu lushi nan eemuyu?*

### **Productos Artesanales**

#### **Tyaapachi iimu tsejtachi iimu taawasha bulli**

##### **Costos**

- 1.16. ¿Cuánto tiempo Usted dedica a producir artesanías cada semana?

*¿Ma semana-nu nan tinbu ñu tsejtanchi iimu bulli ke' faawaremuyu?*

- 1.17. ¿Qué materiales usan para producir la artesanía y de dónde se obtienen?

*¿Kaa taawasha tsejtanchi iimu bulli kenu ñulla tyeenajaa talamu deeyu, tsenmin juntsa jukaa kamu deeyu?*

- 1.18. ¿Más o menos, cuánto cuesta cada material, cuánto compra de cada uno, y cuán frecuentemente?  
*¿Tsange' tsejtanchi iimu bulli kenu tiba wa'kaakaa dekishu juntsa, ti tinbumee tsatsangemu deeyu, tsenmin nukaa ati'kamu deeyu, naanchi?*

### **Productos y Comercialización**

- 1.19. ¿Qué productos artesanales Usted produce para vender?  
*¿Tsejtanchi iimu bulli titi ke' faawaremuyu?*
- 1.20. ¿Cuánto produce de cada producto artesanal en un mes? ¿Por año?  
*¿Tsejtanchi iimu bulli titi ke' faawaamu ju'ba juntsa nan nan kemuyu ma' chuchayanu?*
- 1.21. ¿Dónde los comercializan los productos artesanales o los usan en la casa, o hace las dos cosas?  
*¿Tsange' tsejtanchi iimu bulli ke' faawaatu nukaa ai'muyu, tsangetyu'ba ñu' yasharen ne tsangare' maaline mandalaikemuu? ¿ai'min, yasha bain mandalamingemuu?*
- 1.22. ¿A qué precio vende cada producto? ¿cuánto de cada producto? y ¿cuán frecuentemente?  
*¿Tsangetu naanchi tene ai'mu deeyu tin atike' bain? ¿tsenmin nan nan ai'mu deeyu ti juu bain? ¿ti tinbumee tsangemu deeyu?*
- 1.23. ¿Cuánto gana cada mes vendiendo productos artesanales? ¿Cada año?  
*¿Tsange' tsejtanchi iimu bulli ke' faawaare' ai'tu ma chu'chayamee nan lushi laalaakeyu? ¿ma año-nuya nan lushi laamuyu?*

### **Pecuario**

#### **Animaa awakara paate**

##### **Costos: Vacas**

##### ***Wagara / wakara***

- 1.24. ¿Cuánto tiempo Usted se dedica a la crianza de vacas cada semana?  
*¿Wagaa/wakara awakaanu ketu ma semana-nu ñu nan tinbu washkemuyu?*
- 1.25. ¿Cuántas vacas tiene y cuánto costó cada una?  
*¿Nan wagara/wakara miyayu ñu, tsenmin naanchi tenen kayu?*
- 1.26. ¿Cuánto cuesta la semilla de pastos y otros insumos que utilizan para la producción y con qué periodicidad tiene que comprar cada insumo?

*¿Wagara/wakara awakaanu ketu ñulla tape wajnu ya' ñi naanchi kamu deeyu, naa kayu vera juu bain naanchee kamu deeyu, tsenmin ti tinbucnee tsatsangemu deeyu?*

### **Productos y Comercialización de Vacas**

#### ***Wagara/Guacara ai'nu paatee***

1.27. ¿Dónde comercializan las vacas o sus productos o las consume, o hace las dos cosas?

*¿Wagara/wakara juu ne yanu kalaraimu juu ti bain, nukaa atimu deeyu, tsangityu'ba finchee kemu dejuu? ¿atinchi bain finchi bain kikemu dejuu?*

1.28. ¿A qué precio vende cada producto, cuánto de cada producto, y cuán frecuentemente?

*¿Tsangetu naanchi tene ai'mu deeyu tin atike' bain, tsenmin ti tinbumee tsangemu deeyu?*

1.29. ¿Cuánto gana cada mes vendiendo productos de vacas? ¿Cada año?

*¿Tsange' Guacara/wagaranu kalaraimu ti juu bain ai'tu ma chu'chayamee nan lushi laalaakeyu? ¿ma año-nuya nan lushi laamuyu?*

### **Costos: Chivos**

1.30. ¿Cuánto tiempo Usted se dedica a la crianza de chivos cada semana?

*¿Chivo awakaanu ketu ma semana-nu ñu nan tinbu washkemuyu?*

1.31. ¿Cuántos chivos tiene y cuánto costó cada uno?

*¿Nan chivo miyayu ñu, tsenmin naanchi tenen kayu?*

1.32. ¿Cuánto gasta en comida o cada insumo para la crianza de chivos y cuán frecuentemente?

*¿Chivo awakaanu ketu ñulla yaichi panda kaketu nan eemu deeyu, tinaaju kayu vera juu bain naanchee kamu deeyu, tsenmin ti tinbucnee tsatsangemu deeyu?*

### **Productos y Comercialización de Chivos**

#### ***Chivo-nu karaimu ti juu bain ai'un paate***

1.33. ¿Dónde comercializan los productos de chivos o los consume, o hace las dos cosas?

*¿Chivo juu, ne yanu karaimu juu ti banin, nukaa atimu deeyu, tsangityu'ba finchee kemu dejuu? ¿atinchi bain finchi bain kikemu dejuu?*

1.34. ¿A qué precio vende cada producto, cuánto de cada producto, y cuán frecuentemente?

*¿Tsangetu naanchi tene ai'mu deeyu tin atike' bain? ¿tsenmin nan nan ai'mu deeyu ti juu bain? ¿ti tinbumee tsangemu deeyu?*

- 1.35. ¿Cuánto gana cada mes vendiendo productos de chivos? ¿Cada año?  
*¿Tsange' chivo-nu kalaraimu ti juu bain ai'tu ma chu'chayamee nan lushi laalaakeyu? ¿ma año-nuya nan lushi laamuyu?*

**Costos: Gallos y Gallinas**

*Walla'aruku, supu wallapa bain*

- 1.36. ¿Cuánto tiempo Usted dedica a la crianza de gallinas o gallos cada semana?  
*¿Wallapa awakaanu ketu ma semana-nu ñu nan tinbu washkemuyu?*
- 1.37. ¿Cuánto gasta en comida o cada insumo para la crianza de gallos y gallinas y cuán frecuentemente?  
*¿Wallapa awakaanu ketu ñulla yaichi panda kaketu nan eemu deeyu, tinaaju kayu vera juu bain naanchee kamu deeyu, tsenmin ti tinbuche tsatsangemu deeyu?*
- 1.38. ¿Cuántas gallinas tiene y cuánto costó cada uno?  
*¿Nan wallapa miyayu ñu, tsenmin naanchi tenen kayu?*

**Productos y Comercialización de Gallos/Gallinas**

*Wallapanu karaimu ti juu bain ai'nu paate*

- 1.39. ¿Dónde comercializan los huevos y los gallos/las gallinas o los consume, o hace las dos cosas?  
*¿Napipu juu ne wallapa juu bain nukaa atimu deeyu, tsangityu'ba finchee kemu dejuu? ¿atinchi bain finchi bain kikemu dejuu?*
- 1.40. ¿A qué precio venden, cuánto de cada producto, y cuán frecuentemente?  
*¿Tsangetu naanchi tene ai'mu deeyu tin atike' bain, tsenmin ti tinbumee tsangemu deeyu?*
- 1.41. ¿Cuánto gana cada mes vendiendo productos de gallinas/gallos? ¿Cada año?  
*¿Tsange' wallapanu kalaraimu ti juu bain ai'tu ma chu'chayamee nan lushi laalaakeyu? ¿ma año-nuya nan lushi laamuyu?*

**Costos: Otros Animales (Pavos, Patos, etc.)**

*Vee animaala (pavo, pato, etc.)*

- 1.42. ¿Qué otros animales tienen?  
*¿Kayu vee anima juuya tyee miya deeyu?*
- 1.43. ¿Cuánto tiempo Usted dedica a la crianza de estos animales cada semana?  
*¿Juntsa animaa awakaanu ketu ma semana-nu ñu nan tinbu washkemuyu?*
- 1.44. ¿Cuántos animales de cada tipo tiene y cuánto costó cada uno?  
*¿Juntsa animaala titi vee vee miyayu, tsenmina naanchi tene dekeyu?*

- 1.45. ¿Cuánto cuesta la comida y cada insumo para la producción, y cuán frecuentemente tiene que comprar cada insumo?  
*¿Juntsa animaala awakaanu ketu ñulla yaichi panda kaketu nan eemu deeyu, tinaaju kayu vera juu bain naanchee kamu deeyu, tsenmin ti tinbuchee tsatsangemu deeyu?*

### **Productos y Comercialización de Otros Animales**

- 1.46. ¿Dónde comercializan los animales o sus productos o los consume, o hace las dos cosas?  
*¿Juntsa animaalanu nukaa atimu deeyu, tsangityu'ba finchee kemu dejuu?  
 ¿atinchi bain finchi bain kikemu dejuu?*
- 1.47. ¿A qué precio vende cada producto, cuánto de cada producto, y cuán frecuentemente?  
*¿Tsangetu naanchi tene ai'mu deeyu tin atike' bain, tsenmin ti tinbumee tsangemu deeyu?*
- 1.48. ¿Cuánto gana cada mes vendiendo productos de otros animales (patos, pavos)?  
 ¿Cada año?  
*¿Tsange' vee animaa judeeshu juntsalanu kalaraimu ti juu bain ai'tu ma chu'chayamee nan lushi laalaakeyu? ¿ma año-nuya nan lushi laamuyu?*

### **La Pesca**

#### **Pisha alla paate**

#### **Costos**

- 1.49. ¿Cuánto tiempo Usted dedica a la pesca o buscar camarón cada semana?  
*¿Pisha alla mityake ne bishu mityaketu ma semana-nu ñu nan tinbu tsange' mi'kemuyu?*
- 1.50. ¿Cuánto gasta en cada insumo para la pesca o buscar camarón y cuán frecuentemente?  
*¿Pisha alla mityake ne bishu mityakenu ketu tiiñuba ati' katu nan lushi eemuyu, tsenmin ti tinbuchee tsatsangemu deeyu?*

### **Productos y Comercialización de Pescado o Camarones**

#### ***Pisha pumu alla, ne bishu juu bain ai'nu paate***

- 1.51. ¿Dónde comercializan los pescados o camarones o los consume, o hace las dos cosas?  
*¿Pi alla juu, ne bishu juu nukaa atimu deeyu, tsangityu'ba finchee kemu dejuu?  
 ¿atinchi bain finchi bain kikemu dejuu?*
- 1.52. ¿A que precio vende, cuánto de cada producto, y cuán frecuentemente?

*¿Tsangetu naanchi tene ai'mu deeyu tin atike' bain, tsenmin ti tinbumee tsangemu deeyu?*

- 1.53. *¿Cuánto gana cada mes vendiendo pescado o camarones? ¿Cada año?  
¿Tsange' pisha pumu alla juu, bishu juu ai'tu ma chu'chayamee nan lushi  
laalaakeyu? ¿ma año-nuya nan lushi laamuyu?*

### **La Caza**

#### **Jeendaa ne'alla kanu paate**

##### **Costos**

- 1.54. *¿Cuánto tiempo Usted dedica a la caza cada semana?  
¿Jeendaa ji' alla mityaketu ma semana-nu ñu nan tinbu tsange' mi'kemuyu?*
- 1.55. *¿Cuánto gasta en cada insumo para la caza y cuán frecuentemente?  
¿Jeendaa ne' alla mityakenu tiiñuba ati' katu nan lushi eemuyu, tsenmin ti  
tinbumee tsatsangemu deeyu?*

##### **Productos y Comercialización de Animales de la Caza**

#### **Jeendaa ne'alla' ka' ai'nu paate**

- 1.56. *¿Dónde comercializan los animales de caza o los consume, o hace las dos cosas?  
¿Jeendaa ne' ti animaañuba tu'tu nukaa atimu deeyu, tsangityu'ba finchee kemu  
dejuu? ¿atinchi bain finchi bain kikemu dejuu?*
- 1.57. *¿A qué precio vende, cuánto de cada producto, y cuán frecuentemente?  
¿Tsangetu naanchi tene ai'mu deeyu tin atike' bain, tsenmin ti tinbumee tsangemu  
deeyu?*
- 1.58. *¿Cuánto gana cada mes vendiendo animales de caza? ¿Cada año?  
¿Jeendaa ne' alla mityake' tiiñuba atiketú ma chu'chayamee nan lushi  
laalaakeyu? ¿ma año-nuya nan lushi laamuyu?*

### **Cultivos**

#### **Buikiya wajka paate**

##### **Costos**

- 1.59. *¿Cuánto tiempo Usted dedica a cultivos cada día?  
¿Wajka kiyatala washkenú ma malunu ñu nan tinbu tsangemuyu?*
- 1.60. *¿Cuánto tiempo dedica a la granja de Usted cada día? ¿Cada semana?  
¿Ñuchi ti kuya' baasa, naa ti anima' baasa washkenú ma malunu nan tinbu  
tsangemuyu?*

## Productos y Comercialización

1.61.

	Area año pasado	Cosecha	# Cosecha	Consumido en la casa	Vendido dónde	Precio
<i>Anuales</i>						
1. arroz	_____	_____	_____	_____	_____	_____
2. fréjoles	_____	_____	_____	_____	_____	_____
3. Yuca	_____	_____	_____	_____	_____	_____
4. Maíz	_____	_____	_____	_____	_____	_____
5. Caña	_____	_____	_____	_____	_____	_____

	# en cosecha	Cuán frecuen.	Cosecha /mes	# de meses	Consu -mido	Vendi do	Precio
<i>Perenales</i>							
6. Jackfruit	_____	_____	_____	_____	_____	_____	_____
7. Cacao	_____	_____	_____	_____	_____	_____	_____
8. Borojó	_____	_____	_____	_____	_____	_____	_____
10. Rolinio	_____	_____	_____	_____	_____	_____	_____
11. Guayabilla	_____	_____	_____	_____	_____	_____	_____
12. Pina	_____	_____	_____	_____	_____	_____	_____
13. Limón	_____	_____	_____	_____	_____	_____	_____
14. Rambotan	_____	_____	_____	_____	_____	_____	_____
15. Manzana Malaysia	_____	_____	_____	_____	_____	_____	_____
16. Mandarina	_____	_____	_____	_____	_____	_____	_____
17. Otro	_____	_____	_____	_____	_____	_____	_____
18. Otro	_____	_____	_____	_____	_____	_____	_____

1.62. ¿Cuánto dinero ganó la casa de la venta de borojo o mermeladas de borojo en la ultima semana? ¿Mes? ¿Año?

*¿Entsa challa pullaishu chu'chayanu borojó mermelada nan de'aiyu?*

1.63. ¿Para tu familia, qué es lo preferible?

*¿Ñu' paandelachiya naakeña uranu jun?*

1. vender un producto agrícola  
*wajke'awakaraimu buli ai'nu*
2. comer un producto agrícola en el hogar  
*wajke'awakaraimu buli yasha fiñu*
3. hacer las dos cosas  
*juntsa palluren juntsangeñu*
4. ninguna de las dos cosas es preferible  
*Juntsaachiya tiba tsangi'ñu.*

**Mujeres*****Supula***

- 1.64. ¿Cuántos racimos de plátanos cosechan en una semana?  
¿*Ma semana-nu ñu nan bulu panda kamuyu?*
- 1.65. ¿Cuántos racimos de plátanos comen en una semana?  
¿*Ma semana-nu nan bulu panda fimu deeyu?*
- 1.66. ¿Cuántos racimos de plátanos venden en una semana?  
¿*Ma semana-nu nan bulu panda ai'mu deeyu?*

**Tierra/Terreno**

- 1.67. ¿Cuántas hectáreas de tierra tiene Usted? Valor?  
¿*Tu nan hectárea tayu ñu?* ¿*Nan balen juntsa tu?*
- 1.68. ¿Cuánto de su tierra Ud. Tiene en cultivos?
- 1.69. ¿Cuánto de su tierra Ud. Tiene en portrero?
- 1.70. ¿Usted también tiene una choza o otra cas arriba el río para trabajos eventuales?  
¿*Vi' taawasha kikekenu kaa yapaya ñu miyaa?*
- 1.71. ¿Cuándo Usted va a la choza o la otra casa arriba el río?  
¿*Naamaa ñu juntsa yapayasha viviiyu?*
- 1.72. ¿Para qué?  
¿*Tyeengenuaa viviiyu?*
- 1.73. ¿Qué siembra allí?  
¿*Tyee junga wajmuyu?*
- 1.73.5. A. ¿De donde Usted usualmente saca la Madera blanca? B. ¿Madera dura?
1. Bosque primario de su propiedad
  2. Bosque secundario de su propiedad
  3. Bosque primario de un pariente o compañero
  4. Bosque secundario de un pariente o compañero
  5. Bosque primario de la comunidad
  6. Bosque secundario de la comunidad

**Extracción de Madera****Costos**

- 1.74. ¿Cuánto tiempo dedica Usted a la extracción de madera cada mes (para las mujeres, dedica a ayudar en la extracción)?  
*¿Pulla kketu ma chu'chayamee ñu nan tinbu tsangemuyu?*
- 1.75. ¿Cuánto Usted gasta en aceite, gasolina y otros materiales e insumos para sacar madera, y cuán frecuentemente?  
*¿Tsange' pulla ketu aceite cake, ne gasolina kakitu naa kayu vera juu bain kaketu nan lushi eemu deeyu, tsenmin ti tinbumee tsatsangemu deeyu?*

### **Productos y Comercialización**

- 1.76. ¿Cuántos metros cúbicos Usted vendió en el último mes? ¿Año?  
*¿Challa pullaishu juntsa chu'chayachi, nan metro cúbico pulla ke' ai'yu?*
- 1.77. ¿Qué tipos de madera y cuáles fueron los precios?  
*¿Ti pulla juu, ti ta'pa juuya de-ai'yu, tsenmin naanchi?*
- 1.78. ¿Dónde?  
*¿Nuca?*
- 1.79. ¿A quién?  
*¿Munu?*
- 1.80. A. ¿Que vende más Usted—Madera blanca o Madera dura? B. piensa tres ventas atras: ¿Qué tipos de arboles vendió (Madera blanca o dura)?
- 1.81. A. ¿Cuánto area de bosque primario tiene Usted en su terreno? B. Cuánto tenía cuando le dieron su terreno? C. ¿Cuándo le dieron?
- 1.82. ¿Qué tipos (numeros de trozas, tablones, tables, o tabletas) de Madera Usted ha vendido en el ultimo año (Madera blanca o madera dura)?
- 1.83. ¿Dónde estuvo comercializado?  
*¿Nukaa tsange' ai'yu?*
- 1.84. ¿A quién?  
*¿Muna ai'yu?*
- 1.85. A. ¿Para Usted, que es un bosque primario? B. ¿Para Usted, qué es un bosque secundario?
- 1.86. A. ¿Cuánto gana cada mes cuando elabora Madera? B. ¿Elabora todos los meses?

### **Preguntas Generales sobre La Extracción de Madera**

- 1.87. ¿Usted piensa que cortar madera está mejorando la calidad de vida?

*¿Ñu' pensaya tsange' pulla detule' ai'tu kayu uusundenna tiya' chunu dejuve tengen?*

- 1.88. ¿Conoces por qué sus abuelos anteriormente no vendían la madera?  
*¿Nenñaa kaspee tinbutalaa ñu' aa-apala bulla ke' aityuwa deenuba ñu miyu?*
- 1.89. ¿Cómo era la economía antes de estar dependiendo de la venta de madera?  
¿Cómo ganaban el dinero? ¿Necesitaban dinero tanto como ahora?  
*¿Tsange' pulla' ai'tuaa lushi kakaki'nu tinbunuya kaspele lushi laanu naajuwaatun? ¿Naa ketuaa lushi laamutu den?*
- 1.90. A. ¿Usted practica reforestación en su terreno? B. ¿De qué árboles y cuánto? C. ¿Cuán frecuentemente?

#### SOLO PARA LA CEIBA

- 1.91. ¿Soponiendo que cada casa va a ganar más o menos \$500 de la venta de la 3000 metros cubicos de la Madera de la comunidad, como Usted va a gastar este dinero?
- 1.92. A. ¿Como Usted gastó los \$400-\$500 que cada casa ganó de la venta de Madera comunal en 2000? B. ¿Comó gastó los \$600-\$700 que cada casa ganó de la venta de madera comunal en 2001?

#### PARA TODOS (PREGUNTAS AUMENTADOS)

- 1.93. ¿Usted tiene otra profesión (professor, motorista, trabajo por un NGO)? Digame sobre ello. ¿Cuánto tiempo Usted pasa haciendo esto cada semana o mes?  
¿Cuánto dinero gana?
- 1.94. ¿Usted paga una persona o gente para ayudarle con la limpieza de la granja, o con cualquier cosa, incluyendo jalando madera?
- 1.95. ¿En que gasta más dinero?
1. comida
  2. materials didacticas
  3. transporte
  4. uniformes
  5. medicinas
  6. inversiones
  7. uso de casa

APPENDIX B  
GENERAL SOCIAL QUESTIONNAIRE

**CUESTIONARIO**  
***PAKE'MERA***

Translated from Spanish to Cha'palaa by Samuel Añapa Chapiro

**II. Características del Hogar (contestado por uno de los esposos):**  
**II. Ya naajuñu bain (ya' ruku pakake, ya' shinbu pakake)**

2.1. ¿Cuántos pisos tiene la casa? (*OBSERVACION*)  
¿ya nan dijki juin? (*KERANCHI*)

1. uno  
*main*
2. dos  
*pallu*
3. tres o más  
*pema*

2.2. ¿Qué tipo de casa es? (*OBSERVACION*)  
¿ya naaju juin? (*KERANCHI*)

1. abierta  
*achakalii*
2. cerrada con puerta  
*dellukaa juukapa puu*
3. medio cerrado con una puerta  
*mantsandaa llukaa, juukapa main puu*
4. media cerrada sin puerta  
*matsandaa llukaa tiba llukajtu*
5. cerrada con puerta con seguro  
*dellukaa, juukapa puu, nara deengara*
6. medio cerrado con seguros en los cuartos cerrados

2.3. ¿De qué material está construido el techo de esta casa? (*OBSERVACION*)  
¿Tichee ya jaki mityan?

- 1 tejido de palma  
*Tinchi jaki, yaanchi jaki*

2. zinc  
*zinc*
3. madera  
*Ta'paa*
4. otro \_\_\_\_\_  
*Tyee kayu vera mityan* \_\_\_\_\_

2.4. ¿ La gente de esta casa dónde tira generalmente la basura de la casa?  
*¿Enu chulla tyeenaju cuchinuu bain nukaa kayu den kepumu deju?*

1. al río  
*pisha*
2. debajo de la casa  
*ya chitansha*
3. la queman  
*jupenchi kemu deju*
4. la entierran  
*tu vijchi' menanchee kemu deju*
5. donde sea  
*nuka kepundya'ba*
6. otro \_\_\_\_\_  
*kayu veemujtu* \_\_\_\_\_

2.5. ¿Tienen los miembros de la casa los siguientes artículos, cuántos hay y cuándo los compró?  
*¿Entsa yanu chulla entsa bulli tatu, , nan detayu, naamaa dekayu?*

1. Radio \_\_\_\_\_
2. televisión \_\_\_\_\_
3. refrigerador \_\_\_\_\_
4. reloj de la pared \_\_\_\_\_  
*ya chiipanu eengaraa reloj* \_\_\_\_\_
5. reloj personal \_\_\_\_\_  
*tyaapanu telaimu reloj* \_\_\_\_\_
6. teléfono \_\_\_\_\_
7. maquina de coser \_\_\_\_\_  
*jai punnu máquina* \_\_\_\_\_
8. carro \_\_\_\_\_
9. bicicleta \_\_\_\_\_
10. canoa \_\_\_\_\_  
*kule* \_\_\_\_\_
11. motor/generador de electricidad
12. equipo
13. otro (DVD o VH)

2.6. ¿Los miembros de la casa tienen los siguientes instrumentos de trabajo, cuánto hay, y cuándo los compró?

¿*Entsa yanu chulla taawasha kenu jeru entsana tanatu, nan detanayu, naamaa dekayu?*

1. machete \_\_\_\_\_  
*mashte* \_\_\_\_\_
2. azadón \_\_\_\_\_
3. motosierra \_\_\_\_\_
4. escopeta \_\_\_\_\_  
*illapan* \_\_\_\_\_
5. otro (plano; petromax; rastrillo; ansuelo) \_\_\_\_\_  
*kayu veraa juu bain* \_\_\_\_\_

2.7. ¿Que usan para cocinar?

¿*Panda tengaanu tyee tadeeyu (naamaa dekayu, tsenmin nan dekayu)?*

1. fuego \_\_\_\_\_  
*techi* \_\_\_\_\_
2. cocina de butane \_\_\_\_\_  
*gas ñinbelechi* \_\_\_\_\_
3. cocina de kerosene \_\_\_\_\_  
*kerosene ñinbelechi* \_\_\_\_\_
4. cocina eléctrica \_\_\_\_\_  
*eléctrica ñinbelechi* \_\_\_\_\_
5. otro \_\_\_\_\_  
*kayu verachi* \_\_\_\_\_

### **III. Demográficos**

#### **III. Chachi naaju aa dechuñu bain**

- 3.1. Sexo \_\_\_\_\_  
*Llupuu / supuu* \_\_\_\_\_
- 3.2. ¿Dónde nació Usted?  
¿*Nukaa na kayayu ñu?*
- 3.3. ¿Cuánto tiempo ha vivido en este pueblo?  
¿*Nan tinbu chuntsuyu entsa pebulunu?*
- 3.4. ¿Cuántos años tiene Ud.?  
¿*Nan año tayu ñu?*
- 3.5. ¿Cuántas personas viven en este hogar?  
¿*Nan chachi dechuyu enu?*

- 3.6. ¿Cuántas veces Usted ha estado casado/a?  
¿Ñu nan bijee casaa imuwaayu?
- 3.7. ¿Cuánto tiempo Usted has estado casado?
- 3.8. ¿Cuántos hijos ha tenido Ud.?  
¿Nan na miyayu ñu?
- 3.9. ¿Cuántos hijos están todavía vivos?  
¿Ñu' nala naajula bain chaiba sundene dechuu?
- 3.10. ¿Cuántos hijos viven con Usted y cuántos años tienen?  
¿Ñu' nala nan ñuba dechun, tsenmin nan año taden?
- 3.11. ¿Cuál es el idioma principal que se habla en esta casa y cuánto tiempo?  
¿Entsa yanu ti palaaya den pamu den, tsenmin ti tinbumee?
- \_\_\_\_\_ 1. todo el tiempo  
naa uwanu bain juntsandene
2. casi todo el tiempo  
aa tinbu juntsandene
3. mitad del tiempo  
kejtaa tinbun juu
- 3.12. ¿Cuántos veces a la semana Usted usa la canoa?  
¿Semana, un nan bijee kulenichi nemuyu?

**Los dos siguientes preguntas para solo mujeres**

- 3.13. ¿Dónde Usted lava la ropa?  
¿Nu nuca jalli manbipumuyu?
- 3.14. ¿Usted conversa con otras mujeres cuando lava ropa?

**Educación**

**Kiika minu paate**

- 3.15. ¿Cuántos años de estudios tiene Usted?  
¿Kiika naaju miyu ñu?
1. ninguno  
jayuuba mijtu
2. primario 1 2 3 4 5 6 grado
3. secundario 1 2 3 4 5 6 curso
4. universidad 1 2 3 4 5

3.16. ¿Su mamá?

*¿Ñu' amaa naaju min?*

1. ninguno  
*jayuuba mijtu*
2. primario 1 2 3 4 5 6 grado
3. secundario 1 2 3 4 5 6 curso
4. universidad 1 2 3 4 5

3.17. ¿Su papá?

*¿Ñu' apa naaju min?*

1. ninguno  
*jayuuba mijtu*
2. primario 1 2 3 4 5 6 grado
3. secundario 1 2 3 4 5 6 curso
4. universidad 1 2 3 4 5

#### **IV. Capital Social Estructural**

#### **IV. Chachi puree paate-i' chumula naana deshiinañu bain**

#### **Densidad Organizacional**

#### **Organización naaju den dejuñu bain**

4.1. De estas organizaciones, escoja 3 que sean las más importantes para Usted.

*Entsa organización judeeshu juntsalanu ñuchiya naajulaa kayu bale deeñuba juntsanu pema te'laade*

1. religioso católica
2. religioso evangelista
3. el gobierno del centro  
*Centro-nu / comuna-nu bale pumula*
4. FECCHE
5. cooperativa de productos agrícolas  
*buikiya wajke' aware' juntsa bulli ai'nu cooperativa*
6. cooperativa de mujeres  
*supula' cooperativa*
7. comité de padres de familias
8. comité de salud
9. asociación de cultura
10. asociación de ambiente
11. gobierno tradicional  
*kayu vee asociación tradicional (Chaita, rukula, uní)*

- LA CEIBA ONLY
12. Altropico
  13. OIM
  14. SETRAFOR
  15. Plan Chocó
  16. COMOFOR
  17. Comité Forestal
  18. Comité de Deportes
  19. Comité Agroforestal
  20. Comité de la Elaboración de Mermeladas
  21. Comité del Agua
- LOMA LINDA ONLY
22. Asociación de Profesores
  23. Club Deportivo Juvenil
  24. Redes Amigas

### **Redes Egocéntricos**

#### **Organización jumula waaku juuñuu juturen, yaichiren juusa tyamula**

4.2. ¿Cuántas personas (amistades) que no son chachi conoce Usted en los siguientes lugares (quienes no son Chachis)?

*¿Entsa tenatala chachi jutyu vee chachillanu ñuya nan chachi kerayu?*

1. En Río Tululbi (o San Miguel para Loma Linda) \_\_\_\_\_  
*Tululbí pisha ( San Miguel)*
2. San Francisco (Borbón) \_\_\_\_\_
3. San Lorenzo \_\_\_\_\_
4. Esmeraldas \_\_\_\_\_
5. Quito \_\_\_\_\_
6. Otros lugares (Santo Domingo) \_\_\_\_\_  
*Kayu vee mujtu bain \_\_\_\_\_*

4.3. ¿En el “1” y del “2 al 6”, cuántas personas conoce Usted, a través de?

*¿Tisee “1”nu pakayamin “2 bain, 6 bain” pakaya deeshu juntsa chachillanu, mu’ mityaa keemijayu?*

1. A través de ONG’s?  
*¿ONG’s-la’ mityaa?*
2. ¿A través de sus posiciones del gobierno?
3. ¿A través de vender o comprar productos agrícolas?  
*¿Tunu wajke’ awakaraimu bulli atike, ne ati’kaketuu?*
4. ¿A través de vender o comprar productos artesanales?  
*¿Kaa taawasha, tyaapachi tsejtanchi iimu taawasha bulli atike, ne ati’kaketuu?*

5. ¿A través de la extracción de madera?

¿*Pulla ke' atiketuu?*

6. ¿A través de la religión?

¿*Religión' mityaren?*

### **Exclusión**

#### **Baca'tyui-eraañuu juu**

4.4. Muchas veces hay diferentes posiciones entre la gente que vive en un mismo pueblo. ¿*Cuánto cree Usted que esas diferencias dividen a la gente en su pueblo?* Mandinbu, ma pebulu' chumuutalaren tiba miyanchi pareju jutyuwa deeve.  
¿*Ñu' kerachiya juntsa paate juntsaañu ju' ñu' pebulunu naaju vera' dejuve tengen juntsachi?*

	Nada <i>Nejuu</i>	Algo <i>Ka jayu ne jatsaa</i>	Mucho <i>tsaanchi pure' keengayaju</i>
Diferencias en educación <i>Kiika minchi pareju jutyu</i>	_____	_____	_____
Diferencias en riqueza/posesiones materiales <i>Lushi tanchi/tiba pure' taanchi pareju jutyu</i>	_____	_____	_____
Diferencias en cuanto a la tierra de que uno es dueño <i>Tu miya, tu pudee tanchi pareju jutyu</i>	_____	_____	_____
Diferencias en status social <i>Kayu daj chachi junchi pareju jutyu</i>	_____	_____	_____
Diferencias entre hombres y mujeres <i>Unbee ruku jutu, supu jutu pareju jutyu</i>	_____	_____	_____
Diferencias entre generaciones de viejos y jóvenes <i>Rukula jutu, musula jutu pareju jutyu</i>	_____	_____	_____
Diferencias entre habitantes originales del pueblo y recién llegados. <i>Yumaa junu chumula, challan vija' chudimulaba pareju jutyu</i>	_____	_____	_____
Diferencias entre afiliaciones de partido político <i>Parido político-nu shinnatu pareju jutyu</i>	_____	_____	_____
Diferencias en creencias religiosas <i>Religión-nu shinnatu pareju jutyu</i>	_____	_____	_____
¿Otras diferencias? <i>¿Kayu vera' mitya pareju jutyu, ti' mitya?</i>	_____	_____	_____

4.5. ¿Tomando en cuenta los últimos 10 años, cuánto cree Usted que esas diferencias dividieron a la gente de su pueblo? (Usar las mismas preguntas anteriores)  
¿*Ma pebulu' chumuutalaren tiba miyanchi pareju jutyuwa deenu, ñu' kerachiya juntsa paate juntsaañu ju' ñu' pebulunu naaju vera' dejuve tengen entsa pullaishu*

*juntsa paitya año-nu pensange' keeñu? (Entsa katyunu pake' mera judeeshu juntsaren pake'meenu)*

4.6. ¿Cómo resuelve la gente los problemas?

*¿Chachilla yala' peletu naake matse'kaamu den?*

1. No hay problemas  
*Nejuu*
2. Diferencias no causan problemas  
*Peletu jutyu naa pareju jutyu' bain*
3. La gente resuelve estos problemas por sí mismo  
*Chachilla yaiteneren ne tse'kaakemu deju?*
4. Familia/el hogar interviene  
*Ma paande chachilla, ma ya' chulla yaiteneren ne ura' majuu*
5. Los vecinos intervienen  
*Ya kelu' chulla tse'kaamishtimu deju*
6. Líderes de la comunidad intervienen  
*Comunidad-nu bale pumu chachilla tse'kaamishtimu deju*
7. Líderes religiosos intervienen  
*Religión balela tse'kaamishtimu deju*
8. Líderes políticos intervienen  
*Partidos político balela tse'kaamishtimu deju*
9. Violencia  
*Tsamantsange firu' ketu*
10. Gobernador o gobierno tradicional  
*Chaita, rukula, uní*
11. Otro (toda la comunidad, alguien de afuera)
12. No sé /no estoy seguro  
*Mijtu / nara mijtu*
13. No hay respuesta  
*Pake'meranu pakatyu*

4.7. ¿Cuánta influencia (capacidad para influir o motivar) cree que Usted tiene en hacer de esta comunidad un mejor lugar para vivir?

*¿Entsa comunidad-nu kayu sunden chudinuu kikaanu ñu pudee tayu tengen?*

1. mucho  
*pure' taju*
2. algo  
*ka jayuya*
3. no mucho  
*aa jutyu*
4. nada  
*jayuuba*
5. no sé/no estoy seguro  
*mijtu / ura' mijtu*

4.8. ¿En su opinión, esta comunidad es generalmente pacífica / tranquila o conflictiva?

1. Pacífica / tranquila  
*Ajarajtu / nejuu*
2. Conflictiva  
*Puita firu*
3. No sé/no estoy seguro  
*Mijtu / ura' mijtu*
4. No hay respuesta  
*Pake' meranu pakatyu*

## **V. Capital Social Cognitivo**

### **V. Chachilla paate aa bulu i' chumula pensasha naa dejuñu bain**

#### **Solidaridad**

#### **Tinuba bulu ju' pensangenu**

5.1. Suponga que algo desafortunado le pasara a Usted, como de repente su papá o su hijo se muere (algo que le deja sentir triste), a quien podría pedir ayuda personal (o hablar sobre su tristeza)?

*¿Tsaandenna ñu apa juu, ñu' na juu ma peyaiñu, muna a ayuda pa'nu juyu tengen?*

1. nadie ayudaría  
*muba ayuda kendejutyuve*
2. familia  
*paandelanu*
3. amigos  
*llajchala*
4. vecino  
*ya kelu' chulla*
5. un líder o un grupo religioso  
*religión bale chachilla*
6. un líder de la comunidad  
*comunidad bale chachilla*
7. un líder de comercialización o negocios  
*tiba ai' mu, tiba ati' kamu bale chachi*
8. un líder político  
*Partido político bale chachi*
9. una organización de la comunidad de que Usted es miembro  
*Ñu' comunidad-nu chumu organización-nu ñubain shiñanashu juntsanu*
10. una organización de la comunidad de que Usted NO es miembro  
*Ñu' comunidad-nu chutyu organización-nu ñu juntsanu shinnatyushu juntsa organización-nu*

11. Gobernador o gobierno tradicional

*Chaita, rukula, uní*

12. otro

*kayu veela*

13. no sé/no estoy segura

*mijtu / ura' mijtu*

14. no hay respuesta

*Pake' meranu pakatyu*

5.2. Suponga que Usted perdiera mucho económicamente, por ejemplo un fracaso de cultivos, a quien podría pedir ayuda económica (un favor económica)?

*Tsaandenna ñu lushi pure' peedi iitu, tiiñuba wajtu tsa depeedi iitu, muna lushi ayuda pa' chuyu tengen?*

1. nadie ayudaría

*muba ayuda kendejutyuve*

2. familia

*paandelanu*

3. amigos

*llajchala*

4. vecino

*ya kelu' chulla*

5. un líder o un grupo religioso

*religión bale chachilla*

6. un líder de la comunidad

*comunidad bale chachilla*

7. un líder de comercialización o negocios

*tiba ai'mu, tiba ati'kamu bale chachi*

8. un líder político

*Partido político bale chachi*

9. una organización de la comunidad de que Usted es miembro

*Ñu' comunidad-nu chumu organización-nu ñubain shiñanashu juntsanu*

10. una organización de la comunidad de que Usted NO es miembro

*Ñu' comunidad-nu chutyu organización-nu ñu juntsanu shinnatyushu juntsa organización-nu*

11. Gobernador o gobierno tradicional

*Chaita, rukula, uní*

12. otro

*kayu veela*

13. no sé/no estoy segura

*mijtu / ura' mijtu*

14. no hay respuesta

*Pake' meranu pakatyu*

## Confianza

### Tsaave uraa tya' pensangenu

5.3. ¿Usted piensa que en esta comunidad la gente generalmente tiene confianza uno con el otro en cuestiones de prestar?

*¿Ñu' pensaya entsa comunidad chulla yaatala uwain mangunu tsuve tya' tiba kuwa kuw kemu deeve tengen?*

1. sí, tienen confianza  
*uwain tsangenu tsuve tyamu deeve*
2. miti miti
3. no hay confianza  
*Tsangenu tsuve tyatyu deeve*
4. no sé /no estoy seguro  
*mijtu / nara mijtu*
5. no hay respuesta  
*pake' meranu pakatyu*

5.4. ¿Cómo piensa Usted que ha cambiado el nivel de confianza en los últimos 10 años?

*¿Ñu' pensachiya entsa pullaishu juntsa paitya año-tala, chachilla tsangenu tsuve tya' keengenu paatetala, vera' tiyaive pensayu?*

1. ha mejorado  
*kayu ura' tiyaive*
2. igual  
*tsaren ne juu*
3. peor  
*mushanchi iñu*
4. no sé /no estoy seguro  
*mijtu / ura' mijtu*
5. no hay respuesta  
*pake' meranu pakatyu*
6. no es aplicable

5.5. ¿Cuánta gente en esta comunidad son honestas y merecen confianza.?

*¿Entsa comunidad-nu nan chachi aa ura chachi, meengenu' chachi, keengenu' chachi dechuve tengen?*

1. la mayoría son honestas y merecen confianza  
*Pure' chachi aa ura chachi, meengenu' chachi, keengenu' chachi deju.*
2. algunos son honestos y merecen confianza  
*Mantsaya aa ura chachi, meengenu' chachi, keengenu' chachi deju.*
3. solo pocos son honestos y merecen confianza  
*ka jayuren aa ura chachi, meengenu' chachi, keengenu' chachi judeju.*

4. no son honestos ni merecen confianza  
*jayuuba aa ura chachi, meengenu' chachi, keengenu' chachi dejutyu.*

5.6. Suponga que Usted tuviera que ir con su familia por un tiempo. Con quien podría confiar, cuidar su chacra y cultivos?

1. otro miembro de la familia  
*main ya' paadenu*
2. vecino  
*ya kelu chumunu*
3. cualquier persona del pueblo  
*ya' pebulunu chundala, mu'baasa*
4. otro  
*kayu veelanu*
5. nadie  
*munuba*
6. no estoy seguro/no sé  
*nara mijtuyu / mijtuyu*
7. no hay respuesta  
*pake'meranu pakatyu*

5.7. ¿Si de repente Usted y su esposo o esposa tuviera que irse a Quito por dos días, con quien podría confiar, cuidar de sus hijos?

*¿Tsaandenna ñu, ñu' rukuba/shinbuba Quito-sha pai malu' mitya lu' jindu, munaa ñu' kaillanu washkare' jinu juyu tengen?*

1. otro miembro de la familia  
*main ya' paandenu*
2. vecino  
*ya kelu chumunu*
3. cualquier persona del pueblo  
*ya' pebulunu chundala mu' baasa*
4. otro  
*kayu veelanu*
5. no tengo hijos  
*na miyajtu*
6. no estoy seguro/no sé  
*nara mijtuyu / mijtuyu*
7. no hay respuesta  
*pake'meranu pakatyu*

## **Reciprocidad y cooperación**

### **Manbarejuren tsangenu, ti bain kive'nu**

5.8. ¿Sobre todo, qué le parece la cooperación en esta comunidad?  
 ¿Ti kikenu keñuba entsa comunidad-nu kike'nu dejuve tengen?

1. muy bajo  
*Ura jayu wakuu*
2. bajo  
*jayun wakuu*
3. normal  
*Naa-i wa'dinu juñuba tsai wa'dimu deju*
4. alto  
*Pure' wakudimu deju*
5. muy alto  
*Ura tsamantsai wa'dimu deju*

5.9. ¿En los últimos 10 años, que le ha parecido sobre todo, la cooperación en esta comunidad?  
 ¿Entsa paitya año pullaishu juntsanu keetaditu, ñu' keraya ti kikenu keñuba entsa comunidad-nu kivete kiveteki' depullaa tengen?

1. muy bajo  
*Ura jayu wakuu*
2. bajo  
*jayun wakuu*
3. normal  
*Naa-i wa'dinu juñuba tsai wa'dimu deju*
4. alto  
*Pure' wakudimu deju*
5. muy alto  
*Ura tsamantsai wa'dimu deju*

APPENDIX C  
SOCIAL QUESTIONNAIRE FOR KEY INFORMANTS

**CUESTIONARIO**  
**PAKE'MERA**

Translated from Spanish to Cha'palaa by Samuel Añapa Chapiro

**II. Características del Hogar (contestado por uno de los esposos):**  
**II. Ya naajuñu bain (ya' ruku pakake, ya' shinbu pakake)**

2.1. ¿Cuántos pisos tiene la casa? (*OBSERVACIÓN*)  
¿ya nan dijki juin? (*KERANCHI*)

1. uno  
*main*
2. dos  
*pallu*
3. tres o más  
*pema*

2.2. ¿Qué tipo de casa es? (*OBSERVACION*)  
¿ya naaju juin? (*KERANCHI*)

1. abierta  
*achakalii*
2. cerrada con puerta  
*dellukaa juukapa puu*
3. medio cerrado con una puerta  
*mantsandaa llukaa, juukapa main puu*
4. media cerrada sin puerta  
*matsandaa llukaa tiba llukajtu*
5. cerrada con puerta con seguro  
*dellukaa, juukapa puu, nara deengara*
6. medio cerrado con seguros en los cuartos cerrados

2.3. ¿De qué material está construido el techo de esta casa? (*OBSERVACION*)  
¿Tichee ya jaki mityan?

1. tejido de palma  
*Tinchi jaki, yaanchi jaki*

2. zinc  
*zinc*
3. madera  
*Ta'paa*
4. otro \_\_\_\_\_  
*Tyee kayu vera mityan* \_\_\_\_\_

2.4. ¿La gente de esta casa dónde tira generalmente la basura de la casa?  
¿*Enu chulla tyeenaju cuchinuu bain nukaa kayu den kepumu deju?*

1. al río  
*pisha*
2. debajo de la casa  
*ya chitansha*
3. la queman  
*jupenchi kemu deju*
4. la entierran  
*tu vijchi' menanchee kemu deju*
5. donde sea  
*nuka kepundya'ba*
6. otro \_\_\_\_\_  
*kayu veemujtu* \_\_\_\_\_

2.5. ¿Tienen los miembros de la casa los siguientes artículos, cuántos hay y cuándo los compró?  
¿*Entsa yanu chulla entsa bulli tatu, , nan detayu, naamaa dekeyu?*

1. Radio \_\_\_\_\_
2. televisión \_\_\_\_\_
3. refrigerador \_\_\_\_\_
4. reloj de la pared \_\_\_\_\_  
*ya chiipanu eengaraa reloj* \_\_\_\_\_
5. reloj personal \_\_\_\_\_  
*tyaapanu telaimu reloj* \_\_\_\_\_
6. teléfono \_\_\_\_\_
7. maquina de coser \_\_\_\_\_  
*jai punnu máquina* \_\_\_\_\_
8. carro \_\_\_\_\_
9. bicicleta \_\_\_\_\_
10. canoa \_\_\_\_\_  
*kule* \_\_\_\_\_
11. motor/generador de electricidad
12. equipo
13. otro (DVD o VH)

2.6. ¿Los miembros de la casa tienen los siguientes instrumentos de trabajo, cuánto hay, y cuándo los compró?

¿*Entsa yanu chulla taawasha kenu jeru entsana tanatu, nan detanayu, naamaa dekayu?*

1. machete \_\_\_\_\_  
*mashte* \_\_\_\_\_
2. azadón \_\_\_\_\_
3. motosierra \_\_\_\_\_
4. escopeta \_\_\_\_\_  
*illapan* \_\_\_\_\_
5. otro (plano; petromax; rastrillo; ansuelo) \_\_\_\_\_  
*kayu veraa juu bain* \_\_\_\_\_

2.7. ¿Que usan para cocinar?

¿*Panda tengaanu tyee tadeeyu (naamaa dekayu, tsenmin nan dekayu)?*

1. fuego \_\_\_\_\_  
*techi* \_\_\_\_\_
2. cocina de butane \_\_\_\_\_  
*gas ñinbelechi* \_\_\_\_\_
3. cocina de kerosene \_\_\_\_\_  
*kerosene ñinbelechi* \_\_\_\_\_
4. cocina eléctrica \_\_\_\_\_  
*eléctrica ñinbelechi* \_\_\_\_\_
5. otro \_\_\_\_\_  
*kayu verachi* \_\_\_\_\_

### **III. Demográficos**

#### **III. Chachi naaju aa dechuñu bain**

- 3.1. Sexo \_\_\_\_\_  
*Llupuu / supuu* \_\_\_\_\_
- 3.2. ¿Dónde nació Usted?  
*¿Nukaa na kayayu ñu?*
- 3.3. ¿Cuánto tiempo ha vivido en este pueblo?  
*¿Nan tinbu chuntsuyu entsa pebulunu?*
- 3.4. ¿Cuántos años tiene Ud.?  
*¿Nan año tayu ñu?*
- 3.5. ¿Cuántas personas viven en este hogar?  
*¿Nan chachi dechuyu enu?*

- 3.6. ¿Cuántas veces Usted ha estado casado/a?  
¿Ñu nan bijee casaa imuwaayu?
- 3.7. ¿Cuánto tiempo Usted has estado casado?
- 3.8. ¿Cuántos hijos ha tenido Ud.?  
¿Nan na miyayu ñu?
- 3.9. ¿Cuántos hijos están todavía vivos?  
¿Ñu' nala naajula bain chaiba sundene dechuu?
- 3.10. ¿Cuántos hijos viven con Usted y cuántos años tienen?  
¿Ñu' nala nan ñuba dechun, tsenmin nan año taden?
- 3.11. ¿Cuál es el idioma principal que se habla en esta casa y cuánto tiempo?  
¿Entsa yanu ti palaaya den pamu den, tsenmin ti tinbumee?
- \_\_\_\_\_ 1. todo el tiempo  
naa uwanu bain juntsandene
2. casi todo el tiempo  
aa tinbu juntsandene
3. mitad del tiempo  
kejtaa tinbun juu
- 3.12. ¿Cuántos veces a la semana Usted usa la canoa?  
¿Semana, un nan bijee kulenichi nemuyu?

**Los dos siguientes preguntas para solo mujeres**

- 3.13. ¿Dónde Usted lava la ropa?  
¿Nu nuca jalli manbipumuyu?
- 3.14. ¿Usted conversa con otras mujeres cuando lava ropa?

**Educación**

**Kiika minu paate**

- 3.15. ¿Cuántos años de estudios tiene Usted?  
¿Kiika naaju miyu ñu?
1. ninguno  
jayuuba mijtu
2. primario 1 2 3 4 5 6 grado
3. secundario 1 2 3 4 5 6 curso
4. universidad 1 2 3 4 5

3.16. ¿Su mamá?

*¿Ñu' amaa naaju min?*

1. ninguno  
*jayuuba mijtu*
2. primario 1 2 3 4 5 6 grado
3. secundario 1 2 3 4 5 6 curso
4. universidad 1 2 3 4 5

3.17. ¿Su papá?

*¿Ñu' apa naaju min?*

1. ninguno  
*jayuuba mijtu*
2. primario 1 2 3 4 5 6 grado
3. secundario 1 2 3 4 5 6 curso
4. universidad 1 2 3 4 5

#### **IV. Capital Social Estructural**

#### **IV. Chachi puree paate-i' chumula naana deshiinañu bain**

#### **Densidad Organizacional**

#### **Organización naaju den dejuñu bain**

4.1. De estas organizaciones, escoja 3 que sean las más importantes para Usted.

*Entsa organización judeeshu juntsalanu ñuchiya naajulaa kayu bale deenuba juntsanu pema te'laade*

1. religioso católica
2. religioso evangelista
3. el gobierno del centro  
*Centro-nu / comuna-nu bale pumula*
4. FECCHE
5. cooperativa de productos agrícolas  
*buikiya wajke' aware' juntsa bulli ai'nu cooperativa*
6. cooperativa de mujeres  
*supula' cooperativa*
7. comité de padres de familias
8. comité de salud
9. asociación de cultura
10. asociación de ambiente
11. gobierno tradicional  
*kayu vee asociación tradicional (Chaita, rukula, uní)*

## LA CEIBA ONLY

12. Altropico
13. OIM
14. SETRAFOR
15. Plan Chocó
16. COMOFOR
17. Comité Forestal
18. Comité de Deportes
19. Comité Agroforestal
20. Comité de la Elaboración de Mermeladas
21. Comité del Agua

## LOMA LINDA ONLY

22. Asociación de Profesores
23. Club Deportivo Juvenil
24. Redes Amigas

- 4.2. ¿Qué organizaciones o instituciones de desarrollo están trabajando conjuntamente con la comunidad?  
*¿Naaju organización-laa ñuiba comunidad-ba buudi' bulu taawasha kendetsun ñullanu aawa' tirenu?*
- 4.3. ¿En su opinión, los proyectos de estas organizaciones son exitosos? ¿Por qué sí o por qué no?  
*¿Ñu' pensachiya entsa organización jumula kikedekeshu juntsa proyecto yuj aa ura debe pensayu? ¿Tsaave tishu juntsaa nejtu, tsenmin tsajutyuve tishu juntsa bain nejtu?*
- 4.4. ¿En qué aspectos está apoyando la FECCHE actualmente en la comunidad?  
*¿Challa tinbutala tinaajutalaa FECCHE ñullanu buudi' tiiñuba kike'tsun?*
- 4.5. ¿La FECCHE afecta la organización política de la comunidad?  
*¿Organización kuinda juutala ne política kuinda juutala, ñullanu naake keewaañu' juin FECCHE deke' faawaañu?*
- 4.6. ¿Cuán frecuentemente se reúne el centro/comuna en asambleas generales?  
*¿Ti tinbumee Asamblea kikedeken ñu' Centro-nu / Comuna-nu.*
- 4.7. ¿En su opinión, qué proyectos tienen más éxitos, comunales o familiares?  
*¿Ñuchiya, naaju proyecto juuya kayu ura' kiike dekeve tengen, comuinchi chachilla wa'di' juu, tsangityu' ma bulu paandelanchin juu proyecto?*
- 4.8. ¿De que benefician el estar asociado en Centro/ Comuna?  
*¿Centro-nu juu, Comuna-nu juunu debuuditu tichee uukeraa katandetsuyu tengen?*

- 4.9. ¿Usted piensa que más uso de efectivo (dinero) ha cambiado la organización familiar? Si dijo que sí, cómo?  
*¿Ñu' pensaya ñulla paandela naana chumuwa deeñuba lushiren juntsatala tsaa devera' kikee tengee? ¿Tsaave tishu juntsaa, nejtaa tsa' in?*
- 4.10. ¿Usted piensa que el uso de efectivo (dinero) ha cambiado la organización comunitaria?  
*¿Ñu' pensaya ñulla' comunidad-nu organización naajumuwaañu bain lushiren tsaa juntsatala devera' kikee tengee?*
- 4.11. ¿Hay problemas provocados por agentes externos?  
*¿Ñuiba bulu chutyu, aa veemujtu vee chachillaren ñullanu peletu juu kikarendetyuu?*
- 4.12. ¿Cuáles o quiénes y por qué?  
*¿Naajula, mun tsenmin ti' mitya?*
- 4.13. ¿Desde cuándo?  
*¿Ti tinbuchi tsange' jandetsun?*
- 4.14. ¿Cómo Usted ha reaccionado a estos problemas?  
*¿Tsa peletu faañu ñuya tyeengeyu?*
- 4.15. ¿Cómo la comunidad ha reaccionado a estos problemas?  
*¿Tsa peletu faañu comunidad-ya tyeengen?*

### **Redes y organización de apoyo mutuo**

#### **Organización jumula veta' veta' tyaapa kuwakeñunge waaku juuñuu jumula**

- 4.17. ¿Si la escuela primaria de esta comunidad no tuviera un profesor por seis meses o más, qué personas tomarían la iniciativa para hacer algo sobre esto?  
*¿Entsa comunidad-nu, tsaandenna escuela kiika keewaamu ruku putyu, tsaanchiren manchismain chu'chaya, tsajutyu'ba kayu pure' tinbu' mitya tsaa juuñu, muua juntsanu jayu tiiñuba kenu ke' keenu juve tennu jun?*
1. nadie  
*muba*
  2. el gobierno local/provincial  
*Provincia balela*
  3. el gobierno de la comunidad  
*entsa comunidad-nu bale pumula*
  4. FECCHE
  5. padres de los niños  
*na miya rukula*
  6. la comunidad entera

*kumuinchi comunidad chulla*

7. otro (describe)  
*kayu veela*
8. no sé/ no estoy seguro  
*mijtu/ nara mijtu*
9. no hay respuesta  
*pake' meranu pakatyu*

- 4.18. ¿Si hubiera un problema que afectara a toda la comunidad, por ejemplo, enfermedad de los sembríos, quien piensa Ud. tomaría la iniciativa de trabajar para confrontar esta situación?

*Tsaandenna ma bulla, tsa kumuinchi ñulla' comunidad-nu ma musha kentsu, patiñuya, ñulla' bui kiya wajkanu tsa ma dediikaapukentsuñu, juntsanu, ñuchiya muua, naaju chachee, kaju'taladi' ura' mannu juve tengen?*

1. cada persona/hogar confrontaría el problema individualmente  
*Chachimee, maali maali yameemee yaitene, juntsa bullanu mijanu dejuve.*
2. vecinos entre ellos  
*Muba mu bain ya' ya keetaa chullalaban juu*
3. el gobierno local/provincial  
*Provincia balela*
4. el gobierno de la comunidad  
*Comunidad-nu bale pumula*
5. la comunidad entera  
*kumuinchi comunidad chulla*
6. otro (describe)  
*kayu veela*
7. no sé/ no estoy seguro  
*mijtu/ nara mijtu*
8. no hay respuesta  
*pake' meranu pakatyu*

- 4.19. ¿Para qué hacen una minga?  
*¿Tyeengenaa minga kenu den?*

- 4.20. ¿Durante este ultimo 10 años, Usted piensa que ha mejorado la organización? ¿Por que si o porque no?

### **Redes Egocéntricos**

#### **Organización jumula waaku juuñuu juturen, yaichiren juusa tyamula**

- 4.21. ¿Cuántas personas (amistades) que no son chachi conoce Usted en los siguientes lugares (quienes no son Chachis)?

*¿Entsa tenatala chachi jutyu vee chachillanu ñuya nan chachi kerayu?*

1. En Río Tululbi (o San Miguel para Loma Linda) \_\_\_\_\_

*Tululbí pisha ( San Miguel)*

2. San Francisco (Borbón)\_\_\_\_\_
  3. San Lorenzo \_\_\_\_\_
  4. Esmeraldas \_\_\_\_\_
  5. Quito \_\_\_\_\_
  6. Otros lugares (Santo Domingo)\_\_\_\_\_
- Kayu vee mujtu bain \_\_\_\_\_*

4.22. ¿En el “1” y del “2 al 6”, cuántas personas conoce Usted, a través de?  
 ¿Tisee “1”nu pakayamin “2 bain, 6 bain” pakaya deeshu juntsa chachillanu, mu’  
 mityaa keemijayu?

1. A través de ONG’s?  
 ¿ONG’s-la’ mityaa?
2. ¿A través de sus posiciones del gobierno?
3. ¿A través de vender o comprar productos agrícolas?  
 ¿Tunu wajke’ awakaraimu bulli atike, ne ati’kaketuu?
4. ¿A través de vender o comprar productos artesanales?  
 Kaa taawasha, tyaapachi tsejtanchi iimu taawasha bulli atike, ne ati’kaketuu?
5. ¿A través de la extracción de madera?  
 ¿Pulla ke’ atiketuu?
6. ¿A través de la religión?  
 ¿Religión’ mityaren?

### **Exclusión**

#### **Baca’tyui-eraañuu juu**

4.23. Muchas veces hay diferentes posiciones entre la gente que vive en un mismo pueblo. ¿Cuánto cree Usted que esas diferencias dividen a la gente en su pueblo?  
 Mandinbu, ma pebulu’ chumuutalaren tiba miyanchi pareju jutyuwa deeve.  
 ¿Ñu’ kerachiya juntsa paate juntsaña ju’ ñu’ pebulunu naaju vera’ dejuve tengen juntsachi?

	Nada <i>Nejuu</i>	Algo <i>Ka jayu ne jatsaa</i>	Mucho <i>tsaanchi pure’ keengayaju</i>
Diferencias en educación <i>Kiika minchi pareju jutyu</i>	_____	_____	_____
Diferencias en riqueza/posiciones materiales <i>Lushi tanchi/tiba pure’ taanchi pareju jutyu</i>	_____	_____	_____
Diferencias en cuanto a la tierra de que uno es dueño <i>Tu miya, tu pudee tanchi pareju jutyu</i>	_____	_____	_____
Diferencias en status social <i>Kayu daj chachi junchi pareju jutyu</i>	_____	_____	_____

Diferencias entre hombres y mujeres	_____	_____	_____
<i>Unbee ruku jutu, supu jutu pareju jutyu</i>	_____	_____	_____
Diferencias entre generaciones de viejos y jóvenes	_____	_____	_____
<i>Rukula jutu, musula jutu pareju jutyu</i>	_____	_____	_____
Diferencias entre habitantes originales del pueblo y recién llegados.	_____	_____	_____
<i>Yumaa junu chumula, challan vija' chudimulaba pareju jutyu</i>	_____	_____	_____
Diferencias entre afiliaciones de partido político	_____	_____	_____
<i>Parido político-nu shinnatu pareju jutyu</i>	_____	_____	_____
Diferencias en creencias religiosas	_____	_____	_____
<i>Religión-nu shinnatu pareju jutyu</i>	_____	_____	_____
¿Otras diferencias?	_____	_____	_____
<i>¿Kayu vera' mitya pareju jutyu, ti' mitya?</i>	_____	_____	_____

4.24. ¿Tomando en cuenta los últimos 10 años, cuánto cree Usted que esas diferencias dividieron a la gente de su pueblo? (Usar las mismas preguntas anteriores)

*¿Ma pebulu' chumuutalaren tiba miyanchi pareju jutyuwa deeñu, ñu' kerachiya juntsa paate juntsaña ju' ñu' pebulunu naaju vera' dejuve tengen entsa pullaishu juntsa paitya año-nu pensange' keeñu? (Entsa katyunu pake' mera judeeshu juntsaren pake'meenu)*

4.25. ¿Cómo resuelve la gente los problemas?

*¿Chachilla yala' peletu naake matse'kaamu den?*

1. No hay problemas  
*Nejuu*
2. Diferencias no causan problemas  
*Peletu jutyu naa pareju jutyu' bain*
3. La gente resuelve estos problemas por sí mismo  
*Chachilla yaiteneren ne tse'kaakemu deju?*
4. Familia/el hogar interviene  
*Ma paande chachilla, ma ya' chulla yaiteneren ne ura' majuu*
5. Los vecinos intervienen  
*Ya kelu' chulla tse'kaamishtimu deju*
6. Líderes de la comunidad intervienen  
*Comunidad-nu bale pumu chachilla tse'kaamishtimu deju*
7. Líderes religiosos intervienen  
*Religión balela tse'kaamishtimu deju*
8. Líderes políticos intervienen  
*Partidos político balela tse'kaamishtimu deju*
9. Violencia  
*Tsamantsange firu' ketu*
10. Gobernador o gobierno tradicional  
*Chaita, rukula, uní*
11. Otro (toda la comunidad, alguien de afuera)
12. No sé /no estoy seguro  
*Mijtu / nara mijtu*
13. No hay respuesta  
*Pake'meranu pakatyu*

### **ACCIÓN COLECTIVO**

4.26. ¿En el año pasado, cuántas veces los miembros de esta comunidad se han juntado y pedido a las autoridades o líderes políticos alguna cosa para desarrollar al pueblo?

*¿Entsa pullaishu juntsa año-chi, entsa comunidad-nu buunamu chachilla nan bijee dewa'di', vee mujtu chumu bale chachillanu juu, ne político bale juulanu bain, entsa pebulu kayu awakaanu tiiñuba depaken?*

1. nunca  
*jayuuba*
2. una vez  
*Ma bijeeren juu*

3. dos veces
4. frecuentemente  
*Naa uwanu bain*
5. no sé/ no estoy seguro  
*mijtu / ura' mijtu*
6. no hay respuesta  
*pake' meranu pakatyu*

4.27. ¿Fue exitoso(s) esta acción/ algunas de las acciones?  
*¿Tsangetu ti mityake' bain naa uwanuba katandene dekiyu, matsan kataa dekiyu?*

1. Sí, todos fueron exitosos  
*ti mityake' bain naaju bain kandene dekiyu*
2. Algunos fueron exitosos/ algunos no  
*Matsan kadekiyu / mantsaya kaindetyuyu*
3. No, ninguna fue exitoso  
*Naa maliiba kaindetyuyu*

4.28. ¿Cuántas veces en el año pasado han juntado con otras comunidades para enfrentar un problema común?  
*¿ Pullaishu juntsa año-chi vee mujtu chumu comunidad-laba, , nan bijee debuudi' yaichi bain tsaren bulla ju naa ñuichi bain tsaren bulla ju paatetala ura' kenu dekeyu?*

1. nunca  
*jayuuba*
2. una vez  
*Ma bijeeren juu*
3. muchas veces  
*Pure' bijee*
4. frecuentemente  
*Naa uwanu bain*
5. no sé/ no estoy seguro  
*mijtu / ura' mijtu*
6. no hay respuesta  
*pake' meranu pakatyu*

4.29. ¿Si fuera necesario tomar una decisión relacionada con un proyecto de desarrollo en esta comunidad, quien piensa Usted que tomará la decisión?  
*¿Tsaandenna comunidad-nu awakaanu ma proyecto punu, tsanginuuve ti' kuinda kenu keñu, comunidad chulla dewakudinu dejuve tengen, tsaityu'ba comunidad bale chachillaren yaitene tsangidaa tinu dejuve tengen?*

1. Los líderes de la comunidad decidirán  
*Comunidad balela yaiteneren ne tsangenu deju*
2. La comunidad entera estaría llamada

*Comunidad chulla cumuinchi dewakudita tsangenu deju*

3. No sé/ no estoy seguro

*Mijtu / nara mijtu*

4. No hay respuesta

*Pake' meranu pakatyu*

4.30. ¿Sobre todo, qué le parece la participación en toma de decisiones en esta comunidad?

*¿Ti kikenу ke'ba tsangedaa tinu ketu naa-i wa'dimu dejun entsa comunidad-nu?*

1. muy bajo

*Ura jayu wakuu*

2. bajo

*jayun wakuu*

3. normal

*Naa-i wa'dinu juñuba tsai wa'dimu deju*

4. alto

*Pure' wakudimu deju*

5. muy alto

*Ura tsamantsai wa'dimu deju*

4.31. ¿En los últimos 10 años, sobre todo, que le pareció la participación en toma de decisiones en esta comunidad?

*¿Entsa paitya año pullaishu juntsanu keetadiñu, ti kikenу ke'ba tsangedaa tinu ketu naa-i wa'dimu dejun entsa comunidad-nu?*

1. muy bajo

*Ura jayu wakuu*

2. bajo

*jayun wakuu*

3. normal

*Naa-i wa'dinu juñuba tsai wa'dimu deju*

4. alto

*Pure' wakudimu deju*

5. Muy alto

*Ura tsamantsai wa'dimu deju*

4.32. ¿Cuánta influencia cree que Usted tiene en hacer de esta comunidad un mejor lugar para vivir?

*¿Entsa comunidad-nu kayu sunden chudinuu kikaanu ñu pudee tayu tengen?*

1. mucho

*pure' taju*

2. algo

*ka jayuya*

3. no mucho

- aa jutyu*  
 3. nada  
*jayuuba*  
 4. no sé/no estoy seguro  
*mijtu / ura' mijtu*

### **Resolución de Conflictos**

#### ***Peletu junu matse'kaanu***

4.33. ¿En su opinión, esta comunidad es generalmente pacífica / tranquila o conflictiva?

1. Pacífica / tranquila  
*Ajarajtu / nejuu*  
 2. Conflictiva  
*Puita firu*  
 3. No sé/no estoy seguro  
*Mijtu / ura' mijtu*  
 4. No hay respuesta  
*Pake'meranu pakatyu*

4.34. Suponga que dos personas en este pueblo tuvieran una discusión seria. ¿Quién ayudaría a resolver la discusión?

*Entsa pebulunu tsaandenna pai chachi yaitene feete' vinbandetsuñu, ¿muaa juntsa peletu tse'kaamishtinu juve tengen?*

1. La gente resuelve estos problemas por sí mismo  
*Chachilla yaiteneren ne tse'kaakemu deju?*  
 2. Familia/el hogar interviene  
*Ma paande chachilla, ma ya' chulla yaiteneren ne ura' majuu*  
 3. Los vecinos intervienen  
*Ya kelu' chulla tse'kaamishtimu deju*  
 4. Líderes de la comunidad intervienen  
*Comunidad-nu bale pumu chachilla tse'kaamishtimu deju*  
 5. Líderes religiosos intervienen  
*Religión balela tse'kaamishtimu deju*  
 6. Líderes políticos intervienen  
*Partidos político balela tse'kaamishtimu deju*  
 7. Otro  
*Kayu veela*  
 8. No sé /no estoy seguro  
*Mijtu / nara mijtu*  
 9. No hay respuesta  
*Pake'meranu pakatyu*

## **V. Capital Social Cognitivo**

### **V. Chachilla paate aa bulu i' chumula pensasha naa dejuñu bain**

#### **Solidaridad**

##### **Tinuba bulu ju' pensangenu**

- 5.1. Suponga que algo desafortunado le pasara a Usted, como de repente su papá o su hijo se muere (algo que le deja sentir triste), a quien podría pedir ayuda personal (o hablar sobre su tristeza)?

*¿Tsaandenna ñu apa juu, ñu' na juu ma peyaiñu, muna a ayuda pa'nu juyu tengen?*

1. nadie ayudaria  
*muba ayuda kendejutyuve*
2. familia  
*paandelanu*
3. amigos  
*llajchala*
4. vecino  
*ya kelu' chulla*
5. un líder o un grupo religioso  
*religión bale chachilla*
6. un líder de la comunidad  
*comunidad bale chachilla*
7. un líder de comercialización o negocios  
*tiba ai'mu, tiba ati'kamu bale chachi*
8. un líder político  
*Partido político bale chachi*
9. una organización de la comunidad de que Usted es miembro  
*Ñu' comunidad-nu chumu organización-nu ñubain shiñanashu juntsanu*
10. una organización de la comunidad de que Usted NO es miembro  
*Ñu' comunidad-nu chutyu organización-nu ñu juntsanu shinnatyushu juntsa organización-nu*
11. Gobernador o gobierno tradicional  
*Chaita, rukula, uní*
11. otro  
*kayu veela*
12. no sé/no estoy segura  
*mijtu / ura' mijtu*
13. no hay respuesta  
*Pake'meranu pakatyu*

5.2. ¿Suponga que Usted perdiera mucho económicamente, por ejemplo un fracaso de cultivos, a quien podría pedir ayuda económica (un favor económica)?

*¿Tsaandenna ñu lushi pure' peedi iitu, tiiñuba wajtu tsaadepeedi iitu, munaa lushi ayuda pa'chuyu tengen?*

1. nadie ayudaría  
*muba ayuda kendejutyuve*
2. familia  
*paandelanu*
3. amigos  
*llajchala*
4. vecino  
*ya kelu' chulla*
5. un líder o un grupo religioso  
*religión bale chachilla*
6. un líder de la comunidad  
*comunidad bale chachilla*
7. un líder de comercialización o negocios  
*tiba ai'mu, tiba ati'kamu bale chachi*
8. un líder político  
*Partido político bale chachi*
9. una organización de la comunidad de que Usted es miembro  
*Ñu' comunidad-nu chumu organización-nu ñubain shiñanashu juntsanu*
10. una organización de la comunidad de que Usted NO es miembro  
*Ñu' comunidad-nu chutyu organización-nu ñu juntsanu shinnatyushu juntsa organización-nu*
11. Gobernador o gobierno tradicional  
*Chaita, rukula, uní*
12. otro  
*kayu veela*
13. no sé/no estoy segura  
*mijtu / ura' mijtu*
14. no hay respuesta  
*Pake'meranu pakatyu*

### **Confianza**

#### **Tsaave uraa tya' pensangenu**

5.3. ¿Usted piensa que en esta comunidad la gente generalmente tiene confianza uno con el otro en cuestiones de prestar?

*¿Ñu' pensaya entsa comunidad chulla yaatala uwain mangunu tsuve tya' tiba kuwa kuw kemu deeve tengen?*

1. sí, tienen confianza  
*uwain tsangenu tsuve tyamu deeve*
2. miti miti
3. no hay confianza  
*Tsangenu tsuve tyatyu deeve*
4. no sé /no estoy seguro  
*mijtu / nara mijtu*
5. no hay respuesta  
*pake'meranu pakatyu*

5.4. ¿Cómo piensa Usted que ha cambiado el nivel de confianza en los últimos 10 años?  
*¿Ñu' pensachiya entsa pullaishu juntsa paitya año-tala, chachilla tsangenu tsuve  
tya' keengenu paatetala, vera' tiyaive pensayu?*

1. ha mejorado  
*kayu ura' tiyaive*
2. igual  
*tsaren ne juu*
3. peor  
*mushanchi iñu*
4. no sé /no estoy seguro  
*mijtu / ura' mijtu*
5. no hay respuesta  
*pake'meranu pakatyu*
6. no es aplicable

5.5. ¿Cuánta gente en esta comunidad son honestas y merecen confianza?  
*¿Entsa comunidad-nu nan chachi aa ura chachi, meengenu' chachi, keengenu'  
chachi dechuve tengen?*

1. la mayoría son honestas y merecen confianza  
*Pure' chachi aa ura chachi, meengenu' chachi, keengenu' chachi deju.*
2. algunos son honestos y merecen confianza  
*Mantsaya aa ura chachi, meengenu' chachi, keengenu' chachi deju.*
3. solo pocos son honestos y merecen confianza  
*ka jayuren aa ura chachi, meengenu' chachi, keengenu' chachi judeju.*
4. no son honestos ni merecen confianza  
*jayuuba aa ura chachi, meengenu' chachi, keengenu' chachi dejutyu.*

5.6. Suponga que Usted tuviera que ir con su familia por un tiempo. ¿Con quien podría confiar, cuidar su chacra y cultivos?

1. otro miembro de la familia  
*main ya' paadenu*
2. vecino  
*ya kelu chumunu*
3. cualquier persona del pueblo  
*ya' pebulunu chundala, mu'baasa*
4. otro  
*kayu veelanu*
5. nadie  
*munuba*
6. no estoy seguro/no sé  
*nara mijtuyu / mijtuyu*
7. no hay respuesta  
*pake'meranu pakatyu*

5.7. ¿Si de repente Usted y su esposo o esposa tuviera que irse a Quito por dos días, con quien podría confiar, cuidar de sus hijos?  
*¿Tsaandenna ñu, ñu' rukuba/shinbuba Quito-sha pai malu' mitya lu' jindu, munaa ñu' kaillanu washkare' jinu juyu tengen?*

1. otro miembro de la familia  
*main ya' paandenu*
2. vecino  
*ya kelu chumunu*
3. cualquier persona del pueblo  
*ya' pebulunu chundala mu' baasa*
4. otro  
*kayu veelanu*
5. no tengo hijos  
*na miyajtu*
6. no estoy seguro/no sé  
*nara mijtuyu / mijtuyu*
7. no hay respuesta  
*pake'meranu pakatyu*

### **Reciprocidad y cooperación**

#### **Manbarejuren tsangenu, ti bain kive'nu**

5.8. ¿Sobre todo, qué le parece la cooperación en esta comunidad?  
*¿Ti kikenу keñuba entsa comunidad-nu kike'nu dejuve tengen?*

1. muy bajo  
*Ura jayu wakuu*

2. bajo  
*jayun wakuu*
3. normal  
*Naa-i wa'dinu juñuba tsai wa'dimu deju*
4. alto  
*Pure' wakudimu deju*
5. muy alto  
*Ura tsamantsai wa'dimu deju*

5.9. ¿En los últimos 10 años, que le ha parecido sobre todo, la cooperación en esta comunidad?

*¿Entsa paitya año pullaishu juntsanu keetaditu, ñu' keraya ti kikenu keñuba entsa comunidad-nu kivete kiveteki' depullaa tengen?*

1. muy bajo  
*Ura jayu wakuu*
2. bajo  
*jayun wakuu*
3. normal  
*Naa-i wa'dinu juñuba tsai wa'dimu deju*
4. alto  
*Pure' wakudimu deju*
5. muy alto  
*Ura tsamantsai wa'dimu deju*

## LIST OF REFERENCES

- Allum, Claire Paulette (1997). *An Ethnoarchaeological Study of Chachi Land-use in Northwestern Tropical Ecuador*. Dissertation, University of Calgary, Calgary.
- Altropico (2000). *Memoria Taller Diagnostico: Comunidad La Ceiba*. San Lorenzo, Ecuador.
- Añapa Cimarrón, Juan Bautista (2003). *Chachi: Lala'cha'kuinda, naa na chumu Juhua ju'bain, naa chaibain*. Indio-Hilfe, Esmeraldas, Ecuador.
- Arguello, Maria (1995). *Extractive Activities in Northwestern Ecuador: The Case of the Commune Rio Santiago-Cayapas*. MA thesis, University of Florida, Gainesville.
- Baksh, Michael and Johnson, Allen (1990). Insurance Policies among the Machiguenga: An Ethnographic Analysis of Risk Management in a Non-Western Society. In Cashdan, E (ed.), *Risk and Uncertainty in Tribal and Peasant Economies*. Westview Press, Boulder, pp. 193-228.
- Barrett, S.A. (1925). *The Cayapa Indians of Ecuador*: 2 vols. Museum of the American Indian Heye Foundation, New York.
- Basurco, Santiago (1844). *Trois Semaines chez les Indiens Cayapas (Republique de L'Ecuador): 1844-1847*.
- Bedoya Garland, Eduardo (1995). The Social and Economic Causes in the Peruvian Amazon Basin: Natives and Colonists, In Durham, William and Painter, Michael (eds.), *The Social Causes of Environmental Destruction*. The University of Michigan Press, Ann Arbor, Michigan, pp. 217-246
- Begosi, Alpina (1998). Resilience and Neo-traditional Populations: the *Caicaras* (Atlantic Forest) and *Coboclos* (Amazon, Brazil), In Berkes, Fikret; Folke, Carl; Colding, Johan (eds.), *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. Cambridge University Press, Cambridge, England, pp. 129-157.
- Berkes, Fikret; Folke, Carl; and Colding, Johan (eds.) (1998). Linking Social and Ecological Systems for Resilience and Sustainability, In *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. Cambridge University Press, Cambridge, England, pp. 1-25.

- Bodley, John H. (1999). *Victims of Progress*, Fourth Edition. Mayfield Publishing Company, Mountain View.
- Bolanos, Omaira (2003). *Diversity and Conflict in a Forest Management Project: The Case of a Colonist Community in the Lowlands of Bolivia*. Master of Arts Thesis, University of Florida, Gainesville, Florida.
- Bourdieu, Pierre (1979). Les Trios Etats du Capital Culturel. *Actes de la Recherche en Sciences Sociales* 30: 3-6.
- Bourdieu, Pierre (1979). Le Capital Social: Notes Provisoires. *Actes de la Recherche en Sciences Sociales* 31: 2-3.
- Bourdieu, Pierre (1985). The Forms of Capital. In Richardson, J.G. (ed.), *Handbook of Theory and Research for the Sociology of Education*. Greenwood, New York: pp. 241-58.
- Bray, David Barton; Merino-Perez, Leticia; Negreros-Castillo, Patricia; Segura-Warnholtz, Gerardo; Torres-Rojo, Juan Manuel; and Vester, Henricus F. M. (2003). Mexico's Community Managed Forests as a Global Model for Sustainable Landscapes. *Conservation Biology* 17(3): 672-677.
- Coleman, J.S. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology* 94: S95-S120.
- Coleman, J.S. (1990). *Foundations of Social Theory*. Belknap Press of Harvard University, Cambridge, Massachusetts.
- DeBoer, Warren R. (1996). *Traces Behind the Esmeraldas Shore: Prehistory of the Santiago-Cayapas Region, Ecuador*. University of Alabama, Tuscaloosa and London.
- Dinerstein, E.; Olson, D.; Graham, D.; Webster, A.; Primm, S.; Bookbinder, M.; and Ledec, G. (1995). *Una Evaluación del Estado de las Eco-regiones Terrestres de América Latina y el Caribe*. World Bank, WWF. Washington DC.
- Dodson, C.H. and Gentry, A.H. (1991). Biological Extinction in Western Ecuador. *Annals of the Missouri Botanical Garden*. 78: 273-295.
- Durkheim, E. (1984). *The Division of Labor in Society*. Free Press, New York.
- Durrenberger, Paul (2002). Why Social Capital is a Bad Idea. *Society for Applied Anthropology. Newsletter* 13(3): 3-4.
- Ecociencia, Centro Fátima, Jatun Sacha, and Omaere (1996). *Manejo de Recursos en el Bosque Tropical: Lecciones Aprendidas*. Ecociencia, Quito, Ecuador.

- Forsyth, Adrian and Miyata, Ken (1984). *Tropical Nature: Life and Death in the Rainforest of Central and South America*. Scribner, New York.
- Fox, J. (1995). Governance and Rural Development in Mexico: State Intervention and Public Accountability. *Journal of Development Studies* 32: 1-30.
- Fox, J. (1996). How Does Civil Society Thicken? The Political Construction of Social Capital in Rural Mexico. *World Development* 24: 1089-1103.
- Garcia Canclini, Nestor (1997). *Transforming Modernity: Popular Culture in Mexico*. University of Texas Press, Austin.
- Godoy, Ricardo A. (2001). *Indians, Markets and Rainforests: Theory, Methods and Analysis*. Colombia University Press, New York.
- Gommes, René; Bakon, Andy; and Farmer, Graham (March 1998). An El Niño Primer. <http://www.fao.org/WAICENT/FAOINFO/SUSTDEV/EIdirect/EIlan0008.htm>, accessed May 27, 2004.
- Hanifan, Lyda Judson (1916). The Rural Community Center. In *Annals of the American Academy of Political and Social Science* 67:130-138.
- Henrich, Joseph (1997). Market Incorporation, Agricultural Change, and Sustainability Among the Machiguenga Indians of the Peruvian Amazon. *Human Ecology* 25(2):319-351.
- Holling, C.S. and Gunderson, Lance H. (2002). Resilience and Adaptive Cycles. In Gunderson, Lance H. and Holling, C.S., *Panarchy*. Island Press, Washington DC, pp. 25-62.
- Holling, C.S.; Gunderson, Lance H.; and Ludwig, Donald (2002). In Quest of a Theory of Adaptive Change. In Gunderson, Lance H. and Holling C.S. (eds.), *Panarchy*. Island Press, Washington DC, pp. 3-22.
- Holling, C.S.; Gunderson, Lance H.; and Peterson, Garry D. (2002). Sustainability and Panarchies. In Gunderson, Lance H. and Holling C.S. (eds.), *Panarchy*. Island Press, Washington DC, pp. 63-102
- Holm-Nielsen, L.; Kvist, L.P.; and Aguavil, M. (1983). Las Investigaciones Etnobotánicas entre los Colorados y los Cayapas. *Miscelánea Antropológica Ecuatoriana* 3 (3): 80-116.
- Jodha, Naprat S. (1998). Reviving the Social System-Ecosystem Links in the Himalayas. In Berkes, Fikret, Folke, Carl; and Colding, Johan (eds.), *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. Cambridge University Press, Cambridge, pp. 285-310.

- Johnson, Nancy; Suarez, Ruth; and Lundy, Mark (2002). The Importance of Social Capital in Colombian Rural Agro-Enterprises. *Collective Action and Property Rights Working Paper No. 26*, IFPRI, Washington, DC.
- Josse, C.; Hurtado, M.; and Granizo, T. (2001). La Diversidad de los Ecosistemas. In Josse, Carmen, *La biodiversidad del Ecuador Informe 2000*. Ministerio del Ambiente, Ecociencia, y Unión Mundial para la Naturaleza (UICN).
- Juncosa, José E. (1988). *Tsachila: Los Clasicos de la Etnografía sobre Los Colorados (1905-1950)*. Abya Yala, Quito, Ecuador.
- Karsten, Rafael (1924). Los Indios Colorados del Oeste Ecuatoriano. In Juncosa, José E., *Tsachila: Los Clasicos de la Etnografía sobre Los Colorados (1905-1950)*. Abya Yala, Quito, Ecuador, pp. 55-79.
- Knack, Stephen and Keefer, Philip (1995). Institutions and Economic Performance: Cross-country tests Using Alternative Institutional Measures. *Economics and Politics* 7(3): 207-227.
- Kearney, Michael and Varese, Stefano (1995). Latin America's Indigenous Peoples: Changing Identities and Forms of Resistance. In Halebsky, R.H.A.S. (ed.), *Capital, Power and Inequality in Latin America*. Boulder: Westview Press, Boulder, pp. 207-231.
- Krishna, Adirudh and Shrader, Elizabeth (1999). Social Capital Assessment Tool. Prepared for the Conference on Social Capital and Poverty Reduction, June 22-24. The World Bank, Washington, DC.
- Kottak, Conrad P. (1999). The New Ecological Anthropology. *American Anthropologist* 101 (1): 23-35.
- Korten, David C. (1995). *When Corporations Rule the World*. Kumerian Press, Inc. and Berrett-Koehler Publishers.
- Lin, Nan (1999). Building a Network Theory of Social Capital. *Connections* 22(1): 28-51
- Loker, William (1993). The Human Ecology of Cattle Ranching in the Peruvian Amazon: The View from the Farm. *Human Organization* 52 (1): 14-24.
- Loury, G.C. (1977). A Dynamic Theory of Racial Income Differences. In Wallace, P.A. and La Mond A.M., *Women, Minorities, and Employment Discrimination*. Heath, Lexington, M.A., pp. 153-86.
- Marchan Maldonado, Nicole (2001). Etnobotánica Cuantitativa de una Comunidad Chachi de la Provincia de Esmeraldas, Ecuador, Thesis, Pontificia Universidad Católica del Ecuador.
- Marx, Karl. (1967). *Capital*, Vol. 3. International Press, New York.

- McIlvaine-Newsad, Heather Lan (2000). *Tied to the Land: Livelihood Systems in Northern Ecuador*, Dissertation, University of Florida, Gainesville, Florida.
- Medina, Henry V. (1992). *Los Chachi: Supervivencia y Ley Tradicional*. Ediciones Abya Yala, Ecuador.
- Morris, David (1990). Free Trade: The Great Destroyer. *The Ecologist* 20(5):190-195.
- Moya, A. (1998). ETHNOS, Atlas Etnográfico del Ecuador. Proyecto EBI-GTZ, Quito.
- Narayan, Deepa (1999). Bonds and Bridges: Social Capital and Poverty. Poverty Group of the World Bank, the World Bank, Washington, DC.
- Neill, D. (1997). Ecuadorian Pacific Coast Mesic Forests, Ecuador. In Davis, S.W.; Heywood V.H.; Herrera-Mac Bryde, O.; Villa-Lobos, J.; and Hamilton, A.C. (eds.), *Centers of Plant Diversity. A Guide and Strategy for Their Conservation* 3. WWF-UICN, the Americas.
- National Oceanic and Atmospheric Administration (5/26/2004). TAO Project: El Nino Theme Page. <http://www.pmel.noaa.gov/tao/elnino/el-nino-story.html>, accessed May 26, 2004.
- Odum, Howard T. and Odum, Elisabeth C. (2001) *A Prosperous Way Down: Principles and Policies*. University of Colorado, Boulder.
- Patino, V. M. (1965). *Historia de la Actividad Agropecuaria en America Equinoccia*. First Edition. Imprenta Departmental, Cali, Colombia.
- Pena, Maria Valeria Junho and Lindo Fuentes, Hector (1998). Organización, Valores, y Capital; Social de las Comunidades de Panama. The World Bank, Washington, DC.
- Pope, Jeanette (2000). Social Capital and Social Capital Indicators: A Reading List. Electronic Document, <http://www.publichealth.gov.au/PDF/soccap.pdf>, accessed March 24, 2004.
- Portes, Alejandro (1998). Social Capital: It's Origins and Applications in Modern Society. *Annual Review of Sociology* 24(1):1-23.
- Portes, Alejandro (1999). Social Capital and its Implications for National Development. Paper presented at United Nations Economic Commission for Latin America. Santiago, Chile.
- Portes, Alejandro and Landolt, Patricia (1996). Downside of Social Capital. *The American Prospect* 26 (Mayo-June):18 -21, 94.
- Pretty, Jules (2003). Social Capital and Collective Management of Resources. *Science* 302: 1912-1914.

- Putnam, Robert D. (1993a). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press, Princeton.
- Putnam, Robert D. (1993b). The Prosperous Community: Social Capital and Public Life. *American Prospect* 13:35-42
- Putnam, Robert D. (1995). Bowling Alone: America's Declining Social Capital. *Journal of Democracy* 6(1):65-78.
- Putnam, Robert D. (2001). *Bowling Alone: The Collapse and Revival of American Community*. Simon and Schuster, New York.
- Rappaport, Roy A. (1971). The Flow of Energy in an Agricultural Society. *Scientific American*, September 1971: 117-122, 127-132.
- Roe, Douglas (2002). Foreward. In McLean, Scott L., Schultz, David A., and Steger, Manfred B. (eds.), *Critical Perspectives on Community and Bowling Alone*. New York University Press, New York and London, pp.xi to xv.
- Salazar, Alfredo (1979). Kaspée Rukula' Kuinda (History of the Forefathers). Unpublished manuscript. Translated by Neil Wiebe.
- Scheffer, Marten; Westley, Frances; Brock, William A.; and Holmgren, Milena (2002). Dynamic Interactions of Societies and Ecosystems-Linking Theories from Ecology, Economy, and Sociology. In Gunderson, Lance H. and Holling C.S. (eds.), *Panarchy*. Island Press, Washington DC, pp. 195-239.
- Schmink, Marianne and Wood, Charles H. (1987). The "Political Ecology" of the Amazonia. Little, Peter D.; Horowitz, Michael M.; and Nyerges, Endre A. (eds.), *Lands at Risk in the Third World*, Westview Press, Boulder, pp. 38-57.
- Schmink, Marianne (2003). Communities, Forests, Markets, and Conservation. In Zarin, D.; Putz, F.J.; Schmink, M.; and Alavalapati (eds.), *Working Forests in the Tropics: Conservation through Sustainable Management?* Colombia University Press, New York.
- Sierra, R. (1996). La Deforestacion en el Noroccidente del Ecuador: 1983-1993. Ecociencia. Quito, Ecuador.
- Sierra, R. (1999). Propuesta Preliminar de un Sistema de Clasificación de Vegetación para el Ecuador Continental. Circa 1996. 1:1,000,000. Proyecto INEFAN/GEF-BIRF y Ecociencia, Quito, Ecuador.
- Sierra, R., Campos, F. and J. Chamberlain (2002). Conservation Priorities in Continental Ecuador: A Study Based in Landscape and Species Level Biodiversity Patterns. In *Landscape and Urban Planning* 59: 95-110.
- Solis, M. Acosta, n.d. Map. La Provincia de Esmeraldas, Ecuador.

- Stevenson, W.B. (1825). *A historical and descriptive narrative of twenty years residence in South America* (3 Volumes). London, England.
- Stonich, Susan C. (1993). "I am Destroying the Land!" The Political Ecology of the Poverty and Environmental Destruction in Honduras. Westview Press, Boulder.
- Stonich, Susan C. (1995). Development, Rural Impoverishment, and Environmental Destruction in Honduras. In Durham, William and Painter, Michael, *The Social Causes of Environmental Destruction*. The University of Michigan Press, Ann Arbor, Michigan, pp.63-99.
- Thurston, David H (1997). *Slash/Mulch Systems. Sustainable Methods for Tropical Agriculture*. Westview Press, Boulder.
- United States Central Intelligence Agency (1991). Ecuador (Shaded Relief) map. [http://www.lib.utexas.edu/maps/americas/ecuador\\_rel91.jpg](http://www.lib.utexas.edu/maps/americas/ecuador_rel91.jpg), accessed February 26, 2004.
- Uphoff, Norman (2000). Understanding Social Capital: Learning From the Analysis and Experience of Participation. In Dasgupta, Partha and Serageldin, Isnali (eds.), *Capital: A Multifaceted Perspective*, the World Bank, Washington, DC.
- Valencia, R.; Pitman, N.; León-Yáñez, S.; and Jorgensen, P.M. (eds.). 2000. *Libro rojo de las plantas endémicas del Ecuador 2000*. Herbario QCA, Pontificia Universidad Católica del Quito, Ecuador.
- Valverde, F.M. (1998). *Plantas útiles del Litoral Ecuatoriano*. Ministerio de Medio Ambiente/ECORAE/Ecociencia, Guayaquil.
- Varese, Stefano (2001). The Territorial Roots of Latin America's Indigenous Peoples' Movement for Sovereignty. *Hagar. International Social Science Review* 2 (2).
- Villavicencio, Manuel (1858). *Geografía de la República del Ecuador*. Robert Graighead Press, New York.
- Von Hagen, Wolfgang (1939) Los Indios Tsachela del Oeste Ecuatoriano. In Juncosa, José E.(ed.), *Tsachila: Los Clasicos de la Etnografía sobre Los Colorados (1905-1950)*. Abya Yala, Quito, Ecuador, pp. 81-124.
- Wentzel, Sondra (1989). *Tacana and highland Migrant Land Use, Living Conditions, and Local Organizations in the Bolivian Amazon*. Dissertation, University of Florida, Gainesville, Florida.
- West, Robert C. (1957). *The Pacific Lowlands of Colombia: A Negroid Area of the American Tropics*. Louisiana State University Press, Baton Rouge.
- Wolf, Eric R. (1997). *Europe and the People without History*. University of California Press, Berkeley and Los Angeles.

- Wood, Charles H. and Porro, Roberto (2002). *Deforestation and Land Use in the Amazon*. University of Florida Press, Gainesville.
- World Bank Group (8/1/ 2000a). How is Social Capital Measured?  
<http://www.worldbank.org/poverty/scapital/SChowmeas1.htm>, accessed February 18, 2003.
- World Bank Group (8/1/ 2000b). Why is Social Capital Relevant to Development Work?  
<http://www.worldbank.org/poverty/scapital/scwhyrel1.htm>, accessed February 18, 2003.
- World Bank Group (8/1/ 2000c). Social Capital and the World Bank.  
<http://www.worldbank.org/poverty/scapital/bank1.htm>, accessed February 18, 2003.
- World Bank Group (2/10/2003). Social Capital and the Environment.  
<http://www.worldbank.org/poverty/scapital/topic/env1.htm>, accessed February 18, 2003.

## BIOGRAPHICAL SKETCH

Julianne Adams Hazlewood was born in Indianapolis, Indiana, on September 26, 1973. During high school, she chose to go to boarding school, thus attending Culver Girls Academy in Indiana and graduating from Northfield Mount Hermon School in Massachusetts in 1992.

The cornerstone of her current interest in the effects of the capitalist market on socio-environmental relations was set while obtaining her undergraduate degree in community studies at the University of California, Santa Cruz. As part of the degree requirement, in 1997, she did a six-month internship with an Ecuadorian NGO called UTEPA (Unidad Técnica Ecuatoriana para el Ecodesarrollo de la Amazonía y Región Awá). As part of the internship, she lived in the Chachi village of La Ceiba and collaborated on the establishment of an ethnobotanical garden.

Since her graduation in 1998, Julianne worked with adolescents and on organic farms in Washington, Hawaii, and the Dominican Republic. In 2000, she returned to Ecuador for a year, and worked with Ecociencia (an Ecuadorian NGO) as the coordinator of another ethnobotanical garden in the Chachi village of Loma Linda. In 2001, she traveled to Brazil and Bolivia and then attended the graduate school at the Catholic University in Lima, Peru, where she lived for one year.

After working in the Virgin Islands for six months in 2002, Julianne moved to Gainesville, Florida, to pursue her MA degree in Latin American Studies. Her concentration was in tropical conservation and development.