

ECONOMIC STRATEGIES AND CHANGING ENVIRONMENTAL SYSTEMS
IN A BRAZILIAN AMAZON COMMUNITY

By

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This dissertation is dedicated to Simone and all of the other individuals in Itupiranga who have lost their lives because of inadequate transportation facilities.

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TABLE OF CONTENTS

	<u>page</u>
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	x
ABSTRACT	xiii
CHAPTERS	
1 AMAZONIAN DEVELOPMENT AND THE TRANSITION TOWARD CAPITALISM	1
Introduction	1
Non-capitalist Qualities in Amazon	12
Aspects of the Amazonian Transition	15
Some Reasons for an Incomplete Transition	18
Findings and Overview of Dissertation	43
Methodology	56
2 HISTORY OF ITUPIRANGA, 1892-1970	61
Introduction	61
1892: Founding	63
Rubber Extraction	68
Extraction of Brazil Nuts	75
Diamond Mining	83
Subsistence Activities	88
The Relationship Between Lago Vermelho and Marabá	91
Social Organization	96
Women's Activities	97
Conclusion	100
3 THE HISTORY OF LAND TENURE IN PARA AND GOVERNMENT- SPONSORED PROJECTS, 1970 TO 1990	106
Introduction	106
History of Land Tenure in Pará	107
Itupiranga During the 1970s: The Transamazon Highway Era	116
Conclusion	150

4	IMPACTS OF DEVELOPMENT ON SOCIAL GROUPS	162
	Introduction	162
	The Dam's Impact on Longterm Residents of Itupiranga	171
	Middle Class	176
	Lower Class	178
	Lower Class Continued: The Case of Santa Teresa do Tauiry	180
	The Case of Former Jacunda Residents Who Moved to Itupiranga	183
	Migrants	190
	Conclusion	199
5	ECONOMIC STRATEGIES IN 1990	214
	Introduction	214
	Standard of Living	216
	Conclusion	247
6	THE CHANGES IN FISHING	264
	Introduction	264
	Methodology	266
	Traditional Fishing	267
	Incipient Capitalization of Fishing During the 1980s	270
	Demographic Characteristics of Fisherpersons in 1990	296
	Marketing of Fish	312
	Perceptions About Fishing Since the Dam	323
	Conclusion	327
7	ONE NEW LAND-USE STRATEGY: LOGGING	351
	Introduction	351
	Methodology	352
	Owning a Sawmill	354
	Operations	362
	Labor	371
	Conclusion	388
8	STRATEGIES FOR COPING WITH RAPID CHANGE AND FRONTIER LIFE: THREE CASE STUDIES	402
	Introduction	402
	Political Expression Against the Tucuruí Dam	404
	An Environmental Movement in Itupiranga	430
	Daily Class Resentments and Struggles	471
	Conclusion	491

9	CONCLUSION	505
	Introduction	505
	The Transition and Its Impacts	507
	Advantages and Disadvantages of the Changing Situation	513
	LIST OF REFERENCES	522
	BIOGRAPHICAL SKETCH	538

LIST OF TABLES

<u>table</u>	<u>page</u>
2-1 Extractive Production in Marabá, Pará, Brazil, 1954	105
3-1 Brazil Nut Production in Itupiranga, Pará, 1975-1989	154
3-2 Brazil Nut Production in Marabá Microregion, Pará, 1973-1989	155
3-3 Timber, Lumber and Charcoal Production in Itupiranga, 1975-1989	156
3-4 Production of Timber, Lumber and Charcoal in Marabá Microregion, 1973-1989	157
4-1 Place of Birth of Itupiranga Residents, 1990 . .	207
4-2 Place Where Head of Household Was Born, Raised, Lived the Longest and Lived Immediately Before Moving to Itupiranga, 1990	208
4-3 Place Where Spouse Was Born, Raised, Lived the Longest and Lived Immediately Before Moving to Itupiranga, 1990	209
4-4 Amount of Time Head of Household and Spouse Lived in Itupiranga Municipality, 1990	210
4-5 Motivations for Migration to Itupiranga	211
4-6 Prices for Food and Other Goods in One Store in Itupiranga, Pará, January to December, 1990 . . .	212
4-7 Minimum Requirements for One Worker per Month, and Costs for Those Requirements in Itupiranga, Pará, Brazil, February 15, 1990	213
5-1 Standard of Living Indicators by Ownership of Land in 1990, Itupiranga, Pará, Brazil	252
5-2 Comparing Standard of Living Among Households of Fishermen with Different Access to the Means of Production in 1990, Itupiranga, Pará, Brazil . .	253

5-3	Comparing Standard of Living Among Households Which Include Different Types of Rural Workers in 1990, Itupiranga, Pará, Brazil	254
5-4	Standard of Living Among Households Which Include Different Types of Urban Workers in 1990, Itupiranga, Pará, Brazil	256
5-5	Standard of Living Among Households with Zero to Seven Urban Workers in 1990, Itupiranga, Pará, Brazil	258
5-6	Standard of Living Among Households with Zero to Seven Qualified Urban Workers in 1990, Itupiranga, Pará, Brazil	259
5-7	Standard of Living Among Households with Zero to Seven Qualified Urban Wage Workers in 1990, Itupiranga, Pará	260
5-8	Standard of Living Among Households with Zero to Twelve Rural Workers in 1990, Itupiranga, Pará	261
5-9	Standard of Living Among Households According to State of Birth of Household head in 1990, Itupiranga, Pará, Brazil	262
5-10	Standard of Living Among Households According to Length of Residence of Household Head in 1990, Itupiranga, Pará, Brazil	263
6-1	Month and Year Fishermen Became Members of the <i>Colonia dos Pescadores de Itupiranga (Z-44)</i> , per records in December, 1989	331
6-2	Legal Mesh Sizes (in centimeters) and the Type of Fish Caught in Each Size According to Fishermen, Itupiranga, Pará, Brazil, 1990	332
6-3	Fishing Net Mesh Sizes by Depth of Placement in the Tucuruí Reservoir, Pará, Brazil, 1990	333
6-4	Number of Kilos of Fish Sold to the Itupiranga Fish Market from 1988 to 1992	334
6-5	Type of Remuneration by Division of Labor, Itupiranga, Pará, Brazil, 1990	335
6-6	Social Relations of Production in Commercial Fishing, Itupiranga, Pará, Brazil, 1990	336
6-7	Location of Sale of Fish by Fishermen, Itupiranga, Pará, Brazil, 1990	337

6-8	List of Fish Marketed in Itupiranga, Pará, Brazil 1990, by Common Name and Species	338
6-9	Number of Times Fish from Itupiranga Went to Destination Per Month, 1988	339
6-10	Number of Times Fish from Itupiranga Went to Destination Per Month, 1989	340
6-11	Amount of Times Fish from Itupiranga Went to Destination Per Month, 1990	341
6-12	Number of Times Buyers Bought Fish from Colonia per Month, 1988	342
6-13	Number of Times Buyers Bought Fish from Colonia per Month, 1989	343
6-14	Number of Times Buyers Bought Fish from Colonia per Month, 1990	344
6-15	Number of Times Buyers Bought Fish, By Destination, 1988	345
6-16	Number of Times Buyers Bought Fish For Destination, 1989	346
6-17	Number of Times Buyers Bought Fish For Destination, 1990	348
6-18	Number of Times Buyers Bought Fish For Destination, 1990	349
6-19	Buying and Selling Price for Fish at the Market of the <i>Colônia dos Pescadores de Itupiranga-Z44</i> from Late November 1989, through 1990	350
7-1	One Sawmill's (A) Buying and Selling Prices for the Three Qualities of Lumber per M ³ , June 1990	393
7-2	Estimated Annual Production of <i>Madeira Serrada</i> at one Sawmill (A) for One Year 1989-1990 in Itupiranga, Pará, Brazil	394
7-3	Types and Prices of Wood Within Each Quality Category in Mid-August at One Sawmill (B) in Itupiranga, Pará, Brazil, 1990	395
7-4	Estimated Total Prices for <i>Madeira Tora</i> and <i>Madeira Serrada</i> , and Potential Profit for One Year at One Sawmill (B) in Itupiranga, Pará, Brazil, 1990	396

7-5	Number of Minimum Wages Earned by Forest Crews of Two Sawmills in Itupiranga, Pará, 1990	397
7-6	Number of Minimum Wages for Positions in Five Sawmills in Itupiranga, Pará, 1990 (According to Sawmill Owners)	398
7-7	Average Sawmill Workers' Salaries per Position, Among Sawmills in September 1990, Itupiranga, Pará (According to Sawmill Workers)	399
7-8	Household Type of Sawmill Workers and Fishers From 30-Household Surveys, Sawmill Workers and Fishers.	400
7-9	Standard of Living Indicators for Households with Sawmill Workers versus the Rest of the Population in Itupiranga, Pará, Brazil, 1990 . .	401

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By

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Chairperson: Marianne Schmink
Major Department: Anthropology

This study concerns culture change in a small riverine town, Itupiranga, Pará, Brazil. There are crosscultural similarities in the transition toward capitalism among world areas. A majority of people in these regions lose access to the means of production--land and resources--in similar and violent processes of primitive accumulation. Like other third world countries which were impacted by colonialism, Brazil's process remains inhibited because of its historical and structural position in the world economy; the extent, nature and role of government intervention in Brazil; the continued presence of non-capitalist forms of production in the Amazon; and the resistance efforts of some social groups.

Since 1970, but especially during the 1980s, the people of Itupiranga have experienced major changes in their

physical and social environments caused by development projects and policies encouraged by the Brazilian government. The Transamazon Highway, the Tucuruí Hydroelectric Dam, colonization projects and the influx of migrants, changes in land use and tenure, increased logging and the commercialization of fishing have all had a major impact on the environment as well as traditional life in Itupiranga.

Conceptually, this dissertation explores how these developments altered local livelihoods. I examine how the environmental and social impacts of Brazil's development projects and policies caused the demise of economies once based upon resource extraction. The new productive economy focuses more on non-renewable resources. Furthermore, the need to make a profit or to generate cash constrains the abilities of individuals as part of social groups to practice their economic activities in environmentally sound ways.

The development model initiated by the Brazilian government implicitly assumes and explicitly advertises the benefits of development for people in the Amazon region, as measured by their increasing standard of living. Although a few social groups benefited from the regional developments, they were in the minority. In fact, the standard of living for a majority of people in Itupiranga did not improve. The development projects and resulting changes in the physical and social environments constrained peoples' abilities to

fulfill their basic needs in a self-reliant manner, hence, their lives became more insecure and precarious. Different social groups used different strategies to cope with the extensive changes in their lives that caused the increasing insecurity and poverty.

CHAPTER 1
AMAZONIAN DEVELOPMENT AND THE TRANSITION TOWARD CAPITALISM

Introduction

Itupiranga was a town with at least two faces. One face revealed a calm, charming town resting above the banks of the Tocantins River in the eastern Amazon region of Brazil. The other face began to reveal itself slowly, as rumors, stories and every day language hinted of threats and events of violence in town and in the surrounding rural areas. The contrast between the two faces indicated underlying tension and overt conflict as people coped with traditional versus changing lifeways and mores because of profound alterations in their environment, economy, political system, social structure and world view.

At night one could see the Milky Way, thick with stars, stretching across the sky. Roosters began to crow before dawn. By the time the first rosy rim of the sun was reflected in the river and baby chicks started their constant background peeping, people would open the doors of their houses and sleepily look out on the new day, getting ready to conduct business in the coolness of morning. Before long the streets were full of people going to work. As the day progressed, the intense heat of the tropical sun laid itself thickly over the treeless, dusty streets of

Itupiranga, and people moved more slowly to and from their destinations. During the middle of the day after lunch, most people rested behind closed doors for two hours before returning to work. Activities in the early evening were dining, watching *novelas* (Brazilian soap-opera-type stories shown nightly for eight or nine months) on television, and sitting out in front of their homes watching and visiting with other townspeople promenading up and down the streets. Visitors would lean in peoples' windows or sit outside of doorways facing the television to watch the *novelas* and the news. Oldtimers, who were not interested in this new medium which entered Itupiranga after the town received power from the Tucuruí Hydroelectric Dam in the mid-1980s, watched the streets. People would discuss the events of their day or those of the *novelas* during the two-to-three minute intervals of silence when the television screen went dark and a clock would count the minutes and seconds of dead time when commercials were running in larger towns, but not in small towns like Itupiranga.

During the week people went to bed fairly early. On the back streets, many poor people retired as soon as it got dark. On mainstreet, where more wealthy people lived, things quieted down around ten o'clock. However, on the weekends, particularly Saturday night, there was usually a dance-party at one of several places in town. On those nights and other holidays, the music would not stop until about 3 o'clock in the morning, and party goers often would

be on the streets until dawn. Blessedly, for those of us along the river there would be an hour respite between 3:00 and 4:00 a.m. until someone in a household/bar at the riverfront would arise and begin the day playing *Sertanejo* (a type of country music popular in Northeastern Brazil) music as loud as the dance music had been. Sunday afternoons were often spent catching up on sleep from partying or struggling futilely to find a position under one's pillow to block out the loud and distorted music from the previous Saturday night's events.

The more violent face of Itupiranga began to reveal itself to me slowly, from observations made on nights of the parties and in gossipy conversations. I spent many evenings with younger, unmarried middle- and upper-class locals, and became involved in the unfolding drama of romantic liaisons and breakups. Dances and parties presented an excellent opportunity to observe the relationship between upper-class locals and the wealthy outsiders. These social affairs revealed the tensions and conflicts inherent in the rapidly changing situation. Unwittingly, I was allowed a glimpse of the larger conflicts played out at an interpersonal level in the social events themselves and in the endless gossip, discussion and analysis about those events and relationships by the actors themselves, and other observers from Itupiranga.

Rumors were told to me, too, about people being murdered or threatened with assassination over land

conflicts, logging contracts, labor disputes, high prices charged by local merchants and other business deals gone sour. There were a surprising number of crimes of passion, too. More striking still to someone unused to frontier justice, was the brutality shown by local police toward poor people. Shortly after Christmas in 1989 two teenage boys were beaten to death in the local *delagacia*, ostensibly for theft. They were killed by local officials before they even saw a judge. Poor people and even middle-class locals were afraid to protest against this type of violence and told me that one should never, ever admit to any knowledge about a crime to the police, even if officials could prove the person was guilty. If you did, they would torture and kill you for sure.

Before three months were out, it had crept into my awareness that there was another darker, more violent face beneath the sunlit town and friendly, hospitable people I first encountered. Despite the appearance of a tranquil, traditional riverside community, albeit one that was growing rapidly, Itupiranga was also much like the more violent roadside towns in the Amazon, caught up in a whirlwind of rapid culture change.

This dissertation is a study about rapid social change in a community in the Brazilian Amazon. The focus is a town called Itupiranga, which is located along the Tocantins River/Tucuruí Reservoir approximately 50 kilometers north of Marabá, Pará, Brazil, just off the Transamazon Highway

(Figures 1-1 and 1-2). The municipality (county) of Itupiranga was created by Law Number 62 of December 31, 1947. The municipality is adjacent to the municipalities of Jacundá and Portel to the north, Marabá to the south, to São Domingos da Capim to the east and Senador José Porfírio to the west. The municipal seat, also called Itupiranga (South Latitude 05° 11' 00"; Longitude 49° 16' 53"; Altitude 90 meters), is located approximately 420 kilometers south from Belém, the capital of Pará as the crow flies, and 556 kilometers by boat on the Tocantins River. The area of the municipality is 15,890 square kilometers, with an estimated population of 27,210 inhabitants in 1989. That same year the population density was 1.72 habitants per square kilometer. At that time, a major portion of the population was employed in agriculture, cattle raising, natural resource extraction and fishing (Secretaria da Fazenda 1990).

The inhabitants of the town as well as the region of Southern Pará experienced marked and rapid social upheaval as a result of major environmental, economic, political and social changes that began in the 1970s. These changes accelerated during the 1980s with the closing of the floodgates of the Tucuruí Hydroelectric Dam in 1984, and other developments which included gold mining, colonization projects, the influx of thousands of migrants, changes in land use and land tenure, logging and the commercialization of fishing.



Figure 1-1. Map of Brazil

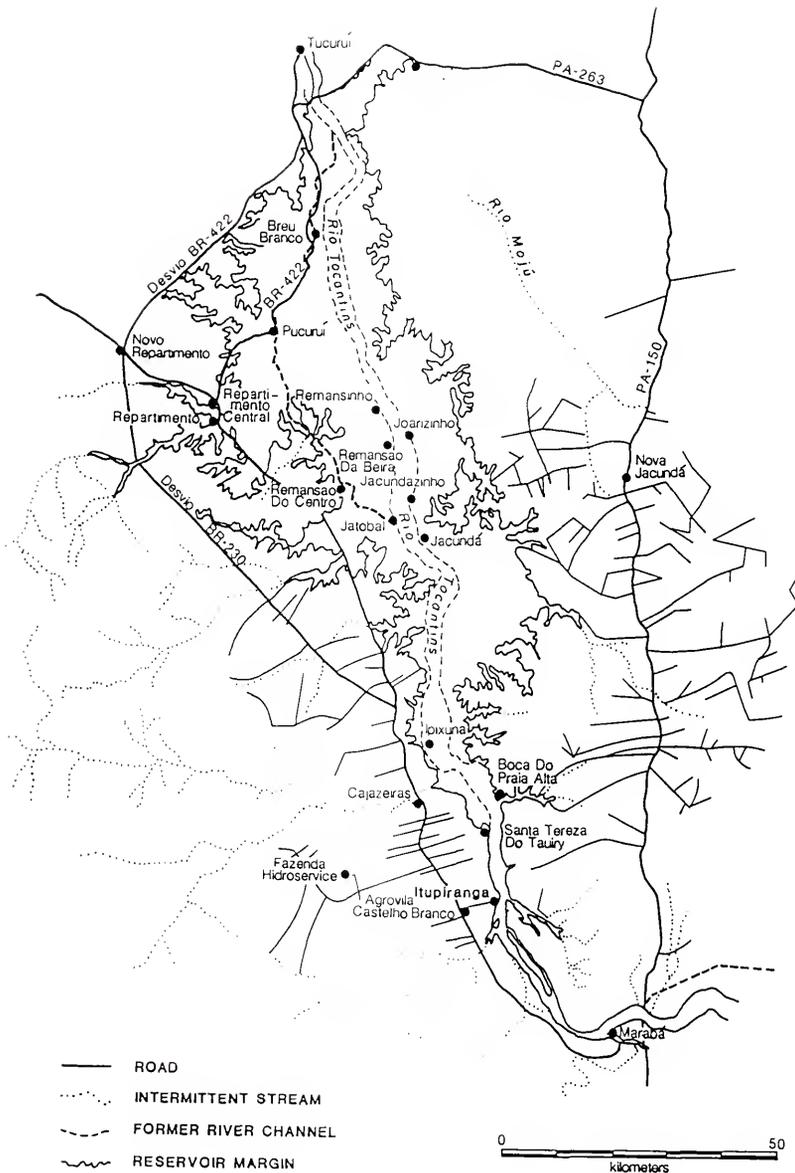


Figure 1-2. Tucuruí Hydroelectric Dam Area of Impoundment. Modified Map (Original in Mougeot 1986).

The collective impacts of these development policies and projects separated many people from the natural resources upon which they depended and disrupted the interdependent relationships they needed to make a living, making their conditions of survival more insecure and precarious. The consequences of the development process were increasing population density, and changes in land tenure, land use, economic activities, and resources. As a result, peoples' ecological, economic and political landscapes were altered, forcing them to adopt new strategies for dealing with a transformed environment, as well as new economic forces and relations of production.

I will examine the structural opportunities and constraints that life-long residents of the riverine community of Itupiranga experienced as a result of a development process that began with the construction of the Transamazon Highway and colonization projects in 1970. Many people lost access to the resources they needed to make a living, which resulted in their loss of autonomy and increasing dependence upon cash. The development process also caused an increase in social stratification and economic disparity among social groups in Itupiranga. There is also a link between the continuation of these social consequences and the unfolding degradation of the local and regional environment. It would appear that the insecurity and precariousness of many people in Itupiranga, and in the region as a whole, may increase over time because of the

environmental degradation that is occurring from population pressure, deforestation, and threatened aquatic resources.

I will also discuss the strategies that people used to cope with the dramatic changes that have taken place in their lives during such a short period of time. These coping strategies differed among social groups who were differentially affected by the ecological, economic and social changes.

One example is the former direct producers, who had lived along the Tocantins River for years. They organized and protested the resettlement process that forced their removal from riverine homes and disrupted their social ties and economic strategies. Their sustained efforts, which were assisted by opposition political parties and the Catholic Church during the redemocratization process in Brazil in the early and mid-1980s, gained them some concessions from the power company, ELETRONORTE, which built the dam and implemented the resettlement scheme.

Secondly, another group formed in the later 1980s, calling itself the *Grupo Ecologico de Itupiranga*. The members of this group were mostly teenagers from long-term elite Itupirangan families who had lost status and economic security during the changes that occurred in the 1980s. Although the members of the group derived from contemporary local middle class families, and thus, were wealthier than the resettled direct producers and most migrants, their movement also was an attempt to cope with the altered

physical and social environments in which they found themselves. Although their activities included modern environmental education and other conservation practices, their goals harkened back to a remembered former golden age when the forest and river gave abundant food and materials by which to live, and their community was intact with its own Amazonian and Itupirangan culture. In essence, their latent agenda was a conservative attempt to mitigate the destructive changes that they perceived were caused by both wealthy and poor migrants from other regions of Brazil who had destroyed the former environment, economy, social relationships and culture of Itupiranga.

A third social group consisted of poorer migrants who faced insecurity every day from poverty. They were more vulnerable than other social groups to economic deprivation, landlessness, forced removal from their land/homes, unemployment and underemployment, hazardous working conditions, low pay and long working hours, high prices and unfair marketing practices by local merchants, inflation, injustices in the distribution of charity, poor health, malnutrition, high infant mortality, uncertain social ties, verbal abuse by wealthier people, and the fear of physical abuse by the police. Yet, most of the time people lived under these conditions without taking action to rectify the abuses about which they complained. Possible reasons for why people endured such living conditions and often did not make a choice to seek redress to improve their situation

included fear of retaliation by police and also daily interaction with members of other social groups which softened peoples' perceptions of their oppression.

As these examples show, perceptions and collective action varied among the different social groups in Itupiranga as they attempted to negotiate a secure place for themselves in a rapidly changing situation. During this economic and social transition, Itupiranga had qualities both of a tranquil, traditional riverside Amazonian community and also of a dusty, frontier highway town replete with all of the accompanying interstices of high drama.

This transition from one type of economy to another is uneven and conflictual. Different social groups vie for an advantage in a confusing and sometimes violent setting. Mostly, more powerful social groups gained the advantage in these confrontations because they had the wealth and power to use force, government policy and ideology to ensure gains in their favor. However, less powerful social groups did attain some concessions when they organized, created linkages with more powerful groups and made sustained efforts that addressed their needs. Mostly, however, life unfolded every day as people worked, played with their children, visited with their neighbors, negotiated romantic interludes, argued about politics and watched other people as they sat by their front doors under the blazing, afternoon sun and, again, later in the cooler evenings, typical of Amazonia.

This unfolding of local history took place in an arena of structural constraints and opportunities at the local, regional, state, national and international levels that were also subject to evolving and sometimes more abrupt and unforeseen changes. I will begin by defining and explaining the conceptual framework and methodology I will use to examine the transition that tore through the fabric of a traditional Amazonian riverside community and created a more heterogenous and rambunctious frontier town within a decade.

Non-capitalist Qualities in Amazonia

The Amazon is perhaps the final frontier in Brazil, which has already experienced other phases of frontier expansion since World War II (cf. Foweraker 1981; Katzman 1977; Margolis 1973 & 1979; Martins 1975; Sawyer 1979 & 1984). This dissertation is a case study of the environmental and socioeconomic effects of development in a traditional Amazonian community, and the responses by different social groups to the changes. This development process in the Brazilian Amazon has some commonalities with the transition from feudalism to capitalism in Western Europe, beginning in the Fourteenth Century, and in other world areas that have experienced the impacts of colonialism since that time.

In general, feudalism in Western Europe was based upon a relationship between lords and vassals, which was expressed by an oath of fealty. Feudal production was characterized by the division of land into feudal estates,

whereby a class of peasants or serfs produced for family subsistence and also had to produce a surplus for a lordly class, who owned the land. The ruling class appropriated this surplus from the producer class by using extra-economic coercion to force serfs to pay rent, in kind or with money, or donate labor service to the manorial land and serve in his army. Under the lord-vassal relationship, peasants had access to the means of production in the form of tools and use rights on the lords' lands. In early feudal times, ninth through tenth centuries, production was mainly limited to the manor, but during what Little (1978) calls the Second Feudal Age, at the end of the thirteenth and beginning in the fourteenth centuries, production for the market increased.

Amazonia had features similar to feudalism. Under the *aviamento* system in Amazonia, the social relations of production were patron clientism whereby patrons controlled the exchange of certain natural resources and trade goods in a chain of credit extending from local direct producers, who gathered the extractive products, to the foreign export houses in Belém and Manaus (Wagley 1974 & 1976; Weinstein 1983). Direct producers, or those who harvested forest products, produced for family subsistence and also for their patrons who used extra-economic forms of coercion to appropriate surplus from their clients. Instead of using rents or labor service, patrons in the Amazon extended credit to their clients to ensure their indebtedness, so the

former could maintain a labor force for the next season's harvest of natural resources. Further, clients always lived under a threat of violence if they did not fulfill their debt obligations to their patrons by running away, or by working for some other patron. Hence, under the *aviamento* system the upper classes' control over direct producers was political in nature at the level of exchange, and not economic, as under capitalism.

Direct producers in Amazonia had access to the means of production because the land tenure was based upon usufruct rights, whereby the upper class patrons controlled specific resources, rubber and Brazil nuts, on the land, but did not own the land itself. Amazonian peasants had the right to use those lands for other extractive and productive activities, seasonally. There was also a local common property arrangement in Itupiranga, whereby the community controlled access to specific resources-- Brazil nuts during the rainy season--and land upon which to farm. In Amazonia, the system of production was based upon use in some economic activities--hunting, gardening and fishing--and on exchange in others--gathering rubber and Brazil nuts, mining for diamonds and hunting for animal skins--in a market network. Thus, in Amazonia, peasants were not proprietors of land, but had effective possession of their small landed resources. As such, peasants had access to the means of production, and hence control over their productive activities.

The extra-economic control over labor was felt to be a problem that negatively affected Amazonian development (Weinstein 1983). Surplus in the Amazon was only obtained via the market, and not from the labor process. It was partly the scarcity of labor that influenced the particular relations of production and exchange in the Amazon, whereby the focus of exploitation was on the trade relationships and not on production. Peasants had easy access to vast land areas, which inhibited the patrons from controlling more closely the productive activities of the people who worked for them. The trade relationships, coupled with environmental and geographic factors, allowed room for primary producers to refuse to get involved in a wage labor relationship, since if they could get out of debt, they could subsist from surrounding forest and riverine resources. Thus, the labor supply in the Amazon was unreliable. Weinstein argues that the unreliable labor supply inhibited capitalist development in the Amazon. After the Asian rubber plantations became viable in 1910, the economy in the Amazon suffered a severe blow because Brazilian exporters, constrained by the labor-extensive system of gathering under the *aviamento* system, could not sell rubber as cheaply as capitalist Asian plantation owners (Weinstein 1983).

Aspects of the Amazonian Transition

Many features of the *aviamento* system were greatly undermined by later capitalist expansion in some areas of

Brazilian Amazonia, beginning in the 1960s and 1970s. This process included the privatization of land and other resources, which ignored communal relationships to land. Hence, many people lost access to necessary resources and came to need cash to buy formerly free resources. The only way to obtain cash was by selling their produce or finding jobs that paid wages. In this process: (1) the State assisted, via legal and extra-legal channels, in the expropriation of the means of production from many people; (2) conditions existed whereby wealth was transferred from the peasant sector to the capitalist sector; (3) there were violent conflicts over land; (4) there was increasing socio-economic differentiation; and (5) land was concentrated into the hands of fewer numbers of people (Wood and Schmink 1978; Martins 1980 & 1984; Foweraker 1981; Davis 1977; Branford and Glock 1985). Instead of encouraging development, these processes contributed to increasing impoverishment of many groups of people in the Brazilian Amazon, since they could no longer fulfill their subsistence requirements in a self-reliant manner (Waldram's 1983 definition of development).

In the transition toward capitalism the struggle over land was paramount in the case of European feudalism and the *aviamento* system in Amazonia. In the Amazon all of the projects and policies were carried out on lands that were already occupied for the most part. Thus, the process of the closing frontier in the Amazon, like the enclosure act

in Western Europe, was inherently violent, since it required the removal of people who were in the way of such schemes. They were often forced to migrate further into the frontier in search of land in order to survive.

The occupation of land in frontier areas in Amazonia by small peasants is the first stage in capital accumulation (Foweraker 1981; see also Hay 1988). This transfer of value took place during numerous land conflicts in the region, which were partly due to the historical confusion over land titling and the transition from a land tenure system based upon usufruct rights to a scheme of private property. Many small-scale producers obtained rights to land simply by occupying and "improving" it, which meant clearing it for agriculture and constructing buildings on it. However, they were vulnerable to more wealthy claimants who could afford to buy titles or used other coercive measures to remove them from it. Surplus was transferred to the capitalist enterprises at the moment of dispossession when the peasant was either poorly paid or not given compensation for the value of labor he expended in clearing and making other improvements. Wood (1983) maintains that this process can be rightly called "primitive accumulation" because peasants become divorced from the means of production, even though it does not necessarily imply a complete conversion from peasant to proletariat (as in the feudal transition in Western Europe) because there remained expansive lands on the frontier, which absorbed part of this dispossessed

population. When people migrated, their flight contributed to a recurring cycle of primitive accumulation in which many direct producers were actually divorced from ownership or possession of the means of production.

This process, and the violent nature of it intensified during the during the 1970s and 1980s with the changing land tenure regime in which more land became subject to private property controls. With this intensification came increasing conflicts over land. Foweraker (1981) observes that the contemporary violent nature of the frontier is a class struggle waged over the appropriation of value created in a process of economic expansion, and over peasants' right to survive. As the frontier was linked to wider markets, land became more valuable and increasingly vulnerable to expropriation, which continued to take place via legal and extra-legal channels, including non-economic coercion and violence (Wood 1983 and Foweraker 1981). By taking over lands that had already been cleared by peasants, larger enterprises extracted the value of both the land they expropriated and that created by the peasant labor in the process of occupation. This surplus was transferred from the frontier to southern Brazil, the industrial and financial center, where policy and laws were made (Bunker 1985).

Some Reasons for an Incomplete Transition

The extent to which the Brazilian state became involved in the transition toward capitalism, including the struggles

over land, was much greater in Amazonia than in Europe. However, despite government intervention, the efforts of peasants to hold onto their land in the contemporary situation in Amazonia--1960 to 1990--inhibited the expansion of capital (Pompermayer 1984). There were also other factors that inhibited the development of capitalism in Amazonia, including Brazil's position in the world economy, historically and structurally, and the continued presence of non-capitalist forms of production there.

Outside Influences: The Impacts of Governmental and International Intervention

In the ensuing debates over land as outlined above, the state became the focal point for the competing socio-economic groups to protect their interests (Schmink and Wood 1992). The Brazilian government mediated in the struggles between peasants and large businesses for land; indigenous groups and mining interests over land use and land rights; small producers and the electric power company over compensation; and national and international environmental and human rights groups and loggers, ranchers, miners and large companies over humans rights issues and sustainable methods of production (cf. Schmink and Wood 1992).

In Amazonia, government bureaucracy and law were the main mediators of the economic forces driving frontier expansion (Foweraker 1981). Since 1964, when the Brazilian State became more centralized, it has increasingly acted as an entrepreneur and a generator of economic enterprises, and

played a major role in the appropriation of land in the Amazon via legal and policy channels (Foweraker 1981). Despite its periodic enactments of legislation designed to benefit smaller, less powerful groups, in the long run, the state ultimately maintained an environment that has assisted more powerful groups in the process of primitive accumulation. Furthermore, the state acted in various capacities to promote the acceleration of accumulation, including ignoring or assisting in the violence that has been an integral part of frontier expansion in Amazonia (cf. Foweraker 1981; Branford and Glock 1985). The state effectively preserved capitalist production via its policies and also limited the degree of conflict by using such measures as militarizing the agency responsible for land titling and colonization. These agencies repressed any objections by less powerful groups, while at the same time, protected the interests of the state-run enterprises. Thus, the state assumed a role which contributed to unequal development within the region, as well as between social groups (Cardoso and Muller 1977). The rapid capital accumulation fostered by the Brazilian State inhibited the development of all social groups in the Amazon; encouraged increasing economic disparity between them; and exacerbated the extreme exploitation of poorer, less-powerful social groups by employing various means that disrupted their more autonomous means of making a living (Cardoso and Muller 1977).

However, the state provided an arena in which less powerful social groups sometimes contested successfully against more powerful social groups (Schmink and Wood 1992). The redemocratization of Brazil, which began in the early 1980s, provided an opening for Amazonian peasants, rubber tappers, indigenous groups, itinerant miners, small farmers and others to protest their grievances (cf. Biery-Hamilton 1987; Schmink and Wood 1992). These groups were sometimes aided by more powerful entities, at both national and international levels, that for various reasons opposed prevailing Brazilian policies in the Amazon, whether economic, political, social and/or environmental. This national and international intervention in the transition process in Brazilian Amazonia was not a feature in the history of Western Europe.

The Amazon's Inability to Develop as Did Western Europe

The transition toward capitalism in the Brazilian Amazon took place at a different moment in history from that of Western Europe. Brazil, like most third-world countries, had trouble developing both agrarian and industrial sectors simultaneously. The difference has enormous implications for a full transition to capitalism for any underdeveloped country in the world, including Brazil. This point is important not only for the moment in history aspect, but also structurally, since the world has changed dramatically since the inception of capitalism, primarily because of widespread impacts of colonialism (cf. Wolf 1982).

The birth of capitalism took place in Western Europe, utilizing Eastern Europe as its first periphery, and later colonizing other parts of the world for its labor and resources (see Mintz 1985 for the example of sugar). Due to its historical and structural development, Western Europe, particularly England, was able to exploit other world regions to fuel the necessary requirements of capitalism. Although there are arguments over whether non-capitalist modes of production in the transition were more necessary for markets (Luxemberg 1968) or for cheap labor to increase profits to reinsert back into production (Wolf 1982; Bradby 1980), it is difficult for countries, contemporarily, given the current world economic system to develop fully, especially since they themselves are often the peripheries for cheap labor and resources for more developed countries. The Amazon is not only a periphery in the world context, but also within Brazil itself (Bunker 1985). As such, it has had a difficult history of attempting autonomous development, with many subsequent failures. However, if we take the view, as advocated by de Janvry (1981), that peripheral capitalism is only a phase in the process of development, is there yet a possibility that the sequence of events in the Brazilian Amazon will allow for a more complete transition toward capitalism?

The Retention of Other Forms of Production in the Amazon

Non-capitalist forms of production frequently persist in the periphery, and are thought to inhibit the transition

process. According to Bottomore, "Capitalism, in Marxist terms, is not possible until the shape of society and economy is largely determined by the exploitation by owners of capital of a class of propertyless wage workers" (1983). In many parts of the world, including Latin America, the capitalist sector has been unable to absorb a significant amount of labor, and so it is argued that the transition remains incomplete for this reason (Portes 1985). Mahar (1979), whose analysis is not marxist, notes that this situation exists in the Amazon and is a symptom of its failure to develop. Activities such as cattle ranching and mining do not employ great numbers of the local population. Large sectors of the Amazonian population are employed in non-capitalist forms of production. Thus, it could be argued that a complete transition to capitalism has not taken place in the Amazon because other forms of production still exist and support capitalist expansion.

One problem that scholars have in determining the extent to which the transition to capitalism is complete is defining the degree of proletarianization, i.e., the absorption of the labor force into the marketplace. However, it cannot be assumed that once capitalism penetrates into a region, it becomes the only mode of production, and that complete proletarianization will occur. Very often, other modes of production articulate within the capitalist system, and in fact, support it (Roseberry 1976; Meillassoux 1981; Bundy 1979). Many social scientists now

use the term 'non-capitalist,' instead of 'pre-capitalist,' to imply that a complete transition may never occur. An examination of this difference is important because, as Bradby notes, in order to fully understand transition or a lack thereof, one must also take into account the dynamics of the non-capitalist modes of production (1980).

Non-capitalist societies are no longer seen as passive agents undergoing change totally manipulated by market forces, but rather as actively articulating within the constraints set by the capitalist mode of production and even altering the path, at times, that capital takes.

Further, the concept 'mode of production' often obfuscates the dynamics of different types of economies at local levels. This term is problematic because it tends to relegate vastly different forms of production and their articulation with the capitalist one, into a catchall category, which then may negate their analysis (Wood 1983). Each discrete form of production and how it interacts with and influences the capitalist mode must be analyzed. There are relations of production other than capitalist, that exist side-by-side with capitalist ones throughout the Amazon. In other areas of the world, Taussig (1978), Meillassoux (1981), Roseberry (1976) and Bundy (1979) have shown that other modes of production articulate with the capitalist mode of production, and moreover, underwrite its maintenance and expansion.

However, at the same time that these non-capitalist forms of production assist the maintenance and expansion of capitalism, they are being destroyed "by being so used even though the time span over which they remain in existence may be considerable" (de Janvry 1981:22). Because these non-capitalist forms--e.g., peasants and artisans--are constrained by their lower-class position in the peripheral process, they will undergo stagnation and impoverishment, and ultimately be destroyed over time by capitalist production (de Janvry 1981).

Coping with Change

During changes brought about by capitalism and colonialism, people struggle with changing occurrences and perceptions of those occurrences in a similar manner (cf. Taussig 1980). For example, in many non-capitalist systems including the *aviamento* system, land has use value. People are forced to cope with changing regulations when land becomes a commodity, common property rights are no longer respected and they lose access to land and resources. In Europe, the fact that legislative bodies enacted more capital punishments for crimes against property reveals the struggle people had with the transition to private property (Thompson 1966:60). Many scholars have examined more recent instances of resistance to the impacts of colonialism (cf. Wolf 1969; Hobsbawm 1959; Scott 1976). Further, some studies reveal that the struggle by social groups against those governments or enterprises that disrupt their

livelihoods also may have an inhibiting effect on capitalist development (cf. Guha 1989; Nader 1990; Schmink and Wood 1992; Scott 1985 & 1990).

The violence over land in the Amazon also indicates a similar struggle to be examined in more detail later (see also Schmink and Wood 1992). Further, the ideological struggle manifested itself in the term *jogo de terra* ('land game'), which refers to the use of land as an investment. This term had negative connotations and was mainly used in reference to poor people who acquired land, especially in the resettlement process in the Tucuruí region, and then sold rather than farmed it. There was a strong implication that they were furthering their own poverty by selling the land rather than using it, which was perceived as shameful. Poor people were blamed by locals and government officials for their poverty in this manner. The reasons for which people sold land were not examined even though having land did not mean a poor family was able to maintain itself. Furthermore, many poor families did not have access to land and had never participated in the *jogo de terra*.

Another example was the introduction of money and the ensuing moral conflicts surrounding the transformation of items having use values into items for profit. Several authors note that during the transition from a moral economy to a profit economy, money is perceived as sterile and evil (cf. Little 1978 for a discussion of the feudal transition; Taussig 1980 for Colombia, South America during the middle

twentieth century; Scott 1976). In Europe, money lenders, many of whom were Jews, received the brunt of peoples' anger as the sin of avarice in the practice of usury became perceived more seriously over time, toward the end of the thirteenth century and beginning of the fourteenth century (Little 1978). Little suggests that the pogroms against Jews were initiated out of guilt, as non-Jews struggled with their own new practices of transferring treasure to money when they sold sacred vessels to merchants for cash.

Similarly, local Itupirangans who now owned land, who perhaps participated in land speculation, and, moreover, who utilized resources in new ways that destroyed them (like cutting down Brazil nut trees for a profit), tended to transfer their guilt to poor migrants by blaming them for all of the problems that resulted from the land transition from use values to exchange values. In another example, since the Amazon had a system of credit, there does not appear to be a strong theme of the evils of avarice in the debt/credit relationship, at least in Itupiranga. However, patrons were supposed to be generous, and people who accumulated wealth during the transition without sharing were seen as "ambitious" (there was a strong negative connotation to this word). If a person was too ambitious and gained wealth at the expense of others, he or she was the target of vicious gossip and might be the victim of sorcery, and die as a result.

In Europe there was much anger against merchants who were perceived as overpricing their merchandise in order to profit at the expense of their customers. Little states that during the Second Feudal Age that began at the end of the thirteenth century, merchants were considered sinners (1978). During later periods, the incidence of bread riots, which sometimes turned violent, indicates the difficulty people had with the changing role of money, and their need for money when faced with the loss of access to the means of production. The riots were based upon "the assumptions of an older moral economy, which taught the immorality of any unfair method of forcing up the price of provisions by profiteering upon the necessities of the people" (Thompson 1966:63). Faced with the impersonal nature of a free-market economy, people made desperate efforts to reimpose the older moral economy, especially toward the end of the eighteenth century. However, peoples' anger tended to manifest itself more at the level of exchange than at production. Thompson states that "consumer consciousness preceded other forms of political or industrial antagonism. Not wages, but the cost of bread, was the most sensitive indicator of popular discontent" (1966:63). However, there are indications that people protested vigorously against the implementation of new technologies that took away jobs at fabric mills in England in the early Nineteenth Century. Charlotte Bronte's novel Shirley describes the violent turmoil in rural England between mill owners, who tried to introduce new, more

efficient machinery, and mill workers (Bronte 1981; original in 1849).

Likewise, in Itupiranga, many poor people grumbled about how local merchants were overpricing necessary consumer items at poor peoples' expense. There were periodic organized protests against merchants, which were immediately quelled by local police. Attempts to protest against local employers, for example at sawmills, on the other hand, were the acts of only a few individuals, since most people were afraid to be fired and lose their income. Also, in most cases, some form of a patron/client relationship existed between employers and employees, even in the most capitalist local activity, logging and the operation of sawmills. This patron/client relationship may have softened some harsh feelings that overworked and underpaid employees felt against their employers. Overall, there seemed to be less tendency to complain about wages and dangerous working conditions than about prices at local stores, or ungenerous municipal officials.

Environmental Destruction Noted in Late 20th Century:
Neglect of the Environment in Orthodox Literature

Much attention has been drawn to environmental impacts of capitalist development during the past 30 years or so because of growing environmental concerns, worldwide. Barkin discusses the conflict between productive and environmental imperatives in Mexico, stating that the country's inability to confront ecological imbalances correlates with other contradictions in the national

development model. He states that "these contradictions are the result of a long history of competing demands on limited government financial resources to finance the development of private investment opportunities" (1986:3). The pressures in the development model "overwhelm popular demands for improvements in the quality of their material conditions. Profit-making activities have traditionally taken precedence over programs to enhance the natural environment or reduce inequalities in the social structure" (1986:3).

Like Mexico, Brazil focuses on export oriented development, especially regarding the Amazon where resources and infrastructural improvements are mostly located in areas where activities geared to the extraction of products taken out of the region, e.g., cattle, mining and timber. Government programs have directed resources and subsidies for these activities and to a much lesser degree toward agriculture and fishing. The initiation of these activities in the past 20 years in the Amazon Region has come at the expense of more environmentally benevolent extractive strategies which mainly focused on the gathering of forest products--rubber, Brazil nuts, palm oils, spices--while leaving the rainforest intact. It is also questionable whether or not these development activities have improved the standard of living of a majority of people in the region.

In the Amazon, and elsewhere, the rampant destruction of vast areas of tropical forest, fears of global warming,

and mercury pollution in rivers have broadened the debate over capitalist development. The importance of environment is not addressed in classical theories of the transition toward capitalism. However, recently scholars have struggled to understand the links between ecology and economy, and conservation and development, to rectify what they consider to be missing elements in orthodox Marxist thinking. They argue that the problem of environmental degradation has existed for a long time, having intensified especially with the expansion of capitalism. Until recently, Marxists have been reluctant to incorporate environmental and demographic factors into their framework, principally because of their concerns over the policy implications of Malthusian-influenced paradigms. However, it has become increasingly obvious that a consideration of the environment and demographic factors must be included in political economic examinations of societies in the modern world (Redclift 1987).

In anthropology, the fields of economic and ecological anthropology became distinct beginning with Steward (1955 & 1977) and White (1949 & 1959), and often focused on different aspects of human society. White, in particular, focused on energy and the laws of thermodynamics, rather than economic factors to explain culture change. Ecological anthropology broke into two main strands: evolutionary and systems approach. Numerous anthropologists have used systems models derived from the discipline of ecology to

examine human societies (cf. Harris 1974; Piddocke 1965 and Rappaport 1967). Harris, and Sahlins and Service, attempted to integrate Stewards' and White's analyses into one coherent framework to examine the process of human evolution (Sahlins and Service 1960; Harris 1968 & 1979). Demography came into the equation when Harner explicated the impacts of population pressure on natural resources (1970 & 1975; also see Cohen 1975 and Harris 1979). Lawless extended Harner's theory, to include the investigation of both synchronic and diachronic population pressure (1977 & 1979). Lawless was one of the first anthropologists to apply a modified model of population pressure theory in a field situation and among a group of foragers, the Kalinga in the Philippines. He examined both ecological and economic factors at the micro level, by focusing on scarcity and the factors of production, land, labor and capital. By utilizing aspects from political economy to examine how the scarcest factor of production "is obtained, who gets it, what is done with it, and what the societal consequences are," he found that the Kalinga had begun to practice more intensive agriculture because of population pressure (1977:5). Citing Cook (1973), Lawless argues that economic questions are intrinsically tied to the ecology.

Until 1973, the focus of economic anthropology remained at the level of exchange, throughout the period of the formalist and substantivist debates. Finally, in a seminal article published in 1973, Scott Cook attempted to unite the

positive elements of both economic and ecological anthropology. He proposed that in order to examine the relationship between peoples' economies and the natural environment, the focus must be on production processes (Cook 1973). He argued that a focus on production provides a specific, discrete, empirically distinguishable field of inquiry. He redefined "economy" as "a culturally mediated field of a human population's activity in which its members interact with their physical and social environments in the calculated attempt to acquire, directly or indirectly, a living" (1973). Cook asserted that more attention must be paid to production because it is the important integrative link with ecological and social systems. According to Cook, a focus on production: (1) can integrate ecological and economic approaches in anthropology by revealing the links between the economic field and the natural environment; (2) can show the link between work organization and ideology; and (3) can show how linking human relations to product determines their relationship to each other and to their share of the product. Extending this discussion, Orlove argued that production "is prior to distribution and exchange [because] it constrains activity more strongly" (1977:97). Harris (1979), stressing the causal nature of the environmental, demographic, technological and economic conditions of social life upon other sociocultural phenomena, developed a research strategy, called cultural materialism, that incorporates some elements of Marxism,

evolutionary theory, systems ecology and population pressure theory.

A developing approach for examining how human beings interact with their environment is called "political ecology" (cf. Schmink and Wood 1987; Sheridan 1988). Advocates of this approach call for a careful examination of "distinct production systems and class structures within which they unfold" in order to examine what happens to the environment, economy and social relations of production when a population experiences a radical transformation of forms of production (Collins 1992:185).

Political ecology weds the "approaches of political economy, which focus upon a society's place in a region, nation, or "world system," with those of cultural ecology, which examine adaptations to local environmental and demographic factors" (Sheridan 1988:xvi). Small peasant communities are both constrained and given opportunities by the local environment and by demographic factors, as well as internal and external political economic forces. Sheridan states that "[t]he ecology of any human community is political in the sense that it is shaped and constrained by other human groups" (1988:xvii).

Furthermore, Sheridan shows how the approach is useful for examining the intersecting forms of production in any one community. Using the household as the unit of investigation, Sheridan argues that one can examine local conflicts and control over resources, which allows us to

elicit the diversity in community structure and function, and the limitations on community power (1988). Secondly, not only can we uncover the class differences between peasants and elites, but we can also analyze the class differences within the peasant community itself. Thirdly, we can examine specific social and cultural manifestations of communal or "corporate" tenure, and distinguish local particulars from overarching conceptions of peasant "corporateness" (see Wolf 1955 & 1957). This feature is important, according to Sheridan, because peasants may have communal arrangements for land and water without developing civil-religious hierarchies or closing their communities to outsiders. Starting with the household, we can determine whether the corporate control over scarce resources is more or less fundamental and seek the "ideological expressions of social cohesion that may or may not exist in any given corporate community itself" (1988:xxiii). The application of a political ecological approach is not confined to an examination of capitalist relations of production, as revealed by Lawless in his study of the Kalinga, a group of foragers in the Philippines (1977).

In the Amazonian literature the debate over problems with development has focused on whether the unit of analysis is at the level of production or exchange. Bunker (1984 & 1985) argues that extractive economies, as in Amazonia, have different demographic, ecological and infrastructural effects than productive economies. His main premise is that

"economic models of industrial production neglect the physical dependence of industrial production on resource extraction" (1984:1017). Whereas Neo-Classical economics uses prices and Marxist development models assume the labor theory of value, Bunker, in contrast, uses energy in his scheme as the measure to analyze unequal exchange in the world economic system. In other words, resources have an inherent value in and of themselves, without labor input, an assumption theoretically opposed to Marxist doctrine. The extraction of resources from a locale such as the Amazon results in a loss of value in that area because production requires the transformation of matter and energy, which capital and labor cannot create, that is then exported elsewhere, accruing a loss to the region of origin. Thus, like White, Bunker's scheme is informed more "by the laws of thermodynamics than by theories of politically enforced unequal exchange" (1985:12).

Bunker advocates using time-lagged models to measure the cumulative effects of different "modes of extraction" and modes of production, which are organized in response to world demand. A mode of extraction is dynamically different from a mode of production (a unit of analysis that connects social, legal, political, productive and commercial activities into one unified framework) in that unequal exchange is created not only in terms of the "labor value incorporated into products but also through the direct appropriation of rapidly depleted or nonrenewable resources"

(1985:22). Bunker demonstrates his point by reviewing the history of the Amazon from the time of first contact through the early 1980s. He begins by proposing that different levels of regional development result from the interaction between changing world demand for specific commodities and the local reorganization of modes of production and extraction in response to new or changing market opportunities and pressures" (1984:1019). A focus on the demographic, ecological, and infrastructural consequences of each mode of production and extraction will reveal the developmental effects of this interaction over time. And the consequences of these factors "establish key parameters for subsequent modes organized in response to world market demand" as well as "the limits and potential for the productive capacities and the living standards of regional populations" (1984:1019).

The significant point is that each boom-bust cycle, in which resources are extracted and humans destroy resources of the Amazon beyond regeneration, puts limits on what people can do in that region in the future. With those resources gone, people must look to new extractive and/or productive activities in order to maintain themselves. The loss of energy during each one of these phases decreases peoples' autonomy in their relationships with each other and with resources. Thus, people in the Amazon become more dependent upon necessary products, including foodstuffs, from other places, which they have to buy with cash.

In contrast to Bunker, Wood accepts Marx's concept of the labor theory of value (Wood 1983). Thus, the stress in Wood's argument is on class struggle within the region due to his emphasis on the level of production, whereas the issue to Bunker is unequal exchange between world periphery and core, as argued by advocates of dependency theory. Wood explicitly accepts the Marxist model for examining the changes in the Amazon, and thus, the focus is on the similarities of certain aspects of the transition from feudalism to capitalism in Western Europe.

Like Bunker, Wood is skeptical about the future prospects in the Amazon, considering the problem from an environmental perspective. However, Wood argues that it is not only extractive economies that are environmentally destructive, as Bunker argues, but under capitalism, both extractive and productive economies are destructive to the environment. The most basic premise is that capitalism, the dominant mode of production in the world economy, is an inherently expanding system. The following basic idea from Marxist theory is intrinsic to a political ecological approach:

The engine of this continual expansion is the market competition between producers who privately own the means of production. When one producer adopts a new technology, others are forced to follow suit if they are to survive in the marketplace. In this way there is built into the system a constant need for individual firms to advance technology and productivity, tendencies which, in a competitive market environment, necessarily spread throughout the economy. (Schmink and Wood 1987:42-43)

Because of the inherent contradictions of capitalism, Schminck and Wood argue that the goals of environmental policy (conservation and long-term sustainability) are "fundamentally at odds with the goals of expanded production and short-term accumulation" (1987:38). In this case, Brazil's focus on a development model that seeks to maximize annual aggregate real output or GNP (gross national product), based upon Keynesian and Rostowian economics, makes "environmental degradation an eminently rational process, at least insofar as the short-term needs of capital are concerned" (1987:43).

Brazil has always articulated with the world capitalist economy as an export nation, marketing primarily agricultural products and raw resources. Most of the value of resources is imputed via labor in the receiving countries that manufacture goods from the raw products. Hence, the exporting country, in this case Brazil, loses real value in terms of capital and labor in the process (Bunker 1984). The flows between the nation that exports raw materials to the nation that later manufactures them into commodities result in an unequal exchange in labor and prices. These extractive systems are inherently unstable, with boom-bust periods that react to world demands for certain products (Bunker 1985). Often, per unit costs rise as the scale of extraction increases, since commodities must be obtained from more distant and difficult locations. These rising costs mean that sources elsewhere are substituted, leading

to economic decline in the original export region. For example, as discussed earlier, this process occurred in the Amazon in the early twentieth century with rubber. The region experienced rising costs of obtaining labor during the Rubber Boom, which made the prices for rubber latex high on the world market. Later when the Asian rubber plantations (planted with seeds from the Brazilian Amazon) began producing rubber more cheaply, the Amazon region went into decline (Dean 1987).

Under unequal terms of trade, countries such as Brazil are forced to exploit their frontier regions for raw resources, or to reap short-term profits from unsustainable agricultural strategies. These conditions have become exponentially worse in recent years. Burdened with a huge international debt in the 1980s, Brazil's economic policy must concentrate on short-term export possibilities rather than on a more sustainable long-term strategy. With the severe constraints of the budget and rampant inflation, Brazil has little choice but to exploit the Amazon region for lumber, gold, iron ore and other minerals, energy, and agricultural production. Thus, Brazil, as a dependent nation-state in the world economic system, is constrained by factors outside its borders which make it imperative for government officials to make decisions that run counter to policies that encourage sustainable environmental uses and reduce deforestation rates.

Within Brazil itself, the conflicts between social groups over resources contribute to environmental degradation. For example, on the Amazon frontier, small-farmer migrants, traditional Amazonian peasants, and Indian groups are frequently removed from their landholdings by larger land speculators. This conflict over land and resources consequently exacerbates deforestation rates as these less powerful social groups desperately attempt to survive in a situation where all of the odds are stacked against them. Extractive economies impoverish the environment on which local populations depend, both for their own reproduction and for the extraction of commodities for export (Bunker 1984). Once caught up in producing for the market, indigenous groups begin to lose their subsistence orientation and to overexploit their forest resources (Redford 1992). Amazonian peasants also begin to exploit their environment due to the conflicts over land, and increasing population density into the Amazon Basin.

All groups--large-scale entrepreneurs and the less powerful peasants and Indians--clear forest areas as a first step in establishing land rights, since "improving" the land in this manner is a rational strategy for obtaining title to land in the Amazon. Furthermore, the state often operates in behalf of large entrepreneurs by enacting policies that enable them to concentrate their landholdings and enhance private accumulation. A political ecological approach explicitly argues that the state is an institution that is

not a neutral arbiter of competing interests. Rather, the competing agencies within the state ultimately serve to ensure the reproduction of the status quo, in which more wealthy and powerful groups benefit from policy decisions that they themselves had a large hand in promoting, due to their hegemony over access to necessary resources--the means of production (land, labor and tools), credit and financial institutions, and the ideological tools that sway public opinion in favor of their interests. Despite improvements in technology and scientific information about sustainable land use patterns in the Amazon, the Brazilian State continues to maintain and create environmentally destructive policies which favor the more wealthy and powerful groups.

At the same time, however, policies are created that encourage sound environmental practices. During the 1980s, growing popular concern stimulated the beginnings of a conservation movement, in which Special Environmental Secretariat was passed in 1981, and a number of parks and reserves were established. Yet, in practice, the state often backs those policies and projects that are more destructive. Schmink and Wood state that,

However well-conceived a project may be on technical grounds, its success is contingent on a receptive political environment. (1987:49)

In order to formulate sound policies and projects that will actually be successful in reducing environmental destruction, such as deforestation, the method must include an assessment of "a society's prevailing form of economic

production and class structure, and the manner in which diverse economic groups battle for ideological and policy advantage within the state apparatus" (Schmink and Wood 1987:39).

Environmental policies and resource management projects that seek to protect the long-term sustainability of the biophysical system often run counter to the logic of private accumulation and, as a consequence, to the interests of powerful social actors. (Schmink and Wood 1987:52)

These social forces operate, not only at the national and regional levels, but even within small communities, such as Itupiranga. Struggles ensue between more powerful actors, such as loggers, ranchers and politicians who support the changing regime, versus less powerful groups, because the newcomers obtain their wealth by using resources in a manner that destroys the former economic activities, upon which those locals once depended.

Findings and Overview of Dissertation

Societies that develop a market economy undergo profound social and environmental impacts. For one thing, local relative autonomy diminishes. Although people in the Amazon were dependent upon the marketing of extractive resources before for part of their sustenance, they are now even more so because of the loss of local resources and the necessity to buy their replacements. The community experienced social stratification and class differentiation, in which some people became wealthy at the expense of most other people and environmental sustainability.

On the other hand, we need not assume that peoples' lives will become worse because of capitalist development. In order to better assess the impact of development upon peoples we must compare their former way of life with the changed one. These populations often lose important aspects of their cultures, especially those which make them autonomous and able to provide for themselves. Hence, the focus of research should begin by examining these populations' former and new economies, since peoples' welfare is directly related to how they make a living and whether or not what they do is sufficient to sustain themselves and their families. Economic strategies are intrinsically tied to the physical environment, and often people encounter new rules that make them unable to obtain the resources that they easily acquired under the old regime. They may be introduced to new economic activities that require different interactions with the environment, and which may permanently alter it. Often, development means a change from non-capitalist forms of production to capitalist, and in this process, most people may lose access to the means of production. This process has a profound impact upon peoples' economic strategies and thus, standard of living.

Thus, we must ask the question of how this transition toward capitalism, whether incomplete or complete, affects human beings in the region given the social and environmental problems that seem to be created in the

process. What are the ramifications of changing forms of production on the environment, on the economy and on the social relations of production? What consequences do the changes have for the people at the time they experience them and in the future?

It is often assumed by governments and international lending institutions that capitalist development will be a positive experience for "traditional" peoples living in non-capitalist societies. There is an implicit assumption that peoples' lives will improve if they adopt Western technology, marketing and political systems, and values. Many evaluators of resettlement use Western definitions of development and categories of measurement to assess standard of living (cf. Cernea 1987, 1988, 1990). Thus, attention is paid to what people gain that can be measured by Western concepts and methodologies. We measure infrastructural gains made by recipients of development that can be counted such as roads, electricity, buildings, educational and medical facilities, credit, agricultural technologies, national, regional and household income, and demographics, including fertility, mortality and morbidity indices. The point is that we can measure what Western development creates for people, but it is difficult to measure adequately what they lose in the process.

There is an incongruence in measuring "traditional" lifeways by "modern" methods and standards. For example, until recently natural resources were not considered

valuable in economic terms until they were processed or were profitable on the market for the businesses that produce and sell them. For example, once Brazil nut trees are cut, made into lumber and sold, their value is measured by Western standards (although much of the profits are never known since the process is clandestine because it is illegal to cut Brazil nut trees in the Amazon). However, those profits only go to a few entrepreneurs compared with the number of people who utilized the resources of those Brazil nut trees before. If we do think to examine the value of how Brazil nut trees were utilized in Pará in the past, we can measure the profits to marketers of Brazil nuts. What remains difficult to measure is how Brazil nuts and derived products were consumed by people living in the region before, and further, how the marketing part of that activity sustained, in part, the local economy. We can only approximate the loss of those resources to the people in the region who formerly used them by examining how those resources were once used.

This dissertation attempts to address these issues and problems in four parts. Part One is an examination of the impact of capitalist development in the Amazon, and includes chapters 1, 2 and 3. Chapter 1 presents a theoretical overview for the rest of the dissertation. Chapter 2 is a examination of the history of Itupiranga from its founding in 1892 to 1970. I describe the local manifestation of the *aviamento* system in Itupiranga, including the former social

relations of production, control over resources, ideology regarding resource community use, social structure, and the division of labor by gender in past economic activities. Before 1970 and all of the changes in Itupiranga as well as the region at large, (1) workers were autonomous at the level of production, (2) but were controlled at the level of exchange by their patrons who used extraeconomic means of coercion to gain a surplus from the labor of their clients. (3) Everyone had access to necessary resources, (4) and shared the same standard of living at the local level.

Chapter 3 continues the historical account of Itupiranga between 1970 and 1990 by examining the nature of the changes, locally, initiated by the implementation of government projects and policies, including the Transamazon Highway, colonization programs, migration to the area, mining for gold at Serra Pelada, the Tucuruí Dam and resettlement, elimination of diamond mining, changing land tenure, decline of Brazil nut trade, and introduction of logging and commercial fishing. This historical description provides a context by which to understand the impacts of the changes that accompanied the transition from the *aviamento* system toward capitalism in Itupiranga, which are examined in the rest of the dissertation.

In general the rest of the dissertation is an examination of the environmental, economic and social impacts of the transition toward capitalism in Itupiranga and peoples' strategies to cope with those impacts. The

transition in Itupiranga included the privatization of property, a loss of communal access to resources, and a diminishing of the patron/client relationships. First, beginning in the 1970s powerful external elites in the Brazilian Amazon created large-scale projects and enacted sweeping policies in the region. The area was no longer a marginal region, but was rapidly becoming incorporated into the larger economy. Second, the local populations were overwhelmed by outsiders, both rich and poor, who migrated to the region, especially during the 1980s. The policy of privatization of land was accompanied by a readily available outsider population who swarmed in throughout the region and took control of land lots backed by changing land policies and by the force of their very overwhelming numbers, as well as other more coercive means. The land that locals once used was lotted up, and given away, sold or expropriated by landowners. Locals could no longer trespass over these private lands to maintain their standard of living. Many people lost access to land and to many of the resources they had before.

Third, the migrants who had different perceptions of resource use in the Amazon came to utilize the forest and waters differently from traditional local economic activities. The new productive activities in the Amazon, which included large-scale ranching, more intensive and extensive agriculture, logging, mining and commercial fishing, required the clearance of vast areas of tropical

forest, which had been the source of the former extractive activities. With the increasing degradation of resources for extraction, traditional markets and social relations of production began to break down. Furthermore, the emphasis was on the newer activities, which were so much more profitable than the former ones for the newcomers and since richer migrants, who were aided by the agenda, policies and forces of social control of the state, took control of local politics. It is probably easier for people in a community to maintain themselves and even find strategies to circumvent or that are beneficial in the face of such policy changes, especially with regard to land tenure, if the community does not undergo such a drastic change in economic activities. With the devastation of the former extractive economic activities in Itupiranga, the locals had to find new ones over time.

Fourth, because of the overwhelming numbers of outsiders, and the fact that wealthier ones took control of the local reigns of power, locals had no effective means of organizing to oppose such sweeping changes. The only really successful strategy for locals was to go along with the changes and cooperate with outsiders. Certain local individuals and families did just this, although their participation in the new scheme was divisive for the former community. Different local households had varying rates of success under the new regime. However, the community of Itupiranga in 1990 was not what it was in 1970. Although

the community was always linked to the outside market, and there were local class divisions, locals had more autonomy, security and choices for making a living before all of the changes.

The privatization of land had devastating consequences for locals. They lost community control of a large amount of land, and within a period of less than ten years during the 1980s community sanctions no longer functioned to regulate peoples' behavior regarding the use of land and other natural resources. The changes led to an economy based upon money instead of credit. Increasingly, people needed money to survive, even if they had access to the means of production. Making money required the sale of one's produce or finding employment for wages.

Part Two focuses on the transformation of the social structure in Itupiranga. Chapter 4 examines this transition process by focusing on the Tucuruí Dam and how the dam and other changes affected former traders and direct producers, including those who had to relocate to Itupiranga. The impacts affected the various social groups in Itupiranga differently. Although some social groups benefited from the changes, many groups lost economic security and became impoverished in the process. The chapter emphasizes what it means to lose access to the means of production, especially for former direct producers. They experienced decreasing autonomy in the production process, changes in consumption and distribution, an increasing need for cash which

necessitated waged labor employment, a loss of variety and quantity in their diet, and a declining standard of living. Throughout most of this dissertation I use the term "social group" instead of social class because the latter term is problematic in the Amazon. Access to the means of production--land--does not guarantee wealth and power among small-scale landowners. Hence I will use Schmink and Wood's definition of social group: "collectivities of people defined by common forms of access to productive resources and by their participation in similar social relations in the process of making a living" (1992:13).

Chapter 5 compares the standard of living among groups utilizing different economic activities to tease out contemporary social groups in Itupiranga in 1990 and to elicit information as to whether there was an economic disparity between these social groups. The findings reveal an absolute need for cash in contemporary Itupiranga. One would expect, using a Neo-marxist framework, that access to land would be a significant predictor of standard of living. But in fact, people who had a secure position in town that provided a regular and higher salary than one minimum wage were significantly better off than the rest of the population. Those households employed in rural activities who had access to the means of production--farming and boats--did not enjoy a higher standard of living than the rest of the population. The avenues toward success appeared to be white collar employment and education. However,

access to these paths to success was restricted, and they were new arenas of conflict among urban social groups. More wealthy and powerful groups, who were supported by state and local government policies, prevented poorer and less powerful social groups from gaining access to scarce contemporary resources--education and white collar jobs--that could provide them with an avenue to a higher standard of living. Despite the fact that elder migrants preferred to farm because they enjoyed the autonomy and variety of food that farming brought, they often sacrificed to provide an education for their children so that they could one day obtain urban employment. They struggled with the realization that they needed cash, and that their children would remain in the bottom rungs of society unless they obtained an education.

Although the social structure changed profoundly in Itupiranga, there were remnants of the former patron/client relations of production. For example, in many cases, people found jobs in the tertiary sector based on who they knew and to whom they had vertical or horizontal ties, rather than with any job skills. Landless agricultural workers referred to the people they worked for in rural areas as their patrons. Despite the changes in fishing and the capitalist relations of production in logging, there appeared to be strong patron/client bonds between employers and employees. In all activities, patrons appeared not to have such a heavy responsibility of providing for their clients, as they did

in the past, but in many cases provided some aid--money, food, transportation and medical care--in times of disaster.

Part Three is an examination of the transformation of traditional activities and the impact of new economic activities on the environment. I present two case studies to show how the whole extractive economy was transformed. I focus on fishing, Chapter 6, in order to reveal what occurs when a former subsistence activity that focuses on consumption becomes a commercial enterprise. There were marked changes in fishing because of the installation of the Tucuruí Reservoir, population growth and increasing market for fish in southern Pará. I describe former subsistence and contemporary commercial fishing in terms of technology, social relations of production, consumption and distribution. The change to commercial fishing caused: (1) people to lose access to the means of production, (2) increasing stratification in the activity, and (3) increasing conflicts. The profit-making directives of commercial fishing and peoples' need for cash led to the overuse of resources despite government attempts to create policies designed to protect those same resources.

Chapter 7 focuses on a new land-use strategy, logging, that began, locally, in the mid-to-late 1970s. I examine the social relations of production in the logging industry because it was the most capitalized economic activity in Itupiranga. The findings revealed a distinction between sawmill owners and their low-paid workers that was the

widest economic disparity in the community. Qualitative evidence reveals that sawmill owners were the richest social group in Itupiranga, and enjoyed a comparably higher standard of living than sawmill workers, one of the poorest social groups in Itupiranga, as indicated by quantitative data from the community survey.

In this chapter I also begin to explore resentments between sawmill owners (as both new elites and outsiders) and lower class groups and insider locals. Like fishing, logging is an activity that directly affects the natural environment. Logging was one of the most devastating activities that caused the decline of a former economic activity--Brazil nut extraction. Despite the lucrative nature of logging, the activity appeared to have short-term prospects, locally, which (1) will set parameters of future activities by eliminating resources and (2) will negatively affect the local economy once the sawmills leave.

Part 4 focuses on peoples' strategies to cope with the dramatic changes they experienced, and struggles among different social groups in town. The first section of Chapter 8 describes the movement of direct producers, the former lowest social group in the region, against the company that built the dam and carried out the resettlement scheme. These people, who were relocated because of the dam, expressed their grievances in a sustained rebellion for several years. They gained some of their demands because they were aided by other more powerful social groups during

a period of redemocratization in Brazil. However, they could never recover the lifestyle they lost by the development of the region. Over time, their movement was coopted by the creation of a new structure for addressing grievances created by ELETRONORTE.

The second part of Chapter 8 examines the activities and motives of the *Grupo Ecológico de Itupiranga*, a movement initiated by the children of formerly elite/contemporarily middle class families who lost status and power during the 1980s because of the changing economy. Their families lost economic security, status, and access to resources during the changes in Itupiranga. I propose that the motivations behind their movement were conservative although their activities appeared to be contemporary with national and international environmental interests, with whom they had links and support. Despite these links, the group's goals for stemming the tide of development in Itupiranga, especially in terms of environmental destruction caused by logging, ranching, agriculture and over fishing, were not possible in the face of local, regional and national political economic interests.

The third part of Chapter 8 focuses on the silent class struggle between the poorest social groups in Itupiranga and more powerful groups, who controlled resources, employment, markets and the means of maintaining order. I examine why these oppressed groups did not organize against more powerful groups and seemed to acquiesce to daily

deprivation, starvation and abuse from merchants, employers, civil servants and the police. I propose that fear, acceptance of the social order, and daily contact with patrons were reasons for their silent endurance of these repressions (cf. Scott 1985). Despite their grumbling and infrequent protest activities against wealthier social groups, their aspirations were reformist in that their expressed desires tended to be to become viable members of the contemporary system.

Methodology

I used multiple strategies to gather data for this dissertation. First and foremost, I spent one year living in Itupiranga as a participant observer, from October 1989 to October 1990, funded by a Fulbright grant for research. Much of what I learned was obtained from casual conversations with people when I was "on" and working, and also when I was "off" and playing. I believe that the real jewels of information come about when people are relaxed and consider the anthropologist a friend. Serendipity plays a significant role in obtaining information in the field.

Interestingly enough, however, some excellent bits of information come about when people are defensive and trying to justify their activities. For example, I got an insight into the perceptions of loggers and ranchers, who approached me on the defensive, because I was an American, which meant to them, that I was an "ecologist." These conversations usually took place over a beer or while traveling. The

loggers were especially reacting to the media-driven impression that Americans are ecologists who want to save the Amazon from deforestation caused by their logging activities. Some sawmill owners eloquently tried to defend their way of making a living, after being initially somewhat defensive, yet always polite. Any hostility gradually disappeared as they realized I was not critical of them. They argued to me that their activities were developing the Amazon and Brazil, and even saving local lives by supplying jobs.

Whether or not these assertions are true, as I was befriended by two logging families, especially, I began to struggle with the dilemma of my own biases against logging and loggers in the Amazon. At first, I worried about befriending the "enemy." Later, as the friendships deepened, I grieved over how I could write honestly about them and their activities, and at the same time call myself a friend, since some of what I would write would be critical. For I realized during this endeavor in the field that I could not judge or help anyone or the general situation in the Amazon; I could only be a friend to the people who had opened their lives to me, and shared their insights as well as their hearts. Being a human being with my own biases, I shared myself with them, too, and lost my heart, both to some logger families and to some local ecologists. My friendships with two such disparate groups (and others) were tricky at times, and I often found myself

walking a fine line of diplomacy between the individuals holding such opposing and polarized world views. Yet, I do believe that I can "see" both positions differently than those actors, and by comparing the two, can add something to both the humanistic and more "objective" scientific field of anthropology.

The anthropologist, who is not an unbiased or neutral instrument of research, influences her research informants because of her gender, nationality, social class, age, appearance and personality. People respond to her according to these attributes as well as their own world view which is influenced by their gender, class, culture and personality. In another case, while I was formally interviewing a woman, I was privy to a rather heated discussion between her and another woman of a lower socioeconomic status about what it meant to be poor (see Chapter 8). Although I felt relegated to the position of being a fly on the wall at times during that debate, I realized that they were carrying it out, in part, for my benefit. I obtained an important insight that day because of that incident, although my presence influenced what those women said, including the fact that the debate took place at all. It follows that although anthropologists are indeed part of the field picture, they can still obtain important insights into other cultures by using the method of participant observation.

However, I also wished that my data be representative of the whole community in order to draw more solid

conclusions about my hypotheses. With this in mind, I drew a random sample of 150 households after mapping the town of 1,851 houses. I then surveyed those households using a 21-page questionnaire. The general sets of questions were designed to obtain both individual-level and household-level information. I obtained the following information about each individual within the household: relationship to head of household, economic contribution to household (i.e., whether a person brought in an income or not) sex, age, birthplace, education, and detailed employment histories. The second part of the questionnaire was designed to obtain information about the household, and included the following: migration history of the head of household and the spouse; past and present relationship to land and housing; agricultural, logging, fishing and commercial business activities; standard of living; religion and perceived problems in Itupiranga.

I conducted three other questionnaires. Using a snowball sample, I carried out interviews with fishermen and sawmill workers from 30 households, each. These questionnaires were designed to obtain standard of living data as well as more detailed information about the activities of fishing and working in sawmills. A third questionnaire was conducted with five sawmill owners (which included six of the eight sawmills in or near town), to round out the analysis of logging and sawmill operations, as well as get the owners' side of the story. I talked casually over a few beers with another sawmill owner, who

refused to be interviewed formally. The other town-based sawmill owner put me off seven times before I finally realized that, despite his pleasant demeanor and seeming hospitality, he was not going to let me interview him. Because of my novice status in talking about fishing and logging, I used a tape recorder for many of these interviews, especially with fishermen and sawmill owners to get the details down so that I could better understand what they were talking about, later (*com calma*).

Other information was obtained from archives in Belém at both the campus and downtown Museu Goeldi, NAEA at the Universidade Federal do Pará, IDESP, IBGE, SUDAM, Cacex, Secretaria de Fazenda. I carried out other archival research at the Casa da Cultura in Marabá and Itupiranga. I conducted interviews with key informants from IBAMA and the Comissão Pastoral de Terra, C.A.T., and SUCAM in Belém and Marabá. In Belém, I visited INCRA, the Secretaria de Indústria Comercio e Mineração, Cacex, SUDAM, Secretaria de Fazenda, and the Federação dos Pescadores. I talked to an evaluator for the Legião Brasileira de Assistência, who was visiting from Marabá. In Itupiranga, I talked with municipal officials, the president of the Sindicato dos Trabalhadores de Itupiranga, elected officials of the Colônia dos Pescadores de Itupiranga, visiting researchers and officials from ELETRONORTE, Movimento de Educação de Base, SUCAM, Grupo Ecológico de Itupiranga, EMATER, SAGRI, and the Catholic Church.

CHAPTER 2
HISTORY OF ITUPIRANGA, 1892-1970

Introduction

This chapter is a brief history of Itupiranga, Pará since its founding in 1892 until 1970. An account of the area's history is important in order to compare and contrast the former lifeways of its inhabitants to those since rapid changes began in the early 1970s and have accelerated since 1980. This is not to say that culture change did not occur in Itupiranga from 1892 until 1970. However, events since 1980 dramatically increased this rate of change and almost completely transformed the economic landscape. Because of this transformation, the Itupiranga of today has little in common with the area as little as 20 years ago, even though historical vestiges remain among the town's original inhabitants in their memories, and thus, in how they cope with the stresses that the changes have brought. In order to analyze the scope and impact of culture change in Itupiranga in later chapters, this historical account will emphasize the former political economic system, specifically: how people depended upon resources and which resources were important, their social relations of production and distribution, the land tenure system, and sociopolitical arrangements of extraction.

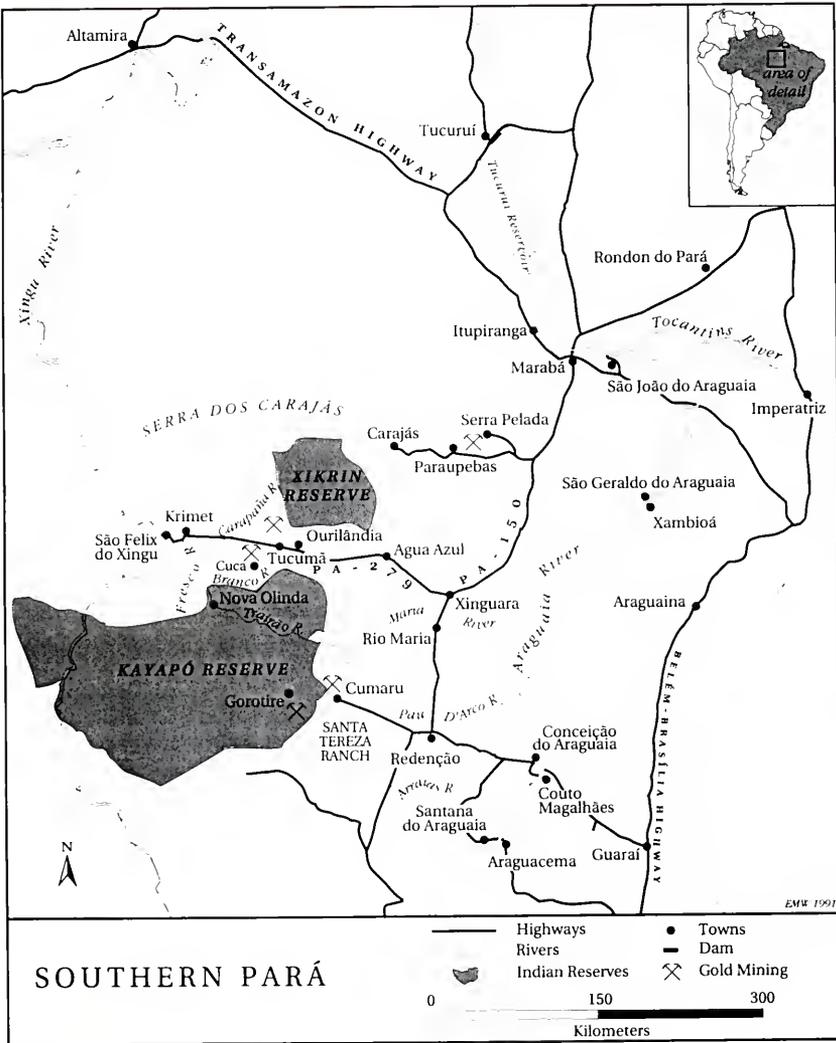


Figure 2-1. Map of Southern Pará

Source: Schminck and Wood (1992)

1892: Founding

Itupiranga is a small town that was founded in 1892 by people migrating from the municipality of Boa Vista (today Tocantinópolis), Goiás. These founders were fleeing from violence and confusion in Boa Vista, Goiás as was happening in other places in Goiás, Maranhão and Pará. These "levantes armados" ('armed uprisings') were conflicts between local political chiefs ('*coronéis chefes políticos*') and state officials and created turmoil for citizens who were sometimes arrested, persecuted and imprisoned (Chaves 1990:1). The conflicts also damaged local agriculture, cattle production, commerce and general activities. During these violent uprisings in the early 1890s many people abandoned or sold their land to search for a place where they could live and work peacefully. They sometimes had to leave their homes in Goiás, for example, under cover of night so their flight would remain undetected (Chaves 1990). One group, led by a small-scale farmer who was originally from Riachão, Maranhão, travelled down the Tocantins River and into the state of Pará, and finally decided to settle in what is today known as Itupiranga.

The late 1800s were a turbulent period in Brazil due to the abolition of slavery in 1888 and struggles over land, labor and power between land-holding elites themselves and also with the lower classes, which manifested themselves in religious and political struggles at the local, regional and national levels. The "guerra da Boa Vista" (war of Boa

Vista) involved a conflict between several *coroneis* (colonels or political chiefs) in 1892 of different political parties and levels of government. At one point in the conflict, many adherents of one party, the *florianistas*, left the state of Goiás in droves and migrated north into Pará. One leader, Colonel Carlos Gomes Leitão, landed in a place near present-day Marabá and tried to start an agricultural colony called the Burgo de Itacayuna (Velho 1972, cited in Emmi 1985). This colony existed in 1896, with a population of 222 inhabitants comprising 55 agricultural families according to historical accounts. The families depended upon growing manioc, raising cattle for consumption and extracting Brazil nuts, also purely for consumption. While looking for pasture in which to graze their cattle, the residents discovered *caucho* (rubber) trees (Moura 1910, cited in Emmi 1985). The discovery triggered more migration to the area, since rubber had become a primary extractive resource in the Amazon region by the late 1800s. Shortly after the discovery of rubber, locally, the colony of Burgo de Itacayuna was largely abandoned in favor of the commercial center of Marabá, which sprang up because of its advantageous location at the confluence of the Itacayuna and Tocantins rivers, and coincided with the rapidly growing trade of rubber in the area. Instead of a community based upon agricultural production, as was intended for the Burgo de Itacayuna, Marabá was a commercial

town, which depended from its inception upon the trade of extractive resources.

The founding of the Burgo de Itacayuna and Itupiranga do not appear to be related except that the founders came from Boa Vista, Goiás. Leitão was said to have brought with him from Goiás, many of his peons who carried out agricultural and small commercial activities in the agricultural colony. Later, they extracted rubber for a living instead of remaining farmers. Leitão also had the help of the governor of Pará, Lauro Sodré, a fellow party member, in founding and executing the plans for his agricultural colony. The historical records show that Leitão's colony of Burgo de Itacayuna was registered in 1894, and inspected by the governor, Lauro Sodré, in 1896. However, Emmí (1985) does not mention when Leitão and company were thought to have migrated, nor does she refer at any time to Itupiranga.

On the other hand, Chaves (1990) does not mention the Colonel Leitão at all in his book on the founding of Itupiranga, and the account implies that the first founders were small farmers, who migrated independently of any more powerful leader. The first founder of Itupiranga was a farmer named Lúcio Antonio dos Santos, a farmer who was originally from Riachão, Maranhão but subsequently lived in Boa Vista, Goiás before traveling up the Tocantins and settling in Lago Vermelho. It is possible that Lúcio Antonio dos Santos was one of Leitão's peons who kept on

going further upriver, where he and the few families with him decided to camp and begin to farm. However, it is also possible that although Santos was most likely a *florianista* fleeing from the conflicts at home in Goiás, he and his friends may have migrated earlier than Leitão, and were, thus, independent from the colonel. It would also explain the existence of different chiefs in and around Itupiranga, who controlled the rubber trails.

Itupiranga has always been dependent upon Marabá because of that town's advantageous trading position. Yet, at the same time, one senses from the historical account, that Itupiranga has always maintained some independence from Marabá, even when the smaller community was under Marabá's jurisdiction. The roots of this independence may be found in Itupiranga's independent founding, as well as the fact that the town had *chefes* (people who controlled the rights to rubber tree and Brazil nut tree tracts) from areas other than only Marabá.

After exploring the area, the founders of Itupiranga decided to remain, because they perceived that the land was good for agriculture. They gave their new settlement the name "Lago Vermelho," ('Red Lake') after the nearby creek. Immediately they began to clear some land for farming and to build houses, most likely between May and June in 1892 (Chaves 1990:3).

These first settlers collected rubber in addition to farming. This period was the height of the rubber boom

(1890-1910), and these and subsequent migrants came to this area seeking their fortune in rubber. By 1896, Lago Vermelho had 60 inhabitants (Chaves 1990). Attracted by the availability of rubber, many more migrants continued to arrive from Goiás, Maranhão, Bahia, and other states. By this time Lago Vermelho already had a private school and several small commercial houses that carried necessary items for the local population. Chaves recounts that Lago Vermelho society was acephalous, whereby every individual behaved according to his or her own standards. However, some people felt that Lago Vermelho should have an administrative system, and approached the regional trader who was established in Arumatéua, a small town near Alcobaça (present-day Tucuruí). They asked him to intercede in their behalf about this matter to the government in Baião, since Lago Vermelho fell under its jurisdiction. The residents of Lago Vermelho wanted the trader, Raymundo Rocha, to ask that their area become a municipality, which did not occur until 1947.

This case illustrates the social structure of the region at that time. Rocha (a contemporary and class equal of Leitão in Marabá) was the main buyer of all export products, including rubber, Brazil nuts, *copaíba*, *andiroba* and other extractive commodities of the region, and exported them to more distant places such as Belém, the capital city of Pará. In turn, he supplied the local populations with necessary food and other survival items at stores in vilas

including Lago Vermelho. Because Rocha had control over the distribution of export and import products, he also had political control over the region.

Rubber Extraction

Lago Vermelho, like most other locations in the Amazon during the rubber boom, had the *aviamento* system of social relations of production (cf. Wagley 1974; Moran 1974; Weinstein 1985). The *aviamento* system linked primary rubber producers to exporters in the larger cities through rubber trader/merchants and the proprietors of rubber trails. As Weinstein (1983) explains, a series of debt relations operated at each point of this exploitive system where rubber collectors often worked under coercive labor arrangements. At the bottom of the system was the rubber tapper (*seringueiro*), a direct producer who extracted the rubber latex from rubber trees in the forest and coagulated it over a fire to make it easier to handle and transport. He then delivered the hardened rubber to a trading post to his patron (*patrão*), who was either a large landholder (*seringalista*) who leased the tracts of land containing rubber trees to the *seringueiro*, or a merchant (*aviador*) who controlled local rubber production and trade. The *seringueiro* received trade goods in return, usually in credit, to continue his operations. The trader and landholder used various means--overpricing the tradegoods and underpricing the rubber, rubber rents--to appropriate surplus and to maintain their control over the *seringueiro*

by extending more credit, thus increasing the latter's indebtedness so that he had to continue the relationship.

This type of credit arrangement operated at all levels. Next in the chain came the small-town aviador in cases where the local trading post was not easily accessible to larger steamboats, and thus, the rubber could not be shipped directly to a major urban center, usually Belém or Manaus. This individual usually operated as an agent for a larger commercial house, by buying rubber from the patron or the rubber tapper and selling goods that he obtained on credit from a rubber-trading firm (*aviador*) in Belém or Manaus, to locals through his store. When the rubber arrived in the urban area, it was inspected for impurities at the *aviador* firm and prepared for export. Weinstein states,

The *aviador* house was the most important link in the Amazon's commercial chain, in terms of both its central position and its multiple functions. Also known as the rubber 'receiver' (to distinguish it from the actual exporters), it was this firm that decided when and to whom to sell the rubber. And it was the large *aviadores* who contracted with the importing houses for the goods that were distributed to the small-town merchant, the roving trader, the *seringalista*, and ultimately the *seringueiro*.
(1983:18)

It was these *aviador* firms, furthermore, that arranged for the drought-stricken refugees from the Brazilian Northeast to come to the Amazon to work on rubber trails in order to alleviate the labor shortage problems. The firms also acted as the legal and financial agents for the wealthier patrons and traders in the region. Additionally, they were in charge of arranging additional credit or short-term loans

from the local banks in order to add to advances from importing firms, or to buy steamboats, docking facilities, and warehouses.

Next, the rubber was passed on to the export houses, which acted as agents for rubber-buying firms in New York or Liverpool. This transaction was the only link in the chain in which cash was passed within Brazil. These export houses could also act as informal banking facilities or importers, having access to cash and foreign exchange. The last link in the chain was when the rubber arrived in another nation and became the property of the overseas purchasing house, which normally paid for the costs of transporting the goods overseas and any other expenses that incurred after the rubber left Brazil. Then, the rubber was sold by that firm to a manufacturer.

From Chaves' historical account (1990), it is evident that a majority of the residents of Lago Vermelho were primary rubber collectors who worked for a few people who controlled rubber trails in the Araguaia-Tocantins Riverbasin area. Some of these *seringalistas* who controlled the rubber trails later built houses in the Lago Vermelho settlement itself. However, in the early days, only Rocha's middle-men, ('aviadores'), lived in and around Lago Vermelho, running the local commercial trade. The *seringalistas* also encouraged the local inhabitants to gather Brazil nuts, shellfish, and other extractive forest products such as palm nuts to make oil.

Despite the end of the rubber boom in 1910, rubber was still important for the local economy. According to Chaves (1990), in 1912 another "adventurer" arrived to town who built a large house that served as his home, a store, and a temporary storage facility for the products coming from the forest. With his own resources, he explored the forest for more rubber trails and a better outlet from which to transport his own rubber as well as that of other rubber barons in the region. Chaves mentions three principal *comerciantes* (traders) in the region, who were most important to the producers in Itupiranga, one of whom was stronger than the other two. These merchants were supplied from Baião, some directly and others by an intermediary of other nearby rubber barons, such as Raymundo Rocha in Arumatêua who bought a large quantity of the products extracted in the Itupiranga area. There were many buyers of the locally extracted produce, which consisted mainly of rubber, but included the other extracted vegetable products. Some of these buyers travelled from Belém to São Luis, Maranhão, stopping at places such as Arumatêua, Itupiranga and Marabá along the way to buy rubber and Brazil nuts and to sell necessary products as well as some luxury goods to locals. They would arrive in large boat-like canoes driven by up to six to ten oars. The boats were filled with all sorts of supplies, and one informant told me that when they arrived, everyone in town would go to the riverfront to see what the traders had to sell. Women would buy cloth, thread

and other supplies with which to sew. Men would congregate and drink *cachaça* (an alcoholic drink made from sugar cane) and beer with the traders and other people on the boat. Children could buy sweets. Whenever the boats arrived, according to local informants, a general holiday atmosphere prevailed.

During the 1890s and 1900s many people were drawn to the region from other states because of rubber. By 1912, the small settlement had 200 inhabitants, a majority of whom were *caucheiros* and *mateiros*. *Caucheiros* were rubber gatherers who gathered one type of rubber, called *caucho* (*Castilla ulei*), which grew plentifully nearby. People also gathered rubber from another type of tree, *seringeira* (*Hevea brasiliensis*), although historical accounts suggest that *caucho* was the mainstay of the local economy. *Mateiros* explored the forest, opened and marked ownership of the rubber trails, as well as other areas rich in Brazil nut trees (*Bertholetia excelsa*), *copaiba* (*Copaifera officinalis*), *andiroba* (*Carapa guyanensis*) and other extractive resources for possible exportation. The rubber collectors spent six months during the dry season in the forest extracting the latex. They would often trade at small settlements closest to their trails. The rubber was transported by mule during the summer months and in the winter by canoes, with as many as 10 canoes fastened together to tow the rubber over the rapids of the Tocantins River to Itupiranga and also to Arumatêua, before going on

to Belém (Chaves 1990). Sometimes the rapids would break up the train of canoes and the rubber and transporters would be lost. Many people said that river travel was dangerous in those days. During the rainy season, the *caucheiros* would come from their houses on the rubber trails to their houses in Lago Vermelho to sell their rubber and buy supplies, and to socialize.

The winter months were a time for many parties with dancing and drinking. There were dances like the *suscia*, *tambor*, and *roda*, the latter one in which the men danced apart from the women (Chaves 1990). At times, when the parties became too wild and men imbibed too freely in drink, they would become violent and someone would get killed from a knife fight. Many times the fights were over women, who would often get killed, also. Incidents such as these prompted locals to request an administrative and political structure that would be able to legislate and police the local citizens' behavior. Most men who arrived in Itupiranga were not married or had left their families behind, planning to return after they had made their fortune. Some of these men only stayed temporarily. Others cohabited with local women, and sometimes eventually married them, forgetting about their families elsewhere (Chaves 1990). Thus, the town was a temporary haven for some people, but also became a permanent residence for others, who identified with Lago Vermelho and wanted to improve

their living conditions and the organization of their community.

The money the direct producers made and the necessary supplies they received from the traders in exchange for the extractive forest products were not enough to maintain them. In order to survive within the inequitable *aviamento* credit system, these direct producers from the Northeast adopted indigenous economic and technological strategies to maintain their living during the season when they could not collect the rubber latex. They hunted, gathered or fished for resources from the forest and river for their own use, as well as maintained small gardens to supplement their extractive activities. Over time, women and children in the direct producer social group participated in these horticultural activities, as well as in the collection of forest products. However, during the late 1890s and early 1900s, the main activity was rubber collection by men.

This economic activity of rubber collection was not viable in the long run because of the type of rubber tree and method of extraction found in the Itupiranga region. There are different varieties of rubber in the Amazon, which require different methods of extraction. The species most plentiful in Itupiranga, *caucho* (*Castilla ulei*), necessitated that the tree be cut down in order to extract the latex. One result of this method, is that once all of the trees are cut down, rubber extraction is no longer a viable economic activity. By 1910, the *caucho* was mostly

gone in the Itupiranga region, even though smaller amounts continued to be exploited during the next few decades.

Other factors also affected rubber production in the early 1900s. In 1910, rubber prices plummeted due to the successful experiment in cultivation of plantation rubber in Asia. When rubber could be produced more economically from the Asian plantation, natural rubber from the Amazon Basin could no longer compete. The Amazonian economy, which was entirely based on credit relations throughout the system from primary producer to export houses, disintegrated (Weinstein 1983). Lago Vermelho underwent a crisis, but Chaves states that this depression did not last long, locally because of the rising price of Brazil nuts, which were concentrated around Marabá and Itupiranga (1991). Locals also hunted wild cats to trade their skins.

Extraction of Brazil Nuts

The rubber barons in the Tocantins region around Marabá, Itupiranga, and Jacundá did not fail as badly as others elsewhere in the Amazon because their rubber trade operations were able to stay afloat due to the local exploitation of Brazil nuts (Lagenest 1958; Emmí 1985). Thus the regional depression resulting from the ascendancy of the Asian plantations in supplying rubber for the world market did not negatively affect the local barons in the Tocantins region as much because they increased their efforts in the extraction of Brazil nuts or *castanhas*.

Like Marabá, the origin of Lago Vermelho was based upon the commercial production and distribution of rubber. However, when rubber declined with the crisis, the Brazil nut became the primary export product. Export figures from Marabá give an idea of the fall in importance of rubber, and ascendancy of the Brazil nut. In 1919, Marabá exported 355 tons of rubber. By 1920 the exports only reached 229 tons, and by 1921 had dropped to 92 tons (de Lagenest 1958:47). At the same time, in 1919, 5,396 hectoliters (1 hectoliter equals 100 liters) of Brazil nuts were exported from Marabá. In 1920, 17,878 hectoliters were exported, and by 1921, 27,967 hectoliters (Ibid). Since that time and until the 1980s, the extraction and commerce surrounding the Brazil nut continued to be the primary source of wealth for the area. For example, a breakdown of extractive resources in 1954, reveals that the Brazil nut contributed by far the most value in the economy of Marabá (see Table 2-1). However, inexact these figures, they give an idea of the magnitude of Brazil nut extraction carried out in Marabá in 1954.

Extractive activities were carried out seasonally. The extraction of Brazil nuts was carried out during the months from January to June. Then, from June to November, the direct producers or gatherers (*castaneiros*) of Brazil nuts would often work mining for diamonds in the Tocantins River and smaller tributaries in and around the main river before

the rainy season began, which would make the waters too deep in which to mine.

In the municipality of Marabá in 1954 there were 111 demarcated *castanhais* (demarcated tracts of land rich in Brazil nuts), 35 of which were leased by private individuals and 76 percent of which were state property (Lagenest 1954). In Itupiranga several individuals controlled lands with Brazil nut trees, but many primary producers gathered the *castanhas* (Brazil nuts) on state lands. Each *castanhal* (Brazil nut tree tract) is divided into ten or so areas in which two to five *castanheiros* harvested the fruit. As with rubber extraction, *castanha* extraction on private lands was done using the *aviamento* system of production and distribution. When a *castanheiro* contracted with an owner--patron--of a *castanhal* he was given a quantity of money, usually from 200 to 5,000 *cruzeiros* (Lagenest 1954). Besides this money, the gatherer could obtain credit from his patron's store for food supplies as well as even rifles for hunting. The gatherers would spend five to six months in the forest away from their families gathering *castanhas* for six days a week, and resting on Sundays. However, in many cases, whole families would participate gathering Brazil nuts that the family head would then trade with the patron. In May or June, the gatherer would transport his harvest to the bed of the closest creek and store it.

At the end of the season his harvest was measured, and based upon the amount he had gathered, he was paid at a

price fixed by his patron. When an individual's harvest was poor he might only have gathered 5 hectoliters, and in a good year 150 hectoliters. In 1955 the price per hectoliter was 80 to 100 *cruzeiros*, thus someone could earn as little as 400 *cruzeiros* or as much as 15,000 *cruzeiros* according to the hypothesized measurements given above (Lagenest 1954:50). The measurement process lent itself to various forms of exploitation by the patron. Unscrupulous patrons could subtract the waterweight from the nuts or lie about the weight of a gatherer's harvest, since many primary producers did not know how to read. Furthermore, the patron subtracted the expenses that the gatherer had incurred at the beginning and during the season, sometimes adjusting for inflation to the latter's disadvantage. Many times the gatherer did not earn enough to pay off his expenses, and would have to work for the same patron the following year to fulfill his obligations from his debt. As a result, the gatherers who worked for patrons were almost indefinitely in debt. The system was exploitive yet secure for both parties: the patron made sure he had enough labor for the following season, and the gatherer had someone who would take care of his expenses, even though he was in eternal debt.

Gatherers sold their harvest or a part of their harvest to other traders only rarely, despite the exploitative nature of the system. The practice of selling secretly to someone other than one's own patron was even discouraged

among the gatherers themselves (Lagenest 1954). The dishonesty was practiced more by the patrons against the primary producers, against which the illiterate, unorganized gatherers had no recompense. The value added in these transactions between patrons and clients ranged from 50 percent to 500 percent (Lagenest 1954:51). In an effort to protect gatherers from such exploitation, President Getúlio Vargas created the "*Associação Rural de Castanheiros* (Rural Association of Brazil nut Gatherers)," but the reality was not very effective because the local association in Marabá was organized by the *castanhal* owners.

The power of these patrons was enormous because of their wealth. For example, Lagenest posits that in 1950 there were perhaps 30 such patrons in the Marabá area. The export of Brazil nuts was 160,000 hectoliters in that same year, which earned 40 million *cruzeiros*. These 30 individuals who would divide this money almost exclusively among themselves were members of the same few families. A local law prohibited an individual from owning more than one *castanhal*, and as a result, it was common for one family to own from 15 to 20 *castanhais* because each member of the family had one *castanhal* registered in his or her name. Moreover, these families controlled many of the other commercial transactions since they owned the stores. As a result, power and wealth were concentrated in the hands of a few families who had enormous influence over the region and the 3,000 or so gatherers during that period (Lagenest

1954). During the Brazil nut season, only the clients who were contracted by the patrons were allowed to gather or hunt on lands they controlled.

In Itupiranga many people preferred to harvest *castanhais* on government lands, and not work for private owners. With a patron, one was guaranteed credit and a sure sale for one's produce for the season. Another advantage was that there was less competition between gatherers, and so a *castanheiro* could gather more Brazil nuts to sell. However, the patrons would always buy the Brazil nuts from their clients who worked on their lands for a cheaper price, and so most *castanheiros* preferred to work on the municipal lands, which were said to be "everyone's" lands. One man said that he would gather between 20 to 30 hectoliters per season, which he could sell "livre" or to whomever he choose, so he sold to a trader who would give him the best price. The drawback to this method of operating without a patron was that each *castanheiro* had to compete with all of the others who were intent upon gathering as many Brazil nuts as they could in a season. Further, their independence meant that they may not have had access to credit from patrons during leaner times of the year.

To make the extraction of Brazil nuts fair among people who lived in Itupiranga, no one was allowed on the municipal lands of the *castanhal* across the river for several months, even to hunt. Beginning in late November and early December when the Brazil nuts began to ripen, everyone was prohibited

by community sanction from going to the other side of the river so that no one would gather any Brazil nuts earlier than the others. Then, on January 1 every year the community would celebrate the beginning of Brazil nut season. The townfolk would gather at the river and ceremoniously launch the canoes of the direct producers who were to spend the next five months on the other side of the river gathering Brazil nuts. With a gunshot the canoes began a lively race across the river, and the people remaining in town cheered for the racers from the side of the river. The river in front of Itupiranga was filled with boats, people said, and everyone was "animada" (animated) as the *castanha* season began and people went off to work in the forest.

In this manner, community sanctions controlled access to resources at certain times so that they were distributed more evenly among direct producers. On the one hand, game and fish were divided and distributed after they were hunted or extracted from the river. On the other hand, the sanctions that governed Brazil nut gathering worked to even out the chances for everyone to gather a similar amount of nuts at the level of extraction. The restriction to trespass for several months prior to January 1 on municipal lands across the river and subsequent communal sendoff celebration ensured that no one had an opportunity to begin to gather and hoard Brazil nuts before anyone else.

The lands across the river were referred to as the men's *castanhal*, whereas the areas rich in Brazil nuts on the same side of the river as the town were where the women gathered *castanhas*. The reason people gave for this division was that the women had to stay closer to home and watch their children, while the men could go off for the required five to six months and stay in the forest. However, among poorer families, both women and children accompanied their husbands to the other side of the river and remained in the forest throughout the *castanha* season. Women whose fathers or husbands owned small stores, never participated in either farming or gathering Brazil nuts on the other side of the river. Likewise, poorer women also participated in agricultural activities, unlike their wealthier female contemporaries. The fact that there were social group divisions between the lower class vis-à-vis the patron class, is also indicated in Chaves (1990) who mentions the presence of poor people (*carente*) in Lago Vermelho since at least the 1920s.

The collection of *castanhas* was a more social activity than gathering rubber latex. One man said that he did not like to gather *seringa* because he had to spend all of his time alone, and was, thus, always in danger of being attacked by *onças* (wild cats) or Gavião Indians. People stayed together for protection and for company while they harvested Brazil nuts, and perhaps this togetherness despite the competition fostered and maintained a more communal

feeling about the municipal lands, and perhaps also was a source of resistance if those *castanhais* were threatened by any patrons who tried to expropriate those lands for themselves. No mention is made by Chaves (1990) of any direct attempts by anyone to obtain these lands but his account indicates political conflict between Itupiranga and politicians in Marabá, who were themselves, or linked with, Brazil nut patrons. Furthermore, Emmi (1985) carefully traces the economic and political conflicts between *castanhal*-owning families in Marabá, which illustrate the struggles for control over and concentration of lands rich in Brazil nuts. More than likely, the communal lands rich in Brazil nuts near Itupiranga were the source of some conflict between patrons in Marabá and the local Itupirangan population.

Diamond Mining

Another gathered resource that provided access to trade goods were diamonds in the Tocantins River. Diamonds were discovered in the region in 1925 and 1926 nearby Igarapé Cametauzinho, which was located near Lago Vermelho.¹ During the same time, the first diamond was discovered near Lago Vermelho in the Tocantins River. Thus, in addition to the extraction of Brazil nuts and oil from *copaiba*, *babassu* and

¹ According to Lagenest (1954) the first diamonds were not discovered in the region until 1939 or 1940. I choose to believe Chaves' report because he lived in Itupiranga all of his life, travelled back and forth between Itupiranga and Marabá as a public official throughout his adulthood, and is the local historian.

other palmnuts, diamonds began to become a source of revenue for the local population. By this time, Lago Vermelho had many small businesses, the principal merchants being the owners of the motorboats who transported Brazil nuts to Alcobaça.

Many of the same *castanheiros* who made their living by gathering *castanhas* during the rainy season spent their summer months mining diamonds in the Tocantins River and small streams that entered the main river. Some *garimpeiros* (miners) worked individually or with partners extracting diamonds using simple methods like panning in shallow water. These autonomous miners would split their profits after selling any diamonds they found to a local buyer. Many people, however, worked underwater mining for diamonds for a patron. This system was similar to the *aviamento* one which operated for rubber and Brazil nuts. However, the risky, uncertain outcome of the business changed the nature of credit. In this system the primary producers did not have to pay the patron for their supplies if the team with which they worked did not find any diamonds. Thus, the patron who owned the equipment used to extract the diamonds and who supplied the *garimpeiros* with food and other necessary goods throughout the mining season, risked everything if no diamonds were found. However, the patron was entitled to 60 percent of the value of any diamonds that were found; 40 percent for his personal title to the mine and 20 percent for supplying the equipment (Lagenest 1954).

The venture was risky for the *garimpeiros* who actually mined for the diamonds. They would go out on the river in a canoe to a place where the patron perceived there might be diamonds after he had made several research trips to the area. He would put together a team of people, which usually included workers with whom he had worked before. However, they did not have to work for former patrons, and patrons were free to pick anyone they wished each trip. A team usually consisted of six *garimpeiros*. Often the patron would accompany them as part of the team. The trip was risky for everyone. For one thing, the canoes could capsize in the river, which had dangerous rapids in many places. Secondly, the nature of mining for the diamonds was risky to a miner's life because of the type of technology used in those days for extracting the stones underwater.

At the mining site, one man would put on a diving suit that would be weighted down with as much as 75 kilos of lead, attached to the chest and back of the suit so that he could sink. The diver would be lowered into the water with 10 to 20 meters of cord that would reach to the bottom of the river, and would be used to pull him back up. Above in the canoe, his companions would manage his airtank, which was connected to the diver by a long tube so he could breath underwater. The diver would stay underwater until the air supply got low. He would communicate his desire to surface by shaking the hose, and his companions would pull him up.

Then his companions would take their turns descending to the bottom to look for diamonds under water.

This operation was extremely dangerous. As Lagenest (1954) states and several old *garimpeiros* related, the diver was at peril because of the depths to which he often descended causing decompression sickness, because of the fragile airhose, and the ease with which it could be torn on hard rocks underwater upon his descent while he tried to maneuver in the swiftly moving water. Furthermore, it was difficult to keep the canoe stable in the rapids, making the process unwieldy for the diver. The danger intensified if the diver felt bad while underwater, or became trapped under some rocks. Lagenest states that despite these dangers, fatal accidents were rare, although at least several men from Itupiranga lost their lives in this fashion.

The risks must have seemed worthwhile to the *garimpeiros* and their patrons, because many people participated in this activity. People could become "rich" overnight if they found a large, good quality diamond or several. The sale of one, clear diamond "could pay everyone" (Lagenest 1954:53). The patron would be able to cover the cost of his expenses and the *garimpeiros* would earn enough for their labor. Often the money that the *garimpeiros* earned was spent soon after in bars and with prostitutes, or the police would take their share if the individual got into a little trouble. When the *garimpeiro* no longer had any money, he would return to mining.

The *garimpeiro* was at the bottom of the hierarchy in the diamond business. He performed the most difficult and risky job, for the least percentage of the value of the final product. The division of labor among the six *garimpeiros* in the canoe was distinct in terms of activity, yet they would trade positions so that everyone had the chance to dive at least one time per day. One position was the diver, who was supposed to extract 10 bags of sand at the river bottom. Another man would receive the 10 sacks of sand and gravel that the diver sent up. A third man managed the airhose and also paid attention to the communications sent by the diver below. Two other men would make sure that the air supply in the tank was constant. The sixth member of the team would rest, awaiting his turn to dive. The duration of each dive lasted for approximately 30 minutes to two hours per dive depending upon how difficult it was to extract 10 bags of gravel and sand, which was the normal goal for a dive (Lagenest 1954).

The patron owned the equipment including the diving suit and airtank and canoe, which he would loan to a team of *garimpeiros* he had gathered together. He would also furnish them with the food they would need for the day while working. As mentioned previously, his cut was 60 percent if his miners found any diamonds. The patron would sell any diamonds to a local buyer or prospector (*faiscador*) who was employed by an official buyer, who would travel between Marabá and Rio de Janeiro, where the "buyer house" was

located. Value was added to the diamonds with each transaction so that the buyer house made a huge profit on each diamond upon its sale, often as much as three times as much as the original price (Lagenest 1954). The local buyer would pay for the diamonds outright (*à vista*), and not on credit, a business deal which differed significantly from the sale of rubber or Brazil nuts, which were sold on credit all of the way up the line to the buyer house in Belém. The local buyers controlled almost all of the diamond production in Marabá, because only in a rare incidence would a patron or a *garimpeiro* sell directly to the official buyer from Rio de Janeiro. The local buyers sold the raw diamonds to one of the official buyers representing the various buyer houses, which would either export them as jewels or for industrial use; the latter was more common for Brazilian diamonds (Lagenest 1954).

The diamond industry contributed to local coffers considerably, and along with a mini-rubber boom, kept the local economies of Itupiranga and Marabá from suffering too much during the drop in *castanha* production during World War II (Lagenest 1954).

Subsistence Activities

Both towns depended almost entirely upon extractive activities, as did many others in the Amazon Region. Local people supplemented their incomes from extraction by fishing, hunting and small-scale horticultural production on swidden plots on *terra firme* (dry, upland forest) and on the

várzea (flood-plains). Land for cultivation was abundant, and farmers could plant where they desired early on in Lago Vermelho's history. Later on, they would request a plot from the mayor of the municipality, which managed local state lands, and would be free to plant where they desired as long as their claim did not affect anyone else's. Since land was abundant and the town was small, and, furthermore, everyone knew each other and was connected by family and/or an intimate set of social relationships in all activities, the potential for conflict over agricultural land was small. Land was not owned by any individuals. Furthermore, informants indicated that before 1970 when many migrants from the Northeast and other areas of Brazil arrived and undertook more intensive agricultural activities such as growing more rice than in the past, the traditional agricultural practices were humble and swidden plots were smaller. The principle crop was manioc. People also grew some vegetables, rice, beans, coffee and medicinal herbs, all for home consumption.

Everyone fished, including women and children. However, with few exceptions, only men hunted. While the income or produce from other activities was kept by the individual or shared with the other members of his or her household, meat from hunting was shared between households. The sharing arrangements would radiate outward from close family to households comprising more distant family members to friends, although most people in Lago Vermelho were

related by consanguinal, affilial or fictive kinship ties as time went along. The sharing of meat was a form of balanced reciprocity in which the giver was creating obligations among the receivers to receive meat himself in the future. The sharing ethic acted as a form of security for everyone, so that no one would starve. Sharing also kept anyone from accumulating more wealth than his or her neighbors.

People hunted for food, but also to obtain animal skins, especially various types of wild cats, including the ocelot and spotted panther. Several local buyers of these skins lived in Itupiranga, and during the 30s, 40s and 50s the activity was lucrative. These buyers would trade the animal skins to other regional buyers. Again, the credit arrangements and social relations for the trading of animal skins was the *aviamento* system. The extraction of animal skins was more predatory than that of collecting Brazil nuts, for example, because it threatened the species, at least locally. In fact, people say that many types of cats were overhunted and became harder to find in the region by the 1960s.

Although these primary producers participated in local, regional, national and international extractive economies since a great portion of these products were sold to foreign countries, most local income was in the form of credit extended to people by town stores or small commercial houses in the forest, which supplied basic goods such as sugar, salt, kerosene, shoes, beer, *cachaça* and foodstuffs. Very

little cash changed hands. The stores, in turn, bought their supplies--mostly on credit--from major centers, such as Belém, Pará or São Luis, Maranhão. Since transportation was difficult and included dangerous river travel over long distances, the local prices for supplies were very high in Marabá (Lagenest 1954) as well as in Lago Vermelho. Boats had to negotiate rapids in many places and sometimes capsized and sank with their cargoes and passengers. Boats stopped at many places up and down the Tocantins River including Ipixuna and Tauriry, towns downriver from Itupiranga which flourished from the diamond mining nearby. However, although these smaller communities enjoyed bustling commercial activity, they like Itupiranga were always subordinate to the larger center of Marabá.

The Relationship Between Lago Vermelho and Marabá

Lago Vermelho was always a satellite of Marabá, another settlement located six to seven hours by boat (in that era) upstream (Chaves 1990: 46). Marabá, situated at the confluence of the Tocantins and Itacaiunas rivers, was in a ideal spot to be a trade center between São Luis and Belém. The smaller traders who could not go to Arumatêua, Baião and Belém would go to Marabá to conduct business because Marabá was the main trade center between Imperatriz, Maranhão and those other towns. As a result, Marabá had a much stronger trade activity than Lago Vermelho (Chaves 1990). Lago Vermelho was always dependent upon Marabá, commercially, politically and for medical supplies and assistance. When

people were sick and could not travel to Baião or Belém they would to travel to Marabá for medical assistance since it was the only nearby location that had a pharmacy and a doctor who came intermittently to attend the sick. Because of its strong trade, Marabá was always in a more advantageous position for growth than was Lago Vermelho.

On April 5, 1913, after over a year of maneuvering by local politicians and resistance from Baião, which had administrative and political jurisdiction over the region, Marabá became a municipality. Locals from Marabá and Lago Vermelho had not been satisfied with their relationship with those people in power in Baião. Furthermore, they did not feel the local area received fair representation although part of the problem was the long distance between the Marabá area and Baião and the slow method of transportation (Chaves 1990). The next effort by politicians from Marabá was to obtain jurisdiction over Lago Vermelho area. Because of the active trade and service activities between the two towns, people in Lago Vermelho felt more confident with their relationship with Marabá than Baião, and felt that Marabá understood their interests. For their part, traders and politicians in Marabá most likely wanted to obtain control over the remaining rubber trails and rich *castanhais* around Lago Vermelho as well as maintain political control over labor, which was the scarcest factor of production under the *aviamento* system. Finally, on November 10, 1917, after several years of struggle between the residents of Lago

Vermelho and the Baião District, the vila of Lago Vermelho came under the jurisdiction of the Marabá District.

However, the relationship between Lago Vermelho and Marabá deteriorated as the two areas developed and their interests diverged. For one thing, the older residents, who lived all or most of their lives in Itupiranga, stated that Marabá never had diamonds in its waters nearby, yet the major trading was conducted in the larger town. Secondly, Brazil nut barons in Marabá, Lago Vermelho and other areas most likely coveted the rich *castanhais* around Lago Vermelho as well as the labor necessary for all of these extractive activities. Thus, they tried to maintain political power over the smaller town of Itupiranga. Locals resented the fact that Itupiranga was not autonomous and further, did not get the recognition it deserved in commercial accounts and government statistics for its abundant resources. Long-term residents maintained that Itupiranga and the downstream vila of Santa Terezinha de Tauiry always had more plentiful diamonds and Brazil nuts than did the larger center of Marabá, but never got the credit since Marabá was the trading center and the more powerful patrons and politicians lived there. Local politicians began to struggle for more autonomy from Marabá than Itupiranga had previously enjoyed.

Lago Vermelho became "Itupiranga" in 1930, due to the political revolution in Brazil, when Getúlio Vargas became President. Vargas' rise to power signaled the end of the First Republic (1889-1930), exemplified by an oligarchic

political system with a ruling rural elite who received their wealth and power from coffee. Vargas' new government was a more centralized political system in which the reigns of power were held by the State and the army. Under the Vargas regime, many place names changed, some to indigenous ones and others to terms that had meaning to local people. Chaves (1990) writes that the residents of Lago Vermelho believed that the Indians, who lived there before the migrants, had called the location "Itupiranga." According to Chaves and other locals, in the local Indian language of Tupí-Guaraní, "Itu" meant "lago" (lake) and "piranga" meant "vermelho" (red). In 1931, when the first governor to visit the interior came to Marabá, the vila Itupiranga was designated as a town. By this time, the area surrounding the town of Itupiranga was divided into lots with sideroads to transport products out. These lots were distributed to whomever wanted to work in agriculture. The city had two or three vegetable markets and a pharmacy. Chaves states that hunting and fishing were also productive during this period. People also raised chickens for consumption, and beef was introduced into the area, although no cattle breeding was done locally.

In 1932 Itupiranga experienced a financial crisis due to the drought which extended from the Brazilian Northeast to Maranhão and Pará. The people in Itupiranga could not transport the Brazil nuts to sell because the river was so low, and thus, many remained in storage. As a result, many

people did not have the money to buy kerosene, and had to make wood fires inside their houses for light. This period passed, however, and from 1937 through 1939 there was a lot of activity in the Brazil nut and diamond business. People became involved in many money transactions due to a boom in the diamond trade. Tauiry, a small vila 15 kilometers downriver from Itupiranga, grew rapidly during this period because the mining was so lucrative nearby (Chaves 1990). According to Julio Paternostro, Itupiranga had 46 shacks in 1935 (1945:103). Also, in 1935, Itupiranga finally became its own district after years of struggle against interests in Marabá which wanted to maintain jurisdiction over the town and surrounding area (Chaves 1990)

The second World War recreated a need for Amazonian rubber, due to the Japanese blockade of Asian supplies. Extraction activities for rubber increased, while Brazil nut collection diminished throughout the region, and the extraction of diamonds slowed down locally, probably due to increased efforts to extract rubber by primary producers, who were made *soldados de borracha* ("soldiers of rubber"), and appointed to extract rubber. By performing this activity, men were exempt from mandatory military duty. The mini rubber boom lasted until 1945 and 1946, when Brazil nut extraction again began to increase as the need for rubber diminished. After the Asian rubber plantations became accessible once again, the Amazon rubber could not compete, and so regional production dropped off again.

Social Organization

Until the construction of the Transamazon Highway and concomitant population increase beginning in the 1970s, the population of Itupiranga was relatively small. Everyone among those who settled in Itupiranga was related, either by blood, marriage or fictive kinship relationships. Whoever was not part of the four or five Itupirangan families was part of the local *compadrasco* relationships, common in Brazil. A man most likely had several *compadres* (co-fathers) and a woman several *comadres* (co-mothers) with whom they were related by either baptism or marriage. The relationship occurs at the Catholic rite of baptism in which a baby receives two protectors, a *padrinho* or *madrinha*. Similarly, at marriage the couple is appointed a *padrinho* or *madrinha* (Wagley 1976). These relationships can be horizontal, or in other words, between members of the same social class, or vertical, between members of different social classes. Often and hopefully, an individual has both horizontal and vertical ties. The latent function of such relationships is that each person has several people who are interested in that individual's welfare, which is especially helpful during hard economic times.

The town of Itupiranga was small, consisting of two streets: one that ran alongside the river (presently Rua Mouro Carvalho), and the main street (Avenida 14 de Julho), which was perpendicular to the riverside street. The main street extended to approximately one-half the distance it

was in 1990. People could hunt very close to town because the forest surrounded the community, and for many years animals were plentiful nearby. A row of mango trees lined the river, and even today Itupiranga is known as the "*cidade das mangas*" (city of mangos), although a mayor in the late 1970s or early 1980s cut down the trees as well as other flowering plants along the river.

Womens' Activities

There was a rather strict division of labor by gender, which extended from economic activities to dancing. Women in both social groups (trader and direct producer) gathered extractive resources from the forest, such as vegetable fibers, palmnuts, and fruit from which they produced food, oil, medicines and other products including baskets. They also planted home gardens in which they grew fruits, herbs for medicine and cotton to spin into cloth. They made most of the materials and equipment that their families needed, including clothing and hammocks, after they spun the cotton they grew into thread. They also gathered water, did laundry, cooked and performed housecleaning and childcaring duties.

The townspeople bathed in the river or in a nearby *igarapé*. Men bathed in the river at different times than the women, and each gender had a special place in the *igarapé* in which to perform their daily ablutions. Women and children obtained drinking water for their families from the river by either going out in the middle to get clean

water or from a special spot in the *igarapé* above town. Further downstream in the *igarapé*, the women would do their family's laundry and each woman had her own special place, which she would often decorate with aesthetic objects or symbols depicting meaningful aspects about herself and her family. At local *festas* (parties) the men and women would sometimes dance apart in special ritual dances.

A division of labor by gender and by social class extended into Brazil nut extraction. The land across the Tocantins River was referred to as the men's *castanhal* and the areas rich in Brazil nuts on the same side of the river as the town were considered the women's *castanhal*. The women who did not go to the other side of the river during the rainy season with their husbands, mostly the upper class women from trader families, gathered Brazil nuts near town. The money that women earned from gathering Brazil nuts was considered "their own" and they could spend it as they wished, apart from their husbands' approval. They also gathered palmnuts and made cooking oil for consumption and to sell to buyers. The money they kept from the sale of these items added to the family larder. They would also negotiate economic transactions in their husbands' absences with buyers who bought pelts from animals such as deer and jaguar that the men hunted.

In contrast to the trader families, there is evidence that the division of labor by gender was not so strict in the direct producer social group. However, the women in

this social group did not make any money that they could use for themselves. Among these families both the women and children accompanied their husbands to the other side of the river and remained in the forest throughout the *castanha* season. Along with the men, they gathered Brazil nuts which were contributed to the family's total production. The husband was paid for what the whole family produced. Furthermore, women and children from the direct producer families were much more involved in the family's agricultural activities in both the *terra firme* and *várzea* garden plots than were their upper trader class counterparts. The upper class women rarely participated in agricultural activities, such as clearing, planting or harvesting on the upland *terra firme* plots. Only in families in which the husband mined for diamonds in the river during the summer did upper class women work on the household's agricultural plots in the *várzea* next to the river, planting, weeding and harvesting. In the summer, when the waters were lower, men from both social groups would leave to go downstream near Tauiry and beyond to mine for diamonds in the river. The women would stay in Itupiranga, some of them working on the agricultural plots, planting, weeding, and harvesting, while the men were away and could not be around at critical times in the agricultural production process. Women, especially daughters from the wealthiest and most prestigious local

families probably did not do much of this type of farming, either.

Formerly, women had access to a wide variety of natural resources and performed many activities necessary for their families' maintenance and reproduction. A key feature of these activities was that women had access to these forest and river resources, which were close to town. They did not have to range far from their children and household responsibilities, or fear for their safety, in order to find these necessary resources.

Before 1970 Itupiranga boasted a few small businesses: the boat businesses for Brazil nut trade, the stores that sold necessary items such as kerosene, salt, sugar, soap, and clothing, and a pharmacy. The town had a tailor, and a small store where cloth was sold. Roving merchants would sometimes sell fish and beef in the streets. Since Marabá was close by, the people travelled by boat from Itupiranga to the larger city for other needed commercial items that they could not find locally. The town had electricity by generator only from 6 to 10 p.m., and had no running water.

Conclusion

Itupiranga has always depended primarily upon extraction of one or more products: rubber, Brazil nuts, other vegetable products, animal skins, and diamonds. When the rubber boom ended, the community and Tocantins region did not suffer because the extraction of Brazil nuts and later diamonds continued to sustain the local population.

The system of production, known as *aviamento*, changed slightly depending upon the resource. The extraction of rubber and Brazil nuts were almost the same, but in diamond extraction, workers did not go into debt to their patrons at the end of the season as they did in Brazil nut extraction. The patron absorbed the costs of an unlucky season, and his workers were free to work for someone else the following year.

This autonomy was shared by *castanheiros* who worked on the municipal "free" lands instead of for a patron. In fact, the most autonomous relationship for primary producers was the gathering of Brazil nuts on municipal lands. Although there was more competition between *castanheiros* for Brazil nuts on the community lands rather than on lands held by patrons, the activities were carried out in a community of workers, who worked at their own pace and for themselves. Furthermore, these *castanheiros* could sell what they gathered to whomever offered the best price. Thus, people in Itupiranga who were primary producers or small-scale store owners had access to necessary resources, relative autonomy in carrying out their livelihoods and fostered a community ethic of cooperation and sharing. The existence of trespassing restrictions imposed by the community of Itupiranga, and a ceremony on January 1 every year ensured a more equitable distribution of resources in the gathering activities on municipal lands.

The relationship between a *castanhal* patron and someone who worked gathering Brazil nuts on his lands differed from the community of *castanheiros* in that clients had to sell the Brazil nuts they gathered to that patron at a price set by the latter. Patrons used extra economic forms of coercion including debt and the threat of violence to control their labor force. However, the *castanheiro's* daily regime was not set by the patron, nor was the quantity of Brazil nuts he had to gather stipulated. Rather, it was to that *castanheiro's* advantage to gather as many Brazil nuts as he could, so he would earn more money at the time of sale.

The productive activities in diamond mining involved less autonomy than in gathering rubber or Brazil nuts while one was working, yet a *garimpeiro* was freer to choose his patron, and when he worked. The patron covered all of the costs of the process, including food while his *garimpeiros* were working, and the latter did not go into debt with the patron during a mining season as they did with their rubber or Brazil nut patrons. The patrons risked the most because of their output for productive activities, however, the percentage (60 percent) they received was worthwhile if any diamonds were found. The *garimpeiros* only had to return to diamond mining activities when (or if) their money ran out, however they were not compelled to go back to a patron because of previously incurred debts.

In all manifestations of the *aviamento* system of production and distribution, the labor was controlled at the level of the market, and primary producers still had access to other means of production--agricultural plots on "free" land, the forest in which to hunt and gather fruits and palmnuts for family consumption, and the river for fish. A sharing ethic existed for meat obtained in the hunt, and a sense of community cooperation was present in the maintenance of the regulations regarding the municipal *castanhal*. Furthermore, peoples' production activities were relatively autonomous. The activities were seasonal, and families tried to coordinate their efforts to maintain a livelihood with that seasonal calendar. The diamond mining season ended approximately when people needed to clear a place in the forest for their gardens, and then somewhat later plant their crops. For those *garimpeiros* who did have gardens, the flexibility of mining allowed them to leave for a time during the summer months to prepare their plots for the burn. Brazil nut extraction took place at the height of the rainy season during the time when people could not mine for diamonds in the river, and after their crops were planted, but before the harvest in April or May.

The relationship between Itupiranga and Marabá is indicative of the competition between the elites in the *aviamento* system. The rubber barons, and later the *castanhal* owners were intent upon carving up the areas rich in these resources and controlling the labor necessary to

harvest the rubber and Brazil nuts. Marabá's and Lago Vermelho's (former name for Itupiranga) struggle for independence from Baião, and later, Itupiranga's struggle for independence from Marabá most likely reflected struggles between different patrons to control the areas nearby these communities. These patrons maintained their control over labor by imposing all sorts of obligations, by extending credit and by cheating, in order to keep their primary producers from working elsewhere or for someone else.

As shall be seen by the next chapter, after 1970 resource extraction in Itupiranga changed in degree and in kind. Although the method for extracting *caucho* rubber latex and hunting for cat skins depleted these specific resources in Itupiranga, historically, the more contemporary commercialized extraction of lumber and fish, and production of cattle and agricultural products threatened to overmine certain resources or alter the very environment upon which many species depended, which, in turn, influenced the local human economic opportunities and strategies.

Table 2-1

Extractive Production In Marabá, Pará, Brazil, 1954

Resource	Quantity	Value Per Unit	Total value
A. Mineral			
Quartz crystal	1,200 kilos	400	480,000
diamond	200 carats	500	110,000
limerock	34,000 kilos	1,5	51,000
tiles	10,000 units	600 per 1000	60,000
bricks	260,000 units	400 per 1000	104,000
B. Vegetable			
Brazil nuts	120,000 hls.	380	46,600,000
C. Animal			
animal skins	3,000 k.	30	90,000

Translated from H.D. Barruel de Lagenest 1958, Page 47.

CHAPTER 3
THE HISTORY OF LAND TENURE IN PARA AND
GOVERNMENT-SPONSORED PROJECTS, 1970 TO 1990

Introduction

The last chapter examined former economic activities and the social groups who had lived in and nearby Itupiranga who held different positions in the production and distribution processes. These differences led to distinctions in how people were affected by the highway, the dam and accompanying land tenure changes, and in their subsequent strategies to obtain remuneration and to survive. After a review of land tenure in southern Pará, this chapter will discuss these developments and how they contributed to the demise of the former extractive economic activities-- diamond mining and Brazil nut production.

Due to the developments that commenced in the 1970s, the former social class structure underwent profound changes. These changes were intensified with the Tucuruí Hydroelectric Project and recent influx of people into Itupiranga who came drawn by the lure of land as promised in the Agrarian Reform of 1985. The riverside dwellers, who lived along the Tocantins from Marabá to Tucuruí, moved out of the traditional Amazonian extractive occupations and into new ones. This transition began slowly in the 1970s with

the Transamazon Highway--six kilometers from town--and colonization programs, and accelerated in the 1980s. Thus, most traditional dwellers who lived in Itupiranga in 1990, experienced these dramatic changes within their lifetime. In the chapters 4 and 5 I will examine the impacts of these developments upon the different social groups.

History of Land Tenure in Pará

Throughout Amazonian history, legislation alternated between periods favoring large entrepreneurs and private property, and those which favored small producers and usufruct rights (Santos 1984). During the Rubber Boom period (1850 to 1889), a number of laws were passed to facilitate colonization by small farmers in the Amazon. They came primarily from the Northeast. The effect of this legislation was to provide labor for the *seringalistas* on large latifundias. Most of these colonization projects failed. At this point there were two tendencies within the legal system. The first favored small-scale family based production, and the second preserved the integrity of large landholdings (Santos 1984).

The situation changed somewhat after the Republican Constitution in 1891, which reaffirmed the concept of private property. Legislation decreed that land expropriation could only occur with prior compensation to the owner. All unoccupied lands came under control of the Brazilian states, except in frontier areas, and could only be transferred through sale. In Pará, Decree 410 (1891)

stated that extraction was an effective form of cultivation, thus, enabling the controllers of tracts of rubber trees to maintain their landholdings. This same legislation also served small-producer interests by setting aside land for special purposes, such as Indian Reservations or colonization projects. Land conflicts were still rare during this period. Yet, the two tendencies within the legal system remained. Santos states that "had an adequate survey of landholdings been carried out at that time [in Pará], many twentieth century problems would have been avoided," referring to the problem of multiple claims to the same land during the privatization process (1984:450).

The collapse of the Rubber Boom in 1910 changed the situation again due to emigration of labor from the region. Legislation was passed favoring small producers in an attempt to maintain labor within the region, which underwent a severe recession. This need for labor to extract forest products influenced agrarian legislation up until the 1930s. Law I.432 was enacted to create incentives for small farmers. Land, under the control of the municipalities in Pará, was free to any citizen who needed it. Interested parties would be given provisional title for cultivation, and were able to receive a definitive title after a period of two years. Gradually, the economic situation improved due to the increased extraction of Brazil nuts and lumber, and the development of small-scale agriculture.

Despite the benefits in Law I.432 for small farmers, the same legislation also allowed room for the consolidation of land by more powerful groups. A new system of leasing land came into operation, initiating practices that ran counter to the equities in Decree 410. Long-term leases gave people control over large tracts of land. Furthermore, they could obtain these for less expense, and thus obtain larger tracts, than they could buy outright.

In Pará, the cost of the lease amounted to about 2 percent of the cost of the land, a fact that ran counter to the intentions of Decree 410. (Santos 1984:451)

Leaseholders had complete control over Brazil nut tracts. The new legislation also permitted agroindustrial groups to acquire larger tracts of land, sometimes exceeding one million hectares.

The Revolution of 1930 changed all of these legislative directives, especially the scandalous concentration of land. Instead, the new leaders demanded that all Brazil nut groves be returned to the state until a commission could research the issue. In 1931, the government attempted to assist small farmers by revoking the provision requiring colonists to bear the costs of surveys. In addition, colonists became exempted from taxes and other charges associated with obtaining land title. The revolutionary government under President Vargas also tried to improve the employment situation by entrusting local municipal governments with the power to promote colonies for unemployed persons. These trends lasted until the 1950s. During this time the peasant

sector and the large landowners were treated as separate agencies, with two sets of laws and with separate entities in charge of each. Still, land conflicts were rare and highly localized. The number of wage laborers rose during this time as a consequence of unemployment, soil depletion, inadequate education and general market and credit conditions, and not as a result of dispossession (Santos 1984).

However, this relatively calm situation changed in the 1950s. The construction of the Belém-Brasilia Highway, the discovery of cassiterite in Rondônia, the development of cattle ranching for a growing market in Belém, and belief in fertile Amazonian soils attracted thousands of speculators and small farmers to the Amazon. In Pará wealthy groups began to make profits from land speculation, which intensified desire for land. This situation was exacerbated in 1962, when the economic crisis meant increasing inflation, rising costs of material goods and the reduction of other investment options. Land speculation in the Amazon became an ideal means for the wealthy, especially cattle ranchers, to transfer capital in order to maintain or increase its value. As a result, Pará experienced an intense rush for land. Two years later, land titling in Pará fell into complete disarray after the military coup in Brazil in 1964. Land fraud and multiple claims to the same land were rampant, as well as the creation of false titles. Often, people bought land in the name of people who never

existed or had disappeared. Furthermore, the boundaries of small-farmer lands were often disregarded. The new government attempted to control the situation by halting all land sales, and extending transport and communications to small farmers.

Until 1966, legislation that had been passed by the revolutionary government in the 1930s (Decree I.044 of August 19, 1933) continued to favor small farmers regarding easy access to land (Santos 1984). Concession of land plots remained free of charge. However, in an attempt to cope with Brazil's economic crisis, the new government initiated a series of fiscal incentives to stimulate investment of capital in the Amazon, especially for the promotion of cattle-raising and agribusiness projects by entrepreneurs from São Paulo and other areas of the industrial South. Land became a commodity, and was primarily valuable as a speculative enterprise. These policies would prove to have disastrous outcomes for Amazonian peasants as well as Indians and other less powerful groups, who would lose access to the means of extraction and production, and would be drawn up into intense conflicts over land (Davis 1977; Foweraker 1979; Wood and Schmink 1978). Increasingly, in many areas, such as in southern Pará, more land came under private ownership, and there was a movement away from usufruct *posse*, legal rights to land based on possession rather than title. Small-farmers and indigenous groups had little legal recourse to stake their claims to untitled

land, upon which they had been living as this process unfolded (Schmink and Wood 1992). The movement of powerful interest groups into the Amazon put pressure on existing legal institutions, who tended to favor these elites in decisions over rights to land. The conflicts over land were played out within and among government agencies. In this arena the state did not act as a neutral arbiter of conflicting interests (Wood 1983). Usually, the agencies' policies favored the productive interests of more powerful groups to ensure the reproduction of the conditions which maintained and often enhanced the private accumulation of wealth. Yet, less powerful groups sometimes won concessions by organizing and resisting attempts by more powerful groups to take possession of their land (Schmink and Wood 1992). During the 1960s, 1970s and 1980s, the struggle over the appropriation of land became increasingly violent, and the federal government began to play a major role in the conflict between opposing social groups (Branford and Glock 1985; Foweraker 1981).

In 1966, the Superintendency for the Development of the Amazon (SUDAM) was created in an effort to attract private investment in the Amazon. The agency established incentive programs which were financed by an investment fund, Fundo de Investimento de Amazonia (FINAM) that was supported by two tax subsidies. These tax credits and exemptions enabled corporations to acquire projects in the Amazon for a fraction of their actual development costs (Repetto 1988).

A majority of these enterprises never reached productivity levels that even came close to the original investment of government funds. These SUDAM-supported ranches were inherently uneconomic. Rather, the private investors in these schemes "typically realized profits only through tax and rural credit subsidies" (Repetto 1988:77-78). The government ended up financing not only losses in the projects themselves, but also the profits supplied to private entrepreneurs. Furthermore, unfavorable soil conditions and other ecological factors rapidly degraded pasture land in a tropical rainforest environment (Hecht 1984).

In 1970, the Plan for National Integration (PIN) was established to populate the Amazon region and take some of the pressure off of the agrarian problems in the Northeast. The plan called for the colonization of the Amazon by small farmer migrants, who would be given 100-hectare plots along a 100-kilometer stretch of the planned Transamazon Highway. The federal colonization agency, INCRA (Brazilian Institute for Agrarian Reform and Colonization) would carry out this program, which would hopefully relocate over 5 million people by 1980 (see Smith 1982; Moran 1981; Schmink and Wood 1992). Every family would be given a modest house with five acres of cleared land on 250 acres of land; a provisional title for the land which would allow each farmer to be eligible to receive credit from the bank of Brazil and Bank of the Northeast; a minimum wage for at least six months;

and guaranteed prices for their agricultural production (Davis 1977).

The colonization program and east-west Transamazon and north-south Cuiabá-Santarém highways encouraged massive migration from other parts of Brazil, especially the Northeast. People came in numbers far greater than federal planners had ever imagined. Furthermore, the initial plans to relocate 100,000 families by 1976, were never realized due to poor planning and a shift in government policy in 1974, which favored the development of larger capitalist agro-enterprises over small farmer migrant colonization projects (Wood and Schmink 1978; Wood 1983; Schmink 1981; Foweraker 1981; Martins 1984). By 1978, only 12,800 families had been settled by INCRA (Bunker 1985), and many of the urban centers to supply the infrastructure necessary for maintaining the population and the marketing of agricultural products were never constructed (Pompermayer 1979). People who were set up in the project had problems due to maintaining access to the highway during the rainy season, restricted transportation and communication. As a result, there was a high rate of abandonment by people who left their homes and farms along the highway (Smith 1982).

The failure of the colonization projects contributed to land concentration in the hands of fewer numbers of people along the highway and the emergence of a new class structure since a majority of people lost access to necessary resources (Martins 1980). This process intensified after

the military government changed policy again, because of criticism that the Amazon development program was not ecologically or economically sound (Schmink and Wood 1992). First, INCRA deemphasized the colonization program, claiming that the small farmers were the "predators" of the environment (see Wood and Schmink 1978 for a rebuttal). Behind this initiative were political pressures from southern businesses who were benefiting from state-sponsored fiscal incentives in ranching, mining, agriculture, land investments and other enterprises. Second, the government initiated the Second Development Plan for Amazonia (1975-1979). This plan reversed the government's earlier commitment to small-farmer colonization projects in favor of more "rational" and "less predatory" schemes which were backed by private entrepreneurs (Schmink and Wood 1992). For example, a new program, Polamazônia, which was designed to rationalize and modernize all land-use practices in the Amazon Basin replaced the INCRA Transamazon Colonization Program. Furthermore, the government continued with their plans to develop mining and hydroelectric projects, which had been announced in the Project Amazonia Plan of 1966. These large-scale projects also contributed to the relocation of thousands of people, who often did not receive proper compensation. If they were allotted compensation, it was given out years later or was not enough or of the right kind, so they often sold the land they received (Mougeot 1987; Biery-Hamilton 1987, in the case of the Tucuruí

Hydroelectric Dam in Pará). These events exacerbated land concentration and increasing poverty by those who lost their land. A closer look at Itupiranga reveals the impacts of these events that occurred along the nearby Transamazon Highway and in the Tocantins River, which ran in front of town.

Itupiranga During the 1970s: The Transamazon Highway Era

The town of Itupiranga began to experience changes in the 1970s, after people from other areas began moving to the eastern Amazon region due to the construction of the Transamazon Highway and the Transamazon Colonization Program (cf. Barbira-Scazzochó 1980; Moran 1975, 1979, 1981 and 1983; Schmink 1981; Wood and Schmink 1978; Martine 1980; Smith 1978, 1981, 1982). Before the highway, much of the land in the region was publicly owned, and whoever wanted land was able to clear and plant a garden. But after INCRA began to divide the land into parcels and many people began to arrive, land conflicts increased and deforestation began. Many forested areas were cleared for both large-scale cattle ranches and for agriculture. In addition to these activities, in the late 1970s, a local sawmill and several sawmills from Marabá began selectively logging mahogany. To accommodate housing for recent arrivals, the forest that surrounded the town was cut down. Hunting close to town became more difficult. Meat was not so frequently sold in the street, and people had to depend more upon fish.

The population in the municipality tripled in 10 years from 5,346 persons in 1970 to 15,641 in 1980, principally because of the highway (IBGE 1970 and 1980 census). During the 1980s the population almost doubled again. By the first trimester of 1985 the municipal population was 23,773 persons, and by 1990 was estimated to be 28,035 persons, although this figure is probably conservative (IBGE). A majority of people lived in rural areas. By the beginning of 1985 the population of the town in the first semester of 1986 was 5,204 persons (SUCAM, Belém). Many people arrived after 1983 in search of land that they hoped to receive through the *Reforma Agrária*, a national land reform program instituted by the Brazilian government in 1985. Others relocated to Itupiranga from towns such as Jacundá after the Tucuruí Hydroelectric Dam was built because they wanted to live near the river and not in the dry commercial center of Nova Jacundá, which was 60 kilometers from the river. Yet there were few opportunities for employment for these newcomers in the municipality. The relocated group as well as other migrants had to wait for the land agency to demarcate new plots of land in the Agrarian Reform program. Sometimes families had to wait for years to obtain a plot of land. Others would obtain land and then be run off of it by ranchers or other small-farmer colonists. The population increase from 1970 and 1990 coincided with increasing conflicts over land, with a general trend of the poor abandoning their plots and homes along the highway, and the

rich consolidating increasingly larger holdings (Martins 1980). In the municipality of Itupiranga there were numerous conflicts over land, which coincided with increasing disparity in the size of land holdings. Many people were left landless in this process. By November 1989, 838 large landowner/employers owned 48.84 percent of the land in the municipality, as compared with 1,403 small landowners who owned only 7.35 percent of the land (INCRA 1989). The rest of the land in the 15,890-square-kilometer municipality fell under state or federal jurisdiction, although squatters were arriving every day and clearing forest (IBGE 1982/83). Thus, the small landowners had holdings which were divided up within a significantly smaller portion of land than the large landowners in Itupiranga. Furthermore, many people who desired land were landless. In 1990 only 33.3 percent of households in town owned land according to the community survey.

Thus, land had become a commodity in the area. One outcome was that during the 1970s, the disparity between economic groups in Itupiranga began to grow wider since some people could afford to buy land, while others could not. This trend intensified during the 1980s. A new regime of private property was introduced into Itupiranga because of the highway and colonization projects, and land available for "use rights" became more scarce. By the middle 1980s the available land near town was all sold to individual owners. Some people of the original families lost access to

the former freely worked land within the municipality and did not find an opportunity to go into business. They were probably able to survive during the 1970s and early 1980s, before the dam was finished, working for other people and gathering Brazil nuts, diamonds, and other forest products. During this period, many families who had both upland garden plots and a *vazante*¹ on *várzea* land (fertile floodplains by the river) ended up with only a *vazante* because they could no longer find an available plot of land. Thus, their entire agricultural needs eventually depended upon these plots on the floodplain.

The Transamazon Highway not only initiated changes for the traditional riverine population, but attracted many newcomers to the area, who were different from the local groups in a number of significant ways. Many of the new migrants were unfamiliar with the tropical forest environment. Thus, they did not take advantage of the myriad of forest and riverine resources through hunting and gathering, and they also practiced different farming methods from the Amazonian groups (Moran 1979). Furthermore, these people had a desire for land and employment opportunities rather than being lured by a new extractive economy, as had earlier migrants to the Amazon region (Parker 1985). These Transamazon Colonists tended to migrate to the newer

¹ A *vazante* is a local term used to mean a plot of land along the river on the *várzea* (cf. Museu Paraense Emílio Goeldi 1975) for a description of *vazante* and *vazanteiro* (meaning one who farms on a *vazante*).

roadside towns, often the sites of directed colonization projects, rather than the riverside communities. One of these *agrovilas* (*Agrovilla Castelo Branco*, but called "Agrovilla" by locals;) is located on the Transamazon Highway at the junction of the access road, at Kilometer 48, and approximately six kilometers from the town of Itupiranga.

The Transamazon Colonization Project emphasized cash crops, as well as subsistence ones. Thus, near the highway, agricultural production by migrants was more extensive in terms of size of plot planted than that practiced by the locals, who stated that their gardens were smaller than those planted by the colonists. Throughout this period, numerous ranchers moved in and began large-scale cattle production. Although some locals had always kept a few heads of cattle in the savannah areas, this new type of ranching required clearing vast areas of forest and planting pasture. Furthermore, as elsewhere along the Transamazon Highway, land conflicts between colonists and ranchers accelerated throughout the 1970s and the 1980s, until the ranchers owned the choice land areas along the highway and access roads, which were originally designated by INCRA for colonists. The conflicts over land further encouraged forest clearance, because an individual could attempt to maintain or gain title to land if certain "improvements" were made, which included burning forested areas.

However, the introduction of private property along the highway, and resulting conflicts, did not affect the land nearer to town during the 1970s. During the 1970s, a majority of locals maintained small garden plots on municipal land near town, and the major stands of Brazil nut trees across the river remained unaffected by the colonization project along the highway. Locals had traditionally ranged widely to hunt, and the women had gathered Brazil nuts on the town side of the river as far as the agrovila along the highway created by INCRA. The new regime of private property prevented locals from using these areas near the highway for extractive activities, a pattern which was accelerated throughout the 1980s as the changing land tenure scheme was instated slowly throughout the municipality.

Cattle ranching and the more extensive agricultural production practiced by colonists required clearing extensive areas of primary forest. Additionally, the development of the highway and access roads attracted sawmills, which began to selectively log out mahogany, the most valuable tree at that time. Informants stated that the first sawmill arrived in Itupiranga town in 1974, yet the area was also logged by sawmills from Marabá.

These new economic activities and the influx of new people into the region were welcomed at first by the residents of Itupiranga, and would affect their lifestyle in new ways. The highway and increased traffic to town

provided new opportunities for some residents of Itupiranga. For example, the nearby Transamazon Highway made access to Marabá faster and easier by bus, which was considered by locals to be a positive attribute of the highway. Itupiranga town was still relatively unaffected in terms of land tenure changes and the new economic activities as compared with the dramatic changes that would take place during the 1980s. Yet the changes occurring in Itupiranga during the 1970s were merely a preview of the profound and accelerating ecological, economic and social changes that would soon affect the whole municipality. In the 1970s the changes, while slight, were beginning to be felt. In retrospect, locals remembered only the positive impacts of the new activities, most likely because they did not hinder, as yet, any longstanding economic activities.

1980: The Discovery of Gold at Serra Pelada

In 1980 gold was discovered at Serra Pelada in the neighboring municipality of Marabá. This event triggered a massive immigration into the area of people from all over Brazil, including most of the able-bodied men from Itupiranga. Informants stated that the only men who remained in Itupiranga were sick or too old to withstand the rigors of mining for gold. The temporary out-migration of men affected the local economy. Women took over more of the gardening activities after family gardens had already been cleared and burned by the men to be ready for planting. Because clearing and burning took place during the dry

season, which was also the best time for mining, some families did not have gardens in those few years in the early 1980s when Serra Pelada was producing at its peak. Furthermore, the hunting of large animals, a male occupation, declined, and so many families went without game to eat. However, people did not starve because the women and children fished, and continued to extract fruit from their backyards and gardens. Gold mining activities appeared to affect Brazil nut extraction only slightly in those years of 1980 through 1982 (see Table 3-1) because gathering took place during the rainy season, when mining was more difficult.

However, the more important impact of Serra Pelada upon Itupiranga was felt when the men returned to town. The money that locals made from mining gold affected the town, informants said. Although they stated that they felt that the highway caused changes in Itupiranga, the opening of Serra Pelada affected the town a lot more. One informant stated that when the men returned "money began to run in town." Bars opened and people began to drink more, and there was more drunkenness in general. Those men who struck it rich at Serra Pelada (known as "bamburrados,") bought cars for themselves and some relatives, and beer for everyone. Most of the people who earned a lot of money mining for gold spent it all instead of investing it, and ended up the same as if they had never gone to Serra Pelada.

A few people bought land and houses with the money they earned.

Before this period "people hardly knew what to do with money," one informant said, because they rarely used it. Now, some men were returning with a lot of money, and spending it on activities that were felt by most locals to be immoral--drinking and visiting prostitutes. Furthermore, although levelling mechanisms appeared to be operating when people bought drink and presents for everyone, and most people lost all of the money they earned in this fashion, the increasing disparity in wealth was felt. Malignant gossip about one's neighbors, and other tensions increased during this period, and several informants stated that the former sense of community and neighborliness was lost. Some families who struck it rich and perhaps treated their neighbors badly, and then lost their fortunes, still suffered the stigma for their actions even in 1990. The social relationships that were negatively affected by the increase of money from Serra Pelada in Itupiranga continued to change because of other events that occurred as the 1980s unfolded.

The locals knew exactly the rise or fall of each others' fortunes, and when sympathetically relating the history of a family's demise, stated that earning money from mining was uncertain and could bring bad luck. Bad luck was the reason given for most peoples' subsequent loss of fortune, and was usually related to an illness that was

thought to have resulted from one's former good luck in finding gold at Serra Pelada. Quick money is seen by many cultures as potentially evil (cf. Taussig 1980). The reluctance to invest this type of money and the sharing ethic as a levelling mechanism of wealth were likely reasons that most families did not invest their money in land, which could sustain them in the future. However, another more important reason was certainly the lack of foresight about the vast changes that would permanently alter peoples' livelihoods in Itupiranga.

1986: The Impacts of the Tucuruí Dam, and Changing Land Tenure Scheme

The most significant impacts upon the local riverside population in the 1980s was the Tucuruí Hydroelectric Dam, which flooded the diamonds and many castanhal lands, and the accompanying continued federal policy of converting the land in the region to private property.

The Tucuruí Project was built by ELETRONORTE, a regional branch of ELETROBRAS (Centrais Elétricas do Brasil), which was created on June 20, 1973 to administer Amazonia's hydro-energy program. The government company was responsible for the northern part of the country (58 percent of Brazil), which has an estimated hydroelectric potential of 100 million kilowatts.

The Tucuruí Hydroelectric Scheme (as it was named) was the first major project of its kind in the Amazon. The reservoir, filled in 1984, was constructed to generate 4000 MW of electricity to support large mining and metallurgy

projects, including the Carajás Iron Project, the Alumar (Alumínio do Maranhão S.A.) aluminum smelting plant in Maranhão, (owned by a consortium of Billiton/Shell, Alcoa and Camargo Correa), and the Albras (Alumínio do Brasil S.A.) aluminum smelting plant. The latter is owned by the Japanese consortium, Nippon Amazon Aluminum company (NALCO), and the Brazilian firm, Companhia Vale do Rio Doce (CVRD). Tucuruí, located 300 km to the southwest of Belém near the town of Tucuruí, was the first of seven major hydroelectric projects planned along the Tocantins River and its main tributaries. This first project was planned to produce almost 40 percent of the total potential of the basin, which would have a generating capacity of 8 million KW when all of the projects were completed.

The construction of the Tucuruí project began in 1976 when ELETRONORTE began building a company town to house the thousands of workers and also started work on the cofferdams. Also, in 1976, a Division of Ecology was created by the president of ELETRONORTE to conduct research concerning the impact of the anticipated 200 km-long, 2,430 km²-area and 45.8 billion m³-volume reservoir on the flora and fauna in a tropical rainforest.

Also in 1976, ELETRONORTE began the expropriation process to remove the population living in the reservoir area with a decree which delimited an area larger than the artificial lake was anticipated to reach. This region consisted of várzea (fertile riverside lands) and terra

firme (drier uplands) lands, which were being used by a wide variety of population groups (Mougeot and Barrow, no date). All land below this 86-meter line was expropriated by the power company. The people living below this line were to be evacuated and would receive indemnification for any improvements they had made on the land. ELETRONORTE completed a population census and land property assessment by 1978 in a land discrimination process. Their records showed that 14,250 persons from rural areas, and 9,621 from 12 urban areas (4000 families in total) were dispossessed, and had to be indemnified and relocated. However, Mougeot argued that this figure did not include all of the people who lived in the region and depended upon the riparian environment as part of their subsistence (1986). He estimated that more than likely, the reservoir affected more than 151,000 persons who lived in the four municipalities of Tucuruí, Jacundá, Itupiranga and Marabá in 1980, because by 1983, 115,000 people alone lived along the river margins.

The poor planning and execution of resettlement brought the initial consequences of the project. The first problem was that the indemnification procedures ignored the local land tenure system and agrarian economy, and assumed individual land ownership (Mougeot 1986). In fact, most of the people who lived near the river only had access to land under the de facto land tenure system. Under this system, people were legally entitled to land by their occupancy and making improvements, such as clearing for gardens and

constructing buildings and fences. ELETRONORTE recognized certain aspects of this land tenure system, but tended to compensate titled landholders better. In the Araguaia-Tocantins basin 3,431 estates only had occupancy rights as compared with 903 recorded land titles (Mougeot 1986). Furthermore, ELETRONORTE gave larger awards to people who had proof of longer occupancy or ownership and had made more material inputs upon and returns from the land. Clearly, this policy favored more wealthy landowners, especially ranchers who held extensive landholdings and were market oriented. The policy ignored small farmers who did not need extensive inputs and, moreover, produced mainly for family consumption, and thus, did not receive large returns from their relatively smaller parcels of land.

Furthermore, the indemnification policy did not take into account the fact that the local people seasonally extracted natural resources from the nearby forest and water environments which lay beyond their cultivated plots of land. People with few infrastructural "improvements" lived quite well under the traditional land tenure system, and thus, the length of time and inputs made upon titled land by individual landowners were not relevant units by which to measure out indemnification payments. Another problem was that many occupants did not know how to read, were less informed about the indemnification process, and had to depend upon more informed persons to negotiate their cases with ELETRONORTE. Some people never received any

indemnification at all and were not considered part of the process because they got lost in the shuffle.

Another problem with indemnification was that ELETRONORTE initially attempted to give only cash to people who traditionally derived most of their livelihood from the land and only used money to buy a few staple commodities. Cash payments were offered to most of the 4,000 expropriated families on the western margin of the river. This form of indemnification was offered because of the confusing landholding situation around the reservoir which seemed impossible to sort out. There was "an abundance of untitled holdings, record falsification practices, deficiencies and delays in cadastral recording, and squatting immigrants in the early 1970s" (Mougeot 1986:47). Goodland reports that land titling procedures had been kept to a minimum by INCRA in those years before the indemnification procedures began, to cut down on expropriation expenses (1978, cited in Mougeot 1986). The cash payments were inadequate for several reasons. First, once people whose livelihoods were farming and forest-product extraction spent the cash awards, they were left without any means of making a living. Later, many of these people were promised a house in an urban area and 100 hectares for farming. However, the houses and land were not distributed for many years (eight in the case of the *expropriados* in Itupiranga). Furthermore, cash awards were often given several years after the deal was initially made, and inflation made the original amount nominal.

Despite budget constraints, the resettlement phase was more positive because ELETRONORTE was able to learn from its mistakes and correct its policies over time (Mougeot 1986). However, due to funding restrictions that began after 1981, the relocation process took eight years instead of the initially proposed five.

The original proposal for the relocation sites took into account "people's preferences for solutions that preserve territorial cohesion of each major community, and their access to the water resources of the Tocantins" (Mougeot 1986:49). Eight rural relocation sites were found to be suitable, taking into consideration local topography, land accessibility and availability of forest and fishing resources. Of these, only one site was located further than 15 km from the existing communities near the reservoir. Four sites were located on the western margins of the lake, and four on the eastern margins. Two urban locations were pinpointed for resettlement along existing or proposed road junctions, one on the west and east sides, respectively. The actual rural and urban sites differed in number and pattern considerably from those that had been initially proposed, however.

The areas around the rural sites were often inaccessible, and the power company did not get around to building the necessary network roads for the promised farming scheme. Budget cuts forced the power company to limit the promised amenities for resettled families, who had

been promised urban and rural houses, 2.5 hectares of cleared land on 50-hectare lots, schools, medical posts, and other cultural facilities. Thus, although newly tilled and productive soil existed for farming, the lack of infrastructure made it impossible for many families to remain on their lots. Many recipients of land sold or left the lots awarded them by ELETRONORTE. The story was the same at all of the rural resettlement sites, as stated by Mougeot.

Limited feeder road construction, shortage of private capital to prepare the land, lack of minimal financial and technical support to producers as well as of social assistance to their families were major constraints their land titles. (1986:51)

This "jogo de terra" (land game), as it has been termed by those who disapprove of poorer people selling or exchanging their land, continued throughout the 1980s for the same and other reasons. Other factors which compelled people to sell their lands were disease, especially malaria, and an intensifying problem of mosquitos near the reservoir, which had affected at least 1500 of families (or 8000 people), and forced hundreds of families near the reservoir to leave their homes permanently (World Rivers Review 1991).

People were relocated to six urban sites: Breu Branco along PA-263 highway; Novo Repartimento, Itupiranga and Cajazeira along BR 230; and Nova Jacundá and Nova Ipixuna along PA-150. The rural sites were distributed near these urban resettlement areas. Many problems were ironed out between the resettlement of people to Nova Jacundá, the

first community to be settled, and Itupiranga. However, similar problems existed for all of the relocated families. A discussion of the resettlement process in Itupiranga will illustrate, more or less, the problem at each of the sites along the reservoir.

The indemnification process for the people who would be resettled in Itupiranga was more lengthy than at Nova Jacundá or Novo Repartimento. ELETRONORTE built a townsite alongside the town of Itupiranga for the relocated families of Santa Teresa do Tauiry, which was approximately 14 kilometers downstream, as well as those residents of Itupiranga who lost land in the reservoir. The villagers of Tauiry were prohibited to plant permanent crops in 1977 or 1978, which would be considered as "improvements" and force the power company to make greater awards. However, a majority of Tauiry residents did not receive their rural lots for farming until 1986. Most Tauiry villagers moved to Itupiranga in 1981, but had to rent or stay in the houses of friends until the houses in their vila were ready for habitation in 1984. They had to pay rent themselves with money that was extremely difficult to come by. Most people continued to harvest Brazil nuts and mine for diamonds in the river as they previously had done to obtain money. Food was supplied by sympathetic friends or from fishing. Also, many Tauiry villagers continued to travel back to their old vila site and their nearby gardens for food.

Only eight Tauriry villagers had a provisional land document given to them by INCRA. The rest of the people had no title to the land surrounding their vila, but for many years had shared common land for agriculture, hunting and forest extraction. Each Tauriry family was promised a house in the new vila, located on the edge of the town of Itupiranga, and, originally, 21 *alqueires* (100 hectares) of land somewhere nearby. The location of these rural lots was only announced in 1984 by ELETRONORTE, after years of negotiation with those people who were expropriated from their original land. The new vila of Tauriry, like Nova Jacundá and Novo Repartimento, was promised a school, medical post, a church, and other cultural facilities. However, as of August 1986, only 75 houses had been built, which were not enough to house all of the eligible families. Furthermore, none of the other promised buildings had been constructed, and the children of the Tauriry villagers were encouraged to go to the school in Itupiranga, which was already overcrowded. The local officials who were negotiating indemnification with ELETRONORTE, stated that the power company was no longer planning to build a school specifically for Tauriry children.

By the end of August 1986, more than 40 expropriated families in the municipality of Itupiranga did not have a house or a lot. These included families from Ipixuna who had been relocated to Cajazeiras, and families who had migrated upstream from Jacundá. ELETRONORTE needed to build

at least 87 more urban houses in Itupiranga and Cajazeiras and hand out 116 more lots to eligible families who had been expropriated. In addition, the power company needed to supply wood and money for the construction of rural houses, and money for peoples' first clearing and planting on their new rural lots. The rural lots still did not have the promised water wells and access roads, and, as a result, most people were unable to plant even though they finally had obtained land.

The poor planning resulted in negative consequences for many families in the resettled population. For several groups in Itupiranga the battle with ELETRONORTE for complete indemnification continued in 1990. This story will be covered in Chapter 8. However, although poor planning caused many hardships for the expropriated families, the major consequences of the reservoir and land tenure changes were devastating and permanent for everybody in the region.

The rising waters destroyed the diamond mines, many Brazil nut trees, and floodplains, which virtually eliminated the major economic activities. Diamond mining was completely wiped out except for those wealthy companies which had the resources for the expensive and complex technology needed to mine in the deeper waters caused by the reservoir. In 1990, only one outfit, owned by a man from Rio Grande do Sul, was operating downstream in the Tocantins between Marabá and Praia Alta. Many Brazil nut trees were killed from poisoning by Capemi, a company contracted to

clear the forest from the proposed reservoir, before the dam was completed. However, other factors also contributed to the demise of Brazil nut production, as will be discussed below. The rising waters also covered large floodplain areas, which affected many farmers, who depended upon these vazante lots for dry season crops. Many people lost at least half of their lots, and had to look for other employment to make ends meet.

On the other hand, many people commented on how the dam had dramatically increased the size and number of fish in the river. The increase in fish, especially several favored commercial species, created a new profession along the reservoir, and for many people in Itupiranga. However, some of these individuals mentioned that they feared that fish populations would be greatly reduced in three or four years after the nutrients released by the rising waters of the reservoir dissipated.

The decline of the Brazil nut industry and rise of commercial fishing will be explored in the next two sections, because many factors other than the Tucuruí Dam contributed to the significant changes experienced by different social groups in Itupiranga.

Impact on Brazil Nut Trees: Tucuruí, Private Property and Logging

The highway and feeder roads and the general development of the region attracted people who initiated a new extractive activity--logging--that had a profound impact on the extraction of Brazil nuts. The first sawmill in

Itupiranga was set up in 1974. At this point the logging and cutting of lumber was done manually. By 1980, another sawmill had arrived in town and both were run mechanically. By 1982, three more sawmills had arrived in town, and several more were present in the municipality. Furthermore, sawmills from the neighboring municipality of Marabá extracted lumber from Itupiranga as well. By 1990, there were eight sawmills in the town of Itupiranga, and 14 or 15 in the municipality. The number of sawmills in Marabá was at least one thousand, according to several sources.

In the early 1980s several events coincided that determined the fate of the municipal *castanhal* as well as the "owned" areas rich in Brazil nut trees (Bertholletia excelsa H.B.K.). Federal, state and municipal governments sought to privatize much of the land between the Tocantins River and PA-150 highway from Marabá to Jacundá. Some of that land was slated to go to the families who were relocated because of the dam. The land granting agency, INCRA, was controlled by the military during this time, and locally called GETAT. The state and municipal governments cooperated with GETAT as well as ELETRONORTE, in dividing the land into 100-hectare and later 50-hectare lots for new colonization areas, including those families who had been relocated because of the dam, as mentioned previously.

The process began under Itupiranga Mayor João Brasil, and in 1982, continued under Mayor José Milesi. Milesi, an ex-priest from Rio Grande do Sul, was particularly

interested in attracting poor landless people to the municipality and giving them lots. He advertized as far away as Maranhão and Goais that farm lots, as well as lots in town for houses, were freely available to all who came to live in Itupiranga. Thousands of people flocked to the municipality during the 1980s, and many obtained land as the *glebas* (large areas designated for colonization) were demarcated and the lots within them were surveyed and distributed.

The four leagues of municipal lands as well as six other privately controlled *castanhais* on the other side of the river from Itupiranga town were part of this scheme. One informant in Tauiry said that Praia Alta was sold by its only owner, Benedito Mutran, to the Governor of the State of Pará, Alacid Nunes, who then divided it up. Before this time, Praia Alta was inhabited by Indians, he said, and the "land didn't belong to anyone," which meant that people could use it. But Mayor Brasil allowed the sale of this land to the governor, despite the hardship that would cause for many people. Because of this transaction, many people said that the mayor was immoral, because he knowingly conducted business that would hurt his constituents, and, furthermore, profited from it. Other people from Itupiranga said that Mayor Brasil tried to keep out the "invaders" from the municipal lands, or "*terra da união*," and, thus, tried to help local people. Whatever decisions the mayor made that affected local people, he was caught in the middle of a

whirlwind of change emanating from much larger political and economic circumstances than were in his jurisdiction, and over which he had little control.

Whatever the story, in the early 1980s the land held by "owners" and the communal municipal lands used for gathering Brazil nuts and other vegetable and game resources became private property owned by individual families. Locals could no longer use those areas for former extractive activities because they would now be trespassing on others' property. Furthermore, many locals stated that the lots were mostly distributed to newcomers, who did not understand the value of the products derived from Brazil nuts. People from Itupiranga consumed Brazil nuts as well as traded them, since they were a good source of protein. The milk people made from crushing the nuts and adding water was used in local cuisine and as a supplement to children's diets. Newcomers, who did not understand the value of local forest resources, were more inclined to sell Brazil nut trees to loggers than were those locals who appreciated the value of the trees left standing. Several locals angrily stated that the lots purposely were not distributed to them because of outsider values, including prejudice against people from Pará, as well as the devaluing of the old land holding system.

It is true that Milesi and other well-intentioned politicians worked to destroy what they saw as an inequitable land tenure system in Brazil. They viewed the

"latifundias das castanhais" as an extremely exploitative land tenure and economic system in which a few individuals controlled vast tracts of land, monopolized the resources within their lands, and controlled the labor and distribution of resources within their realms. Milesi hoped that the new scheme would create a true agrarian reform. He said that he tried to prevent the formation of large ranches during the process of changing land tenure, and succeeded in distributing land to 5,000 families. As a result, he stated that 60 percent of the land in the municipality was in the hands of small producers because of his support for local land invasions during his tenure as mayor from 1984 to 1988.

However, the privatization of those communal lands deprived locals from a multitude of formerly free resources, including Brazil nuts. Furthermore, many new landowners sold their Brazil nut trees to loggers throughout the 1980s as mahogany became scarce and other types of wood became valuable. Moreover, enormous disparities in land holdholdings persisted, despite the rhetoric of politicians who promised that the new system would be more equitable. Many people were landless in late 1989. In 1990 only 33.3 percent of households in town owned land. Most of these households owned only small farm lots. On the other hand, a few ranchers owned vast areas of land within the municipality. Thus, the privatization of land did not create a more equitable system of land tenure. If anything, the new system deprived people of a livelihood who did not

have land. Whereas anybody could obtain permission to plant a garden in the past, or freely hunt or gather forest products within community rules under the old tenure system, now non-landowners did not have access to land for these activities, and landowners could only perform these activities on their own land. If, for example, a landowner did not have Brazil nut trees, he or she could not obtain the nuts unless a family relation or friend had some and was willing to give or trade them. People traded the Brazil nuts they gathered on their own land to traders or kept them for consumption. But it was no longer lucrative for the locals, who did not have access to their former *castanhal* to gather Brazil nuts.

The Tucuruí Dam was also responsible for the decline in Brazil nut production. The reservoir itself destroyed thousands of trees, especially in the Jacundá area. Furthermore, the dam prevented large boats from transporting the nuts from Marabá and Itupiranga to Belém. They now had to be transported by truck on the highway, which was much more expensive. The expense of transporting the Brazil nuts by truck and the fact that informants said that the prices for Brazil nuts declined also discouraged participation in the trade. Many people simply kept their Brazil nuts for consumption rather than sell them to traders.

People also cited burning as a reason for the decrease in Brazil nut production. When people burned their lots for agriculture, or for pasture, the heat from the fires got

close to the trees and killed them. Scientists have found this to be true, also. Furthermore, forest clearance disturbed the bee that pollinated the tree, which affected fruit production. The large numbers of lot owners coupled with changing agricultural practices led to extensive clearing and burning on 100- or 50-hectare lots in an area, which formerly had been used only for hunting and gathering Brazil nuts, and not for gardening. Several informants stated that the four leagues of municipal lands once produced 6,000 hectoliters of Brazil nuts per year, and that the *loteamento* (division of land into private lots) and burning for agriculture reduced the production, drastically.

Furthermore, many trees fell under the saw. Many new landowners may not have had the time, interest, or connections within the former *aviamento* system to gather Brazil nuts from their own lands for sale. When loggers approached these new landowners, and offered minuscule amounts per Brazil nut tree, the landowners sold their trees, often without a choice in the selection of which trees would be harvested. They were paid for a set number of trees, and the loggers would choose the trees they wanted, often overriding any protestations by the landowners if there was a disagreement. The money people received for the trees was not nearly what each tree was worth. The sawmills made huge profits from the transaction. They often bought a tree for Cz\$200 and sold one cubic meter of lumber for Cz\$ 1.800.000 (Debate Ecológico na "Semana da Castanha,"

Nov. 20, 1986; in 1986, US\$1 = CNz\$ 0.015, United Nations Bulletin of Statistics, May 1990). Normally, one and one-half to two trees are needed to make one cubic meter of lumber, depending upon the size of the tree. Thus, the sawmills were earning Cz\$1.799.600 from the sale of two trees. Furthermore, one tree could produce 300 hectoliters of Brazil nuts in one year, enough to earn, at the minimum, what the landowner received from a logger, which was often only 50, 100, or 200 cruzados in the early 1980s (Debate Ecológico na "Semana da Castanha," Nov. 20, 1986). However, the colonists may not have known the value of the Brazil nut trees, especially during their first year or so in the region. Furthermore, they often needed money immediately in order to start up their gardens, or if they had a family member who needed medical attention. As a result, many of the Brazil nut trees that grew in thick stands across the river from Itupiranga were logged out.

The production of Brazil nuts declined markedly during the 1980s in Itupiranga as well as the Marabá Microregion (see Tables 3-1 and 3-2; Figure 3-1 and Figure 3-2) as timber production increased (see Table 3-3 and Table 3-4). Using 1980 as a base because that year began the decade of dramatic changes for the area, Brazil nut production decreased by almost 68 percent in Itupiranga and by 62 percent in the Marabá Microregion, which includes the municipalities of Marabá, Itupiranga, São João do Araguaia, Jacundá, and Tucuruí. During the same period, lumber

production increased steadily in the Marabá Microregion (Table 3-4; Figure 3-4) while fluctuating somewhat in Itupiranga (Table 3-3; Figure 3-3). As can be seen in Table 3-3, timber production was only 1,725 cubic meters in 1975, but rose to 30,000 cubic meters by 1979 and remained at that level or higher during the 1980s in Itupiranga (see also Table 3-4 for data from the Marabá Microregion). Figures 3-3 and 3-4 illustrate the relationship between Brazil nut production and increased production of timber in Itupiranga and Marabá Microregion.

These figures mirrored ethnographic information and that from other sources. Numerous informants told me that throughout the 1980s many landowners sold Brazil nut trees to sawmill owners from Itupiranga and Marabá, even though harvesting the tree was prohibited by IBAMA, the national environmental protection agency in Brazil. In 1986, an official of IBDF (the previous forestry agency in Brazil before IBAMA was designated in 1988) told me that numerous truckloads carrying felled Brazil nut trees were transported out of Marabá on a daily basis. One source stated that almost 3,000 Brazil nut trees were cut down per year (Desmatamento Desordenado no Sul do Estado, Nov. 8, 1986).

The development of the region, which including ranching, logging and colonization, that began in the 1960s and accelerated during the 1980s, was the major reason given for the destruction. The microregion experienced a population increase of 93.31 percent between 1960 and 1970,

and 257.86 percent between 1970 and 1980 (Em Oito Anos a Decadência dos Castanhais, April 5, 1988). Between 1960 and 1980, the area cleared for agriculture and pasture rose from 16,400 hectares to 52,500 hectares in Marabá, and cattle from 64,000 heads to 367,000 heads (Em Oito Anos a Decadência dos Castanhais, April 5, 1988). In 1987, IBDF declared that 42 percent of the native forests had been deforested, principally for pasture, and by loggers. In 1980, the Brazil nut was the second highest export product from the state of Pará, with lumber the first. According to two researchers, Choji Kitamura and Carlos Hans Muller, Brazil nut production in Pará was 22,611 tons, almost 56 percent of that produced nationally (Em Oito Anos a Decadência dos Castanhais, April 5, 1988). Between 1978 and 1982, Brazil nut production fell by 53 percent, and productivity per hectare fell from 47 hectoliters in 1978 to 23 hectoliters in 1983 (Em Oito Anos a Decadência dos Castanhais, April 5, 1988). By 1989, Brazil nut production in Pará had practically disappeared relative to its former heights. Now 80 percent of the Brazil nuts that were prepared for sale in Belém came from the state of Acre (Já Está Vindo do Acre 80% da Castanha, March 19, 1989).

Indeed there was still some Brazil nut production in the municipality during the 1989-90 season. During the December 1989 through April 1990 season some people were employed to gather Brazil nuts for people from Itupiranga who owned land with enough Brazil nut trees to make the

activity worthwhile. Itupiranga town had one remaining *aviador* who bought Brazil nuts from people, mostly land owners. He had a warehouse full of Brazil nuts. Periodically in February, March and April, trucks from his "*patrão*" in Marabá would come and be filled, leaving with a load of Brazil nuts. In June, several boats docked for a day or two at the wharf, filled with Brazil nuts. A friend and I tried to buy some from the trader, who was draped with gold jewelry, but he refused, stating that he would get into trouble with his "*patrão*" if he sold us any. In another case, a *castanhal* owner living in Itupiranga town hired four to six people to gather Brazil nuts for him. In the past, he said he usually hired 12 to 15 people, and, until 1986, would gather approximately 150 hectoliters of Brazil nuts. But he had to sell part of his land to ELETRONORTE for the company's resettlement program, and planted pasture in another section. Since 1986, his remaining 755 hectares of land only produced 70 hectoliters per season. Despite the continuing trade in Brazil nuts, one could no longer see boat load after boat load of Brazil nuts pass in front of Itupiranga in April and May as in the past. In May of 1990, only a few boats and trucks left Itupiranga loaded with Brazil nuts.

The decline of Brazil nut production in the Marabá microregion was a concern to many groups, including the Mutran family who controlled vast *castanhais* in the region, the Association of Brazil nut Exporters (*Associação dos*

Exploradores de Castanha), the Commission of the Polygon of Brazil nuts (*Comissão do Polígono dos Castanhais*), the Society for the Preservation of Natural Resources (*Sociedade de Preservação dos Recursos Naturais e Humanos da Amazônia*) in Belém, and of two local ecology groups, GEMA (*Grupo Ecológico de Marabá*) and GEI (*Grupo Ecológico de Itupiranga*). Throughout the 1980s, the first three groups sought to defend the economic and territorial interests of large *castanhal* landholders from those interests--politicians, INCRA, and land squatters--who were trying to break up the *castanhais* for colonization. They met unceasingly with INCRA, GETAT and IDBF to try to maintain their land holdings, and resolve the problem of people invading their extensive landholdings of Brazil nut trees. The latter three were environmental movements that were born during the late 1980s. They focused on preservation of the rainforest and its resources.

Public awareness of the conflict increased in the late 1980s, as these groups sought to publicize and gain support for their program to preserve the Brazil nut industry from international and national groups who became interested in Amazonian environmental problems. In 1987, Marabá declared a Week of the Brazil nut, during which many activities occurred to educate the public about the history and importance of Brazil nuts. However, the insecure nature of land ownership encouraged even those families and individuals involved in Brazil nut production, to "improve"

their land by clearing, burning and putting in pasture in order to retain their land holdings and gain title (cf. Binswanger 1989). As a result, extensive areas rich in Brazil nut trees became pasture. Because of the prohibition against felling Brazil nut trees, landowners were careful to burn around them so that they were left standing in cow pastures. The majestic trees dotted the landscape and could be seen for miles, since they usually stood alone surrounded by acres of pasture. But they died slowly because of the burning, and fruit production declined because they were too far from forested areas to be pollinated.

Fishing

Another activity that changed, especially during the 1980s, was fishing. As late as the early 1980s, fishing was rarely considered a primary occupation such that a person called oneself a "pescador" (fishermen). Most of the men fished at times, especially for *pirarucu* (*Arapaima gigas*), a large fish that could measure up to 2 meters long and weigh more than 100 kilos. Some people did sell the fish they caught on the streets, but there was no marketplace for the sale of fish. But by the mid-1980s, numerous fishermen were fishing on the reservoir, and conflicts over fishing began to appear.

The development of commercial fishing was affected by the land tenure changes, migration into Itupiranga, and forest clearance from ranching and agriculture, all of which affected hunting as well. Cattle ranching brought more beef

into the area, and the economic changes which encouraged the growth of a money economy made it possible for some groups of people to buy beef. However, beef was too expensive for most people to buy every day, or even at all. With the decline in game, fish became an important source of protein for many people in Itupiranga.

However, the principal reason for the development of commercial fishing in the area as well as in town, was the new reservoir created by the Tucuruí Hydroelectric Dam. The dam created the conditions for certain species of fish, ideal for commercial consumption, to multiply. The abundance of fish attracted fishermen to the region and provided employment for people who lost their former occupations because of the changes. For example, many people who farmed on the floodplains (*várzea*) next to the river, and lost part or all of their lots (*vazantes*) because of the reservoir, took up fishing as their primary occupation.

The development of commercial fishing, the conflicts over fishing rights, and the potential decline of the resource because of overfishing created the conditions necessary to regulate the fishing profession. In the mid-1980s, the *Federação dos Pescadores* (Federation of Fishermen) in Belém, an organization designed to protect fishermen's rights and regulate fishing under the policy and regulations created and enforced by IBAMA, installed *Colônias dos Pescadores* (Fishermen's Colonies) at all of the

main points of sale of fish along the reservoir--Marabá, Itupiranga, Jacundá (community next to the lake) and Tucuruí.

In late 1986, after many meetings between fishermen, the mayor and representatives of the *Federação*, a *Colônia* was installed in Itupiranga. Fishermen were required to become members of the organization, where they could address any grievances, obtain credit for buying equipment, and have rights to medical benefits for themselves and their families, and be paid during three months of the rainy season when commercial fishing was prohibited during spawning. The obligations and benefits of the *Colônia* as well as a full examination of the fishing profession will be discussed in Chapter 6. However, the overall trend was increasing regulation in the activity of fishing, which, for several reasons, began to push poorer fishermen out of the profession or into fishing for others on larger boats. First, as prices rose, they could not afford the license and necessary equipment to fish, including ice, to keep the fish fresh until the sale. These small-scale fishermen could not compete with others who had better technology to get to the best fishing places faster, catch more fish and store them long enough to sell them. Furthermore, they could not make a living during the months when fishing was prohibited, since the *Colônia* did not bring in enough money to pay people a salary. These social factors were coupled with a decline in fish between 1987 and 1990, as revealed by

production figures of the *Colonia dos Pescadores*, which will be discussed in Chapter 6.

Conclusion

The Brazilian State played a major role in the appropriation of land in the Amazon via legal and policy channels (Foweraker 1981). Despite its periodic enactments of legislation designed to benefit smaller, less powerful groups, in the long run, the state ultimately maintained an environment that has assisted more powerful groups in a process of primitive accumulation.

Because of this process in the region of southern Pará, profound and irreversible changes occurred in Itupiranga between 1970 and 1990. The policies set forth by the Brazilian government attracted new groups of people to the region, with different capabilities for and ideas about exploiting the natural resources in the Amazon. The Transamazon Highway cut a swath through the formerly impenetrable and sparsely populated tropical forest, and opened its resources to the many who flocked there in search of the promised land. The newcomers, intent upon reaping a livelihood by small-scale agriculture, or a profit by ranching and logging, or a fortune by mining, altered the local Amazonian ecological and social landscapes in significant ways.

First, their very numbers increased the population, which put pressure on existing resources such as game. Secondly, their economic activities required that vast areas

of tropical forest be burned for cattle pasture and more extensive agriculture. Furthermore, they fought over land, because it had become valuable in and of itself under the new regime of private property instated by federal government with the Transamazon Colonization Project. During these battles, the small-farmer colonists often lost out to the more powerful ranchers and colonists, and became landless. These struggles created an atmosphere of lawlessness and a reality of violence that continued, especially for the poor, and which will be discussed later. Other factors, including disease, lack of transportation, problems with credit, lack of knowledge about farming in a tropical environment, and inadequate infrastructure also contributed to the demise of many colonists, who abandoned and/or sold their land and then flocked to urban areas.

One social outcome was an increasing economic disparity between economic groups in traditional towns like Itupiranga, where there had not been a significant gap in the past. The money that residents of Itupiranga earned in gold mining at Serra Pelada in 1980 and 1981 further exacerbated the increasing tensions that people had about their recently wealthier neighbors. Although traditional leveling mechanisms seemed to operate to even out the influx of wealth from Serra Pelada in the early 1980s, and thus, the bad feelings between people, as the decade unfolded, other events caused dramatic changes in the environmental

landscape and social relationships between groups in Itupiranga.

The Tucuruí Hydroelectric Dam flooded the Tocantins River and made a great portion of the river basin into a reservoir, covering up the diamond mines and thousands of Brazil nut trees. The loss of diamond mines wiped out an important economic activity for many people living along the Tocantins. Furthermore, Brazil nut production dropped sharply as the regime of private property crept over the state lands in the municipality where the trees grew in thick stands. The thousands of new land owners utilized the land differently than in the past, and many Brazil nut trees were sold to loggers who valued the lumber instead of the fruit. The dam did cause an increase in certain species of fish; especially ones desirable for commercial fishing. With the decline of other activities and lack of accessible land for farming, many people turned to fishing as a profession.

Some people worried about the future when the resources, such as hardwoods, that were being utilized would decline. And although people deeply resented the loggers, for example, for taking what they considered to be their resources without paying local taxes, and polluting the streams and air in the process, they had become accustomed to the commerce these wealthier newcomers attracted. Although in the past locals were subject to the whims of the marketplace for some of their economic activities--Brazil

nuts, diamonds and animal pelts--they had multiple other options for making a living during normal and lean times, including hunting, fishing, gardening, and extracting other fruits and nuts for consumption. However, because of the changing land tenure regime and denuding of several important natural resources during the past 20 years, the variety of subsistence options became more constricted, and will continue to be so if current primary economic activities fail and new viable ones are not found.

Table 3-1
Brazil Nut Production in Itupiranga, Pará, 1975-1989

<u>Date</u>	<u>Quantity</u> (ton)	<u>Value</u> (Cr\$ 1.000)	<u>% Decline, Quantity</u> Base 1980
1975	1.325	3.180	
1976	1.648	3.296	
1977	1.950	9.750	
1978	2.219	15.533	
1979	2.485	24.853	
1980	2.237	33.551	100.00
1981	1.700	60.000	24.00
1982	1.200	120.000	46.35
1983	799	116.669	64.28
1984	665	266.000	70.27
1985	465	511.500	79.21
1986	847	1.948	62.13
1987	720	5.040	67.80
1988	440	22.000	80.00
1989	310	310	86.00

Source: IBGE

Table 3-2
Brazil Nut Production in Marabá Microregion, Pará, 1973-1989

Date	Quantity (ton)	Value (Cr\$ 1.000)	% Decline, Quantity (Base 1980)
1973	22.191	25.441	
1974	5.588	13.095	
1975	7.887	18.659	
1976	12.148	24.040	
1977	14.428	70.940	
1978	15.338	112.364	
1979	17.422	189.218	
1980	15.022	222.325	100.00
1981	-----	-----	-----
1982	8.670	861.500	42.29
1983	5.962	872.776	60.32
1984	4.980	2.012.000	66.85
1985	3.845	4.554.500	74.41
1986	6.510	15.433	56.66
1987	5.695	40.329	62.09
1988	3.844	180.920	74.41
1989	2.793	3.465	81.40

Source: IBGE

Table 3-3

Timber, Lumber and Charcoal Production in Itupiranga, 1975-1989

Date	Charcoal		Lumber		Timber	
	Quantity (ton)	Value (Cr\$1000)	Quantity (M ³)	Value (Cr\$1000)	Quantity (M ³)	Value (Cr\$1000)
1975	14.500 kg	7.250	14.235	213.525	1.725	517.500
1976	15.000 kg	7.500	18.000	288.000	2.830	1.018.000
1977	15.300 kg	9.180	18.500	592.000	3.050	1.220.000
1978	16	11	17.150	600	4.500	2.475
1979	17	33	18.300	1.098	30.000	36.000
1980	15	75	15.800	1.580	35.000	56.000
1981	15	150	13.000	2.600	45.000	157.500
1982	17	340	15.000	6.000	60.000	330.000
1983	19	760	18.000	15.300	64.500	548.250
1984	20	1.600	19.000	47.500	45.000	1.350.000
1985	20	5.000	15.000	150	30.000	3.000
1986	20	16	15.000	450	40.000	12.000
1987	22	44	12.000	960	45.000	40.500
1988	30	300	15.000	44.250	56.000	1.652.000
1989	40	6	12.000	720	70.000	42.700

Source: IBGE

Table 3-4
 Production of Timber, Lumber and Charcoal in Marabá Microregion,
 1973-1989

<u>Date</u>	<u>Charcoal</u>		<u>Lumber</u>		<u>Timber</u>	
	<u>Quantity</u> (ton)	<u>Value</u> (Cr\$1000)	<u>Quantity</u> (M ³)	<u>Value</u> (Cr\$1000)	<u>Quantity</u> (M ³)	<u>Value</u> (Cr\$1000)
1973	82	50	89.350	475	17.070	1.053
1974	74	52	80.850	856	34.000	2.250
1975	84	92	79.435	1.075	55.925	3.778
1976	87	101	96.500	1.339	50.710	5.456
1977	87	112	110.800	2.470	76.150	9.160
1978	100	208	110.150	2.788	91.050	17.178
1979	113	323	133.200	6.792	175.100	123.720
1980	132	1.062	249.800	28.380	209.200	204.720
1981	123	1.365	233.000	35.400	375.000	812.500
1982	144	3.280	247.000	114.800	455.000	2.082.500
1983	147	6.405	297.200	206.620	584.500	4.584.250
1984	174	25.320	401.000	492.500	378.000	9.340.000
1985	235	96.250	591.000	2.410.000	440.000	34.080
1986	277	342	720.000	7.225	607.000	240.150
1987	2.556	9.921	562.066	115.925	1.255.083	4.819.874
1988	4.077	48.460	633.007	650.054	1.116.067	15.702.570
1989	16.503	2.959	627.281	7.921	1.265.831	478.754

Source: IBGE

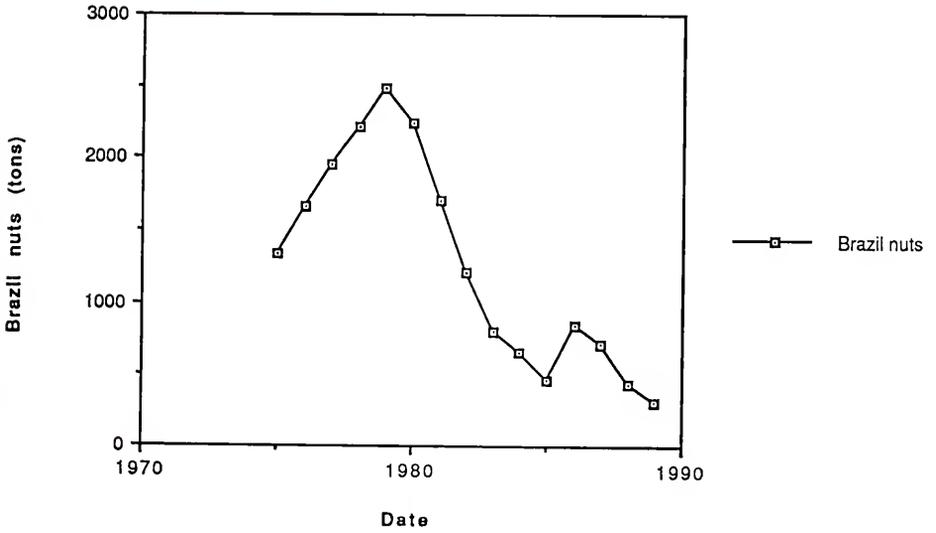


Figure 3-1. Brazil Nut Production in Itupiranga, 1975-1989.

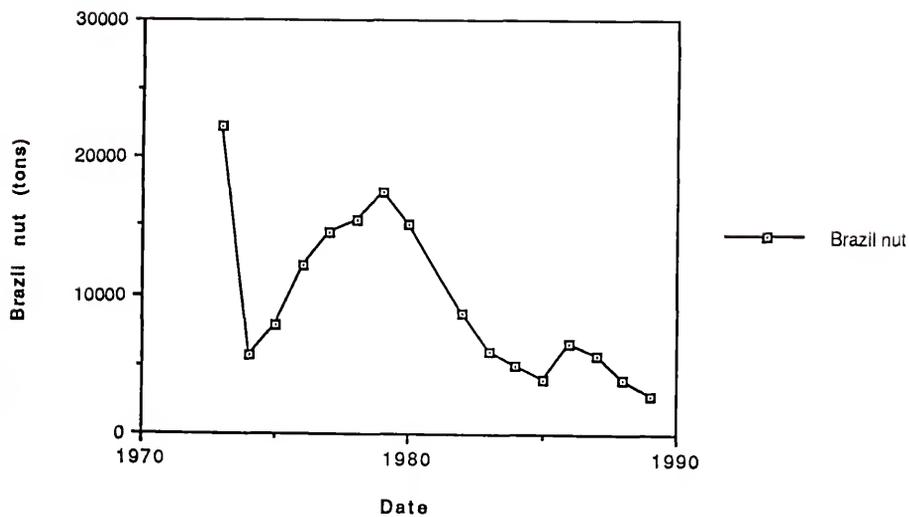


Figure 3-2. Brazil Nut Production in Marabá Microregion, 1973-1989.

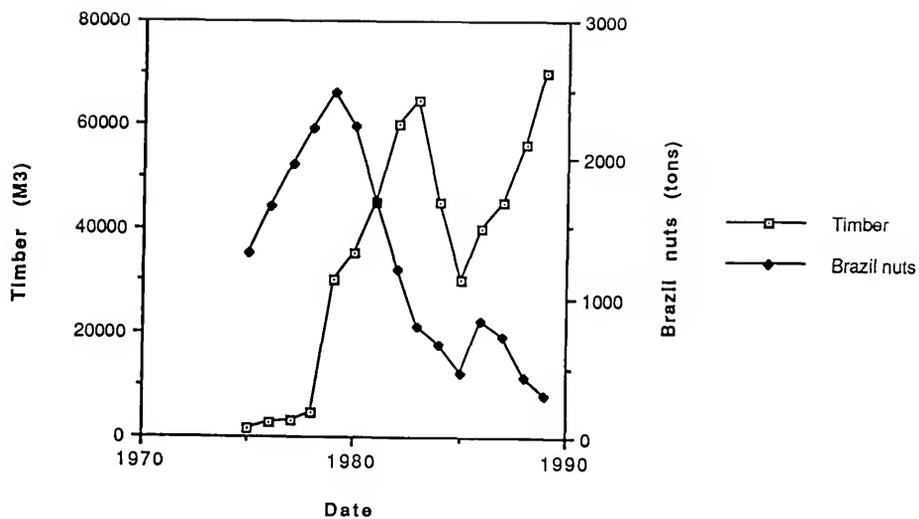


Figure 3-3. Brazil Nut and Timber Production in Itupiranga, 1975-1989.

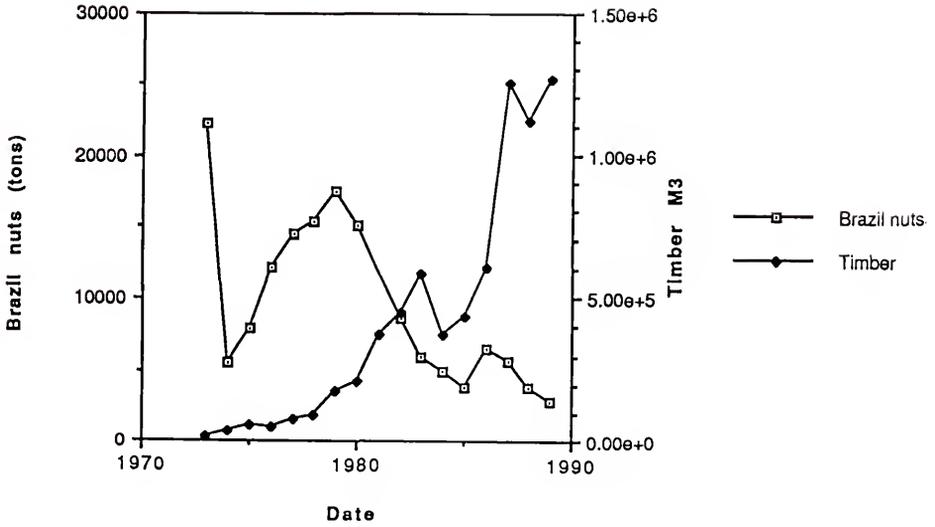


Figure 3-4. Brazil Nut and Timber Production in Marabá Microregion, 1973-1989.

CHAPTER 4
IMPACTS OF DEVELOPMENT ON SOCIAL GROUPS

Introduction

This chapter will trace the impacts of the highway, the dam and other events on the traditional riverside groups as well as newcomers. I will explore in greater detail the differential effects of the changing social and physical landscape upon various social groups in Itupiranga. This development process does not affect everyone in a community in the same way. Members of the former social groups and newcomers were differentially affected by the development process because of their historical and contemporary positions in the production and distribution processes.

Historically, most people in Itupiranga were the direct producers of forest products. These lower class citizens supplied primary forest products--rubber, Brazil nuts, diamonds and palmnuts--to the "local upper class" (see Wagley and Harris 1955; Wagley 1964) *aviadores* and *seringalistas*, and, in exchange, bought necessary products including some food items, not grown on their agricultural plots. Although the direct producers were subordinate to the local upper class who controlled access to these forest products, the lower class direct producers had access to

land, and were thus able to obtain a large portion of their living by their own means.

The local upper class controlled access to the natural resource areas, transportation and trade of the extracted produce. In turn, this local upper class was a subordinate link in the chain of *aviamento* credit relations to more powerful patrons who lived elsewhere. From Chaves' account, it is unclear whether the individuals who actually controlled the nearby rubber and Brazil nut trails lived in Itupiranga or somewhere else, but certainly local representatives--traders--of those owners organized the local production and exchange of these resources. There were several local upper-class families living in Itupiranga, whether traders or these land-controlling individuals. Thus, Itupiranga was historically a two-class society: one social class controlled the distribution of the extracted resources, staple food supplies, transportation and storage facilities. Since the community had access to a vast area of Brazil nut trees across the river, in which resource extraction was designated by community sanction, these local traders only had control over producers at the level of exchange. There were several patrons, who probably lived in Marabá or Baião, who controlled tracts of land containing Brazil nut trees. These patrons had more control over their clients in terms of access to resources at specific times in the season and also with the exchange aspect of the transaction since the

direct producers who gathered Brazil nuts on those lands had to sell to that particular patron. The other local social class consisted of direct producers who extracted raw forest products for these traditional local elites.

I shall refer to both the traditional elites and direct producers as traditional riverside dwellers to distinguish them from the new groups which moved into Itupiranga during the 1970s and 1980s. All of the people who gathered rubber, Brazil nuts, and practiced subsistence agriculture, hunting and fishing will be referred to as direct producers. The traders and individuals who controlled access to extractable profitable resources, i.e., had dominion over commercial production and distribution activities, are included in the traditional upper-class.

By the mid-1980s there were many different social groups in Itupiranga. In fact, one could say that there were many communities within the town of Itupiranga. It was possible for an anthropologist to interact among different circles of people--locals, poorer migrants, sawmill owners, and members of an ecology group--without anyone from the other groups knowing much about it. People within these groups knew intimately the goings on within their own group, like any community, but had an amazing ignorance about each others' affairs. Unless there was big news that affected the whole town, or a dramatic event that entered a larger gossip network, there was a surprising heterogeneity of knowledge among social groups in this frontier town

undergoing a rapid transition. One was left with an impression that the town had a dual quality: of permanence on the one hand, and rapid change on the other.

We can conceptually divide the social groups using several different criteria. One of the most apparent categories was the insider vs. outsider group. There was a deep division in everyone's mind, both rich and poor, between insiders or outsiders. Furthermore, there were other indicators of the insider/outsider distinction, including perceptions about natural resources and how they should be used, and the actual use of resources. For example, no local person from Itupiranga owned or worked in a sawmill.

Another way of dividing up groups in Itupiranga is by social class, although using an orthodox marxist class analysis in the Amazon is problematic. For one thing there were different economic activities whereby people may have owned, had full or partial or no access to the means of production and the social relations of production may have been based on arrangements other than employer/employee. Secondly, having access to the means of production did not guarantee an adequate living in the Amazon as we shall see in Chapter 5. For example, small-scale farmers may have owned land, but struggled to make ends meet because of lack of water, poor soils, lack of family labor or inability to pay for other labor at critical times, lack of access to roads, transportation problems, lack of credit, illness, and

bad harvests from unpredictable weather conditions. In Chapter 5, we will see that although households may have had access to land, for example, small-scale farmers were not necessarily better off than households in which members had other occupations and did not have access to the means of production, per se.

Another conceptual approach that is helpful is to view the social groups in a Weberian sense, in which we divide the population into upper, middle and lower classes, using standard of living measures that are applicable in the Amazon. The usual measurements include housetype, housing utilities and possessions. It is practically impossible to obtain income figures for most of the population, since as they put it, "the money comes in and goes out [of the household]" and they could not keep track of it. Only people who received a paycheck knew how much money they made in a month, and they were in the minority. However, this method does yield statistical evidence of economic disparity in Itupiranga as we shall see in Chapter 5.

In this chapter, I will use the constructs of upper, middle and lower classes to begin to explore the impacts of the development process--especially the Tucuruí Hydroelectric Dam--upon the people in Itupiranga. There were also differences in how locals and migrants, and owners and non-owners of the means of production responded to the events. I will examine the social relations of production between owners and non-owners of the means of production in

two economic activities--fishing and logging in Chapters 6 and 7. In Chapter 5 I will explore the differences in standard of living between households with different economic activities and access to the means of production. In the final part of this chapter I will also begin a discussion of migrants. In the following chapters I will more carefully explore the impacts of the developments on locals and migrants, and on groups which carried out different economic activities.

Overview of the Changes Beginning in the 1970s

A key factor that is common among traditional riverside dwellers is the focus on extracting natural resources. To survive in this business, most individuals had to perform diverse activities. As mentioned, before the dramatic developments, the direct producers extracted resources from their surrounding environment for sale and family consumption as well as practiced subsistence agriculture, hunted and fished. Locally, there were other avenues for employment, also. Some people operated the motor boats which transported rubber and Brazil nuts to Marabá and Belém. Local individuals of the upper class had storehouses, commercial stores, controlled the boating business (the only means of transportation before the highway), had political and teaching positions with the municipal government, and practiced agriculture. When opportunities to own land along the Transamazon Highway arose in the 1970s, some individuals in both social groups,

if they had the means, took advantage of INCRA's land colonization scheme and bought land. In some cases, the money for the land came from gold mining at Serra Pelada. Most people, however, did not feel the need to buy land since it was so abundant for all of their needs. They continued to operate successfully within the traditional land-tenure system throughout the 1970s. It was not until the 1980s that the areas rich in Brazil nuts on the eastern side of the Tocantins River were designated by INCRA for allocation to newly arriving farmer colonists, ranchers and for those families who were relocated in ELETRONORTE's resettlement scheme. Hence, the production of Brazil nuts remained intact throughout the 1970s, as did diamond mining in the river. Any of these early changes in the local economy did not dramatically affect most of the citizens of Itupiranga during the 1970s.

Three Social Groups

But by the mid 1980s the former economy was in decline, and the social landscape had changed markedly. In 1986 there were three principal groups in Itupiranga. The upper "class" consisted of *fazendeiros* (large land owners who raised cattle), their immediate family members who owned local businesses, and sawmill owners. Since many new people had moved into the municipality, many of these upper-class members were outsiders. The sawmill owners were all from southern Brazil, which greatly added to resentment towards them by locals. Furthermore, the locals perceived these

rich newcomers as taking resources that the locals considered were theirs. On the other hand, the sawmill owners viewed the locals as lazy, and without the gumption or knowhow to exploit their own resources, as these southern people were doing. Thus, the southern sawmill owners saw themselves as doing the locals a favor, by bringing progress to the region, and money to town. Furthermore, they explicitly hired non-local workers to extract and process lumber because the locals would not work for them, or, as the sawmill owners stated, did not know how to work hard enough.

A new middle "class" or strata was emerging even more rapidly than in the 1970s due to the growth of the town and changing opportunities. This middle class consisted of owners of small businesses, school administrators and teachers, and people who worked for the federal, state, and municipal governments. These included people who had lived in Itupiranga all of their lives, and recent arrivals. Some of these people earned their primary living from wages, but were also from families (not necessarily from the same household) where other members made a living by some other means--agriculture or fishing. Thus, households and extended families practiced a mixed economy. Members of the traditional elite moved into one of these two groups depending upon their historical circumstances: the present upper and middle classes.

The lower class consisted of people who still practiced agriculture, either in upland gardens or *vazantes* as a primary occupation. These included people who owned smaller amounts of land than the *fazendeiros* (100 hectares or less), and those who did not own any. Among this lower class, there were degrees of poverty based upon length of residence in the area, number of family members employed, type of employment and access to land. Until the closing of the dam, most former lower-class members still worked in the extraction or transportation activities of Brazil nuts and diamonds. Now that these extractive activities were no longer economically viable, many people worked on their plots or the plots of others, and foraged for fruit and palmnuts in the forest to consume. Due to decreasing hunting opportunities caused by the human population growth and accompanying forest clearance in the area, these people depended more on fish than they did in the past. Their livelihoods were curtailed because of the changes caused by the dam and new land tenure scheme, and also from diminishing resources resulting from the arrival of many new (mostly since 1984) migrants who were waiting to receive land in the Agrarian Reform of 1985.

In addition to the relative impoverishment of some members of the lower class because of the changes wrought by the dam, many recent migrants to the town experienced a lack of means to maintain a living. In 1986 Itupiranga had a class of people living in poverty because these several

thousand migrants had little means of making a living while they waited for GETAT to divide and allocate the land. They were not affected by the dam. However, they may have been attracted to Itupiranga because the town now had electricity and running water.

The traditional direct producers made up a diminishing percent of the population, relative to the influx of many recent migrants. However, the numbers within this former social group were difficult to estimate because the town was growing so rapidly. The impacts of the development process upon traditional locals really began to be felt in the early 1980s when the Tucuruí Hydroelectric Dam and ELETRONORTE's resettlement scheme fundamentally altered access to necessary resources because of flooding and the changing land tenure scheme. However, the developments did not affect the former social groups in the same way. It followed that the resulting strategies they used to protect their interests differed, also.

The Dam's Impact on Longterm Residents of Itupiranga

The five members of the upper class I interviewed in 1986 lost pasture and farm land, *castanhal* (land with concentrated Brazil nut tree stands), and many residential and storage houses on those lands. These traditional elites received very poor compensation for the properties they once had, and were continuing their negotiations with ELETRONORTE for more.

One family lost 87,612 hectares (219,030 acres) of *castanhal* land, at least 325 Brazil nut trees, and three houses in the reservoir in the municipality of Jacundá. Before the dam had flooded the land, their *castanhal* produced three times more Brazil nuts than in 1986, when they last gathered fruit from their remaining few trees. They had definitive title to this land, which was purchased around 1940. There were many people who worked for them gathering Brazil nuts. Those families, who gathered Brazil nuts for this elite family, lived on this land, and supplemented their living by hunting, farming, and fishing. The elite family also had owned cattle for awhile, but sold all of their cows in 1976.

For the losses they would sustain because of the dam, ELETRONORTE promised support and money to move their belongings from Jacundá to Itupiranga, and a house in Itupiranga where they already lived for part of the year. ELETRONORTE took care of the total cost and logistics of moving them and their belongings to Itupiranga. They received money for only 2,500 hectares of land and another small amount for each of the three houses. The money had to be divided between nine siblings, and inflation "ate up everything." They had not received the promised house or money for the rest of their lands. In 1986, they owned and operated a pharmacy attached to their house in Itupiranga. At that time they planned to collect Brazil nuts from their remaining *castanhal* land for three more years to sell to an

exporter in Belém. In addition, they planned to harvest valuable lumber from their land to sell. They did not believe they suffered because of the dam, and said that they would feel satisfied once they received indemnification for the remainder of their land.

In another case, a former-local *fazendeiro* had been very unhappy with the negotiating process and outcome from the beginning. He received Cr\$ 1.171.700 (US\$ 4,637.27) in 1982, for his total properties, which were inundated. These included 500 hectares (1,250 acres) of pasture for cattle, *castanhal*, and agricultural land; six houses (residential and storage), a corral for the cattle; and a chicken coop. In order to even negotiate with ELETRONORTE, he was forced by their officials to sign three or four blank pages of paper which did not included prices. He attended several meetings at the *Prefeitura* (Administration building) in which he denounced the pressure tactics used by ELETRONORTE, and also tried to unite other *fazendeiros* in the region to protest the way they were being treated. However, he was not successful in this venture, because, he stated, the others were somewhat intimidated by ELETRONORTE and preferred to negotiate with them alone so as not to antagonize company officials. He was forced to accept the amount the power company offered, and when he protested, they told him that if he did not accept the price they were offering within 90 days, he would lose his chance for receiving indemnification. The officials told him that the

price they were offering was just, yet they did not give him the 10 *alqueires* (50 hectares; 125 acres) of land near the river that he had requested, and which they were offering the other *desapropriados*. Finally, he was also forced to sell 3,050 hectares of land near Itupiranga that was not flooded, because ELETRONORTE would not allow him to use it. The lawyer to whom he sold this for Cz\$770,00 (US\$56,204 in June 1986--US\$18.43 per hectare) then sold it to ELETRONORTE. The *fazendeiro* no longer had any land, and lost his livelihood. Before the dam, he sold an annual average of 660 hectoliters (66,000 liters) of Brazil nuts, which were collected from December to May. From his summer harvests, he sold an annual average of 5,200 boxes of bananas, 40,000 watermelons, 80 sacks of beans, 500 chickens, 30,000 coconuts and many other types of fruit. He had 188 head of cattle which he used to rotate every three months between several pastures, adding up to 40 hectares (100 acres), upon which he carefully planted *capim* (pasture grass) to feed them. He stated that he made more money selling fruit than cattle. After he lost everything, he stayed with a friend of his who owned a restaurant in Marabá, and "[did] not do anything."

Other elites lost various amounts of land and properties, for which they received either no or minimal indemnification by August 1986, but were not as devastated as the last man. One elite family lost 600 *alqueires* or 3,000 hectares (7500 acres) of land they had recently

purchased with money the husband made mining for gold at nearby Serra Pelada. This land was located in the Gleba Parakanã that was still being disputed between the Parakanã Indians and resettled expropriated families. The family, and at least 228 others, continued to wait for GETAT, FUNAI, and ELETRONORTE to settle the problem. The family told me that the three institutions promised them money, a house and 10 *alqueires* (125 acres) of land as reparation.

Although negatively affected by the dam in several ways, the upper class, as of 1986, continued to make a good living using some old strategies--agriculture and cattle--as well as some new ones. Members of these elite families were branching out into businesses--hotels, restaurants, and pharmacies--as a strategy to maintain their standard of living. One *fazendeiro*, who had bought up land in the 1970s with money he made operating a motorboat, lost little compared with what he had had before. He still owned a large *fazenda* by the river with cattle and agricultural land. He had extended his holdings by 1990 so much that he was resented by many traditional families who considered that he had "stolen" community property and was no better than the wealthy outsiders.

Although these elites lost land, and houses and fruit orchards, they had enough to fall back on to continue to make a decent living. They were able to branch out into other productive activities as the face of Itupiranga changed. The transition from an old way of life to a new

one was not as difficult for them as for poorer groups in Itupiranga, because they still owned large tracts of prime land, had the means to produce off of the land, and family members were entering into newer and rewarding occupations.

Middle Class

Some of the other life-long residents of Itupiranga did not receive any indemnification because they did not lose any properties. In the meetings with ELETRONORTE before the reservoir was flooded, they were promised indemnification if Itupiranga was going to be flooded. But since the town was not inundated, they did not require reparation payments.

Many of these residents had jobs with the local government or school system, or had become merchants. Some households within the extended families may still have owned land, but, as mentioned before, many other households no longer owned land. Thus, they depended upon their businesses, or wages, or other family members for a living. Often the income from these various occupations was shared between extended family members from different households. Some of these middle class households were better off than most of the residents in Itupiranga, although they were not as wealthy as the elite upper class. As we shall see in Chapter 5, these households whose members had qualified urban jobs were better off than the rest of the community. They lived mainly along the riverfront, main street and the two streets parallel to the main one, in other words, in the

center of town. Many of their children who completed secondary school had aspirations to attend college.

Many of these middle class families, who were kin of the original families of Itupiranga, had not been negatively affected by the dam, and in fact, stated that they had benefited from both the dam and the general growth of the town since the mid-1970s (see Miller 1983 and 1985, for differential impacts on another Amazonian town resulting from the Transamazon Highway). One woman who had lived in Itupiranga most of her life until the early 1970s when she relocated to Marabá, recently moved back to start up a small hotel. She stated that the increasing traffic through Itupiranga enticed her to relocate her business back to the small riverside community. Her children helped with the labor, and she also hired a woman to work seven days a week for wages. Sometimes, for large luncheon gatherings, she hired other extended family members to come in to cook and serve. During the summer in 1986 she had three additional bedrooms and three bathrooms constructed to keep up with what she perceived was an increasing number of people who passed through looking for rooms. Because she was aware of the growing importance of Itupiranga, she was putting a part of her profits back into her hotel, even though business was run on scarce and fluctuating capital. Her business had improved because of the passing through of many people who had negotiations in the area: people from southern Brazil who were buying lumber, scientists from ELETRONORTE who

monitored the water in the reservoir on a regular basis, employees from PortoBras and Beter, Brazilian companies, who were building a canal in the river.

Lower Class

Many individuals among the lower-class residents of Itupiranga lost access to some traditional activities. Several *garimpeiros* (miners) told me that they lost their livelihood because the 72 local *garimpos* (in this case, areas in the river that were abundant in diamonds) between Itupiranga and Tucuruí were now in the reservoir. Any diamonds they found contemporarily, were very small, and the remaining *garimpos* along the edges were "very weak." The *garimpeiros* I talked to had been working at Serra Pelada, a gold mine nearby in the municipality of Marabá. They had become dissatisfied working there, however, due to problems at the mine. The *garimpeiros* I talked to did not own land, and so were not included in the indemnification process. They had to continue to make a living in places further away to stay in mining, or would have to go into some other occupation to continue to live in town.

Other families from Itupiranga who managed to maintain ties with the land continued to depend upon agriculture, fishing, gathering, and hunting. Many families lost all or a part of their *vazantes* in the reservoir. These families were promised new lots, houses in Itupiranga as well as on their lots, and money for the first planting. One *vazanteiro*, (person who owned or worked primarily on the

fertile floodplain along the river) who lost one-half of his one-*alqueire vazante*, stated that life was more difficult now because he did not earn from fishing what he formerly earned in the past from selling produce from his *vazante*. Due to drastic increases in inflation, the money he made from selling fish in 1986 did not buy as much as before. Before the dam, he had only fished and gathered shellfish for family consumption, but after the dam he had to fish for the market in addition to working on his *vazante*. He said that he could not plant as many types of fruit and vegetables as he did in the past, because his plot was smaller since the reservoir had covered some up. His wife supplemented the household income by sewing clothes, an activity she did only for family consumption in the past. They were promised 10 *alqueires* of *terra firme* (upland forest) land from ELETRONORTE, but had not received it by August 1986.

In the Tocantins River Basin as a whole, at least six villages were relocated away from the reservoir, and it was these people who suffered the most. They were torn away from their traditional riverine lifestyle, and lost many resources and socioeconomic arrangements upon which they had depended for a livelihood. The Tucuruí Hydroelectric Dam and other developments had a devastating impact upon the traditional lifeways of a majority of people who lived in the area that was inundated by the reservoir. The changes wrought by Tucuruí, the inadequate resettlement process,

plus the impact of land tenure changes and other government policies, placed enormous constraints upon their abilities to make a sufficient living in the post-dam era (Biery-Hamilton 1987). Furthermore, they had to radically alter their economic strategies. Two cases illustrate these events (see Biery-Hamilton 1987, for a more complete description). The first, concerns the members of the vila Santa Tereza do Tauiry, which was relocated on the edge of the town of Itupiranga. The original village was located approximately 15 kilometers downriver from the town of Itupiranga, but was within the municipality of Itupiranga. The second case describes the plight of some former residents from the municipality of Jacundá who elected to relocate to Itupiranga, rather than to the new town of Nova Jacundá along highway PA-150, 60 kilometers from the reservoir. Although many of the Tauiry families have received a part of the indemnification promised by ELETRONORTE, their whole way of life was upset by the relocation, and by the loss of former economic activities, which included extraction of natural resources, hunting, and horticultural production. Many other families, especially those from Jacundá, had received no indemnification at all.

Lower Class Continued: The Case of Santa Teresa do Tauiry

The vila of Tauiry existed for a long time, although not as long as Itupiranga. I was told that until the early to mid-1980s, everyone in Tauiry was related by family ties. The vila had 260 hectares of land, which they worked in

common. A few families owned lots, but most people had access to land under the land "use rights" tenure system. The land used by all of the Tauiry families included abundant *vazantes* and upland agricultural plots. They worked together clearing, planting, weeding and harvesting in turn on each family's garden. Since these lots were not owned, however, people freely helped each other in the agricultural work. People could also trespass over the entire area to hunt and gather products from the unused forest.

The people described their life in the past, before they were relocated and then inundated by the water, as very good. They had everything, many people told me. The women would spend many hot afternoons breaking palmnuts in the shaded backyards and making oil produced from cooking the babassu palmtree (*Orbignya phalerata*). Their backyards provided them with a wide variety of fruits and other consumable plants, and also medicinal herbs. Game was plentiful nearby, and the men hunted many types of animals in the forest. The availability of game decreased in the mid-1970s after the Transamazon Highway was constructed and many new people began to enter the region. Hunting became difficult, one informant explained, because animals were overhunted or had left for other places. A lucky hunter would share the meat with his family and close friends, creating obligations to receive meat in return some other day when he was not so lucky. Until the mid-1980s, people

from Tauiry could still hunt successfully on Praia Alta, a nearby island, where they also gathered Brazil nuts during the rainy season for consumption and to sell to their patron, who lived in Tauiry, and to other patrons from Marabá.

During the dry season or summer months, they mined for diamonds in the river to sell for money. The Tocantins River, at least in the Tucuruí Reservoir area, did not have much gold, but had many diamonds and quartz crystals. In the past, Tauiry was an active trading center for diamonds and quartz because it was nearby neighboring Ipixuna, which was rich in diamonds.

The reservoir took away two important means of making a living for the people of Tauiry: the diamond mines in the river and the *vazante* floodplains near their old vila. Hence, their agricultural base was narrowed. Furthermore, the changes in land tenure from the resettlement program and new agrarian policy, plus selective forest clearance diminished opportunities for hunting, and gathering Brazil nuts and other forest resources. The relocation of those who received a house in the new vila of Tauiry increased the distance to their lots. The incomplete indemnification made it impossible for many people to farm because of the lack of infrastructure. Those who did farm, found it difficult to transport their produce because of the lack of roads. Many people described their lives as "*triste*" (sad), whereas the original vila, in the past was "*animada*" (animated). They

referred to themselves as "pobre" (poor). Whereas they had everything they needed before the dispossession, they stated that now they had very little.

The Case of Former Jacundá Residents Who Moved to Itupiranga

The residents of Jacundá had the same lifestyle in the past as those from Tauriry, but were even worse off because the former Jacundá residents who elected to come to Itupiranga had not received any indemnification from ELETRONORTE, including land. Furthermore, many did not have ties to kin or vertical relationships with someone who could carry them through the lean times. These people did not want to live in Nova Jacundá, because the new town, built by ELETRONORTE, was 60 kilometers from the lake, and was extremely dry during the summer. They chose to come to Itupiranga, because Itupiranga is by the river, and represented a lifestyle to which they were accustomed. Everyone said that they were accustomed to living "à beira do rio" (beside the river), and wanted to continue to do so because their livelihoods depended upon the river.

Five out of the ten families interviewed in 1986 came directly to Itupiranga, some because they did not receive houses or land in Jacundá. Others came after living in Nova Jacundá for awhile, and decided to move to the only remaining riverside settlement north of Marabá, and which represented a familiar lifestyle. Many of these people expressed an interest in moving back to the lake near their old homes in Jacundá but could not because they could not

afford to relocate again. Since none of the Jacundá families had received a house or rural lot in Itupiranga, there was nothing to entice them to stay. However, many had built their own homes on town lots given to them by the local mayor, and several families stated that they intended to remain in Itupiranga.

However, some former *expropriados* had moved back to the lake margins in Jacundá. Furthermore, many recent migrants were moving to the lake as well, a trend that ELETRONORTE feared because forest clearing would cause erosion problems and silt buildup in the reservoir. A major reason why one family made the decision to move back to an island near their original home in Jacundá was that they were unable to make a decent living in Itupiranga. They hoped that they could use the economic activities they used formerly if they moved back to the lake in Jacundá. They also did not wish to live on the "raia" (high dry place), or Nova Jacundá, and told me that ELETRONORTE had promised them land and a house beside the river in Itupiranga. The husband and wife had been living in Itupiranga since 1984, while their two sons stayed in Marabá where they worked.

They had lived near their garden, next to the river, in the municipality of Jacundá for 22 years. They had 100 hectares (roughly 250 acres) of land, and rotated between three houses. The family consisted of a husband, wife and their two sons. They told me that they had had everything they needed on this land. They planted rice, manioc, beans,

corn and coffee. Also, they raised chickens and pigs for consumption, and obtained additional meat by hunting in the surrounding forest. At times, they also fished from the river, however, they ate fish less frequently in the past than at present because of their preference for game. Near their houses they had fruit trees of every description, and, thus, had access to fruit all year around.

During the winter months, they gathered Brazil nuts for consumption and sale. The family used Brazil nut money and the money the wife made teaching in the local school to buy items such as shoes, kerosene, salt, sugar and tools. In the past they had sold Brazil nuts to whomever would buy, but three years before they had to leave their land, they started selling to a patron who lived in Itupiranga.

The family prepared for the dispossession of their land by gathering and selling as many Brazil nuts as they could. All of the people who worked for this same patron also used this strategy during the year before they were forced to move.

The husband went to Tucuruí in 1980, as a guest of ELETRONORTE so they could negotiate his indemnification for his land and houses. He told me that the officials from ELETRONORTE made him sign eight pages of blank paper. The family was forced to move from their land in 1982, because they were not allowed to plant. The power company also promised to pay for their transportation to Itupiranga, and for the preparation of the first new garden. As of August

1986, the family had not received any of this indemnification.

They moved to Marabá with some of the money they had made selling Brazil nuts, and rented a house with their own money. They lived there until the winter rains in 1984 flooded the houses along the river in Marabá, including the house they were renting. Consequently, they moved to Itupiranga, where they remained in a house loaned to them, temporarily, by their patron until they obtained land and/or other help from ELETRONORTE. They began negotiations with ELETRONORTE in 1978, and until August, 1986, had not received anything.

The money this family made from selling Brazil nuts did not last, and at the beginning of my visits with them, three members of the family worked for wages. The man worked odd jobs in Itupiranga as an agricultural worker or wood cutter. The sons worked for wages on a boat in Marabá, fishing and operating machinery. The woman fished, but could do little else because she was sick. She told me that she often did not have enough money for medicine and food. Whereas they had a variety of meat, fruit and vegetables to eat when they lived on their land, they told me that they presently only drank coffee for breakfast, ate fish and *farinha* (manioc flour) for lunch, and often had only bread for dinner. The necessity to buy food and medicine had come as a shock. Whereas they had access to both on their land, they now had

to pay for everything, and because of this, would often go without eating or treating their illnesses.

They had planned to stay in Itupiranga if they obtained land, but by August 1986, were actively planning to move back to Jacundá. In the beginning of August, the husband and sons had left for Jacundá and were building a house on what they referred to as "their land" on an island in the river. They did not own this land because they told me that they had not received any indemnification, which included a 50-hectare plot of land, from ELETRONORTE. They may have been referring to land they had once used in the former "use-rights" tenure system. They were planning to sell lumber from this land to obtain the necessary funds to start a new garden. The man, his sons and some friends from Jacundá who were helping them, came back to Itupiranga from time to time, once to buy a new part for their motorized saw that had broken because the trees they were cutting were so big. When I talked to them during this particular visit, they were complaining that the part was expensive, and they did not know where they would find the money to buy it.

Some time later they reappeared again with plans to go to Marabá soon to sell their lumber. The wife was packing to move to Jacundá at the beginning of September 1986. She told me that many people were moving to "*à beira do lago*" (beside the lake), and many of these people were "*de fora*" (from other places, i.e. other states), and not from Jacundá.

In 1990 I heard that the family had indeed moved back to an island near their old home in Velha Jacundá. The woman was believed to have passed away from an illness, and no one was certain where the rest of the family was by then. Many other people, including migrants, had moved to the river margins and islands in the reservoir despite attempts by ELETRONORTE to discourage settlement in the reservoir area.

This family's decision to move back to the lake in Jacundá reflected the desire by many of the *expropriados*, including those from Santa Tereza do Tauiry who received houses in the new vila, to live the lifestyle and retain the production strategies to which they were accustomed. The family in the extended case study was moving back to their old home, after giving up most hope of receiving any indemnification. Their move can be seen as a strategy to return to a life that they thought was better than the one they had since they were forced to leave Jacundá. Thus, they were attempting to preserve the life they had before relocation. Further, living on the islands or along the margins of the river/reservoir was easier for fishers and for agricultural production. Poorer social groups that did not have a cash-earning job found it easier to make a living nearer to the water than in highway-side towns.

Despite their difficulties and romanticizing of the past, many of these lower-social-class people regarded the Tucuruí Hydroelectric Dam as a sign of progress for the

region. People liked the fact that the municipality was growing and that more people were coming to live there. They felt that the population growth and development projects, such as the dam, were signs that the area was "evolving." Most people who were questioned admitted that their own personal lives had not improved because of the dam. Many stated that their situations were much worse. Now employment was uncertain. The families in old Tauriry and the people from Jacundá did not have any electricity, a major benefit attributed to the dam. Furthermore, the people in the new town of Tauriry found it difficult to pay for the electricity that was installed in their new houses built by the power company. Some people took a fatalistic view of the dam: it brought advantages and disadvantages, but since it was already built they could not find it a bad thing. They were aware that the dam had brought benefits to some people, and suffering for others. Some people felt that their personal sufferings were worth the trouble since the dam had brought energy and light, whereas everything had been darkness in the past. However, again, many of these people did not have electricity hooked up to their houses.

On the other hand, a few other people did not think the dam or development of this kind made their own situation or the regional one better. The rising waters destroyed the diamond mines, many Brazil nut trees, floodplains, waterfalls and beaches. On the positive side, many people

commented on how the dam had dramatically increased the size and number of fish in the river. However, some of these individuals mentioned that they feared that fish populations would be greatly reduced in three or four years after the nutrients released by the rising waters of the reservoir dissipated.

Migrants

Although locals had suffered dramatic changes in their lifetime, most long-term Itupirangans were better off than the recent migrants. The social group that had some of the poorest households were migrants and the town was mostly made up of migrants. Although 35.5 percent of the population was born in Itupiranga (Table 4-1), only 15.1 percent of the heads of households had been born in the municipality (Table 4-2) and 14.6 percent of the spouses (Table 4-3). Thus, most of the adults were from other states, especially Maranhão. In fact, 44.5 percent of heads of households, and 40 percent of spouses had been born in Maranhão (Tables 4-2 and 4-3).

Overall, 26.7 percent of the population living in Itupiranga in 1990 had been born in Maranhão, the second most common place of birth after Itupiranga (Table 4-1). There seemed to be a moving front from Maranhão to Pará to Itupiranga as seen in Tables 4-2 and 4-3. Although the heads of households and spouses were also raised in Maranhão, 44.4 percent and 37.8 percent respectively, they

seemed to start moving to Pará after childhood. There was a decline in the category "lived the longest" for Maranhão as there was a marked increase in the same category for Pará. Only 31.2 percent of heads of households and 29.4 percent of spouses stated that they had lived the longest in Maranhão. At the same time, while 9.1 percent of household heads and 15.7 spouses stated that they had been raised in Pará, 17.1 percent of household heads and 23.8 percent of spouses had lived the longest in Pará. The figures rise more dramatically when the category "where lived immediately before" moving to Itupiranga is examined. Almost half, or 48.8 percent of heads of households and 35.1 percent of spouses had lived somewhere else in Pará before moving to Itupiranga (Tables 4-2 and 4-3).

Most of the migration to Itupiranga had taken place during the 1980s, and especially after 1985. Almost 45 percent of heads of households, and 47.9 percent of spouses moved to the municipality of Itupiranga during the five years from 1985 to 1990 (Table 4-4). In the early 1980s 15.2 percent of heads of households and 16.2 percent of spouses moved to Itupiranga. Thus, during the 1980s 60.1 percent (44.9 + 15.2) of heads of households and 64.1 percent (47.9 + 16.2) of spouses moved to Itupiranga. The figures for the 1970s are somewhat higher than during the 1960s. From 1970 to 1979, 13.8 percent (6.6 + 7.2) of heads of households and 16.2 percent (7.7 + 8.5) of spouses had

arrived. More people arrived during the early 1970s than later in that same decade.

It is safe to say that most adults in Itupiranga were migrants. In fact, 73.9 percent of heads of households and 80.3 percent of spouses had moved to the municipality after 1970. Only 26.1 percent of heads of households and 19.7 percent of spouses had lived in Itupiranga longer than 20 years.

The most common reason that people gave for moving to Itupiranga was that they wanted to improve their standard of living (17.2 percent; Table 4-5). Desire for land and family (previous family members already in residence) tied for second place (11.8 percent each) as the most common reasons people gave for moving to Itupiranga. People responded that personal motives (10.8 percent) were an important factor in deciding to come to Itupiranga, although they did not specify what those were. The Tucuruí Hydroelectric Dam was responsible for the relocation of 10.3 percent of people living in Itupiranga. Some of these people were part of the planned resettlement project, and some of them relocated on their own.

Although some people stated that they perceived that they had improved their standard of living after moving to Itupiranga, many people held a less optimistic view. Land was not available in abundance as they had hoped, employment was sporadic and scarce, and the locals did not treat the

migrants with the justice they felt they deserved.

Furthermore, the struggle for resources and cash was exacerbated by inflation.

The Struggle to Make Ends Meet

As in the rest of Brazil, inflation was a constant source of stress for everyone in Itupiranga. The inflation rates for 1989 and 1990 were 1,764.8 and 1,794.0, respectively (Latin American Economy and Business 1990 & 1992). The rate of inflation for February 1990 was 170.9 (ibid).

Peoples' wages did not increase as rapidly. One minimum wage was worth US\$56.40 in 1987, US\$56.00 in 1988, US\$57.40 in 1989 and until April 1990. Further, many people did not even earn one minimum wage per month. Janitors who worked for the municipality made CrZ\$400,00 (US\$24.24) per month in January 1990. Housemaids also made well below one monthly minimum wage. One maid who worked for a wealthier family in town earned Cr\$4.000,00 (between US\$38.35 - US\$55.10) in September (US\$1 = Cr\$104,30 in September 1990 and US\$1 = Cr\$72,60 in August 1990 ; Latin American Economy and Business, August 31 and November 11, 1990). Another maid was earning US\$34.50 per month for a family where she had to work seven days a week and clean two houses. Women who washed and ironed clothes for whole families earned even less. One woman had to argue with her patroness to receive Cr\$250,00 (US\$3.44) for washing many clothes, when she was

offered only Cr\$200,00 (US\$2.75; August 1990 prices, Cr\$72,6 per US\$1). Another laundress earned US\$8.26 monthly for washing and ironing the clothes of six people twice a month.

Men who cleared forest to make pasture for ranchers earned only minimum wage or less and were paid by the job, daily rates or in kind. One man had spent the past year working for various ranchers and agriculturalists and was paid by all three methods. He was the sole supporter of his family of seven including himself, his wife and five children and had lived in Itupiranga since 1980 when they moved from Maranhão. The family had moved during the past year to a new subdivision, Mutirão, housing which was sponsored by the state and municipal governments for poor families. Yet, the family was barely able to maintain itself. I interviewed the woman in early March, and she said her husband was rarely home and had difficulty sending any money because he made barely enough to provide for himself. The floor of their home was not even beaten earth, since the woman was too sick to do it. Her children were ages 9, 5, 3 and one year (twin girls). At the time of my visit, she was sick with the flu and told me that her baby had died two days previously. During the visit she brought another baby out from the bedroom who was crying. The child looked like she was three months old, but her mother said that she was the other one-year-old twin. The baby's beautiful eyes were too big for her face, and her arms and

legs looked like thin parchment-covered appendages protruding out from her enormously swollen belly. A long row of boxes of medicine lined a crossbeam in the wooden wall in the kitchen. A month after that interview my assistant and I saw a group of people carrying a small blue coffin from the neighborhood where the family lived. Although we knew before we asked, the passing group told us that she was the twin of a baby girl who had died the month before. The one-year-old twin daughters died approximately a month apart in March and April 1990.

The quest to find food was important to many such families in Itupiranga, according to local nuns and a priest. Many families in town and in the forest were starving to death, SUCAM officials told me. Locally, the prices for food increased rapidly in the first quarter of 1990, even after President Collar entered office with his new economic program which attempted to limit inflation. For example, the price of powdered milk (in a tin of approximately 32 ounces) increased from CNz\$ 40,00 on January 25, 1990 to Cr\$370,00 by December 1, 1990, a price increase of 925 percent. Table 4-6 gives the price increases in important food and other necessary items in Itupiranga, from January 25 to December 1, 1990.

Table 4-7 reveals the essential minimum sustenance requirements for one worker per month according to legislative decree No. 399, De. 3004.38 (Mitschein, Miranda

and Parensse 1989). I calculated the total costs to sustain one worker in Itupiranga for the month of February 1990, by obtaining local prices for those food goods included in the decree, and multiplying the unit cost times the monthly requirements to obtain a monthly cost for each food item. Then I added the monthly costs for each food item together to get a total minimum cost that one worker would have to spend to sustain himself or herself for the month of February 1990.

The total minimal cost that a worker would have to spend for food in Itupiranga for the month of February 1990 was CNz\$1.302,50 (US\$43.86). Considering that the minimum wage for February 1990 was CNz\$2.004,37 (US\$67.49 assuming that US\$1=CNz\$29.70) (Latin American Economy & Business 1990), one worker would spend 64.99 percent of his or her salary just for food.¹

There are a few problems with the minimum sustenance requirements. First, the minimum standard requirements are only enough to reproduce one worker at a minimal level. The calculation does not figure in a worker's spouse or dependents. Normally there were many mouths to feed on one salary, although in many households more than one member of the household contributed to the larder in some manner. In

¹ This dollar figure for one minimum salary might be high, because the average monthly minimum wage for 1989 was US\$57.40, and was the same in March and April, 1990 (Latin American Economy and Business 1990). Thus, one worker would spend 76.41 percent of his monthly salary on these basic food items just to feed him.

Itupiranga the average number of members in a household was 4.69 persons (minimum persons per household=1; maximum number of persons per household=15; N households=150; and N individuals=1010).

Secondly, that minimum wage figure is a worker's gross salary. One local woman's paycheck revealed that her take-home pay for February 1990 was CNz\$1.841,03 (US\$61.99), which would mean that she would spend 70.75 percent of her salary on food just to sustain herself, as a worker.

However, this woman was not the only person in her household, and as the head of household, she had to support six children (a seventh child lived on a nearby farm). She was the only breadwinner in the household since her husband had left her in 1988, and since she did not receive any assistance from her relatives who had the farm because they could not afford to help her. All of the members of her household depended upon her take home salary of CNz\$1.841.03 (US\$61.99), in February 1990, a month that she earned from working as a janitor at the local state school. Her eldest child living in the household was 14 years old and male, and her youngest child was two years of age, and also a male. We must assume that she spent almost all of her salary per month on food to sustain her family, which left very little for gas for cooking and clothing for the family. She was too poor to have electricity in her household, and the

household did not have any of the items I used to gauge peoples' standard of living in town. She was part of the group of people who received a house in state and municipal settlement for needy people. Her roof was made of palm thatch, the siding of the house was wood, the floor of beaten earth, and the family used a kerosene lamp for lighting. The household did have a well for drinking water and bathing, and had some fruit trees and vegetables planted in their back yard. The family ate fish twice a week, and would buy beef once a month when she was paid. So although this 31-year-old woman, who had lived in Itupiranga all of her life held a salaried position, and earned a steady income, her household could be considered to be among those of the lowest level of poor. However, she did have steady employment, which made her situation enviable as compared with many other households in Itupiranga.

How does the loss of access to necessary resources and the increasing need for cash affect people who were under- or unemployed? For one thing people experience increasing levels of stress because of hunger, overwork and worrying about maintaining themselves and their families. Many local and regional health officials remarked, in 1986 and again in 1990, about the profound poverty in Itupiranga. Poverty and accompanying stress leads to declining health among people. Increasing morbidity and mortality rates are quantitative evidence of a decreasing standard of living. One

measurement of poverty is high infant mortality rates. In 1982 before the Tucuruí Dam was filled and the dramatic influx of migrants to town occurred, the infant mortality rate in the municipality of Itupiranga was 63.3 per 1,000 inhabitants (IDESP, Number 7, 1984). After these events the infant mortality rate rose to 152.4 per 1000 inhabitants by 1985 (IDESP, Volume 9, Number 1, 1986/87). General mortality rates rose from 2.1 per 1000 in 1982 to 2.8 per 1000 in 1985 (Ibid). Fetal deaths rose from 4.5 per 1000 in 1982 to 38.1 per 1000 in 1985 (Ibid). Fertility rates declined from 11.4 per 1000 in 1982 to 5.0 per 1000 in 1985 (Ibid). The data indicate that many people in Itupiranga appeared to be losing ground as the 1980s unfolded.

Conclusion

As events occurred during the late 1970s and early 1980s, some individuals in Itupiranga saw the opportunities to maintain or improve their holdings, and began to buy up as much land as they could afford. Some individuals of the lower class improved their lot within the changing land tenure and economic system, while others did not. One man, who operated a motorboat for 26 years, began buying up land in the 1970s and by the late 1980s owned large tracts of land along the river and also along the feeder road between Agrovila Castello Branco along the Transamazon Highway and Itupiranga. This man grew to belong within the category called "traditional local upper class," but as time went on

in the 1980s, did not enjoy as much status (nor as much resentment by locals) as members of the new "local upper class" who recently migrated to the region from other states to obtain their livelihoods from ranching and logging.

Other individuals from the former elite and lower classes bought some land, or entered into bureaucratic positions or business transactions--hotels, commercial stores, and small restaurants--with the changing opportunities. The individuals belonging to this group constituted a new "middle class," no longer linked to the traditional *aviamento* production and distribution system. Many of these people within the new middle class, by the middle of the 1980s, did not own or have access to land at all. They no longer depended upon agricultural activities to make a living. However, since the original four or five families in Itupiranga--who made up both traditional producer and local *aviador* classes--were so large, it is likely that some households within the extended family still had access to land, which helped everyone to survive. Agricultural products were exchanged among family members constantly.

By 1986, a year and one-half after the dam was complete, Itupiranga was experiencing rapid population increases, while production of goods was already insufficient for many people because most of the relocatees and newcomers had not yet received land. According to many

locals, the opportunities for hunting had diminished because animals were either hunted out or had left the area because of the encroachment of human beings. Furthermore, there were decreasing opportunities for the former types of employment with the devastation of the areas of extraction--the diamond mines in the river because of the higher waters in the reservoir and many Brazil nut trees lost in the reservoir, and because of burning for agriculture and ranching, and logging. People now had to make arrangements to find wage-labor employment or some other strategy to obtain cash, since the *aviamento* credit system was no longer a viable means to maintain a living. Former patrons turned to new types of economic activities after the destruction of resources and changing land tenure scheme that had sustained the former economic system. They no longer had the means or motivation to maintain their former clients, who had been the direct producers of Brazil nuts and diamonds.

For their part, the former direct producers no longer had access to communal resources, and now needed cash in order to buy food, medicines and other goods that they had obtained from the forest or on credit from their patron's trade stores. The former social relationships were changing, and the disintegration of some of the patron-client ties were hardest for former direct producers who lost the security of the credit arrangements, and also lost access to many forest resources that they had gathered

freely with community sanction in the past. The abundant fish resources in the reservoir became the main source of food for many of the poorer people in town during the middle years of the 1980s.

During the 1980s people in Itupiranga increasingly needed cash to maintain a living. Although they utilized natural resources in rural areas when they had access to them, people struggled to find ways in which they could make the cash they needed to buy the things they needed. The devastation of the former extractive economy and the influx of migrants contributed to this need for cash. New economic opportunities in town presented themselves as the 1980s unfolded. There was an increase in urban jobs, mostly in the government sector at both municipal and state levels. Other urban jobs that arose or grew were in construction and marketing because of the increasing population.

Many of the traditional local people lost properties and were relocated because of the Tucuruí Hydroelectric Dam. They called themselves *expropriados* or *desapropriados* (dispossessed), and felt that they were unjustly dealt with by ELETRONORTE, the power company that built the dam and also that conducted the resettlement process. Those terms had political implications as these people saw themselves as a group in their struggle against the power company. They were forced to move by ELETRONORTE because the land they inhabited was either going to be flooded or was considered

to be too close to the margins of the reservoir. The three major groups of *desapropriados* living in town were: those families who were relocated from Tauriry, a community approximately 15 kilometers downriver from Itupiranga; those who migrated on their own from vilas or rural areas in the municipality of Jacundá; and some *vazanteiros* around Itupiranga who lost a part or all of their *vazantes*. Most *expropriados* looked to chosen local leaders to continue their struggle for adequate indemnification with the power company. This struggle will be examined in Chapter 8.

During the 1970s and especially the 1980s most former direct producers lost access to the means of production because of the degradation of natural resources and land tenure changes. The projects and policies set forth by the Brazilian government during the 1970s and 1980s, including the Tucuruí Hydroelectric Scheme and resettlement program, created an arena for primitive accumulation on a grand scale. The implementation of a regime of private property blatantly ignored former patron/client agreements and community sanctions for access to natural resources, and resulted in the dispossession of many former direct producers who had been in the region for decades. Any compensation people received could not make up for what they had lost, even if they received a plot of land as indemnification, because new economic activities wiped out natural resources upon which former economic activities

depended. Further the land tenure changes inhibited those traditional activities that required peoples' ability to traverse over land areas beyond their new 50-hectare borders. The demise of the former system also meant that direct producers no longer had access to credit from patrons, who were also scrambling for a place in the new regime. Former traders found new economic activities including family businesses or white collar employment for the municipality or state. If they owned land, they would hire workers on a daily basis, pay them by the job with wages or in kind. However, the new arrangements were less secure than during former times.

This chapter focused on the consequences for direct producers when they no longer have access to the means of production. Benería and Sen argue that

The single most powerful tendency of capitalist accumulation is to separate direct producers from the means of production and to make their conditions of survival more insecure and contingent. (1989:148)

Former direct producers, and everyone in Itupiranga for that matter, needed to make cash in the new situation, either by selling produce or their labor. People could no longer survive by gathering resources for consumption and credit because the resources were gone as was the former social network. Furthermore, employment opportunities were competitive, because of the dispossession of so many people from land, rapid population increases due to immigration, and increasing scarcity of resources. Most jobs were

difficult and low paying, and did not provide enough upon which to live. There were high rates of un- and underemployment in the municipality.

However, other new economic activities took precedence as the former ones diminished. The general growth of the town required more municipal and state positions in government, health and education. Furthermore, the new activities of ranching and logging as well as population increases required more commerce in town. Several of the store owners were former Transamazon colonists. Many of these coveted tertiary economic activities were performed by original residents of Itupiranga, and wealthier newcomers. The primary activities, including agriculture, were left for poorer segments of the population. For example, those wealthier people who had land in Itupiranga, allowed poorer family members or hired other people to perform the manual labor required in farming. Many former residents of Itupiranga seemed to have improved their situations, and most were definitely better off than a majority of migrants, except ranchers and sawmill owners. Their family connections in the social, political and economic network placed them at an advantage as compared with most poorer newcomers. As the next chapter will show, these events caused increasing social stratification and unequal competition over new resources--education and white collar employment. Wealthier social groups denied poorer groups

access to these new strategies for making a higher standard of living.

Table 4-1

Place of Birth of Itupiranga Residents, 1990

Place	Percent	Frequency
Northeast ^a	8.5	85
Center ^b	1.4	14
South ^c	.7	7
Goais	9.0	89
Maranhao	26.7	265
Pará ^d	18.2	180
Itupiranga	35.5	353
Total	100.0	993

Source: Original survey data

^aIncludes Bahia, Ceará, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, Sergipe.

^bIncludes Distrito Federal and Minas Gerais.

^cIncludes Espírito Santos, Rio de Janeiro, Sao Paulo.

^dExcludes Itupiranga.

Table 4-2

Place Where Head of Household was Born, Raised, Lived the Longest and Lived Immediately Before Moving to Itupiranga, 1990.

Place	Where Born	Where Raised	Lived Longest	Where Lived Immediately Before
	%	%	%	%
Northeast ^a	18.6	13.3	5.6	3.3
Center ^b	.7	1.4	2.9	1.7
South ^c	.7	1.5	1.4	2.4
Goais	7.5	9.2	7.1	11.3
Maranhao	44.5	44.4	31.2	25.2
Other Amazon ^d	---	---	.7	---
Pará ^e	13.0	9.1	17.1	48.8
Itupiranga	15.1	21.1	34.0	6.5
Other ^f	---	---	.7	---
Total	100.1	100.0	100.0	100.0
(N)	(146)	(142)	(141)	(123)

Source: Original survey data

^aIncludes: Bahia, Ceará, Piauí, Pernambuco, Paraíba, Rio Grande do Norte, Alagoas and Sergipe.

^bIncludes the Distrito Federal, Minas Gerais, Matto Grosso and Rondonia.

^cIncludes Rio de Janeiro, Espírito Santo, Sao Paulo, Paraná, Rio Grande do Sul and Santa Catarina.

^dIncludes Amapá, Acre and Amazonas.

^eExcludes Itupiranga.

^fOther means that the person lived all over Brazil, and never lived in any one place for most of his life up to the time of the interview

Table 4-3

Place Where Spouse was Born, Raised, Lived the Longest and Lived Immediately Before Moving to Itupiranga, 1990.

Place	Where Born	Where Raised	Lived Longest	Where lived Immediately Before
	%	%	%	%
Northeast ^a	16.8	8.7	4.0	1.8
Center ^b	2.3	1.6	1.6	.9
South ^c	0	.8	1.6	2.7
Goias	13.1	15.0	15.1	12.0
Maranhao	40.0	37.8	29.4	26.9
Pará ^d	13.1	15.7	23.8	35.1
Itupiranga	14.6	20.5	24.6	20.4
Total	99.9	100.1	100.1	99.8
(N)	(130)	(127)	(126)	(108)

Source: Original survey data

^aIncludes: Bahia, Ceará, Piauí, Pernambuco, Paraíba, Rio Grande do Norte, Alagoas and Sergipe.

^bIncludes the Distrito Federal, Minas Gerais, Matto Grosso and Rondonia.

^cIncludes Rio de Janeiro, Espírito Santo, Sao Paulo, Paraná, Rio Grande do Sul and Santa Catarina.

^dExcludes Itupiranga.

Table 4-4
 Amount of Time Head of Household and Spouse Lived in
 Itupiranga Municipality, 1990

Years	Head of Household		Spouse	
	Percent	Frequency	Percent	Frequency
0-5	44.9	62	47.9	56
6-10	15.2	21	16.2	19
11-15	6.6	9	7.7	9
16-20	7.2	10	8.5	10
21-25	7.3	10	5.2	6
26-30	5.0	7	5.1	6
31-35	5.1	7	3.4	4
35-40	5.1	7	---	---
41-45	3.6	5	---	---
42-49	---	---	3.4	5
55-76	---	---	2.6	3
Total	100.0	138	100.0	117

Source: Original survey data

Table 4-5
 Motivations for Migration to Itupiranga

Reason	Total Percent*
To Improve Standard of Living	17.16
Desire for Land	11.76
Family	11.76
Personal Motives	10.78
Because of the Tucuruí Dam	10.29
Shortage of Land in Previous Place	7.35
Other	7.35
Educate Children	4.90
Desire to Work Autonomously	3.92
Moved From Rural Itupiranga to Town	2.94
Loss of Land	1.47
Land in Other Place was "Tired"	1.47
To Mine (for diamonds)	1.47
Drought	1.47
Sickness on the Roça	1.47
Mayor Offered Work	.98
To Fish	.98
Flood (in Marabá)	.98
Desire for Better Infrastructure	.49
Previous Contact with Itupiranga	.49
Mosquitos on the Roça	.49
Total	99.97
(N)	(204)

Source: Original survey data

*Many households gave more than one reason for moving

Table 4-6

Prices for Food and Other goods in One Store in Itupiranga, Pará, January to December, 1990.

Product	Prices		
	1/25	6/12	12/1
1 Frozen Chicken	2/3		
1 kg	45,00	110,00	260,00
Beef 1 kg	1/30	7/9	9/15
1 grade	50,00	190,00	240,00
Fish	2/5		
1 grade	20,00	70,00	
2 grade	15,00	60,00	
3 grade	10,00	40,00	
one egg	2,00	6,00	10,00
Nestle Mucílon (Baby cereal)			11/1
500 g	35,00	200,00	230,00
Onions 1 kg	15,00	110,00	200,00
	1/30		7/31
Potatoes 1 kg	20,00	60,00	150,00
			11/1
Bisquit flour			
500 g	20,00	80,00	120,00
Corn flour			
200 g	7,00	30,00	50,00
Cuzcuz 500 g	8,00	40,00	40,00
White toilet paper			
4 pack	32,00	140,00	140,00
Colgate Toothpaste			
50 g	10,00	25,00	40,00
Milk			
32 ounces	40,00	142,00	370,00

Source: Original data

Table 4-7

Minimum Requirements for One Worker per Month, and Costs for those Requirements in Itupiranga, Pará, Brazil, February 15, 1990.

Product	Requirements for 1 Worker per month	Price	Quantity for Price	Cost to Maintain 1 Worker/Month CzN\$
Meat with bones ^a	4.5 kg	30,00	1 kg	135,00
Powdered milk ^b	6.0 tins	60,00	1 tin	360,00
Dried beans	4.5 kg	30,00	1 kg	135,00
Rice	3.0 kg	12,00	1 kg	36,00
Manioc flour	3.0 kg	5,00	1 kg	15,00
Tomatoes	12.0 kg	15,00	1 kg	180,00
Bread	6.0 kg	4,00	1 piece/ .1135 kg	212,00
Coffee	0.3 kg	25,00	1 kg	7,50
Bananas	7.6 doz	10,00	1 bunch/10	90,00
Sugar	3.0 kg	40,00	2 kilos	60,00
Cooking oil	0.9 liters	30,00	1 liter	27,00
Margerine	0.75 kg	15,00	.25 kg	45,00
Total costs per month				1.302,50

Sources: ^aThe indices for the subsistence minimum requirements for one worker per month were found in Mitschein, Miranda and Parense (1989). The rest of the information is original data.

^aThe meat requirements for one worker per month (see Mitschein, Miranda and Parense 1989) are a better grade than the one listed here, but I do not have the data for how much second grade beef cost in Itupiranga. Furthermore, most poor people in Itupiranga bought meat with bones, which was considered a third grade of beef (*carne com ossos*).

^bOne tin can of powered milk was approximately 32 ounces.

CHAPTER 5
ECONOMIC STRATEGIES IN 1990

Introduction

During the development process in the 1980s Itupiranga had become a heterogenous town. The primary economic activities were cattle ranching, commercial agriculture, commercial fishing and logging. Secondary economic activities in town included brick making, building construction, food, clothing and pharmacy markets and domestic employment. Tertiary activities included federal and municipal bureaucratic, teaching and hospital jobs paid by the federal, state and municipal governments, and a bank. A large number of men in town mined for gold in distant locations in the Brazilian Amazon. Twenty eight individuals in the community study called themselves miners and 25 individuals had mined for gold during the past year. Many women also went to gold mines to seek their fortune by doing laundry and cooking for a few men, hoping that one of them would strike it rich. Like before, people used a wide variety of economic strategies to make ends meet. However, the ecological and social landscape had changed, dramatically.

By 1990 the town was larger than in 1986. The bus stop had been moved toward the front of town and was installed in

a brick building that was attached to a new market place. The main street and one side street which ran by the new hospital had been paved, and many new stores lined one side of the avenue. The hospital was staffed by one doctor, one registered nurse, a dentist and many assistant nurses, who were mostly local women trained and supervised by the professionals. A new bank opened in December 1989, which was widely celebrated because the town had not had a bank since another one had closed down during the summer of 1986.

In this chapter I will discuss the various strategies that people used to make a living in Itupiranga and distinguish different social groups based on economic activities of household members and differences in standard of living between households. In the course of this analysis it became apparent that access to the means of production did not necessarily mean that a household had a sufficient standard of living. Other factors proved to be more important predictors of household standard of living. The research showed that households in which at least one member had a qualified urban job were better off than the rest of the community.

On the surface it appeared that development was taking place in Itupiranga, according to the standards of what evolves during the modernization process--proliferation of education, improvements in infrastructure, and more opportunities for urban and salaried employment. However, a closer examination revealed that most inhabitants of

Itupiranga in 1990 were not beneficiaries of the development which had taken place in Itupiranga. The benefits were distributed unequally. For example, access to qualified urban jobs was often restricted to long-term residents, family members of wealthy loggers or ranchers, people with a higher education and politically connected individuals. Poorer people had limited access to urban jobs. They could obtain an unqualified urban job through vertical ties with patrons, especially if they supported a successful local political candidate for mayor. Even long-term residents or more wealthy individuals had to depend upon political favors, and hoped that they supported a candidate who would win.

Poorer people hoped that educating their children would eventually place their offspring in a more secure position and higher class by enabling them to obtain more qualified urban jobs. However, access to education was mostly limited to people who could afford to send their children to school. Local policies in 1990 effectively restricted access to education for households that could not afford to buy supplies and uniforms for their children's admission to class.

Standard of Living

Methodology

In the Amazon it is very difficult to obtain the same standard of living measurements as, for example, those that are used in the United States. Income is not a viable

measure because most people cannot remember their income, that is even if they earn cash as part of their living. Many people carry out multiple strategies to make a living. They may gather forest products, farm, hunt and fish for consumption, and perhaps trade or sell a little bit of what they produce. Even if they sell most of their fish, for example, they do not keep track of what they earn on a monthly basis. Only people who earn salaries from working for the state or municipal institutions receive a paycheck whereby they can keep track of their earnings by month and year. In any case, inflation and changes in currency make salary equivalents difficult to assess.

With this in mind, I collected data about housetype, material possessions, diet and education to be used as indicators of standard of living in Itupiranga. The first three indicators were measured at the household level, while education was asked of each individual within the household. Housetype included type of floor, wall, roof, lighting, stove, plumbing (drinking water, bathing and toilet facilities). Material possessions included the presence or absence of a television, refrigerator, radio, throw net, gillnet, sewing machine, bank account, living room sofa, rifle, canoe, motor boat, bicycle, clock, chainsaw, horse or mule, and car.

Since the questionnaire was so large in the first place, for the dietary measure I simply asked how many days people in the household had eaten beef, pork, chicken, fish

and or game during the last seven days. These measures provide a general idea about frequency of consumption of meat protein, which is an important distinction among rural Amazonian households (Schmink and Wood 1992). This information cannot measure intrahousehold distribution of animal protein, nor other sources of protein, nor other types of food. I emphasized animal protein in the study for several reasons. First, meat was more difficult to obtain and was also expensive. Almost everyone in town had to buy beef and pork, and many people had to buy chicken or fish if they did not have chickens or access to fishing technology. In particular, I reasoned that the ability to buy beef was a good indicator of standard of living. I also thought that landowners might consume significantly more game, because they had access to land. This turned out not to be the case, however.

The actual measures I used for standard of living were 'house quality,' 'material possessions,' 'average diet' and 'average education.' 'House quality' is a composite measure of those households that had the best housetype: the roof of the house was tile or Brasilit (another type of tile), the walls were made of painted concrete, brick or stone, the floor was concrete or brick, and the house had electric light, a gas stove, modern indoor plumbing for drinking water, toilet facilities and bathing. 'Material possessions' includes: television, refrigerator, sewing machine, bank account, livingroom sofa, rifle, bicycle,

radio, clock, car and horse or donkey. Respondents in each household were asked if the household had these items or not. I then computed the 'material possessions' measure by adding how many of these items the household owned. The frequencies ranged from 0 to 11, meaning that some households had none of these items and others had all 11 of them. The means of 'house quality' and 'material possessions' were used to compare the standard of living at the household level among different social groups in Itupiranga. 'Average diet' was obtained by finding the mean for the number of times each household ate beef, chicken, game, fish and/or pork during the last week. The mean--average diet--also was used as a measure of standard of living of those households. 'Average education' is the mean grade level completed by individuals who comprised the various social groups that will be compared in this study.

The statistics were computed using an SPSS-X program. It was complicated to analyze information from the individual and household levels of analysis at the same time. I needed to analyze the standard of living of various social groups based on occupational information obtained from individuals. However, the standard of living information was at the household level. The difficulty was to count households only once even if there was more than one person in a household involved in the same economic activity. I used a procedure in SPSS-X called "aggregate" in order to obtain household information about groups of

individuals performing various economic activities. Using "aggregate" I could analyze house quality, material possessions, average diet and average education for each social group (e.g. sawmill workers or fishers) I selected. Then to make statistical comparisons among these social groups I used SPSS-X procedures "breakdown" and "oneway." "Breakdown" allows for the analysis of, for example, mean house quality of households with one to n number of workers in a specific activity, e.g. fishers. We can compare households of fishers to see if there is a significant difference in house quality among households that have one fisher versus households that have n number of fishers. Finally, "oneway" allows for the comparison of households with fishers against the rest of the population in Itupiranga to see if there are statistically significant differences in standard of living between households with fishers and those households without fishers, as measured by "house quality," "material possessions," "average diet," and "average education." Using "oneway" I could make comparisons about standard of living among various social groups as defined by economic activity and/or social relations of production in Itupiranga, since I had obtained this information from each individual and about each of their occupations in the community survey. The information is representative of the whole community because the 150 households were selected randomly.

Household Survey Findings

One hypothesis was that there would be a significant difference in standard of living between households that had land, and those that did not. I assumed that access to the means of production was an important factor in peoples' standard of living. Landed households had more goods (mean=4.2; N=50) verses landless households (mean 2.57; N=100) at the .001 level of significance (Table 5-1). However, there were no significant differences between landed and landless households in terms of house quality, average diet and average education.

A second hypothesis was that fishermen with access to the means of production--boats or canoes--would have a higher standard of living than those fishermen in households that did not have a boat or canoe. There were no significant differences between fishing households that had a boat or canoe, or households that had boat and canoe, or households with only boat, or households with only a canoe, or households with neither a boat or canoe. In fact, the fishing households that did not have a boat nor a canoe, showed higher means across all categories than did those that had any one of the other combinations of ownership of boat and/or canoe (Table 5-2). However, the differences were not statistically significant, probably due to biases resulting from such small sample sizes. But these findings were still intriguing. Despite the small sample sizes, the seemingly higher standard of living among fishermen who did

not have a boat or canoe had to be due to another cause. A cross tabulation of fishing households that did not own a boat or canoe revealed that three out of seven of them had land, and further, that three out of seven had one member who worked as an urban employee in a professional or skilled position and earned a regular wage.

These findings point to the complexity of measuring the standard of living of households in the Amazon by one or two individuals' economic activities (see Schmink and Wood 1992 for another example). Most households in Itupiranga had more than one working individual, and oftentimes, each of those individuals were employed in more than one economic activity in any given year. There was an average of 3.9 economic activities carried out by 2.7 workers per household. Of 1010 individuals in the survey (including children), 425 carried out one economic activity during the past year, 128 carried out two, and 32 carried out three, 5 carried out four and 1 person carried out five. Furthermore, household members employed a wide range of economic strategies to make ends meet. For example, a single household might have one member who fished, another who was an agricultural worker, and another who worked for a regular wage in town. It became difficult to separate households into categories of social groups by focusing on one individual, or the economic activities of household members, separately.

Further examination of the data showed that there were significant differences in standard of living between households with rural workers and households with urban workers. Table 5-3 reveals that households with rural workers (a.) (N=112) were significantly worse off in terms of house quality, material possessions, diet and education than the rest of the population (N=38). It is not surprising that agricultural employees had a lower standard of living than the rest of the population (Table 5-3b.) because they were often very underpaid whether they earned daily wages, or were paid by the job or in kind. However, households with landed small farmers were significantly worse off than the rest of the population in terms of material possessions, average diet and average education (Table 5-3c.; There is a discrepancy between this measurement and that of Table 5-1, which was derived from information at the household level. The information in this table is probably more accurate since the question about economic activity was immediately followed by one about social relations of production during the interview.). Thus, even though they had access to the means of production, households with land owners were in one of the poorest social groups in Itupiranga. The reasons for their difficulties will be explored later. There were no statistically significant differences among households with other rural workers (large landowners (Table 5-3d.),

goldminers (e.) and fishermen (f.)) and the rest of the population.

By the same token, Table 5-4 reveals that households with urban workers (a.) (N=113) were significantly better off than the rest of the population (N=37). There is still a problem of definition because oftentimes the same household has workers in both categories, and one worker may even be employed in both categories in a given year. Although 38 households did not have any rural workers, and 37 households had no urban workers, many households had both urban and rural workers. A crosstabulation of "rural" versus "urban" households revealed that 79 households had at least one urban worker and one rural worker. Some households had workers in more than one or both categories.

Further analysis revealed that households that had at least one qualified urban worker were significantly better off than the rest of the population. Table 5-4 reveals that, as a whole, households that had at least one urban worker (a.) were better off than those households that did not. A closer examination reveals that households with qualified urban workers (b.) were even better off than urban households as a whole. Further, households of qualified urban wage workers (c.) enjoyed a higher standard of living than any group in the sample. As a group, urban store owners (d.) had a better house quality and more material possessions than the rest of the population but there were

no statistically significant differences in the number of times they ate meat per week or in their level of education.

The fact that at least one worker earned a wage did not ensure that the household would have a higher standard of living. Households with unqualified urban workers (e.) had a poorer house quality and fewer material possessions than the rest of the population, although the significance of these findings was only $p < .10$ in both cases. They also consumed meat fewer times a week than the rest of the population. Like households of rural workers as a whole, especially those of farmers and agricultural workers, they had a significantly lower level of education than did the rest of the population.

As can be observed, there was a lot of diversity among households that had urban workers. Tables 5-5, 5-6 and 5-7 indicate that, on the whole, households with more urban workers had a higher standard of living, especially those households with qualified urban workers. On the other hand, there were no significant differences in standard of living among households with more than one rural worker (Table 5-8).

These findings indicate that by the end of the 1980s, urban waged labor was crucial for a household in Itupiranga to maintain a decent standard of living. Furthermore, regular professional employment was the most reliable and provided a better living than unskilled urban positions or other rural activities, including those income-generating

methods like being paid by the day, the sale of farm produce or hand-made items, and payment by the job in cash or in kind. Moreover, a household's access to the means of production--e.g. land for a small farm or owning a boat or canoe, did not ensure a better living.

The Thorny Issue of Land and Farming in Itupiranga

Even small-landowner farmers had a difficult time making ends meet each year. As mentioned previously, the statistical findings show that households with landed farmers as members had a significantly lower standard of living than the rest of the community as measured by number of material possessions, times they ate meat per week and level of education (Table 5-3 (c.)). Qualitative data from numerous sources also revealed the struggle by small farming families to make ends meet in Itupiranga because of certain inherent risks in farming, and structural constraints that inhibited many farming households from making their small-scale family enterprises a success.

Many people in the municipality that received land, even back in the 1970s, later sold or left their plots because of a number of problems. This trend was ironic given the fact that land issues were significant as a deciding factor for peoples' migration to Itupiranga in the first place. As previously mentioned, 11.76 percent households listed that they moved to Itupiranga because they had heard that they could obtain land there (Chapter 4, Table 4-5). Other people (7.35 percent) said that they

moved because there was a shortage of land, or they had lost land (1.47 percent), or the land was "tired" (1.47 percent) in their previous place of residence. Other people who had land in the municipality of Itupiranga moved to town because of various problems--educate children (4.9 percent), sickness (1.47 percent), and mosquitos (.49 percent). About 3 percent (2.94 percent) of the respondents had sold their rural lots and had moved to town because they found it too difficult to farm for one reason or another.

Some farming families lived in town, or at least had some part of their family living in town. Fifty households in the survey, or 33.3 percent of the household population in Itupiranga had land. In many cases their land was far from town, and one strategy for making ends meet was that certain family members stayed on the farm, and others stayed in town.

Some risks to farming manifested themselves during 1989 and 1990 in several ways. Many people said that they had not been able to farm the past year because unseasonable rain during September and October made their plots too wet to burn adequately. Other people were flooded out from their plots and spent many months in town trying to obtain new ones from ELETRONORTE because they blamed their circumstances on the dam. These people lost their plants, livestock and many possessions in the rising waters. In other cases people lost part or all of their rice crop

during April before the harvest because localized droughts dried up the plants.

Health was another problem for farming families who lived away from town. Malaria was an ever present danger for people, especially children and malnourished individuals. SUCAM employees in Itupiranga recounted to me the numerous incidences they observed where people (sometimes whole families of up to 10 or more people) had died from starvation or diseases such as malaria in the forest, because they did not have the means to survive. Although poor health was a more natural risk, it also had a structural basis because of inadequate or non-existent health care facilities away from towns.

There were other structural problems that inhibited successful farming for many small-farmers. Poor transportation and the lack of educational and health facilities made living and farming in the *mata* difficult and even hazardous. Many people mentioned transportation problems as a major factor that inhibited farming. Many people lived more than 50 kilometers from town. Traveling back and forth from their rural farms to their urban homes was expensive. Moreover, bringing produce to town, whether by boat or vehicle on the highway was too expensive for many people. People said that the expenses for transporting their produce cut into their earnings oftentimes by half. Many people said that selling rice, for example, was hardly worthwhile, and that the family would benefit more by

consuming it. However, they often had to sell part of their farm produce because nowadays families needed cash to live.

Two things were fundamental for families to maintain their farms. First, everyone needed cash to survive as the 1980s unfolded. Households tried to diversify their economic strategies in an effort to obtain cash, whether by selling produce or timber, or by working for employers. Secondly, a farm needed enough labor to be successful. The farms of older couples who did not have children nearby or those of couples with only young children were not as successful as those farms which had both male and female adults, and older children or extended family members to provide adequate labor. However, farming households with older children struggled also because many times the mother and children moved to town so that the children could go to school while the father would stay on the lot and attempt to make a go of it by himself. Farms in which the adult women and her children moved to town were less successful than those where the family remained intact. These separated households struggled to make ends meet on the farm and in town.

Thus, having some family members stay in town and work for wages while others stayed on the lot and farmed was both a strategy to obtain cash and was also utilized by families who wanted to educate their children, since the schools in the *mata* were infrequent and did not have grades past the third year. Wives would run the households in town while

their husbands and elder sons, if they had any, would stay on the lots and farm. This strategy was more successful when some household members in town managed to find jobs. Women with children would try to make something to sell. Better off poor women had sewing machines and would sew clothes on commission. If the household had a refrigerator the mother could make popsicles which her children could sell on the street. Other poorer women might bake cakes or cookies and send her own or neighborhood children out to sell them. Poorer women with connections to wealthier women washed and ironed other peoples' clothes, if they were fortunate enough to own an iron. Sometimes the wealthier woman would lend her laundress an iron for the job, if the relationship was solid. If the household was lucky, a teenage daughter might find a job as a maid, working seven days a week, 12 hours a day in someone else's home for one-half, or less, of the monthly standard minimum wage.

Many poor women were not employed outside of their own domestic duties. These households depended upon the male head of household to earn cash. When these men were not farming on their own land, they would find odd jobs around town or for ranchers and other farmers who might pay them by the job or daily wages. Sons in these households might be employed at the local sawmills. Farming was difficult for those families who did not have many resources, steady employment, or did not own a store. However, if the family had enough adult members or children in their late teens who

could find work that brought in a cash income, the rest of the family could manage on the farm. Maintaining a farm was most difficult in households where the children were too young to work for wages or carry out the heavier, more responsible farm work. However, as the children got older, another problem arose because many families wanted them to stay in town to get an education. In some cases the father and the eldest sons would stay on the farm while the wives, daughters and small children would live in town.

The loss of women's contribution to farmwork made it difficult for a farm to be viable. Many migrants had plots of land too far away from town for the husband to visit more than once a month or even once every few months. When the man stayed on the farm alone, he was often the sole laborer and was not able to carry out all of the necessary activities for a successful farm. These farms were considered to be poor because they did not have livestock--chickens, pigs, goats and cattle. The farm suffered because he did not have enough time and energy to take care of home gardens and livestock, activities which were normally carried out by his wife and children. A lone man did not have the time to watch over the farm's livestock to make sure that the animals were not stolen or eaten by wild animals, especially when he was away in town. Lone men on farms worked harder themselves without women and children present to help with the planting, weeding and harvesting. Sometimes, however, the rest of the family would come at the

more critical times of planting and harvesting to help out. Working alone was also dangerous, because if a man had an accident or became ill, he might die before anyone discovered him. Some men admitted to being very lonely on the distant farms without their families. In some cases in which the children were older or extended family members were present in Itupiranga, fathers and their teenage or adult sons (and other relatives) would stay on the farms, while the women stayed in town with the rest of the children. These farms were more successful than the ones maintained by only one man, but they still had difficulty keeping livestock and in preparing meals without women present.

There were many farming families that did not adapt to the conditions in the *mata*. They and other people who could not manage to either find land or farm their land successfully, scraped out a living by working odd jobs for others in town. Some families moved away from Itupiranga and to other places, if they were able. They moved to places where they hoped they could obtain land, especially that was closer to a town where they could sell their produce, and have easier access to medical and educational facilities.

The following case study reveals some of the problems many families experienced in their struggle to both farm and to enjoy the benefits of urban areas, whether they already "owned" land or were newcomers who worked as farmers on

someone else's land. The father of one 15-member household stated that the inheritance that parents could give their children for their security these days was to educate them. Hence, although he preferred to live and work on the *roça* (as did many adult farmers) because it provided a wider variety of food, he lived in town working odd jobs to make ends meet because, as he explained, nowadays it was better to have a salaried job. However, without an education it was difficult for a person to find this salaried employment, and so he felt it was imperative that his family live in town so that his children would receive an education for their future. His family had sacrificed that year because he had lived apart from them while he tended the *roça* they had on a rancher's land. After he harvested his rice, he planted pasture in exchange for the use of the land and came to town. He said that, for one thing, land was difficult to obtain in Itupiranga. Furthermore, any land that was available now was too far away from town. Even in the event that they obtained a plot of land, he and his wife were afraid to take their children and live on it because "they might die of malaria." It was better to work odd jobs like he had during the past year so that the family was safe from disease, the children could go to school, and so that everyone could stay together most of the time.

In case after case, although the adults preferred to live on the *roça*, one main motivation for households to sell or leave their land and to stay in town was the education of

their children. Many people wanted to stay on their lots because life was easier, and food was more abundant. The *mata* supplied everything that adults needed; it was "*descapitalizada*," (a situation in which money is not needed and people do not accumulate wealth) and everything was free. To live on the street (in town) was a struggle, and often people went hungry. "*O mercado é cruel*" (the marketplace is cruel), one man said, "because in town people have to pay for everything." However, for "people who had money the city is a good place to live. But without money, the city is difficult." Yet, sadly and reluctantly in many cases, people moved to town because the *mata* was not a good place for children because they would not receive an adequate education there.

Many Transamazon colonists who had received land during the 1970s sold their land in the mid- to late 1980s as their children grew up and required further education. There were schools around the municipality that provided primary education, but only in the town of Itupiranga was there a high school. People perceived that urban employment was not only a way of making cash that was necessary for survival in the present, but was, in fact, the only way to get ahead. Many farming parents hoped that their children would move out of farming and into more secure and prestigious urban employment. Oftentimes, these families went to drastic lengths to make sure that their children could go to school, even to the point of selling their land and moving to town

as a family unit. One woman said, "*hoje em dia, tudo é estudo*" (today everything is education). Another man emphasized that people without an education did not have secure employment. Further still, one poor farmer said that it was a crime for parents to allow their children to go uneducated these days when everyone needed to know how to read. Someone else made the point that being just a farmer these days was not enough; one needed an education to be worth something. "A person without an education today is a *tristeza*" (lamentable or pitiful) one person said. Farmers were acutely aware that no one recognized their value. Indeed the perceptions of these farmers that led them to make enormous sacrifices to educate their children was accurate to a fault, given the findings that qualified or professional urban employment provided a better standard of living.

Access to a Better Living During the 1980s

There were three main avenues necessary to obtain skilled and professional urban employment. One was education, another was social/political connections, and the third was wealth. This section will explore the issue of access to urban employment. Long-term Itupirangans and family members of the wealthiest newcomers had the most desirable positions in state and local government, and other skilled urban jobs. It follows that access to the plum urban wage jobs in Itupiranga depended upon access to people and to wealth. Further, access to education, the other main

avenue to a better job, was becoming increasingly limited to children of the middle class and elite in Itupiranga, because of local policy changes that I observed during 1990.

There was a clear advantage to being an Itupirangan in terms of access to the more desirable urban jobs and to education. Locals had a higher standard of living than did newcomers, and clearly had a higher education. Table 5-9 shows that households in which the household head was from Itupiranga or other places in the state of Pará were significantly better off than those from other regions of Brazil, especially in terms of the mean level of education. Another table (5-10) reveals a significant difference in the mean level of education between households in which the household head had lived in Itupiranga for more than 20 years and those in which the household head lived there less than 20 years. Locals had the social connections necessary to obtain the more desirable urban employment, and also had more control over local affairs than did poorer migrants. Thus, they also had better access to education than did poorer migrants.

As we have seen, the average education of households which had skilled and professional laborers was higher than the rest of the population (Table 5-4 (c.)). This is consistent with the finding that education was an important requirement to obtain skilled and professional urban employment. If locals did not have the necessary skills for certain positions, such as dentists, registered nurses,

doctors, teachers or technicians, qualified professional personnel were brought in by the municipal government from outside the community for specific jobs depending upon their education and willingness to come and work in Itupiranga. In other cases, skilled positions were also filled by family members of more elite migrants, such as ranchers or sawmill owners. So having the influence that comes from being wealthy was also an advantage in finding skilled urban employment. Thus, length of residence, wealth and level of education influenced who got the skilled or professional urban wage positions in Itupiranga. Of the three, only education was seen as something most people could obtain, especially for their children. Outsiders were discriminated against, and the more recent the migrants the fewer their vertical social connections, although they tried to establish social ties with more wealthy and influential individuals in the community when they could. Since most poor migrants did not conceive that they could ever obtain enough wealth like the sawmill owners or larger-scale ranchers, education was the commonly perceived avenue for obtaining a higher standard of living in Itupiranga. People actively sought strategies to put and keep their children in school to make their futures more secure, even if it meant endangering their present circumstances.

As I mentioned earlier, farm families risked having less successful farms by locating some family members in town so children could go to school. Oftentimes the mother

and children would move to Itupiranga while the husband would stay on the lot. Other families would place children, especially daughters, in other peoples' homes in town. The children would work as servants for the families in exchange for room, board and the opportunity to go to school. Still other farm families sold their land and moved to town, risking the loss of a more certain livelihood of farming in exchange for sporadic employment, underemployment and unemployment. Even urban families made sacrifices to send their children to school. One long-term local woman in her late 50s said that she had never wanted to live in the *mata* even though, as the town began to change, the forest resources became more distant and it became more difficult to live. She stayed in town because she wanted her eight children to get a proper education, and there were few schools in the rural areas. Further, these schools only offered a primary education, and were not very good, according to Itupirangans. A common myth among Itupirangans was that people did not value education, especially poor people. The study showed that, on the contrary, many poor and not-so-poor people made enormous sacrifices to send their children to school.

However, despite the sacrifices that people made to place their children in either the municipal or state school in town, they faced increasing constraints to do so. During 1990 several local policies were enacted that would directly restrict poor peoples' ability to place their children in

the local schools. Certainly the local schools did not have enough space for all of the migrants who arrived during the 1980s, and inadequate facilities and teachers were good reasons to limit attendance. Yet access to obtaining an education was differentiated by social class. There was never a problem admitting students who were well off. However, several policies seemed to discriminate against the children of poorer and more recent migrants.

In February 1990, I interviewed a woman who had five children. She told me that the previous day her children had been sent home with a long list of supplies they had to have before they would be admitted back into class. The list included one package (500 sheets) of paper, one box of crayons, two notebooks, a stapler, an eraser, a bottle of glue, two liters of alcohol and some light cardboard. The woman was extremely frustrated and angry because she could not afford to buy all five of her children the supplies that they would need for the coming year. She explained sadly that she had decided to pull four children out of school for that year, and buy the supplies for one child to be admitted to class. Moreover, the family would have to go hungry for a few days so that she could come up with the money in order even to buy those school materials for the one child.

There had been a meeting about this policy a few days earlier, and many parents did not attend, she said, because they knew that it was about the fact that they would be required to buy their children school supplies, and many

people knew that they would never have the means to do so. "O jeito dos pobres é perigoso." (The way of poor people is perilous.) She explained that people suffered poverty rather than speak out because they were afraid. Poor people perceived that school officials felt that they were not cooperating if they did not buy the materials for their children. If poorer parents spoke out that they could not afford to buy the materials, they were considered rude and disrespectful. Either way, their children would be dispensed from class, so it was better to quietly not send their children back to school without supplies than to complain. Comments from many individuals from various social classes indicated that there were many such families in Itupiranga who did not have the means to buy school supplies for their children.

Ostensibly, poor families were supposed to receive educational materials for their children from the government. However, school supplies that the state and federal government donated to Itupiranga were given out indiscriminately. Although some poor families received educational materials, many families who could afford to buy them did, also. Hence, many poor families had to buy their children school supplies. Many parents complained that although in other places the school system provided materials for their children, in Itupiranga the families were responsible for buying supplies. They wondered why it was that some people were given materials and others were

not. There were many bitter feelings about the perceived injustices in this matter.

People utilized several strategies to keep their children in school if they were not given supplies by charity or could not afford to buy them themselves. As I mentioned, some families who lived in the *mata* were lucky enough to find a patron in town who would provide room, board and materials for a child in exchange for service as a servant or babysitter by that same child. One young teenage girl lived and worked as a servant at a local family run hotel in town. She was treated somewhat like part of the family. When she was not in class, she was responsible the rest of the time at any hour for cleaning and for running errands for the hotel operator and family. Another 12-year old girl who was in the third grade worked as a maid and cook seven days a week to earn school supplies: notebooks, shoes, and a uniform. She lived at home, however, because her family lived in town. Many women looked for wage work, made things to sell, raised chickens and cooked the meat, did laundry for other families, or harvested rice to make extra cash to buy school supplies for their children. Their husbands took on extra jobs when they found them.

The situation became worse for poor and some more well-off but struggling families on May 1, 1990, when another policy was implemented that required school children to wear uniforms to school. In a meeting outlining the dictates of the new policy, many people objected vigorously because they

did not have the resources to buy their children the required uniforms. The uniforms cost Cr\$360 (US\$6.50) for shoes, Cr\$280 (US\$5.05) for a shirt, Cr\$200 (US\$3.61) to Cr\$400 (US\$7.22) for shorts, and Cr\$300 (US\$5.42) for a skirt at the beginning of May 1990 (Cr\$55,4 = US\$1). Assuming that a household made at least one minimum wage (US\$57.40), the uniform for one child was 39.6 percent (US\$22.75) of that monthly salary. The uniform coupled with supplies could easily reach one-half of a monthly salary in a poor household. Many households probably did not even earn one minimum wage per month in cash.

In response to the complaints, one teacher told everyone that they would just have to economize and quit buying some luxuries and other things they needed in order to buy the uniforms. She told the parents that they could make payments little by little for the clothes, and that before they knew it their debts for the clothes would be paid off.

The costs for buying these uniforms would completely destroy the hopes of many poor families to send their children to school. Even many middle class families struggled to send their children to school under the new policy. One man who owned the local ice factory sold his family's house on May 25, 1990 for Cr\$7,500,00 (US\$135.38) in order to buy uniforms for his five children so they could go to school. After that, his whole family had to live in the building of his small business. Although this family

sacrificed to buy the clothing, they had some standing capital, a house, that they could sell. However, for households that did not have the means to obtain such a huge sum of money, the new policy effectively eliminated the chances for hundreds of poorer children to go to school, since they would not be able to attend class until they wore the required uniform. Thus, although the reigning ideology was that everyone in Brazil--hence in Itupiranga--had a right to an education, the new policies limited access only to those people who could afford it.

Further, without a proper education, people could not obtain gainful employment, and in some cases, could not keep their present jobs. About the same time the policy about the uniforms was instated, another policy went into effect whereby everyone who was employed by the government, whether state or municipal, had to learn how to write in order to keep their job. One woman who had a job as a janitor at the local school had to go to class at night to learn to write so that she could keep her job. She was away from her family day and night five days a week in order to perform her job and acquire the new skills that she would need to keep it. This policy reflected the almost hostile attitude of many wealthier people, especially locals, toward the poor, especially new migrants. Although on the one hand, the local political structure made a show of attending to the needs of the poor with charity at times (although this was uneven and fraught with corruption and conflict), these

policies effectively prevented poor people from access to the means of getting ahead in the new economic system. The types of jobs poor people obtained, if they were lucky, did not necessarily require them to read and write. The new requirements effectively ensured that a "good class" of people would receive even the unqualified urban jobs.

Although access to school was not denied to middle- and upper-class children, their options were limited if we compare the quality of their education to that of people who lived in larger cities like Belém or São Luis. Itupiranga had a state school from first grade through high school. However, locals and migrants alike considered that the local schools were inferior to those from other larger towns and cities. Reading materials in the library were sparse, as were many teaching tools, especially books and magazines. After students graduated from high school they had to go to Marabá or elsewhere to study for college entrance exams. The process was potentially expensive because they not only had to pay for these classes, but also for room and board, unless the children could live with relatives.

Indeed, many middle- and upper-class locals used this strategy of sending their children to live and study in the state capital, Belém, mostly with brothers and sisters. Many middle class Itupirangans sent their elder children to high school in Marabá or Belém, and then on to technical school or the university. By the mid-1980s, many former long-term families had moved from Itupiranga to other

places, including Marabá and Belém, and so locals could afford to send their children to school in other cities where they could live with relatives. There were many Itupirangans living in Belém and there was a lot of movement back and forth, especially among young people.

Each holiday in July, young people who went to school in Belém and Castanhal would come home and fill the local dance halls. Many parties and other festive events were planned during the time they were home in July. Parents seemed glad to have their children home, and stated that they missed them while they were gone. Yet, they were proud that their children went to better schools than Itupiranga had, and considered it necessary that they receive a higher education elsewhere. At the end of the vacation time, a bus which was arranged and paid for by the local municipal government transported all of the young students back to Belém where they would resume their classes. In early August the bus arrived in the evening, and many longterm locals gathered on mainstreet to say goodbye to their children, grandchildren, brothers, sisters, aunts, uncles, cousins, friends, and sweethearts.

The large gathering was somewhat melancholy that year in 1990, despite the festive atmosphere, because a lovely 21-year-old young woman from one of the elite local families had died in her younger brother's arms after a tragic accident just two weeks earlier. During a day trip to Marabá, she had been thrown from the back of one of the

municipal trucks when it hit a bump in the road just one kilometer from town. The community of locals, as well as many other people in town, both rich and poor, had mourned expressively for three days in front of her parent's house before she was buried, and an atmosphere of sadness hung over the remaining holiday period. So the departure that evening was a thoughtful one, in which middle and upper-class locals, who did not live with the daily threats of oppression, hunger, illness and death from poverty themselves, said their goodbyes with a bit more insecurity than at other times. Simone's death was on the minds of everyone that evening, especially as her grieving younger brother boarded the bus after being hugged by almost everyone who was present. Locals were freshly reminded that in times of crisis and perhaps at certain other times of the year they still came together as a community. Many local families lived far away and could only participate in local events in spirit, buoyed by local gossip that reached wayward Itupirangans via the telephone and these students. That evening, with their children boarding the bus and leaving for four and one half more months until the Christmas holidays, local people were aware that the community was no longer as coherent as it had been in the past.

Migrant elites had more limited options for schooling their children than did locals. These elites, ranchers and sawmills owners, were from southern Brazil and often did not

have relatives living nearby. Their children went all the way through high school in Itupiranga, and then, if they desired to continue their education, would be sent back to southern Brazil to stay with relatives after graduation, to study for college entrance exams and then attend a university. Although sawmill owners and ranchers were wealthy relative to other Itupirangans, their finances did not permit them any extravagance when it came to any activity but the immediate one of keeping their businesses operating. They could send their children home to receive an education, but they themselves would have to remain in the Amazon. If they wanted their families to stay together, they sacrificed a better education for their children for one they considered to be inferior in Itupiranga.

Conclusion

During the 1980s the development process vastly contributed to the heterogeneity and increasing complexity among social groups in Itupiranga. A marked economic disparity in standard of living was evident by 1990, as measured by local quality of life indicators. The findings indicate that it was absolutely necessary for households to seek economic strategies that provided cash. Those households that had at least one qualified urban worker were significantly better off than those households that only had rural workers or unqualified urban wage workers. Only one third of Itupirangan households had at least one qualified urban worker. Clearly, a majority of the population did not

reap the benefits of the overall development process by 1990.

Length of residence in Itupiranga was also a factor in obtaining a qualified urban job. Those households that had been in Itupiranga longer enjoyed a higher standard of living than recent migrants. Even access to land did not guarantee that a household would be better off. Indeed, the households of small-farmer landowners were significantly worse off than the rest of the population in three categories: material possessions, diet and education.

Landed farmers struggled against many odds in their efforts to maintain a farm. Those people who had land suffered from erratic weather conditions, illness, and lack of access to transportation, medical care, educational facilities and credit. Farmers needed access to cash and enough labor to make their farms viable. However, the attempts to rectify these problems created a contradiction for many families. If they sent some of their members off the farm to work for cash, they lost necessary labor to run the farm. This problem was heightened when children came of age to go school, especially secondary school. Mothers and children would move to town while the father and perhaps some older male children or other relatives stayed on the farm. In some cases, the father stayed on the *roça* far away from town on his own. These farms were less viable than those in which the families remained intact because the loss of women, children, and in some cases, adult males created a

labor shortage. Some families had sold their land and moved to town, eking out a living by finding odd jobs while the children went to school.

A common ideology under feudalism and under the *aviamento* system was that people were fixed in their station of life. However, many poor families in Itupiranga were readily accepting a new capitalist ideology that peoples' stations were not fixed. They perceived that individuals could be born poor and low class, and rise to be rich and upper class. In a dynamic frontier situation, this rise from rags to riches was not uncommon. Everyone knew of someone who made it rich from gold mining or became wealthier than previously by obtaining land.

Although people may have hoped for a similar stroke of luck in their own lives, most saw that the way out of their poverty and low social status was to educate their children. They now saw themselves as able to rise above their stations, or at least their children would be able to do so. This idea was so strong that people deliberately sold their access to the means of production--land, which was a type of insurance, and had to work harder and suffer economic deprivation and insecurity in order to send their children to school.

One theme, expressed to me more than once by farmers and fishermen, was that they did not want their children to turn out the same as they were, but were sending them to school so that they could obtain a stable, secure salaried

job, and be respected. People lived in their fixed stations under the old patron/client system. Even with the new regime, the class distinctions between rich/educated and poor/uneducated were difficult to cross. But people now had aspirations for their children, and definitely saw the possibility for them to rise above their parents' stations.

The struggles that families endured to try to educate their children seemed a rational choice in the new economic environment. Education was seen as an avenue to success, both for economic security and, further, for increasing one's status. Education is touted by modernization theorists, following Rostow (1960), as one critical step in economic development. Indeed, people in Itupiranga perceived that they would improve their standard of living by obtaining an education, at least for their children. Further, my findings show that households whose members had a higher education had a significantly higher standard of living.

At first glance, it might seem that Itupiranga was on the road to development, and that some day if infrastructural problems in the agrarian sector were worked out and there were more opportunities for employment, more people in the municipality would enjoy the benefits of the progress in the region. However, the reality was that these perceptions by modernization theorists and lower class Itupirangans of the benign nature of obtaining an education and qualified urban employment underestimated the ongoing

class struggle over access to necessary resources. While the struggle for land and violence over timber rights continued to be fought in the countryside, in town the vital resources over which different social groups contended were qualified urban jobs and education. In 1990 alone, several policies were enacted by the local government that limited poor peoples' access to urban jobs and their children's access to school. Since a good education was the only means that poor people could obtain qualified urban jobs, if these policies continued, locally, poor children would be denied access to the only avenue that might help them to rise above their station.

Table 5-1

Standard of Living Indicators by Ownership of Land in 1990, Itupiranga, Pará, Brazil

	N	Mean*			
		House Quality ^a	Material Possessions ^b	Average Diet ^c	Average Education ^d
Significance		None	p<.10	None	None
Community	150	3.467	3.113	1.0060	5.3025
Households with land	50	3.760	4.200	1.0850	5.2379
Households without land	100	3.320	2.570	.9662	5.2379

Source: Original survey data

Note: The following criteria apply to all of the tables in Chapter 5:

^a-House Quality' means best type of house: Roof: tile or Brasilit; Wall: brick, painted concrete or flagstone; Floor: cement or flagstone; Lighting source: electricity; Type of stove: gas range; Where they obtain their drinking water: piped into the house; Where they take a bath: from a shower or bath inside the house; Where they have the toilet: flushable toilet inside the house.

^b-Material Possessions' include: television, refrigerator, radio, sewing machine, bank account, livingroom sofa, rifle, bicycle, watch, car and horse or donkey.

Respondents were asked if they had these items or not. The results were obtained by calculating the number of respondents who answered "yes" for each one of the items, and obtaining the frequencies for the number of goods in each household and how many households had a certain number of goods. The frequencies ranged from 0 to 11, meaning some households had none of these items and others had 11 of them. A mean was calculated to compare the standard of living in terms of housing quality and material possessions across different social groups.

^c-Average Diet' was obtained by finding the combined mean for the number of times each household ate beef, chicken, game, fish and/or pork during the last week before the interview.

^d-Average Education' is the mean grade level completed.

Table 5-2

Comparing Standard of Living Among Households of Fishermen with Different Access to the Means of Production in 1990, Itupiranga, Pará, Brazil

	N	Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Fishermen with boat only	7	3.5714	1.8571	.9500	3.2778
Fishermen with canoe only	14	3.2143	2.8571	1.4857	4.6190
Fishermen with boat and canoe	5	4.000	1.6000	1.0500	4.1667
Fishermen with boat or canoe	21	3.333	2.5238	1.3071	4.2167
Fishermen without boat or canoe	7	4.5714	4.0000	1.3143	5.9167

Source: Original survey data

Table 5-3
 Comparing Standard of Living Among Households Which Include
 Different Types of Rural Workers in 1990, Itupiranga, Pará, Brazil

Households	(N)	Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Entire population	150	3.4667	3.1133	1.0060	5.3025
(a) Rural workers	112	3.1964	2.8482	0.9938	4.8518
Rest of population	38	4.2632	3.8947	1.0432	6.6193
Sig. of difference		p<.05	p=.000	p<.01	p=.000
(b) Agricultural employees	50	3.0800	2.2800	0.9540	4.6686
Rest of population	150	3.6600	3.5300	1.0323	5.6132
Sig. of difference		p<.01	p<.01	none	p=.000
(c) Small farmers with land	61	3.1311	2.9508	0.8279	4.7175
Rest of population	89	3.6966	3.2247	1.1295	5.6970
Sig. of difference		none	p<.05	p=.001	p=.000
(d) Large landowners or rural employers	4	4.2500	5.0000	1.1000	7.0708
Rest of population	146	3.4452	3.0616	1.0034	5.2538
Sig. of difference		none	none	none	none

Table 5-3--continued

Households	(N)	Mean			
		House Quality	Material Possessions	Average Diet	Average Education
(e)					
Goldminers	19	3.7895	3.3158	1.1789	5.1950
Rest of population	131	3.4198	3.0840	0.9808	5.3173
Sig. of difference		none	none	none	none
(f)					
Fishermen	28	3.6429	2.8929	1.3089	5.4368
Rest of population	122	3.4262	3.1639	.9360	5.2715
Sig. of difference		none	none	none	none

Source: Original survey data

Table 5-4
 Standard of Living Among Households Which Include Different Types
 of Urban Workers in 1990, Itupiranga, Pará, Brazil

Households	(N)	Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Entire population	150	3.4667	3.1133	1.0060	5.3025
(a) Urban workers (all)	113	3.708	3.4248	1.092	5.6271
Rest of population	37	2.7297	2.1622	0.7459	4.3199
Sig. of difference		p<.01	p=.001	p<.01	p<.01
(b) Qualified urban wage workers & store owners	64	4.3906	4.4219	1.2548	6.2647
Rest of population	86	2.7791	2.1395	0.8238	4.5781
Sig. of difference		p=.000	p=.001	p=.000	p<.10
(c) Qualified urban wage workers	50	4.4400	4.4600	1.3520	6.6020
Rest of population	100	2.9800	2.4400	0.8365	4.6463
Sig. of difference		p=.000	p=.000	p<.01	p=.001
(d) Urban store owners	24	4.2917	5.1250	1.2167	5.4700
Rest of population	126	3.3095	2.7302	0.9656	5.2704
Sig. of difference		p<.01	p=.000	none	none

Table 5-4--continued

Households	(N)	Mean			
		House Quality	Material Possessions	Average Diet	Average Education
(e)					
Unqualified urban wage workers	46	3.1522	2.5870	0.9098	5.1431
Rest of population	104	3.6058	3.3462	1.0490	5.3715
Sig. of difference		p<.10	p<.10	p<.05	p=.000
(f)					
Small autonomous urban street vendors and elderly who depend upon family members for living	38	3.4737	2.9211	1.0176	5.9063
Rest of population	112	3.4643	3.1786	1.0022	5.0959
Sig. of difference		none	none	none	none
(g)					
Sawmill workers	14	2.4286	1.6429	0.7571	4.0129
Rest of population	136	.5735	3.2647	1.0319	5.4363
Sig. of difference		p<.10	p<.05	p<.05	p<.05

Source: Original survey data

Table 5-5

Standard of Living Among Households with Zero to Seven Urban Workers in 1990, Itupiranga, Pará, Brazil

		Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Significance	N	p<.10	p<.01	p<.001	none
<u>Number of Urban Workers in Household</u>					
0	37	2.7297	2.1622	.7459	4.3199
1	57	3.4386	2.8772	.9939	5.1870
2	33	3.5758	3.0909	1.0266	5.4284
3	11	4.4545	5.0000	1.4364	7.2314
4	4	6.0000	7.0000	2.3000	7.5438
5	3	4.0000	4.0000	.8667	5.3690
6	1	2.0000	3.0000	.8000	7.7778
7	4	4.5000	5.7500	1.1000	6.7566
Entire pop	150	3.4667	3.1133	1.0060	5.3025

Source: Original survey data

Table 5-6

Standard of Living Among Households with Zero to Seven Qualified Urban Workers in 1990, Itupiranga, Pará, Brazil

		Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Significance	N	p<.01	p=.000	p=.000	p<.05
<u>Number of Qualified Urban Workers in Household</u>					
0	86	2.7791	2.1395	.8238	4.5781
1	39	4.3846	3.8462	1.1908	6.2543
2	14	3.9286	4.0000	1.0857	5.1926
3	4	5.2500	7.2500	1.6000	7.1601
4	2	5.0000	7.5000	3.1000	7.9127
5	3	4.3333	6.3333	0.8667	7.3657
6	1	6.0000	5.0000	1.8000	9.8889
7	1	5.0000	9.0000	1.6000	7.8750
Entire pop	150	3.4667	3.1133	1.0060	5.3025

Source: Original survey data

Table 5-7

Standard of Living Among Households with Zero to Seven Qualified Urban Wage Workers in 1990, Itupiranga, Pará

		Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Significance	N	p<.01	p=.000	p<.001	p<.01
<u># Qualified Urban Wage Workers in Household</u>					
0 rest of pop	100	2.9800	2.4400	.8365	4.6463
1	33	4.1515	3.5455	1.2641	6.3789
2	9	5.2222	5.6667	1.6444	5.6130
3	3	3.3333	5.0000	1.0000	8.2950
4	3	5.6667	8.6667	1.5333	8.8102
5	1	5.0000	9.0000	1.6000	7.8750
6	1	6.0000	5.0000	1.8000	9.8889
Entire pop	150	3.4667	3.1133	1.0060	5.3025

Source: Original Survey Data

Table 5-8

Standard of Living Among Households with Zero to Twelve Rural Workers in 1990, Itupiranga, Pará

	(N)	Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Significance %		91.43	NOT	NOT	NOT
<u>Number of Rural Workers in Household</u>					
0 rest of pop	38	4.2632	3.8947	1.0432	6.6193
1	54	3.3889	3.1111	1.0370	4.9827
2	31	2.6129	2.6129	.9048	4.7909
3	15	2.9333	2.9333	1.2667	4.9680
4	5	4.4000	3.4000	.8100	3.7757
5	3	3.0000	.6667	.6667	3.8333
7	2	5.0000	2.0000	.1000	5.7778
11	1	6.0000	3.0000	1.2000	7.2008
12	1	3.0000	.0000	.8000	3.0833
Entire pop	150	3.4667	3.1133	1.0060	5.3025

Source: Original survey data

Table 5-9

Standard of Living Among Households According to State of Birth of Household Head in 1990, Itupiranga, Pará, Brazil

	N	Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Significance		p<.01	p<.10	p<.10	p=.000
Maranhão	65	3.1077	2.4615	.9269	3.3226
Pará	19	4.5789	3.6842	1.2526	9.0000
Itupiranga	22	4.5909	4.2273	1.3205	7.0000
Northeast	27	3.1481	3.7037	.8923	2.4231
South	13	2.3077	2.8462	.8615	4.9167
Entire pop.	146	3.4589	3.1507	1.0172	4.5147

Source: Original survey data

Table 5-10

Standard of Living Among Households According to Length of Residence of Household Head in 1990, Itupiranga, Pará, Brazil

		Mean			
		House Quality	Material Possessions	Average Diet	Average Education
Significance	N	p<.01	none	p<.10	p=.001
0-5 years	99	3.1616	2.8687	.8944	3.3152
20+ years	39	4.3333	3.6667	1.1397	5.5946
Entire pop.	138	3.4928	3.0942	.9642	3.9690

Source: Original survey data

CHAPTER 6
THE CHANGES IN FISHING

Introduction

Dawn is witness to quiet activity on the river in front of Itupiranga. There are fishers returning from a night of work, and others are just leaving. Normally, it is the fishers in canoes who return in the early morning hours, their silhouettes dark while they move quietly along the water against the backdrop of the rising sun. The morning peace is interrupted as motors in motorized boats of the larger fishing operations are started up, back out of their moorings, and ascend or descend the river. As the boats become more distant, the sound recedes to a hesitant murmuring.

Sometimes fishers leave in the late afternoon. It is common to observe a fisher walking down to the river with his arms full of fishing nets, oars, and large, white styrofoam boxes in which he and his partner will store ice and later fish, if they are lucky. He may make two or three trips from his house to the river before he is finished carrying all of the supplies he needs for a two- or three-day fishing expedition. He must carry enough food for that amount of time, and if he has a motorized boat, he must bring enough oil and fuel to get him to his destination and

back. Fishing in 1990 required a lot more technological paraphernalia than in previous years, especially before the 1980s. Furthermore, beginning in the mid-1980s, each fisher needed to carry a license to fish, which he had to buy. Each fisher also paid monthly dues to the *Colônia dos Pescadores de Itupiranga*, and was taxed 5 percent of every catch he brought in.

Despite the continuing dangers of malaria, snakes, river porpoises, piranha, alligators, and the uncomfortable cold that creeps in fishers' bones at night, fishing after the flood gates of the reservoir were closed was less dangerous than in the past. Formerly, fishers had to navigate through perilous and rapid waters. Many more people drowned then than now, some old timers related. Furthermore, for a couple of years after the dam, the number and size of fish increased dramatically. Fishing had never been so good! The huge numbers of tasty fish drew thousands of people to the reservoir to fish, commercially.

Fishing was an apt activity to examine the changing relationships between people and with the regional aquatic environment in the face of development that has occurred in Itupiranga and in the larger region of southern Pará. In this chapter I will examine the changes that have occurred in Itupiranga and on the Tucuruí Reservoir since 1984 in technology, fishing techniques, and the organization of fishing, including social relations of production,

marketing, and the growth of governmental presence in managing fishers and the resource.

Beginning in the mid-1980s, increasing governmental regulations and the need for cash encouraged people who fished to overmine the resource, and drove small producers out of this activity or to fish for larger outfits. By 1990 it appeared that the increasing competition over riparian resources plus the intensification of commercial fishing initiated a process of increasing economic stratification in the fishing enterprise. Many formerly autonomous fishers from Itupiranga were forced to abandon fishing as one of their many occupations because of a trend to professionalize fishers or because they could not compete with more capitalized fishing enterprises. These small-scale fishers either looked for alternative means of making a living, or sold their labor to larger fishing enterprises.

Methodology

The methodology used to obtain data on fishing included participant observation, survey questionnaires and interviews. In addition to using information about fishers from the community survey, which was a random sample of 150 households in town, I conducted interviews in 30 more households where at least one fisher lived and fished, commercially, in order to obtain information regarding technology, social relations of production, marketing, organization standard of living and perceptions about fishing. The 30-household survey elicited information from

about 41 people who fished. The households in this survey were selected by networking with fishers, and finding out where other fishers lived. This information will be compared with that of the community survey in which the 150 households were randomly selected. It is important to compare the results of both surveys to see if the survey of 30 fishing households is more or less representative of fishers and fishing households in Itupiranga. There were 42 fishers in the community survey, 35 of whom fished professionally. Together, the information discussed in the demographic and standard of living sections includes 76 professional fishers (five of whom were women). The following description and analysis comes mainly from the surveys with fishers, interviews with other key informants in Itupiranga, Marabá (IBAMA) and Belém (SUDEPE and IBAMA), and records at the *Colônia dos Pescadores de Itupiranga*.

Traditional Fishing

In the past, and certainly before the floodgates of the Tucuruí Dam were closed in November 1984, the technology used for fishing was "simple" in that fishers could make, instead of buy, most of their equipment necessary to catch fish, including line and hooks. When nylon line was introduced in the Amazon during the 1960s, local fishers probably began to purchase line as well as metal fishing hooks. However, most equipment was still made, locally, and furthermore, people who fished probably made most of their own.

Formerly people fished in canoes or from the riverbank. Fishers used such equipment as harpoons (*arpão*), *rastão* (literally a twig left on a stem of a grapevine after pruning), fishing rods (*caniço*), another type of fishing rod and line with multiple hooks on the end (*espinhel*), bow (*arco*) and arrows (*flecha*), fishhooks (*pindá*, a type of fishing rod with 3 fishhooks on the end united by a piece of cloth, and using meat as bait) and gillnets (*malhadeira*). People also used another type of fishhooks (*anzol*). Now the *anzol* was mainly used for fishing professionally for *tucunaré* (*Cichla ocellaris*) or privately for smaller fish for consumption. People also still used the *caniço* to catch *tucunaré* and other types of fish, but less so now than they did in the past (refer to Table 6-8 for common, family and species names of fish).

During the 1980s some of these technologies were prohibited from use because of worries about some species' extinction from overfishing. The bow and arrow were outlawed because fishers often used them to catch a type of fish called *pirosca* or *pirarucú* (*Arapaima gigas*), which became endangered in the Tocantins and elsewhere in the Amazon. Although fishers did not use nets much in the past, they did use some large nets to obtain large-100-kilo (or more) *pirarucú* to eat. Now that it was prohibited to catch *pirarucú*, these large nets could not be used. Also, in 1975 fishers could no longer use smaller net sizes (5 cm and 6 cm) per government regulation No. 47 by SUDEPE. The

appropriate mesh sizes were now at least 25 cm for *tucunaré*, 55 cm for *tambaqui* and 150 cm for *pirarucú* (Leonel 1991). The smaller mesh sizes were outlawed because they often would catch juvenile fish, the loss of which would threaten the sustainability of the resource. There was also a prohibition against fishing with two other types of nets. The *rede arrasto* (drag-net) was prohibited because it was so efficient that the net would catch everything. The *xangaria*, a *rede de cerca água*, was prohibited because it killed all fish that came into contact with it.

In the past those individuals who did fish fished alone or in teams, and mostly as part of their other subsistence activities. They fished for consumption and equally divided the fish to take home to their families. A popular type of fish that was consumed was *pirarucú*, a large fish that would feed many people in a village. The meat was divided and shared among kinfolk and neighbors much like gamemeat from a hunt. Beginning in the 1970s a few individuals occasionally sold fish on the street whenever they had a surplus that day, but there was no regular market for fish. All of the fish caught by people in Itupiranga was consumed locally.

At that time fishers performed all of the activities related to fishing themselves, from making their own equipment, to fishing to distributing or selling the fish they caught. There was no profession of 'fishers.' Fishing was a generalized activity, and merely one of many activities an individual performed to make a living. There

were few fishers, and hence, no competition over the resource. Many people remembered that everyone preferred game meat, and men liked to hunt better than fish, hence fishing for food was secondary to hunting. In the past, fishing was not an organized or specialized activity, and there were no state imposed regulations, although there were probably community sanctions and taboos. People did not make their wealth from fishing since the activity was not commercialized and there was no market.

Incipient Capitalization of Fishing During the 1980s

The simple fishing of the past on the Tocantins River was very different from the commercialized fishing of the 1980s on the Tucuruí Reservoir, although both types were artisanal fishing. During the 1980s, and especially after the floodgates of the Tucuruí Dam were closed in late 1984, the technology, production, consumption and marketing patterns of fishing changed. Fishing became a profession on the Tocantins/Tucuruí Reservoir during the 1980s. The abundance of fish after the floodgates were closed attracted many people to the region to fish, and also created an opportunity for others already in Itupiranga to make a living after they lost many of their former sustenance strategies due to the local impacts of the development process. Significantly, fishing was now carried out mostly for commercial purposes. People flocked to the area, and commercialized fishing was one option in which to make a living.

Organization

As fishing became more specialized, there were an increasing number of regulations designed ostensibly to protect the resource, and also to alleviate conflicts among the fishers. More often, however, the regulations and the attempts to organize people in the profession, meant out-of-pocket expenses for fishers, who were eventually denied access to fish because they could not afford the costs to continue. Many fishers dropped out of fishing and entered or returned to other occupations, or worked as employees for other larger fishing outfits.

The increasing number of fishers on the reservoir and competition over fish brought about conflicts. One major source of hostility was between the people who considered themselves local fishers, and outsiders. The local fishers felt that the outsiders were not paying attention to local traditional rules about honoring each others' rights to fish and maintaining the resource. As early as 1985 and 1986 fishers began meeting with the mayor in Itupiranga to discuss numerous complaints and ensuing conflicts brought on by the competition from so many fishers.

During 1986 the fishers began to meet in earnest about many grievances concerning the rights and number of professional fishers on the reservoir. From those meetings, the *Colônia* became better organized with the help of the local mayor at that time, and membership became obligatory for professional fishers. From the 30-household survey, 17

fishers remembered a time when there was no obligation to be a member of the *Colônia*. Three of these stated that it became obligatory to be a member of the *Colônia* beginning in 1988, when all fishers had to carry a card. Three other fishers remembered that it became obligatory to be a member five or six years before 1990. The rest of those fishers interviewed either did not know or remembered joining the *Colônia* 10 to 20 years before.

Artisanal fishing along the Tocantins River was subject to the same policies and jurisdictional entities as the rest of Pará, but it was only after the Tucuruí Reservoir came into being that regulations increased in number and attempts were made to implement them. All fishers were subject to the policies and regulations as set forth by the *Superintendência do Desenvolvimento da Pesca* (SUDEPE). The highest entity which represents fishers and coordinates local cooperatives is called the *Federação dos Pescadores*, a national governmental organization with offices in each state in Brazil. The main role of the *Federação dos Pescadores do Pará* is to coordinate the activities of the local *Colônias*, or organizations that represent the rights of artisanal fishers in Pará. The *Federação* is run on the dues paid by the members of the *Colônias*, and, according to the president in Pará, does not receive financial help from the federal or state governments. The Federation resolves conflicts between fishers themselves, and with other groups.

IBAMA, the national environmental protection agency, also has jurisdiction over fishers with regard to protecting the resource. For example, they implement and enforce the "*período de defesa*," the spawning period for many species of fish, which begins November 15 and lasts through March 15. During this time, fishers were prohibited from fishing with gillnets most species of fish depending upon their individual spawning periods. Many fishers were uncertain as to the exact dates of the prohibition.

In fact, there was much confusion among fishers about exactly which months they were prohibited from fishing. When asked if there were some months when they did not fish much, 20 fishers responded positively. Seven fishers said that they fished throughout the year, and three gave no response. Only 15 persons responded to the next question which concerned the exact months they did not fish. A total of seven people responded that they did not fish during the period of prohibition, but their responses varied. One person said that he did not fish during January. Two people said that they did not fish during "winter" (the rainy season). Two others said that they did not fish from November through February, the time when fish spawned. One other individual stated that he did not fish during January and February. Yet another individual said that he did not fish during the months (unspecified) when it was prohibited to fish. The other respondents mentioned other months, usually June (one individual), July (two individuals), and

August (two individuals), or "summer" (the dry season) (two individuals).

The local organizations were the *Colônias*, of which there were four on the reservoir. They were located in Marabá, Itupiranga, Jacundá and Tucuruí. The local *Colônia* in Itupiranga came into being on July 27, 1986, after an extended conflict between local fishers in Itupiranga and others, principally from the South. The locals perceived these outsiders were overexploiting the resource and not honoring the rights of nor artisanal style of the local fishing system. In March, 1986, the then mayor of Itupiranga had written to the governor of Pará urging that the town needed its own *Colônia* to organize local fishers and address relevant issues that were not being attended to by the *Colônia* in Marabá, which had jurisdiction at the time. After much correspondence with various entities, the local *Colônia dos Pescadores de Itupiranga-Z44*, was created in a lengthy meeting on July 27, 1986, which was attended by 34 fishers, a representative of FEPA (*Federação dos Pescadores do Pará*), the mayor, several municipal politicians, the chief of police, a judge, representatives from EMATER and other agencies, and the president of the *Colônia* of Tucuruí-Z32, who had worked diligently to organize local fishers during the previous week. The fishers were promised representation, like all of the other types of workers, and also the means by which to create a local market. They received some initial financial help

from the Federation, and the mayor donated a local building for the offices and fish market, although he told the local elected officials of the *Colônia* that they must raise their own funds, by taxation, for their maintenance.

The requirements for joining the *Colônia* were that each fisher had to buy a license to fish, pay monthly dues (Cr\$35 (US\$.51) in July 1990) and pay a 5 percent tax for each catch. The fishers were promised medical assistance, a monthly salary during the spawning periods when they were prohibited from fishing, and political representation. In addition, the *Colônia* sold some equipment--line to make nets (Cr\$500 (US\$7.31) per roll), and hooks--more cheaply than people could buy elsewhere. During the dry months of 1990, the *Colônia* in Itupiranga finally obtained an ice maker after years of negotiation with other state agencies. As a result, fishers could buy ice more cheaply from the *Colônia* than from other producers (Cr\$3 (US\$.04) in July 1990). There was a celebration shortly after the day that this ice maker arrived and was installed. Many fishers were pleased that the *Colônia* had finally gained this victory for their "class," which they felt had few rights or representation, and was badly neglected by federal and state political entities.

Initially, the fishers were enticed to become members of the *Colônia*. However, before long each fisher in Itupiranga had to (1) have a license to fish commercially; (2) pay for this license; (3) be a fisher, as a primary

occupation in order to obtain a license; and (4) not fish during the spawning period from November through January. It had been a long-term struggle for the *Colônia* to force fishers to buy licenses, pay dues and weigh in at the *Colônia* before they sold their fish to outside buyers, so that the *Colônia* obtained the 5 percent tax on each catch. These were still major problems in 1992 (Boonstra, personal communication).

More than a few fishers were uncertain as to exactly when the *Colônia* began to enforce these policies. My survey data revealed that the average number of years that the fishers said that they had been members of the *Colônia* dos Pescadores de Itupiranga was 4.2 (SD=4.4). The minimum amount of time was 5 months, and the maximum was 20 years. The average number of years people had fished in the immediate region was 10.4 years. Nineteen fishers interviewed had become members within the last five years, from 1985, and 18 of these since 1986. Only four members had been members before 1985. In addition to a membership in Itupiranga, five fishers were members of other *Colônias*. Four of these were members of the *Colônia* in Marabá, and another fisher was a member of the *Colônias* in Marabá and Tucuruí. Fishers usually joined other *Colônias* so that they could sell fish in the markets run by the *Colônias* in those towns.

The registration records at the *Colônia* revealed that most members had registered during the latter months of 1986

and early months of 1987. Table 6-1 shows the month and year that fishers became members of the *Colônia dos Pescadores de Itupiranga*. Many of these fishers were only nominally on the roll since they had either moved on, quit fishing, not paid dues for some time, or died. The *Colônia* revamped the membership roster in June of 1990, and recalculated their number of active members at 160 with 21 more fishers recently registered.

More than likely compliance with the regulations was a problem because many fishers grumbled that the local *Colônia* did not provide the benefits it promised, and that they did not know where the money they paid in went. Most fishers stated that they had received "nothing" from the *Colônia* (11 interviewees) or that they did not know about any benefits (4 interviewees) or the question did not apply to them because they had never asked for assistance (4 interviewees). Only five fishers out of the 30 had ever received medical assistance. Two of these had been treated for malaria (however SUCAM treats this for free), one for a vision problem, and another for a head injury. Several fishers mentioned that they had attempted to receive medical assistance but had been denied. Four fishers mentioned that buying ice from the *Colônias* was cheaper. One fisher mentioned that he had heard that they would get paid during the spawning period when they could not fish, and one other fisher mentioned political representation as a positive benefit. The representatives of the *Colônia* were aware of

many of these complaints, but stated that they did not have the money to provide medical assistance or pay during the spawning period to their members. They referred to their local Colônia Number 44 as "poor," and hoped that they could negotiate for more assistance from SUDEPE and other government agencies. They claimed that the money that they received for dues and taxes was not enough to even begin to cover the expenses of the promised benefits for their members.

Fishing Policies and Prohibitions

Among the fishers in Itupiranga there was a wide range of perceptions about policies and prohibitions concerning fishing. Further, I perceived a flexible range of compliance to those prohibitions.

Fishers on the Tucuruí Reservoir were subject to the same regulations as those in the rest of Pará. During the 1970s a series of national regulations were enacted by SUDEPE that limited the fishing technology and techniques they could use. This legislation was designed to preserve the resource. Beginning in the mid-1980s the enforcement of federal and state legislation began on the reservoir. One reason was ELETRONORTE's influence with all activities in the region. Another was the increasing conflicts between local fishers and the growing number of fishers from other regions of Brazil. A major contention by locals was that the fishers from other regions were fishing in ways that were destroying the resource for everyone. There existed a

major conflict between fishers from Itupiranga, and ones from Marabá, where the outsiders mostly lived and marketed fish. In 1987 the *Colônia* of Itupiranga charged in a letter to FEPA that fishers from Marabá were fishing for *pirarucú* in lakes in Itupiranga, which were breeding grounds for that species of fish. They claimed that they were observing the regulations that no one fish for *pirarucú* in those lakes, and were outraged that other fishers were not. They asked that competent authorities look into the matter, and ensure compliance, so that the resource would not be abused by some fishers to the detriment of all.

In 1988 several laws were passed that pertained to the Tucuruí Reservoir, specifically. One law limited the number of fishers on the reservoir to 2,600. However, in June 1990, the President of FEPA stated that there were still 3,500 fishers in the area despite efforts to limit the number. Although he was worried about conserving the resource on the reservoir because of the high number of fishers there, he argued that artisanal fishing did not alter the environment. By artisanal fishing he meant small-scale fishers in canoes and small motor boats using fishing technology that was manually operated versus industrial fishing, which required much bigger boats and more technology, including machinery to raise and lower fishing nets. The artisanal gillnets waited for the fish, he explained, and selected only certain types and sizes of fish, unlike the industrial nets which captured everything,

and thus, were wasteful. He argued that unlike industrial fishing, artisanal fishing technology was not predatory, principally because the men fished manually with their own hands ("*próprios braços*"). Furthermore, the lot of artisanal fishers was more difficult, also, because they were not subsidized by the government, as were industrial fishing enterprises. He did not explain what he meant by government subsidies for industrial fishing enterprises. Despite the view that artisanal fishing was not as detrimental to the resource as industrial fishing, there were laws which addressed the potential predatory effects of commercial artisanal fishing in inland waterways in the Amazon.

One law addressed the size of fish that could be caught. The law specified that fish below 28 cm. had to be thrown back. Compliance was difficult, however, because current gillnet technology captured fish of all sizes. For example, small *tucunaré* and *pescada* (*Plagioscion squamosissimus* and *Plagioscion surinamensis*) juveniles would get caught in nets, and sometimes died. These species were more hearty than another more delicate species, *corvina*, which had a big mouth and died easily in the line. Gillnet fishing was a problem because *corvina* were very sensitive if caught inadvertently in the line, and died before the line could be brought in so fishers could throw them back. When people used smaller mesh, many of these fish died before they could be saved. Many fishers worried that *corvina* were

dying out despite their efforts to save the juveniles. Some fishers complained that the larger boats did not even try to save juveniles, but rather, "wasted" them at the end of the trip by throwing dead ones back into the water. Any fish that could not be easily sold or which would put the boat in jeopardy of fines from IBAMA officials were "wasted" in this manner.

Legislation prohibited people from fishing for certain endangered species, like *pirarucú*, and two types of turtles, *tracajá* and *jabutí*. Many fishers said that some people still secretly fished for *pirarucú*, and sold it openly in Tucuruí. People commonly used to fish for *tracajá* and *jabutí*, also, but it was now prohibited to catch these species. However, people still fished for them, secretly. Some people felt that these laws were necessary to protect the resource. Other fishers argued that it was obvious that there were plenty of turtles, and that the laws protecting them were not necessary. Many people harvested the eggs during turtling season, and also killed the mothers.

One fishing team, originally from Maranhão but who had lived in Itupiranga for five years, killed two large turtles within a period of three months during the dry season of 1990. The method they used to kill the turtles was for one of them to dive into the water and wrestle with the turtle until he hooked the line on her leg. This was a dangerous procedure, because the turtles put up a good fight, and had the advantage under water. The other fisher would stay in

the canoe and hold the line, while the waterborne one climbed back into the canoe and they both hauled the turtle in. Both fishers received many scratches from the turtle during this process. The second turtle, caught in May 1990, was a young female, approximately two and one-half feet in diameter who had not produced eggs. Younger turtles were more delicious, they explained. They had killed her because a woman had asked them to obtain the fat so that she could make some medicine. The turtle provided one liter of fat, which they sold for Cr\$1000 (US\$18.05). The couple ate turtle for two days, and sold one liter of meat to someone else. They planned to kill more turtles because they could make money by selling the meat and fat, as well as save some of the delicious meat for themselves. They were perfectly aware that killing water turtles was prohibited by IBAMA, but did not believe that the turtles were in any danger of becoming extinct, since they seemed to be plentiful in the region. These two fishers did agree that the harvesting of turtle eggs should not be allowed, and that people should only be able to kill the adults. However, despite legislation that prohibited the collection of turtle eggs, they were a popular item for consumption and sale in Itupiranga during the late dry season in August when female turtles climbed onto the sandy beaches of nearby river islands and deposited hundreds of eggs into the nests they made.

The most problematic law for fishers was the four-month prohibition against fishing during the spawning period, from November 15 to March 15. Beginning in 1987, people were not allowed to commercially fish with gillnets for several months during the rainy season because the fish were spawning, but they could use line and poles to fish for family consumption. Some fishers were in favor of this law because it conserved the resource. Others complained that they had no means of making a living other than fishing, and that during this time they and their families went hungry. Many fishers were confused as to the months of the prohibition. The *Colônia* was supposed to pay each fishers in the community a salary during this period. However, the organization was unable to do this because there were no funds. As a result, compliance was almost nonexistent, and IBAMA, which had the authority and responsibility to punish offenders, was ineffective due to lack of personnel and funding.

Thus, although an awareness existed about the degradory effects of predatory fishing and too many commercial fishers on the reservoir, peoples' economic interests superseded their desire to protect the resource upon which they depended. Furthermore, although there were regulations and agencies present to administrate them, lack of funds and personnel inhibited conservation efforts. Efforts at implementing the regulations were difficult, also, because fishers did not inform on each other to IBAMA if they

noticed someone fishing for a prohibited species because they felt that it was "ugly to call the police" on someone of their "class." They would write letters to FEPA and complain about a general trend, but would not inform on individual cases. There appeared to be an intrinsic incompatibility between environmental conservation and a growing commercial fishing enterprise on the Tucuruí Reservoir.

The fishers in Tucuruí were already organized by August 1986, and one of the organizers and leaders there came to Itupiranga to sell people on the idea of establishing an organization that would represent fishers in Itupiranga. Although the *Colônia dos Pescadores de Itupiranga* may have existed tenuously prior to 1986, during the latter part of that year many fishers became members in the hope that their grievances would be addressed by an entity that would represent their profession.

The body of legislation and the institutions that would enforce it became a force in the Tocantins River region from Marabá to Tucuruí during the 1980s. The means to regulate and manage fishing practices on the reservoir evolved during this period. Despite policies and directives designed to preserve fish as a resource, the introduction of commercial fishing threatened the resource. The production of fish in Itupiranga had increased from 12 tons in 1975 and 13 tons in 1976 (IDESP, No. 2, 1978) to 244.4 tons and 346.7 tons in 1988 and 1989, respectively (*Colônia dos Pescadores de*

Itupiranga 1990). Then fish production dropped markedly to approximately 100.9 tons and 99.3 tons in 1990 and 1991, respectively (also see Table 6-4 for production in kilos). During the June, July and August of 1990, the fishers complained that their catches were very poor, and that they had never seen a summer as bad as that. It is well known in other reservoirs around the world that for several years after the floodgates of a dam are closed the fish populations increase dramatically. However, after a period of time, usually from seven to 15 years, this trend is reversed, and the fish populations, in terms of diversity of fish species and individuals per species, will decline well below pre-dam levels due to changes in water temperature, flow, acidity, salinity, spawning grounds, nutrient loss, water logging and thermal stratification which depletes the oxygen supply several meters below the surface (cf. Harding 1966; Bardach 1972; George 1972; Lowe-McConnel 1973).

This ecological tendency coupled with the predatory effects of commercial fishing in the Tucuruí Reservoir will most likely have a negative impact on the numerous fishing enterprises in the reservoir as well as on local communities that depend upon fish as one source of food as well as protein.

Present Day Fishing Technology and Techniques

Because of the concerns about overfishing and species extinction, federal officials enacted legislation to limit the types of technologies that fishers used. By 1990, IBAMA

was attempting to enforce the restrictions on illegal technologies as well as limit the number of fishers on the reservoir, as discussed above.

The most common technologies that fishers used during the 1980s were *redes* (nets), *tarrafas* (throw nets) and *anzois* (fishing poles). *Redes* were large gillnets that were allowed to drift in the water to catch fish swimming in the currents. They could be used in the river, lakes and small narrow waterways between islands or the mainland and an island (*igarapé*). The nets ranged from 10 to 300 meters long, and were made with nylon line into a number of sizes of mesh (*malha*), to catch different sizes of fish. Many fishers had several nets of different mesh sizes. Some fishers had only one net, and a few had as many as 30 or 40 nets. Most fishers had between 5 and 10 nets. The normal mesh sizes used, which were still allowed by law, were sizes 7, 8, 9, 10, 11, 12, 14, 15. The smaller sized nets, 7 through 10, were for catching smaller fish such as *branquinha* (*Curimatã amazônica*), *vocador*, *baraná* and *piaú* (*Laemolyta petiti*). The larger sizes--12, 13, 14 and 15, caught larger fish such as *curimatã* (*Prochilodus nigricans*), *jaraquí* (*Semaprochilodus brama*) and *tucunaré*.

Fishers were interviewed regarding their schemes of mesh and the types of fish they catch with different sized mesh. Table 6-2 shows a compilation of the information from interviews with numerous fishers. Mesh sizes of 7 and 8 were used to catch fish from one-half kilo to 4 kilos,

especially during the dry season. The tendency was to use larger mesh, sizes 12 through 15, during the rainy season (January through April) because the fish were larger than during the dry season (May through August).

The nets were made of different weights of line, also. Fishers used finer line (0-30 weight, 0-25 weight, 0-35 weight) during the summer when the water was clearer so that the "fish cannot see the net," although fishers preferred to use heavier nets because they were stronger. During the winter, the fishers were not so particular because the water had more sediments in it, and the fish would not "see" the heavier nets (0-40, 0-50, 0-60).

The fishers positioned the nets according to the season also. During the dry season they placed them near to the river edge. During the rainy season, when the river was swollen, they placed the nets in the middle of the river. Fishers also placed nets closer to the river edge at night, because it was better to get the fish swimming at deeper levels. However, there was much discrepancy between fishers about how they fished, size and weight of nets, and to what depths they fished.

The fishers placed nets at different depths according to where they saw fish swimming. Some fishers preferred to place the nets deeper, using mesh sizes 7 through 12, especially during the summer because the water was clearer and they could see the fish. The following types of fish were found at deeper depths using the types of mesh as

noted: *piau* (10,11,12,13), *pescada* (all sizes), *mandi-moela* (7,8), *mapará* (8,9) *corvina* (7,8). Nets were placed closer to the surface during the rainy season when the water was dirty and also at night because the fish were said to swim closer to the surface. However, some fishers argued that they placed nets at deeper surfaces at night because it was easier to catch fish this way, and they used their nets closer to the surface during the day. Furthermore, they said that they more often fished at deeper levels because many times they did not catch anything if nets were placed too close to the surface. There was much variety in fishing preferences and styles among fishers. In general, people said that *curimatã*, *avoador*, *branquinha*, *pacú*, *piabanha*, *cará*, *jaraquí* and *barador* were found swimming closer to the surface, and could be caught using all sizes of net according to the sizes of fish. Table 6-3 reveals the pattern used by several fishers. Several fishers said that the position of the net depended on the fish. If the fish were *brabo* (tempestuous) the net was placed at a deeper level. But if the fish were *manso* (tranquil) the net was placed closer to the surface. Everyone said that it was easier to catch larger fish when they were swimming together in large schools, especially during migrations (*cardumes*).

Fishers also used *tarrafas*, or throw nets, when they saw schools of fish swimming together (*cardumes*) and also in lakes. *Tarrafas* were used for smaller fish, and in more turbulent waters, and could be thrown over fish close to the

surface and also used in deeper waters. They were used when a gillnet could not be used. Fishers liked to carry a *tarrafa* so that when they saw a school of fish in one place they could quickly catch them by surprise. The *tarrafa* was also used when there were a lot of people fishing nearby at the same time. The *tarrafa* was used in lakes and in the river, and also sometimes in *igarapés* (narrow creeks between islands and the mainland or between islands), however, the throw net was not as effective in narrower waterways.

People used fishhooks at the end of a pole (*anzol*, singular: *anzois*, plural) to catch *tucunaré*, *pescada*, *mandi*, *surubim* and *peixe de cor*. Fishhooks were used a lot by fishers who fished closer to the reservoir, where most of the *tucunaré*, a first class commercial fish, were harvested. *Tucunaré* and *pescada* remained in deep waters and so fishhooks were more appropriate than nets, according to some fishers. One fisher said that the fishhooks were also used for fishing in the flooded forest during the rainy season because the fish were more difficult to harvest there with a gillnet. However, like gillnets, the *anzol* was also generally used in both the river and nearby lakes depending upon one's preference and the situation.

Some fishers mentioned that they still used *espinhel*, which was a long line with three but up to 25 *anzois* (hooks). Fishers placed it in a spot along the riverbank, or in canals, and would often leave it there while

performing other activities. The *espinhel* was used to catch *filote*, *dourada*, *piraiba*, *pirabal*, *caranha* and *dorel*.

Other technologies were still used, but only rarely. Although the fishers said that the shrimp population had declined since the dam was built, they still sometimes used a basket made of palm fiber with an opening at the base (*matapí*) to catch shrimp. Another type of basket (*cacurí*) was also used to catch shrimp. Another rarely used device was a *caniço*, which was a fishing fence made from reeds to trap fish in areas where there were river tides. Although it was against the law to use a bow and arrow, one man mentioned that he still used them sometimes to catch *pirosca*, which was also against the law.

Most fishing took place at night, unless people were fishing for *tucunaré* with line and hook. When people fished at night they would leave in the late afternoon and return at dawn the next morning. Daytime fishers would leave early in the morning and return at approximately 5:00 p.m.

The number of times a boat placed the net per night varied from two times to 18, with an average of 5.9 times. When asked how many kilos fishers normally caught under good conditions, the answers ranged from 50 kilos to 4000, with an average of 824 kilos. This response varied because the capacity of some fishing operations was much greater than others due to the resources--size of boat and whether it was motorized or not, capacity to buy and store ice, fishing gear and number of fishers. When conditions were bad, the

answers ranged from zero kilos to 370, with an average of 101 kilos.

The factors that made fishing difficult, according to fishers included: bad luck, waves, river dolphins, alligators, too many fishers fishing too close, malaria, the moon, freshwater stingrays, piranha, injury, losing equipment, the season, having enough resources to fish, the size and quantity of nets, good or bad blood between partners, the amount of ice, and river currents.

Bad luck, malaria, river beasts that could injure people and equipment and seasonal and lunar influences affected all fishers approximately equally. However, the type and amount of resources used in fishing affected fishers differently. First, fishers who had motor boats could go further afield to where conditions were better to fish, usually closer to the reservoir. People who had only canoes were limited to fishing more locally, where it was sometimes difficult to catch anything. There was general agreement that there were no good fishing spots close to town. Second, fishers who had boats caught more fish, and thus could afford more resources like ice and containers in which to transport a greater amount of fish each trip. One limiting factor on the number of days a group of fishers could fish was how long the ice lasted. The fish would spoil quickly when the ice ran out.

When fishers were asked why their catch was better at certain times rather than others, the most common answer was

luck (8 persons). The second most common answer was when the moon was good (5 persons). Many fishers stated that fishing conditions were optimal during a new moon, because the fish could not see the nets. During a full moon it was much more difficult to catch fish because the nets were more visible. Another explanation was that during the new phase, the fish ascended up the river, whereas during the full moon, they did not. The third most common answer was that fish were plentiful and easier to catch during the *cardume* (actual fish migrations or when large schools of fish swim together) (4 responding initially, and one person secondarily, after first giving another reason). It was easier for fishers to see fish when they were swimming in large groups because of the ripples they made from their movement in the water. Four persons (three on the initial response and one on the second) attributed a good catch to the "consequences of the fish themselves." This response meant that the fish were either in the right place, did not see the nets, or did not outsmart the fishers. Other answers included competence and/or experience of the fishers, the season and the price of fish.

Then I asked the fishers how they knew when conditions were good to fish. According to the fishers, the conditions were best when the river was either filling up or drying up at the beginning of the rainy season and dry season, respectively. These seasonal fluctuations of the river corresponded with major fish migrations, which occurred

during January, when the river began to rise, and May and June, when the river began to go down. Table 6-4 reveals that May was consistently the peak month for fish production for years 1988 through 1991. The seasonal aspect was also relevant in that during the dry season the water was "clean" and the fish could see the nets and so were "difficult" to catch, whereas during the rainy season the water was "dirty." The overall best season to fish was from December through June or July. However, it was illegal to fish with nets during part of this period, which was problematic for most of the commercial fishers interviewed.

During the rainy season some fishers did not like to fish in lakes because the waters were too high and the fish went into the flooded forest, making it difficult to find them. Also during this period, fish were readily available in the river. On the other hand, some fishers stated that they preferred to fish in the flooded forest, especially in January, because it was "easy" to catch them after locating their spawning location. Again, fishers had different preferences according to their knowledge and technology. People said that they fished a lot less during January and February because they were afraid they would be caught fishing during the spawning season when fishing was prohibited. These responses indicate that although fishers honored the prohibition on the river where it is easier for IBAMA officials to find them, some would fish in lakes and

flooded forests to more easily catch fish and escape detection by the authorities.

The most common reason given for why there were certain months they did not fish was that it was not a good time to fish (eight individuals). The explanations for this response were that the fishing was better during the winter months than during the summer when it was "weak" and the river was "dry." Other fishers did not like to fish during the winter months because of mosquitos and rain, and when the river was "too full." They preferred to fish during the dry season. The second most common response for why people did not fish for certain months was the prohibition (five individuals). Two other fishers responded that they had other activities during certain months, and so did not have time to fish.

Overall there was considerable variety among fishers in preferences and outlook about fishing, and confusion about prohibitions, especially regarding the months when they were not supposed to fish. Most the fishers agreed that something had to be done to protect aquatic resources which provided their livelihoods, but there was considerable non-compliance resulting from the confusion or deliberately ignoring the illegality of fishing during certain times and using certain prohibited technologies.

The more sophisticated fishing technology, need for cash, changing relations of production and increasing demand for fish in southern Pará from the Tucuruí Reservoir were

contributing to the problem of compliance to the policies and regulations designed to protect fish. The next sections will examine the increased specialization of fishing by focusing on the changing social relations of production and distribution in the activity.

Changing Social Relations of Production

Before the rise of commercialized fishing in the mid-1980s, fishing was carried out for sport and consumption from the riverbank or in canoes by individuals or groups. Fishers either divided the harvest, especially if a group caught a large fish such as *pirarucú*, or brought home smaller fish for their family's consumption. Large fish were shared like game meat. The fish would be divided up and shared among the fishers and other kinfolk, since it was impossible for one family to eat all that meat before it would spoil. There was some informal, small-scale marketing of fish before the changes in the 1980s. Some fishers would walk up and down the street with their catch on a stick advertising vocally that they had some fish to sell. However, both the production and marketing of fish was non-specialized in that it was only one of the various economic activities that people performed, and was not a profession as it later came to be. People cooperated in the fishing endeavor and shared in the harvest, equally.

During the 1980s, fishing became a profession, and the production and marketing of fish became more specialized. For example, whereas people fished in the past as part of

their daily or weekly consumption, there was now an occupation of "fishing," and people practiced fishing as a primary occupation. Although fishing on the Tucuruí Reservoir would still be considered artesanal fishing, as opposed to industrial fishing, there was a process of incipient capitalism at work among fishers from Marabá to Tucuruí. Although fishers referred to themselves as a "class" of fishers, indeed there were two social classes of fishers in the production part of the process: boat owners/employers and employees. Furthermore, boat owners became wealthy at the expense of their employees. Those individuals with accumulated resources could afford to purchase more efficient technology and hire employees. Capital accumulation occurred in the production process and at the time of sale, when boat owners took a larger portion of the catch than was merely necessary to pay their expenses. The social relations of production in commercialized fishing during the 1980s became more complex than in the past.

Demographic Characteristics of Fishers in 1990.

According to the fishing survey of 30 households of the network sample, the average number of years that fishers lived in Itupiranga was 15.2 (SD=12.5), with the maximum 45 and minimum less than one year. Eleven of the fishers were born in Maranhão, 19 in Pará, 3 in Ceará, 2 in Goiás, 1 in Paraná and 1 in Piauí. Of the 19 fishers who were born in Pará, 12 were born in Itupiranga, and three in nearby

Marabá. Seven of the fishers had fished elsewhere, and several of these had fished in more than one place, previously. Five of these fishers had fished in Maranhão, one in Pará and another in Goiás. I did not count those fishers who had fished elsewhere in the region, i.e., from Itupiranga to Tucuruí, in this calculation, because historically and contemporarily, people moved a lot around this immediate region along the Tocantins River/Tucuruí Reservoir. The average number of years these people fished in the Tocantins was 10.4 years (SD=11.28). The maximum number of years people fished there was 50 and the minimum was one year.

In the fishing survey the most common reason that the fishing families moved to Itupiranga was to improve their situation since their previous locations were not conducive to making an adequate living (four respondents). Three other common reasons for why people moved to Itupiranga were to fish, because of family and other, with three respondents each in the categories. Other reasons included, to look for land (one respondent), loss of land in the previous location (one respondent), lack of land in the previous location (two respondents), for personal motives (two respondents), because of the dam (two respondents), and to mine for diamonds in the river (one respondent).

Twenty six of the fishers were heads of households. Other members of those 30 households who fished for the market included seven children, four wives, two friends, one

brother and one son-in-law. The average education of the fishers was 5.4 school years (SD=3.04 school years). The average age of the fishers was 34.6 (SD=14.95) with the maximum age of 75 and a minimum age of 14.

Types of Fishing Arrangements. Many people, especially women and children from poorer families, still fished from the riverbank or in small creeks using line and hooks, but this was only for consumption. Professional fishers fished in canoes and/or motorized boats. Approximately half of the fishers I interviewed only had access to canoes. Usually these people went out in partnerships of two individuals and split the costs of the trip and the remuneration. Seventeen households of fishers out of 30 in the fishing survey and 14 households of fishers out of 28 in the community survey owned their own canoe. According to the fishing survey another fisher who owned a canoe shared it with a family member in the same household. Three fishers who did not own canoes, shared a canoe with someone else in another household. Seven fishers fished with someone who owned a canoe. In three of these cases, the canoe owner was a friend. In two other cases the canoe owner was his *patrão*. In one case the owner was a brother, and in another case the owner was a step father.

The other half of fishers I interviewed fished in motorized boats, and usually in some type of employer/employee relationship. Although people still used canoes, motorized boats began to be used in the fishing

enterprise to transport canoes and fishers to more distant locations. The better fishing, especially for Tucunaré was done closer to the dam. The motor boat was used primarily for transportation to and from the fishing destination, since their size and the noise they made disrupted the fish. Often in these types of situations, canoes were taken on the motorboat to the fishing destination, and then the employees conducted the actual fishing from canoes.

Eight out of 30 fisher households in the fishing survey and 7 out of 28 fisher households in the community survey owned their own boat. In the fishing survey, two other fishers shared a boat with someone from a different household. Ten fishers fished with someone else who owned a boat. In three cases the boat owner was his *patrão*, and in another three cases his brother. In two more cases the boat owner was a friend, and in one other case another relative.

When asked "With whom do you fish?" ten fishers responded that they fished with a friend, nine fished with a relative, three with a *patrão* and friends, two with a *patrão*, two with *compadres*, and two with a relative and friends. In another case the fisher was a boat owner who fished with his employees, and in yet another case the fisher fished alone.

Then when asked about the composition of the team with which they normally fished, nine people responded that they performed the same activities as their partner, and another nine responded that the boat had an owner and the fishers

worked as employees for him. Another eight fishers responded that they divided the activities among themselves; for example, one person would paddle the canoe and the other would place the net.

When asked whether or not these fishers always fished with these same people, 17 responded "yes" they did, and nine responded that no, they sometimes fished with other people and in other situations. They chose their fishing partners based on several characteristics. Seven fishers mentioned that acquaintance or friendship was an important factor in deciding with whom they would fish. Several fishers added that it was extremely important to get along with their partners. Six fishers reported that experience was a very important factor in choosing their fishing partners. Another four mentioned that they preferred to fish with family members or close relatives. Two fishers said that they chose people who had documents and were not behind on their payments to the *Colônia*. Some fishers were not so particular about their partners. Two people mentioned that they would choose anyone who wanted to fish with them, and another person mentioned that he would fish with whoever asked him. Other reasons given, in which one person responded in each case were: 1) with people of the same profession, 2) with needy persons, 3) with people with a *cabeça fria* (lit. cold head) which means figuratively a person with common sense who knows how to fish, 4) with

people who knew how to manage a canoe, and 5) with any fisher they could find at the time in the *Colônia*.

Dividing the harvest. When asked if everyone received payment for fishing, 28 persons replied affirmatively, and only one gave a negative response. Then I asked if everyone on the team received the same payment. Fifteen replied that all fishers in the boat received the same payment. Thirteen respondents said that teammates were paid unequally. In eight of the cases where the fisher fished in someone else's canoe or boat, they divided the earnings from the catch between them. In four cases the fisher received a certain amount of money per kilo of fish. In three cases the fishers received a percentage of the total take of the boat.

These figures correspond somewhat to those regarding the question of how the fishing teams were composed. Table 6-5 illustrates that there were a total of 17 fishers who responded that they performed the same or equivalent activities. Nine responded that they worked as employees on a boat where the owner was paid more. Seventeen fishers reported that they owned a canoe and 19 responded that they fished with either a friend or relative. There were only two cases in which a fisher fished with someone else who owned the canoe and referred to him as a *patrão*. It is evident that canoe owners mostly fished with friends and/or relatives, and divided the activities and remuneration they received, equally.

Furthermore, when asked how the money was divided, 12 fishers responded that the expenses and remuneration were divided equally (Table 6-5). Ten fishers responded that the boat owner paid the expenses of the trip and then received a greater percentage of the remuneration than the others, who mostly received equal amounts. Normally, the five or so employees on boats would receive 25 to 30 percent each of the total cash after expenses were paid, and the owner took his cut. In five other cases, the boat owner paid the costs and then bought the fish from the others, paying a certain amount per kilo.

When fishing conditions were good, fishers fished an average of 3.1 days per week (nr=9) ("nr" means number responding; the others may not have answered the question or did not know). When conditions were bad they fished an average of 5.7 days per week (nr=7). Many fishers did not respond to these two questions. However, when asked how many number of consecutive days they fished, on average, the mean was 10, with two as the minimum number of days and 90 the maximum (nr=23). In order to establish further the average number of days people fished, consecutively, I also asked how many consecutive days each fisher had fished the last time he or she went out. The average number of fishing days for the last trip out was five, with a minimum of one day, and the maximum 20 days (nr=29). Of the fishers who responded to this last question, nine said that the last time they fished was in the same week I interviewed them.

Two responded that they fished during the previous week, five had fished the week before last, and four responded that the last time they had fished had been a month ago.

As shown by Table 6-6, 12 fishers fished in teams of two persons in which they performed the same or complementary ("equal") activities, and divided the expenses and remuneration equally. There were also several other arrangements between duos, as illustrated in Table 6-6. In sixteen out of 30 cases, the fishers normally fished with one other person and performed similar or complementary activities. In 12 of these cases, both partners assumed the risks and benefits of the fishing trips, equally. In four cases the canoe owner assumed all of the risks and paid for the expenses, but also received a greater percentage of the take after the sale of fish. This arrangement may have been beneficial to the four people who fished with the owners, because they only lost time, if the amount of the catch, hence the remuneration, was not good.

In 11 cases there was an employer/employee relationship between the fishers in the boat. There were two types of arrangements in boats. In six of these cases (the first type), the fishers split a percentage of the catch after the expenses were paid by the owner, who received a greater percentage of the money after the sale of fish. In these cases, after the boat owner took his cut, the employees either received the same percentage as everyone else or they got a certain percentage depending

upon the type of job they performed in the boat, e.g., motorist, cook or fisher. The costs and risks of each fishing trip were assumed by the boat owner. The employees did not risk anything except time and wear and tear on their own equipment. Everyone suffered if the catch was not good, but the boat owner suffered the most when fishing conditions were bad, yet, on the other hand, benefited the most when conditions were good. Although there was a boat owner in this type of arrangement, the relationships were more equitable between the owner and employees than in the second type of arrangement whereby employees were paid by the kilo of fish (see below). In the type of arrangement where fishers were paid a percentage of the "boat," everyone fished for the good of the boat because their percentage of the take increased with the more fish they caught. They were working together in a cooperative team. Also, because the boat owner assumed all of the risks, and also paid all of the expenses, the balance of good times to bad acted as a leveling mechanism between himself and his employees. He suffered more than his employees if the fishing trip was not successful. Furthermore, he did not consistently profit from his employees because he did not force them to assume any risks for the fishing trips.

In the second type of arrangement wherein the employees received a certain amount of money per kilo of fish they personally caught in the boat, the situation was much more individualized, and would tend to encourage the fishers to

compete against each other rather than work together to increase the catch of the boat as a whole. The owner in this case did not have to pay individual fishers if they did not catch any fish. In some cases the owner provided food and other expenses. Normally, however, the owner deducted a certain amount of the costs of each trip from the amount he paid to each fisher. Thus, if individual fishers did not do well on certain trips, they could go into debt in this latter type of arrangement. They lost their autonomy, and had to fish for that boat owner. Although they were assured of employment, an important matter in the region, they had no choice but to fish with that owner until they were out of debt, no matter if the owner paid less than other boat owners or imposed other unfavorable conditions. Furthermore, the owner profited from the money he made upon the sale of each kilo of fish, since he sold for much higher than he bought. Moreover, the boat owner did not have to assume the expenses of the fishing trips since he imposed those costs upon his employees, also.

Fishers who were paid a percentage earned less than those who were paid by the kilo. However, since percentage employees were not responsible for helping to pay for expenses and they were ensured a percentage of the total catch of the boat, they benefited in that this arrangement was more secure than that of the earners per kilo. Most employees who were paid a percentage of the boat earned 20 to 30 percent of the catch. When fishers were paid by the

kilo, during July 1990, they were paid Cr\$25 (US\$.37) to Cr\$30 (US\$.44) for Classes 1 and 2 fish, and up to Cr\$60 (US\$.88) for Class 1, especially *tucunaré* (US\$1 = Cr\$68,4, Latin American Economic Report, July 31, 1990). The boat owner would sell the fish for at least Cr\$45 (US\$.66) (Class 3) or Cr\$65 (US\$.95) (Class 2) per kilo. Thus, these employees were earning approximately 46 to 67 percent of their own individual catch. However, this arrangement was not as secure as the one where they might have earned by receiving a percentage of the boat catch, because if they did not catch many fish, they did not earn anything. In fact, they ended up owing money to the boat owner, for any expenses they incurred on the trip. The economic disparity, as well as one of power, could easily increase between boat owner and employee, because the owner assumed few risks, and profited one way or another from his employees.

Boat owners necessarily had to make a profit because of the expenses of commercialized fishing. Motorized boats had to be purchased, as well as the petroleum and oil necessary to make them run. A fisher had to have accumulated capital to purchase a boat and motor, which were expensive, and then make sure he earned a steady supply of cash in order to keep his boat operating. Nylon nets, weights, ice, and styrofoam coolers also required cash for the initial investment and continued maintenance since these items wore out or were used up in the process of fishing.

One problem with the new technology was cost for many fishers. Whereas before the changes in the mid-1980s, people had made most of their fishing equipment, by 1990, fishing had become an expensive undertaking, and one had to have considerable accumulated wealth to carry out a successful enterprise. Boats cost Cr\$500.000,00 (US\$6,887.05) to make in early August, 1990, and motors cost from Cr\$180.000,00 (US\$2,479.34) to Cr\$220.000,00 (US\$3,030.30), depending upon the size of the motor. Canoes cost from CzN\$20.000,00 (US\$2,714.44) in November, 1989 (US\$ = CNz\$7,368, United Nations Monthly Bulletin of Statistics, May 1990). The material to make gillnets cost approximately US\$30, and this amount did not include the cost of the labor, which brought the price up to between US\$80.00 and US\$100.00. One styrofoam ice box, which would hold 60 kilos of fish, cost US\$25.00, and one bar of ice was US\$.50. Considering that fishers only made CzN\$2,00 (US\$.20) to CzN\$3,00 (US\$.30) per kilo of fish at that time in November 1989, the prices for the equipment were high. Inflation drove up the prices throughout the following year, 1990. While prices for fish increased also, they did not rise as much as equipment costs.

Boat owners became dependent upon earning cash in order to maintain their technology necessary for fishing. Where did they obtain this cash? Unless they had some other source of income, they had to earn it from fishing. Furthermore, they needed help to operate all of this

equipment and catch enough fish for their enterprises to remain viable. Hence, they had to make some sort of arrangement with other fishers for their labor, and make enough profit from that labor to maintain their equipment and make a living.

By 1990 boat owners used different types of labor arrangements depending upon whether the fishing was good or bad. When the fishing was good, they usually took out more people than at other times and paid them by the kilo. When fishing was bad, they took out fewer people, and paid them by the percentage. In many cases, the boat owner paid for all of the expenses, and so the only costs to the fishers were time and wear and tear on their fishing equipment. They benefited by the transportation, ice, and food that the boat owner provided at his own expense. However, there were cases where fishers, who are usually paid by the kilo, were also forced to help pay for expenses on certain boats. They ended up earning less than fishers who did not share expenses with the boat owner, and risked going into debt. During good fishing periods, boat owners probably made good profits from the two arrangements of paying employees a percentage of the catch, or per kilo. However, during bad periods, boat owners lost income.

Implications for the changes in fishing. During 1990 in Itupiranga, boat owners either paid their employees a percentage of the catch after the fish were sold and the expenses were paid, or paid them a certain amount per kilo

of fish they individually caught. In either case, the boat owner earned a larger percentage of the boat's catch than the employees. The former arrangement was more equitable for everyone, and the boat owner subject to more risk, because he shared with his employees in the uncertainty of fishing. Although he earned more than the others when the catch was good, he could easily go into debt when the catch was bad. In the latter case, the boat owner often made his employees share the expenses in that they owed him a certain amount for each trip to cover fuel, food and ice costs. If an employed fisher did not earn enough to pay what he owed the boat owner for that trip, he could go into debt.

Not all fishers fished as employees for others. Many worked in partnerships, either dividing the expenses and remuneration equally, or with the canoe owner taking a slightly higher percentage of the catch. Increasingly, however, people were entering into employee/employer relationships in fishing because they could not afford to fish themselves, as the prices for canoes, gillnets, weights, ice and licenses and taxes increased. Half of the fishers I interviewed were fishing in employer/employee relationships by 1990, whether for a percentage of money after the boat catch was sold or per kilo. However, it appeared that the situation had changed significantly by 1993. Boonstra found that by 1993 many fishermen on the Tucuruí Reservoir, including the other ports of Marabá, Jacundá and Tucuruí, were clients of more wealthy patrons

from Marabá and elsewhere who were boat owners and/or who marketed fish (1993). We speculated that the rapidly increasing inflation between 1990 and 1993 encouraged the development of patron/client relations in which a few wealthy patrons controlled the production and marketing of fish on the Tucuruí Reservoir. This situation evolved in commercial fishing in the region because small fishers could no longer afford to buy any of their equipment, including nets. Saving money during periods of dramatically increasing inflation was practically impossible since the cash became devalued rapidly. Cash had to be put into use immediately after one was paid to buy goods at prices that the cash was worth at the time. Unable to save, small producers were forced to obtain fishing equipment from more wealthy patrons, especially from those people in the industry who controlled the marketing of fish (Boonstra 1993). Most likely, many fishers who were independent in 1990 in Itupiranga, by 1993, had become clients of patrons who marketed fish.

The fishers who worked as employees for others lost their autonomy over the production and distribution processes, although they gained some measure of security in an uncertain economic environment of high unemployment and inflation. Not only was the profession of fishing specialized, but on larger boats the jobs were specialized, also. Usually someone piloted the boat, and this individual was not always the boat owner. In several cases the boat

owner no longer went out on the fishing trips, but hired a manager to coordinate the activities and pilot the boat. The boat needed a cook. This job would either be rotated among the fishers, or one individual was hired on as a cook for the crew. The bulk of the crew aboard a boat were the fishers, who would often bring their own canoes in which the actual fishing would take place.

Another aspect of loss of autonomy was that the boat owner decided when the trips would take place, and would hire on the fishers of his choice. The timing of the trips depended upon the fortunes of the boat owner. The employees were often kinfolk or skilled fishers who had worked with the boat owner before. The hiring practices were much like the patron/client relationships, and one's ability to be hired depended upon who one knew and the strength of the relationship. Obviously, if an employee complained about a boat owner, he would not be hired back. On the one hand, this situation minimized the capacity for employees to complain about unfair pricing or division of remuneration. On the other hand, in 1990 the fishers I talked to did not seem to have any real complaints about the boat owners with whom they worked, which leaves a strong impression that everyone thought they were treated more or less fairly. Any conflicts seemed to be directed against fishers in "other" boats.

Another consequence of the rising costs of fishing was that people were leaving the profession. Former fishers

left commercial fishing for other activities because they could not come up with the cash necessary to buy equipment or a license. Further, during 1990 there was a debate in local meetings of fishers over whether they should be allowed to have professions other than fishing. One sentiment was that professional fishers should be fulltime and that people in other professions should not be allowed fishing licenses. Fishers both supported this proposal and were against it, at the same time. On the one hand, they favored the proposal to keep too many outsiders from competing against them for increasingly scarce resources. On the other hand, many fishers were against this idea because they argued that they could not make ends meet from fishing only, especially during spawning season when they were not allowed to fish. Fishers complained that they would be forced out of fishing if the directive was enacted and enforced. Already, because of the declines in fish that year many other fishers were afraid that they would be forced out of business. I talked to several fishers who had found other temporary jobs to sustain their families because of the combination of events during the dry season of 1990--inflation and rising equipment costs, permit expenses and declining yields.

Marketing of Fish

There were other relationships in the distribution part of the fishing process. Indeed, during the 1980s, a local and regional market developed to meet a demand for fish from

the reservoir. There was a chain of buyers of fish who employed people to transport, by truck or boat, the fish from Itupiranga to towns along the network of highways in Pará. Most of the fish from Itupiranga went to gold mines and boomtowns associated with mining and the Carajás Mining Project in southern Pará. One buyer of fish lived locally, arriving in 1989 from Goiás. He worked for one of the three main companies that bought fish from Itupiranga.

I asked each household where the fishers sold their fish, and allowed four responses, since many fishers sold their fish to more than one place depending upon the price they could get and the willingness of buyers to buy at the time. The response order indicates the order of preference of fishers of where they sell. As Table 6-7 shows, 27 fishers said that they sold their catch to the market next to the *Colônia dos Pescadores in Itupiranga* (n=30). On this first response three fishers replied that they sold their fish to the *Colônia* in Marabá, independent buyers who came in trucks to Itupiranga, and buyers in Marabá, respectively. Thus, these three fishers did not sell their fish to the *Colônia* in Itupiranga at all. On the second response (n=30), nine fishers said that they sold their fish to the *Colônia* in Marabá, 15 replied that they sold to buyers in Itupiranga, three sold to buyers in Marabá, one to buyers in Tucuruí, and another sold his fish elsewhere. The question did not apply to one fisher because he only sold his catch in Itupiranga. On the third response (n=30), nine fishers

said they sold their catch to buyers in Itupiranga, two said to buyers in Marabá, and another two to buyers in Tucuruí. There were 17 fishers to whom the question did not apply, since they only sold their catch in two places, as previously shown in the first two responses of the question. On the fourth response (n=30), seven fishers said that they sold their fish to buyers in Marabá, and 23 did not respond to the question.

Table 6-8 lists the fish that were mentioned in the sales rosters at the *Colônia* in Itupiranga. The common and scientific names are given. Many times fishers lump several species of fish under one common name, as with the case of *branquinha*, *piranha* and *pacu*, for example. The two highest price and commercially successful fish were *tucunaré* and *pescada*. In fact, these two species represented more than 50 percent of the total fish caught in the Tucuruí Reservoir (Petrere 1986).

The total fish production for the total reservoir for 1984 and 1985 was 452 tons. By 1986 fish production had increased to 1,120 tons, and by 1987 to 2,131 tons (Petrere 1986). The 1987 figure meant that there were 7.5 kg of fish caught per hectare per year, considering that the total area of the reservoir was 2,830 km² (Ibid). Itupiranga, which was approximately 160 kilometers upriver from the dam, produced five to seven tons of fish a month in 1987, according to the President of the *Colônia dos Pescadores de Itupiranga-Z44* (ELETRONORTE, TUC-10-26439-RE).

Table 6-4 shows the number of kilos of fish sold to the *Colônia* in Itupiranga from 1988 through July, 1992, according to the local records. Although the sales probably do not represent all of the fish sold to all buyers in Itupiranga, the figures probably give a fair description of seasonal fluctuations and a notable drop in production in 1990 and in subsequent years. Fish production was higher during 1989 than in 1988, and markedly higher than in 1990. If we take the month of highest production, May, and use 1988 as the base year, we see that fish production rose by 47 percent in 1989, and then dropped to 77 percent of the 1988 level in 1990. 1991 was a better year in that fish production was only 66 percent of the 1988 level, however, by 1992 production was only 93 percent. In July 1990, fishers complained that the catches that year were drastically lower than normal, lower than they had ever experienced during the dry season. The records in the *Colônia* also revealed markedly lower fish production figures during the dry season months of 1990 than in 1988 or 1989 (see Table 6-4). It is likely that by 1992 fewer fish were being sold in Itupiranga due to efforts to make the fish market in Jacundá a major center because of better access roads which connected to highway PA-150, a main corridor that connected Belém to Marabá. Production figures may also be low because of under reporting by local officials (Boonstra 1992, personal communication). Thus, the local figures may not reflect a decline in the resource merely due

to ecological changes from creating the reservoir, but also because the market structure was changing. More years of production figures for all four market locations-- Itupiranga, Marabá, Jacundá and Tucuruí--would be necessary to analyze any trend. The drop in local production figures was probably due to a combination of factors.

It is evident that the dry months from May through September were the peak months of fish production (Table 6.4). This empirical information contrasts somewhat with the discussions I had with many fishers who said that they preferred to fish during the rainy season, and specifically during the months of spawning. However, the production numbers probably reflect under reporting. The lowest months for fish production were the months of December through March, during all three years. This apparent trend was a positive sign for IBAMA officials and other people who desired conservation measures designed to protect the resource, especially during spawning periods. During 1989 IBAMA officials attempted to enforce the prohibition by seizing the catches of any fishers during that period. Funding and personnel shortages prevented any overall implementation of prohibition measures. However, in late 1990 and early 1991, IBAMA enforced the prohibition during the spawning season, and the Colônia market was closed during that period. I do not know if the markets in Marabá, Jacundá and Tucuruí were closed during those months of 1990 and 1991, but I suspect they were.

Tables 6-9, 6-10, and 6-11 reveal the number of times fish from Itupiranga went to a given destination each month, for the years of 1988, 1989 and 1990. These tables show that the production and sale of fish was heaviest during dry season months. Furthermore, most of the destinations were in the region. Only twice were fish destined for places out of the general region, once to São Paulo in September 1988, and once to Minas Gerais in July 1989. Most of the fish from the reservoir tended to be destined for gold mines and boom towns along the highways in southern Pará in the Carajás Project region. The fish marketed in Itupiranga during those three years mostly went to Serra Pelada, a gold mine in the neighboring municipality of Marabá. Beginning in 1989, some fish went to another gold mine called Garimpo de Cutia. Cleary mentioned the importance of fish for people living in gold mines in the Amazon (1990). Fish continues to be a very important source of protein, and a staple in the diets of many Amazonians, especially poorer social groups (Smith 1985).

Eleven companies were listed on the books at the *Colônia* in Itupiranga as buyers of fish. All of the fishers were required to conduct their business through the *Colônia*, which included paying the 5 percent tax on each catch, even though they may have sold their fish to buyers instead of to the *Colônia* market. Thus, the information from the records at the *Colônia* probably includes most of the business transactions concerning fish in Itupiranga for the years

1988, 1989 and 1990. It is likely, however, that some business was conducted surreptitiously between producers and buyers so they could avoid taxes and obtain better prices for fish. As a result, the records would not indicate total production figures nor complete information on the marketing and destinations of all of the fish sold in Itupiranga.

Tables 6-12, 6-13 and 6-14 reveal that business was transacted by 10 companies and other individual buyers. These tables tabulate the number of times per month buyers bought fish from the *Colônia* in Itupiranga in 1988, 1989 and 1990. Some of the individual buyers may have worked on their own, however, most buyers probably worked for one of the 10 companies, but the books did not always indicate for which company they worked, and the personnel at the *Colônia* did not know when questioned. However, it is clear from Tables 6-12, 6-13 and 6-14 that only three companies--FSF, PT and FL--bought most of the fish produced in Itupiranga during 1988, 1989 and 1990. These three companies were busy throughout each of the three years, while the other companies were busy generally during the dry season months, April through September in 1988. By 1990, the FL company was transporting most of the fish from Itupiranga. During that year there seemed to be an increase in the number of individuals who transported fish from Itupiranga, however, most of them probably worked for one of the three main companies, and more than likely for FL.

More evidence that suggests that the individual buyers most likely worked for FL is revealed in Tables 6-15, 6-16, 6-17, and 6-18. These tables tabulate the number of times buyers bought fish for specific destinations in 1988, 1989 and 1990. As shown on Tables 6-15, 6-16 and 6-17, companies FSF and PT distributed fish bought in Itupiranga only to Serra Pelada. In 1988 PSA, PA, PIXI, PY, OP, PP, PSJ and eight individuals (assuming they were working for themselves or companies other than the 10 mentioned here) distributed small amounts of fish to a few places in Pará. However, FL distributed most of the fish to the widest variety of places in 1988. In 1989, FL had a virtual monopoly on the distribution of the fish from Itupiranga to other places. Companies FSF and PT distributed some fish to Serra Pelada but to nowhere else. Again in 1990 FSF and PT only distributed fish to Serra Pelada, and FL distributed the greatest quantity of fish to the widest range of places. Since FSF and PT consistently distributed only to Serra Pelada, and the other seven companies that had been somewhat active in 1988 no longer seemed to be transporting fish from Itupiranga in 1989 and 1990, I assume that many of the individuals in Table 6-8 worked for FL. Further, those individuals distributed fish to the same destinations as FL.

Thus, one company, FL, controlled the transportation and distribution of most of the fish from Itupiranga to the rest of the region of southern Pará, especially those gold

mining areas and boom towns along the highways in the Carajás mining area.

In November, 1989 fishers received only CzN\$2,00 (US\$.27) per kilo of fish when they sold it to buyers. They complained that they worked so hard for so little, and they strongly suspected that the middlemen who bought fish from them earned at least three times more than the price they bought it. During the same time in 1989, fish sold for CzN\$7,00 (US\$.95) to CzN\$8,00 (US\$1.90) per kilo in Belém. I do not know the prices for fish in southern Pará, however, food was expensive in the gold mines, and I suspect that prices there exceeded those in Belém where there was a more competitive market due to the abundance of fish.

Another problem was that the best fish were exported from town, and people in Itupiranga could only buy inferior grades of fish from the local market. Sometimes there were shortages of fish, locally. For example, people could not buy fish at the local fish market for a few days preceding Easter in 1990, because the few people who were fishing during that religious period sold their fish to outside buyers. I tried to buy fish on June 11, 1990, at the market, and was told that there were no fish, even though all types of large and small fish were being weighed right in front of me as this situation was explained. The man who worked at the market told me that all of the fish were going to Marabá. He finally sold me one Mapará for Cr\$70 (US\$1.26) per kilo, which was the price of first class fish

at the time. Later I found out that this fish was not first class, and that I should not have been charged that amount (refer to Table 6-19).

During that period fishers earned more money per kilo (Cr\$100 (US\$1.81) per kilo) if they sold it to buyers who came from Marabá or to the market at the Colônia in Marabá, than if they sold it to the local Colônia market. One fisher sold his second-class fish for Cr\$55 (US\$.99) to an outside buyer, instead of receiving Cr\$48 (US\$.87) if he had sold it at the local Colônia. Fishers often sold to outsider buyers instead of at the local market because they made more money, which was why there was often a lack of fish (*falta de peixe*) in Itupiranga, he said.

The mayor would not allow the fishers to raise prices for fish in Itupiranga because of rapid inflation and the fact that many poor people depended upon fish. Already, poorer people were suffering from the impact of high inflation because beef with bones, the only beef they could afford, sold for Cr\$80 (US\$1.44) a kilo in June 1990, which was only Cr\$10 (US\$.18) more than the highest grade of fish. Fishers resented the enforced price freeze and complained that Itupirangan prices for fish were not competitive with Marabá. Hence, during certain periods many Itupirangan fishers sold their fish on the sly to outside buyers and to the market in Marabá. This practice was risky for fishers, because IBAMA would confiscate fish from anyone

they observed who was selling fish to a market in a *Colônia* other than that for which they had a card.

Thus, fish were no longer only consumed locally in Itupiranga, but a regional market created a demand for fish from the reservoir. In less than 10 years a complex network of production and distribution was created, made up of different social classes--owners and employees--whereby the former made its profits from the labor of the latter. Further, this process was not neutral in that formerly autonomous fishers became employees because they lost access to technology and resources by which they could make an adequate living. They needed money to buy the tools of their fishing trade, and to pay for the licenses and taxes necessary to fish. Fishers without motorized boats could not go as far afield as those who had boats, and complained that they were losing out to larger enterprises. Smaller-scale fishers who fished in canoes complained bitterly that the larger boats were taking away their fish, either by over fishing or in hostile encounters on the river.

There were conflicts at the level of distribution of fish, also. Fishers depended upon market prices which differed among the four major marketing centers on the Tucuruí Reservoir. However, they were discouraged from selling fish outside of the jurisdiction of the *Colônia* to which they belonged. Itupirangans perceived that conditions were better for fishers in the other three towns than they were locally. They had experienced major changes in the

social relations of production and distribution of fish during their lives. The changes increased dramatically in five years from 1985, when the reservoir was filled, to 1990. It appeared that the fish market on the Tucuruí Reservoir was being consolidated, and that a few companies had a monopoly over the distribution and sale of fish. Further, Boonstra's study reveals that these owners of the marketing apparatus were controlling more and more of the production aspects of fishing on the reservoir by 1993 (Boonstra 1993).

Perceptions About Fishing Since the Dam

All of the fishers except for one felt that fishing had changed since the dam. There was a wide range of responses to this question. I allowed the fishers to list as many aspects that had changed as they desired. Not one fisher mentioned more than four aspects, and most mentioned only one or two. The responses will be discussed in two major categories. First, I will list the more positive attributes that fishers perceived had occurred since the dam, and then I will explore the negative factors.

Eight people stated that since the dam there had been a dramatic increase in the number of fish. Some of these fishers stated that the fish were now larger in size, also. One person said that now there were more *tucunaré* than before and that they were accessible during all seasons. Along with the greater availability of fish, there were more buyers for fish. Furthermore, there was a market for ice.

Three people mentioned that in the past there was no ice, and that now it is easier to obtain more fish because they could store them. Another positive aspect resulting from the dam was that now it was less dangerous to fish than before because the rising water levels in the reservoir covered up all of the waterfalls.

One commonly mentioned negative aspect that had changed since the dam, according to six fishers, was that there were many more people fishing now than before. People mentioned that there were more conflicts between fishers, especially between larger and smaller boats. Many fishers felt that there were many injustices that were happening from people "outside their class." Some larger enterprises were unjustly taking more fish than they should and taking over the best fishing spots, which was injurious to the "class" of common fishers. People complained that this competition over fish was not good for the resource itself, and would lead to a reduction in fish that would harm everyone. Furthermore, now fishers had to worry about having their canoes and equipment stolen by other "outsiders." A few fishers with whom I talked had canoes and nets stolen from them.

The following responses concern perceived changes in the ecology of fishing. Four people said that before the dam the *cardume* was "direct" in that the fish migrated at more predictable times than now, and thus it was easier to catch fish then than now. Three people mentioned that it

became more difficult after the dam to catch fish because they did not swim upriver like before. Four people mentioned that it was much easier to catch fish a few years before 1990 but after the dam because there had been more fish. Now they had to look further afield to catch fish. Three people suspected that fish production dropped markedly in 1990 because ELETRONORTE did not lower water levels and so the fish did not ascend back up the river because of the constantly high water levels. One person noted a decrease in the size of fish in recent years. He stated that before the dam the fish were larger, and that recently they had smaller. Two people said that now it was more difficult to catch fish during the rainy season because the water stayed dirty.

Some people complained about the increasing type and number of regulations. Four people mentioned that no one had to have a license before. This was an important issue to many contemporary and former fishers, because they had difficulty paying for a license and dues. Some fishers told me that they knew of people who no longer fished because they could not afford to pay for a license, and that they themselves had difficulty in paying their monthly dues. Many people resented certain regulatory functions of the *Colônia*. Two people said that now the *Colônia* "stays on top of the fishers" more than in the past during the spawning period when they were prohibited from fishing. Many fishers complained that they had to fish during the prohibition

period because their families would starve if they did not. One person mentioned that in the past there had been no limit for how many fish an individual could catch. Now people were limited in the number they could bring in during certain time of the year. Furthermore, before the dam everyone could use whatever size gillnet they desired. Now they were prohibited from using the smaller gillnet sizes. However, many fishers agreed that this was a necessary restriction because they believed that if people caught the smaller juvenile fish, the resource would decline, especially since people now fished more with gillnets than they had before, when people mainly fished with line and hooks.

Despite the improvements in fishing conditions in recent years in many peoples' minds, fishing was still a hazardous occupation. Many fishers had gotten malaria from fishing, and complained about how the mosquito population had increased since the dam. Another risk for fishers came from water fauna, especially alligators. More fishers (11) complained about the dangers and problems caused by water fauna than any other issue. Several fishers complained how the *Colônia* prohibited people from carrying guns in their boats, and that they were unable to protect themselves from predators. They understood that the prohibition was to protect endangered resources from being hunted and overexploited, however, they felt it was unfair to put

themselves, human beings, at risk for such an esoteric reason.

Conclusion

In this chapter I have examined the complexity of how the commercialization of fishing has changed peoples' interactions with each other and their environment. Changes in technology enabled people to catch fish more efficiently. But the new equipment required that fishers have cash in order to purchase it. Furthermore, as already discussed elsewhere in this dissertation, other changes occurring in Itupiranga created a need for cash, also. Moreover, the closure of the floodgates of Tucuruí Hydroelectric Dam in late 1984, caused dramatic changes in fishing. The reservoir restructured a former riverine ecological system into a lacustrine one, which, initially, caused dramatic increases in the number and size of many commercial fish species. Many people were attracted to the region for this reason and others, and commercial fishing became a profession during the 1980s on the Tucuruí Reservoir.

The commercialization of fishing had a profound effect on the social relations of production. People not only needed cash to make living, but also to buy expensive equipment for fishing and to pay for a license and dues to the new organizations that were formed to represent fishers. These increasing number of expenses and conditions of rising inflation during the 1980s appeared to be forcing many formerly autonomous fishers to fish as employees for other

larger enterprises or were driving them out of the profession, altogether.

The new relations of production created two social classes of fishers--boat-owning employers, and employees. Although there were several types of remuneration arrangements, the boat owners made profits from the labor of their employees, that they could then put back into production by purchasing more efficient equipment. There was evidence of an incipient economic disparity between the two classes of fishers in Itupiranga. The very circumstance of owning a motorboat allowed the owner to travel to more ideal fishing spots than people who only owned canoes, to store more fish and ice to keep them fresh, and to travel faster back to a market to sell the fish. The employees lost access to the means of production in fishing if they could not afford to buy a canoe or gillnets. They were dependent upon the boat owners to hire them, decide when trips would take place, and for the prices they would pay for fish and any other arrangements. On some boats the division of labor became specialized in that the employees were assigned a specific occupation, such as cook.

The specialization of the division of labor extended to the marketing of fish, as well. An elaborate structure to market fish from the reservoir developed during the 1980s. The market in Itupiranga was monopolized by three principal companies who sent trucks and boats to Itupiranga and the other towns of Marabá, Jacundá and Tucuruí to buy fish, and

transport them to the surrounding region of mostly boomtowns along highways in southern Pará. As a result of the regional demand for fresh fish, people living along the reservoir, for example in Itupiranga, were often denied the best fish at their local markets, and sometimes could not buy any when outside demand was particularly high.

Although there were plenty of legislative directives and there seemed to be sufficient concern about conserving fish by the numerous federal, state and local agencies who administrated issues involved with fishing, there was evidence that the resource was declining by the late 1980s and early 1990s. Most people blamed this situation on the fishers: there were too many on the reservoir, and they were using techniques and technology that wasted and overmined the resource. The fishers themselves blamed each other, citing these very same reasons for the decline of fish. Some officials acknowledged that the decline of fish might have an ecological origin because of the nature of reservoirs. But they hoped that this type of problem would not occur in the Amazon, since, as they argued, their environment was different from ones where hydroelectric dams were installed in Africa and elsewhere.

The commercialization of fishing changed peoples' interactions with each other and with their environment. When a resource becomes important for commercial consumption, and especially when the relations of production become capitalist, the fault regarding the overmining of a

resource lies not with the individual actors but with the system itself. The ever expanding requirements for profit within a capitalist system demand short-term decision-making behavior, which may not be compatible with the processes of aquatic reproduction in a lacustrine ecosystem. People fished because they needed to make cash in a system of diminishing resources and to which they no longer had communal access. Now they had to buy the items they consumed and used to make a living in fishing and in other professions. In order to buy these things, and increase the potential for production by buying more fishing equipment, they needed to catch more and more fish to sell for cash. Smaller-scale fishers said that the larger boats were using predatory practices to catch fish, which was a major conflict between fishers. Furthermore, there was an increasing demand for fish in the larger region of southern Pará. Overall, increasing governmental regulations and the need for cash encouraged people who fished to undermine the resource, and were driving small producers out of this activity or to fish for larger outfits.

Table 6-1

Month and Year Fishermen Became Members of the *Colonia dos Pescadores de Itupiranga (Z-44)*, per records in December, 1989.

Month	1986	1987	1988	1989
January	1	55	1	3
February	1	26	2	4
March	1	13	11	7
April	7	10	15	14
May	0	1	7	25
June	1	2	3	4
July	0	9	5	10
August	24	4	7	12
September	35	4	1	7
October	49	5	0	6
November	25	5	6	1
December	23	0	17	--
Year totals	167	134	75	93

Pre-1986 memberships are as follows:

<u>Year</u>	<u>No. Fishermen</u>
1964	1
1965	1
1966	1
1969	1
1971	3
1974	10
1975	2
1976	1
1977	5
1978	4
1979	4
1980	1
1981	4
1982	1
Don't know	6
Total	45

Source: Original data compiled from the records of the *Colonia dos Pescadores de Itupiranga, Z-44*, in 1989.

Table 6-2

Legal Mesh Sizes (in centimeters) and the Type of Fish Caught in Each Size According to Fishermen, Itupiranga, Pará, Brazil, 1990

Mesh Sizes				
<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
branquinha	paíú	paíú	curimatá	curimatá
piaú	curimatá	curimatá	mapará	jaraquí
ubarana	tucunaré	pescada	mandi-moela	corvina
	branquinha	tucunaré	pescada	
tucunaré				
avoador	covinamiuda		jaraquí	
albarán	mandi-moela		corvina	
mandi-moelha	mapará		tucunaré	
curimatá peq.	caranhazinho		surubim	
barbado	cará		mapará	
caranhazinho				
cará				
<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	
curimatá	curimatá	curimatá grande	curimatá grande	
jaraquí	jaraquí	jaraquí	other large fish	
tucunaré	tucunaré	tucunaré		
corvina		piabanha		
peixe de cor		surubim		
mapará		pacu-branca		
		caranha		
		pacu-manteiga		

Source: Interviews by the author with fishermen in Itupiranga, 1990.

Table 6-3

Fishing Net Mesh Sizes by Depth of Placement in the Tucuruí Reservoir, Pará, Brazil, 1990

Raso	Depth of Water Placement		Lama/Chão
	Meia água	Fundo	
(Shallow)	(Mid-way)	(Deep)	(Mud/Floor)
<u>Small mesh</u> branquinha avoador uarana	cará	piaú traíra	traíra mandi cabeça de ferro pico de pato corvina peq.
<u>Large mesh</u> jaraquí	caranha curimatã piabanha filhote pacu	surubim jaú pirarara	

Source: Interviews by the author with fishermen in Itupiranga, 1990.

Table 6-4

Number of Kilos of Fish Sold to the Itupiranga Fish Market from 1988 to 1992.

Months	Kilos				
	1988	1989	1990	1991*	1992*
January	2,475	4,470	9,593	--**	3,940
February	4,013	4,480	8,638	6,740	8,510
March	3,280	6,335	7,365	7,690	11,715
April	4,250	25,488	8,754	11,065	8,000
May	59,780	87,745	13,855	20,030	3,960
June	53,250	83,750	13,990	6,770	980
July	36,450	86,790	6,430	3,205	1,910
August	21,830	53,810	6,620	3,020	n/a
September	10,320	55,671	5,280	4,380	n/a
October	3,980	18,700	4,470	3,590	n/a
November	7,725	16,060	6,539	11,660	n/a
December	7,260	9,750	--**	11,890	n/a
Total	214,613	453,049	91,534*	90,040	39,015

Source: Data compiled from the daily records of fish sales at the *Colonia dos Pescadores de Itupiranga* (Itupiranga Fishermen's Association).

* Figures for 1991 and 1992 were obtained by Tara Boonstra, who conducted fieldwork in Itupiranga in June and July, 1992 and 1993.

**Missing records.

Table 6-5

Type of Remuneration by Division of Labor, Itupiranga, Pará,
Brazil, 1990

<u>Composition of Team</u>	<u>Number of Fishermen</u>
Perform the Same Activities	9
Divide Activities Equally	8
Work as Employees for the Boat Owner	9
Total	26
<u>Division of Expenses and Money</u>	
Equally	12
Boat owner receives greater percentage	10
Boat owner pays per kilo of fish	5
Total	27

Source: Original survey data from 30 fisher households,
Itupiranga, 1990.

Table 6-6

Social Relations of Production in Commercial Fishing,
Itupiranga, Pará, Brazil, 1990

Division of Catch & Expenses	No. Other Persons per Team	Composition of Team
equal	1	equal
equal	1	same/equal
equal	1	same
dono/percent	1	equal
dono/percent	1	equal
dono/percent	1	same
dono/percent	1	same
dono/percent	4	dono/emp.
dono/percent	4	dono/emp.
dono/percent	5	dono/emp.
dono/percent	3	dono/emp.
dono/percent	4	dono/emp.
dono/percent	10	dono/emp.
dono/kilo	6	dono/emp.
dono/kilo	9	dono/emp.
dono/kilo	1	dono/emp.
dono/kilo	1	dono/emp.
dono/kilo	9	dono/emp.
---	1	---
---	1	same
---	1	same

n=30

Source: Original survey data from 30 fisher households,
Itupiranga, 1990.

Table 6-7

Location of Sale of Fish by Fishermen, Itupiranga, Pará,
Brazil, 1990

Where fish are sold 1 response

Colônia, Itupiranga 27

Colônia, Marabá 10

Buyers, Itupiranga 25

Buyers, Marabá 13

Buyers, Tucuruí 3

Other 1

Source: Original survey data from 30 fisher households,
Itupiranga, 1990.

Table 6-8

List of Fish Marketed in Itupiranga, Pará, Brazil 1990, by
Common Name and Species

<u>Common Name</u>	<u>Family</u>	<u>Species</u>
Curimatã	<u>Curimatidae</u>	<u>Prochilodus nigricans</u>
Jaraquí	<u>Curimatidae</u>	<u>Semaprochilodus brama</u>
Piaú	<u>Anostomidae</u>	
Aracu cabeça gorda, piau		<u>Leporinus trifasciatus</u>
Aracu cabeça gorda, piau		<u>Anostomoides laticeps</u>
Aracu, piau		<u>Laemolyta petiti</u>
Pacu	<u>Serrasalmidae</u>	
Pacu ferrado		<u>Mylesinus schomburgki</u>
Pacu		<u>Metynnishypsauchen</u>
Pacu dente-seco		<u>Myleus pacu</u>
Pacu-branco		<u>Myleus cf. micans</u>
Pacu-branco		<u>Myleus cf. torquatus</u>
Pacu-branco		<u>Myleus sp.</u>
Piabanha	<u>Charadidae</u>	<u>Brycon breviceauda</u>
		<u>Brycon sp.</u>
Branquinha	<u>Curimatinae</u>	
b. comum		<u>Curimata amazônica</u>
b. baião		<u>Curimata cyprinoides</u>
Sardinha*	<u>Characidae</u>	<u>Triportheus albus</u>
Sardinha cumprida		<u>Triportheus elongatus</u>
Sardinha-papuda		<u>Triportheus angulatus</u>
Ubarana	<u>Curimatidae</u>	<u>Anodus elongatus</u>
Piranha	<u>Serrasalmidae</u>	<u>Serrasalmus eigenmanni</u>
		<u>Serrasalmus rhombeus</u>
		<u>Serrasalmus spilopleura</u>
Piranha-caju		<u>Serrasalmus nattereri</u>
Apapá*	<u>Clupeidae</u>	
Apapá-amarelo		<u>Pellona castelnaeana</u>
Apapá-branco		<u>Pellona flavipinnis</u>
Cari-cascado		
Caranha	<u>Serrasalmidae</u>	<u>Colossoma brachypomum</u>
Cachorro	<u>Characidae</u>	<u>Hydrolycus scomberoides</u>
Tucunaré	<u>Chichlidae</u>	
Tucunaré-açu		<u>Chichla ocellaris</u>
Tucunaré-pinima		<u>Chicla temensis</u>
Pescada	<u>Sciaenidae</u>	
Pescada-branca		<u>Plagiosion</u>
<u>squamosissimus</u>		
Pescada-branca		<u>Placioscion surinamensis</u>
Jaú	<u>Pimelodidae</u>	<u>Paulicea lutkeni</u>
Pirarara	<u>Pimelodidae</u>	<u>Phractocephalus</u>
<u>hemiliopterus</u>		
Bagre	<u>Pimelodidae</u>	<u>Goslinia platynema</u>
Pirarucú	<u>Osteoglossidae</u>	<u>Arapaima gigas</u>

Table 6-9
Number of Times Fish from Itupiranga Went to Destination Per Month, 1988

Destination	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Serra Pelada	8	10	11	11	13	13	14	14	16	4	8	12	134
Paragominas	1	1	1	3	6	5	3	1	2	3	4	2	31
Rio Maria	1	1	1	1	2	3	3	1	1				11
Xinguara	1	1	1	1	1	1	1	1					2
Ourlândia	1	1	1	1	1	1	1	3	1				19
Abaetetuba	1	1	1	2	3	4	3						12
Curionópolis				2	1	1							4
Redenção				2	8	8	6	2					24
Belém													
Marabá					1							1	2
Itaituba							1						1
Repartimento							1						1
Imperatriz								4	3	2	5	3	18
Nova Jacundá									1				1
São Paulo									1				1
Eldorado										1		2	2
Tucuruí											1		1

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

Table 6-10

Number of Times Fish from Itupiranga Went to Destination Per Month, 1989

Destination	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Serra Pelada	8	10	11	9	10	11	12	20	10	7	7	8	123
Paragominas					2								2
Rio Maria	3	1	2		3	2				1	3	2	17
Xinguara											4	2	6
Ourilândia													0
Abaetetuba				1	9	7	9	5	3	3	7	4	48
Curionópolis	1	1	8	7	9	1	3	3	2	4	2	3	44
Redenção				3	4	3	2	1	5	1			1
Belém				2				1	1				18
Marabá								1					4
Itaituba													0
Repartimento	4	4	6	1	1	4	4	8	7	4	6	3	52
Imperatriz				1		1							2
Nova Jacundá													0
São Paulo													0
Eldorado							1						1
Tucuruí										1			1
Serra dos Carajás					2								3
Garimpo de Cutia													3
Tucumã				1	4	1	3	1		1	3	3	21
Paraubebas				1	9								10
Rondón do Pará				1	8					3			12
Mujú					3								3
Minas Gerais					1								1
Cancela							1						1
Anapolis, GO									1				1
Serra Norte										1			1

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

Table 6-11
Amount of Times Fish from Itupiranga Went to Destination Per Month, 1990

Destination	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals
Serra Pelada	10	6	9	8	6	8	8	11	7	6	4		83
Paragominas										1			1
Rio Maria	2	4	3	2									11
Xinguara	4	3	1	3	6	4	2	5	4	2	5		39
Ourlândia													0
Abaetetuba	2	4			2	2							10
Curionópolis	4	1	5	8	8	8	10	7	6	3	8		68
Redenção			1	1	2								4
Belém						1							1
Marabá		2		7	11	1	1			3	1		26
Itaituba													0
Repartimento	6	7	3	6	7	6	6	5	3				49
Imperatriz	1	6	4	1	1	1	3	1		1	3		22
Nova Jacundá													0
Sao Paulo													0
Eldorado													0
Tucuruí		1											1
Serra dos Carajás													0
Garimpo de Cutia	1	1				1							3
Tucumã													0
Parauapebas		2											2
Rondón do Pará					3						2		5
Mujú	1												1
Minas Gerais													0
Cancela													0
Anapolis, GO													0
Serra Norte													0
Colmeia			1										1
Amapá							2						2

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

Table 6-12
Number of Times Buyers Bought Fish from Colonia per Month, 1988

Buyer	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals
<u>Companies</u>													
FSF	7	8	9	6	7	6	8	8	9		5	7	80
PT	1	2	1	3	6	6	5	6	5	4	4	5	48
PSA		1				3	1		1				6
PA		1			1								2
FL			4	3	16	13	10	11	7	5	12	6	89
PIXI				2	2	2	3						9
PY					1								1
OP						1							1
PP						2							2
PSJ						1							2
<u>Individuals*</u>													1
Cons.										1			1
AJM		1											1
DDRS				2	5								7
GB				2									2
JMF					2								2
PSD					1								1
FAA					2								2
JBO					1								1

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

*It is likely that most of these individuals worked for the mentioned companies.

Table 6-13
 Number of Times Buyers Bought Fish from Colonia per Month, 1989

Buyer	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals
<u>Companies</u>													
FSF	4	7	6	3	7	7	8	8	7	7	7	7	78
PT	4	3	5	6	3	3	3	3					30
PSA													0
PA													0
FL	8	6	17	21	52	20	25	28	23	19	26	18	263
PIXI													0
PY													0
OP													0
PP													0
PSJ													0

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

Table 6-14
Number of Times Buyers Bought Fish from Colonia per Month, 1990

Buyer	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals
<u>Companies</u>													
FSF	9	3	4	3									19
PT	1	1	3	4		1	1	1					12
PSA													0
PA													0
FL	21	33	20	30	43	31	18	22	17	11	9		255
PIXI													0
PY													0
OP													0
PP													0
PSJ													0
<u>Individuals*</u>													
DDD					1		2						3
BSS					1								1
FC					1	2	2	3	2				10
JC					2	2	2		1		1		8
FAS					1								1
RAX					1								1
VPD						3	1						4
RAC						1							1
RTM						1							1
JBQ											1		2
VLB								1					1
GC								1					1
RTM									1				1
RFD									1				1
RSV										2	2		5
RPS										1	1		2
JJJ											1		1
JJJ											3		3
AAN											2		2
SFS											1		1
WFD											1		1

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

*It is likely that most of these individuals work for the mentioned companies.

Table 6-15
Number of Times Buyers Bought Fish, by Destination, 1988

Destination	Companies										
	FSF	PT	PSA	PA	FL	PIXI	PY	OP	PP	PSJ	
Serra Pelada	77	46	5		8						
Paragominas											
Rio Maria		1			23					1	
Xinguara				1	10		1				
Ourlândia					18						
Abaetetuba					1	9			2		
Curionópolis											
Redenção				1							
Belém					3			1			
Marabá					2						
Itaituba					1						
Repartimento					16						
Imperatriz											
Nova Jacundá					1						
São Paulo											
Eldorado					2						
Tucuruí					1						

Source: Data compiled from the daily records of fish sales at the *Colônia dos Pescadores de Itupiranga* (Itupiranga Fishermen's Association).

Table 6-15--continued

Destination	Individuals*										Totals	
	AJM	DDRS	GB	JMF	PSD	FAA	JBO	CONS				
Serra Pelada												136
Paragominas	1											1
Rio Maria		4										29
Xinguara												12
Ourilândia					1							1
Abaetetuba												18
Curionópolis												12
Redenção		2										3
Belém		3		2		2	1					12
Marabá												2
Itaituba												1
Repartimento												16
Imperatriz												0
Nova Jacundá												1
São Paulo										1		1
Eldorado												2
Tucuruí												1

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

*These individuals may have worked for the companies in the first part of this table.

Table 6-16
Number of Times Buyers Bought Fish for Destination, 1989

Destination	FSF	PT	PSA	PA	FL	Companies				PSJ
						PIXI	PY	OP	PP	
Serra Pelada	77	30			15					
Paragominas					2					
Rio Maria					16					
Xinguara					6					
Ourlândia					49					
Abaetetuba					43					
Curionópolis					1					
Redenção					17					
Belém					4					
Marabá										
Itaituba					52					
Repartimento					2					
Imperatriz										
Nova Jacundá										
São Paulo										
Eldorado					1					
Tucuruí					1					
Serra dos Carajás					1					
Garimpo de Cutia					21					
Tucumã					10					
Parauapebas					11					
Rondón do Pará					3					
Mujú					1					
Minas Gerais					1					
Cancela					1					
Anapolis, GO					1					
Serra Norte					1					
Colmeia, TO					1					
Amapa										

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

Table 6-17
 Number of Times Buyers Bought Fish for Destination, 1990

Destination	FSF	PT	PSA	PA	FL	Companies				
						PIXI	PY	OP	PP	PSJ
Serra Pelada	35	12			53					
Paragominas					16					
Rio Maria					39					
Xinguara										
Ourlândia					19					
Abaetetuba					50					
Curionópolis					3					
Redenção										
Belém										
Marabá					23					
Itaituba										
Repartimento					61					
Imperatriz					20					
Nova Jacundá										
São Paulo										
Eldorado										
Tucuruí					2					
Serra dos Carajás										
Garimpo de Cutia					8					
Tucumã										
Paraubebas					2					
Rondón do Pará					5					
Mujú					2					
Minas Gerais										
Cancela										
Anapolis, GO										
Serra Norte										
Colmeia,										
Amapa					1					

Source: Data compiled from the daily records of fish sales at the Colonia dos Pescadores de Itupiranga (Itupiranga Fishermen's Association).

Table 6-18
 Number of Times Buyers Bought Fish for Destination, 1990

Destination	Individuals																	
	RFD	APS	DDD	BSS	FC	JC	FAS	RAX	VPD	JBQ	VLB	GC	AFD	ASV	JJJ	AAN	SFS	WFD
Serra Pelada											1							
Paragominas	1																	
Rio Maria												1	1					
Xinguara	4																	
Ourlândia																		
Abetetuba																		
Curionópolis				1	9	8			3							3	2	
Redenção																		
Belém									1									
Marabá	1							1										1
Itaituba																		
Repartimento																		
Imperatriz													2					1
Nova Jacundá																		
São Paulo																		
El Dorado																		
Tucuruí																		
Serra dos Carajás																		
Garimpo de Cutia																		
Tucumã																		
Parauapebas																		
Rondón do Pará																		
Mujú																		
Minas Gerais																		
Cancela																		
Anapolis, GO																		
Serra Norte																		
Colmeia, TO																		
Amapá																		1

Source: Data compiled from the daily records of fish sales at the *Colônia dos Pescadores de Itupiranga* (Itupiranga Fishermen's Association).

Table 6-19
 Buying and Selling Price for Fish at the Market of the Colônia dos Pescadores de
 Itupiranga-244 from Late November 1989, through 1990

Date & Class of Fish	Buying Price per Kilo		Selling Price per Kilo	
	(from producer) CNz\$/Cr\$	US\$	(to consumer) CNz\$/Cr\$	US\$
11/27/89				
First Class	5	.68	6	.81
Second Class	4	.54	5	.68
Third Class	3	.41	4	.54
2/5/90				
First Class	15	.50	20	.67
Second Class	12	.40	15	.50
Third Class	8	.26	10	.34
3/1/90				
First Class	25	.45	35	.64
Second Class	20	.36	25	.45
Third Class	17	.31	20	.36
3/4/90				
First Class	45	.81	50	.91
Second Class	40	.73	45	.81
Third Class	30	.55	35	.64
6/13/90				
First Class	58	1.05	70	1.26
Second Class	48	.87	60	1.08
Third Class	28	.51	40	.72
7/6/90				
First Class	75	1.10	90	1.32
Second Class	65	.95	80	1.17
Third Class	45	.66	60	.88

Source: Data compiled from interviews with fishermen and from notices at the Colônia dos Pescadores de Itupiranga, Pará, Brazil.

CHAPTER 7
ONE NEW LAND-USE STRATEGY: LOGGING

Introduction

In the changing ecological, economic, political and social circumstances in Itupiranga people reacted in different ways. Their economic strategies changed because of the altered economic system, on land and water, and they were forced to make their living in new ways. In the next chapter I will discuss several political reactions by some social groups to the rapid changes, and also their strategies to get ahead in the new scheme of things. In this chapter I will explore a new economic activity that arose in Itupiranga during the late 1970s and throughout the 1980s.

The former extractive economy and *aviamento* relations gave way to new types of extraction and production that dramatically altered the physical environment and peoples' relationships to each other. The new primary economic activities that most directly interfaced with the physical environment were ranching, logging, more intensive and extensive agriculture, and commercial fishing. There were also new employment opportunities in secondary activities, including building construction, brick making, stores, small restaurants, and tertiary activities--public service in the

municipal and state governments. The social relations of production in these activities as well as in ranching and agriculture included wage labor, patron/client relations, daily wagework, piecework or payment for a job and payment in kind. Of the new extractive activities in the municipality, logging had the most capitalistic relations of production. I will focus on logging because the focus on production in logging reveals the community's changing relationships with the natural environment and between people in Itupiranga in their working relationships as well as in levels of wealth and power. Since logging was highly capitalistic and most workers were paid in wages, there were sufficient data to reveal a marked economic disparity between sawmill owners and workers in 1990.

Methodology

The methodology used to obtain data about logging included participant observation, survey questionnaires and interviews. In order to obtain data about sawmill operations and logging in Itupiranga, I formally interviewed five sawmill owners, using a questionnaire that elicited information in the following categories: 1) history of the sawmill; 2) commercial information concerning the buying of trees and selling of lumber; 3) production; 4) profits; 5) labor; 6) taxes; and 7) miscellaneous. I also obtained information from participant observation, especially with two families who became my friends, and more casual interviews with two other sawmill owners who refused to be

formally interviewed. I interviewed sawmill workers in 30 households, using a survey questionnaire to obtain information about themselves and their families, as well as particulars about their occupations at the sawmill. Knowledge of where to find sawmill-worker households was obtained by using a snowball sample. Information was obtained about 36 sawmill workers who worked in six local sawmills. I obtained the following information from each individual in the household: relationship to the head of household, contribution to household (i.e., whether a person brought in an income or not), sex, age, birthplace, education, principal and secondary occupations and the locations where the people were employed in each. The second part of the questionnaire was designed to obtain information about the household, and included the following: migration history, occupational history, standard of living, and work in the sawmills.

Individual-level and household-level standard of living information about sawmill workers and their families were also obtained from the community random sample of 150 households. Data about 19 sawmill-worker households from community questionnaire were compared with those from the survey of 30-households of sawmill workers to see if the information in the latter survey was more or less representative of sawmill worker households in Itupiranga. Together, the information discussed in the demographic and standard of living sections includes 55 sawmill workers.

Other information was obtained from archives, casual conversations, and/or interviews with key informants from IBAMA, municipal officials, Sindicato dos Trabalhadores de Itupiranga, the Secretaria de Industria Comércio e Mineração, CACEX, SUDAM, Secretaria da Fazenda, IDESP, and IBGE.

Owning a Sawmill

Logging was the most highly capitalized economic activity in town at the sawmills and also among work gangs who logged in the forest. Further, there was an extreme economic disparity between owners and most of their employees who only received one minimum wage. Sawmill owners owned the sawmills and all of the expensive equipment to run them, lived in the nicest houses in Itupiranga, and had several vehicles including family cars and semi-tractor trucks for transporting lumber. Their employees normally worked five and one-half days a week and received monthly, biweekly or daily wages ranging from 10 minimum salaries for technically specialized positions to one salary for manual labor jobs that required few skills. Another type of labor contract was the arrangement several sawmills had with charcoal makers, in which the owners would employ several families to produce charcoal on the premises and both parties would share a percentage (usually 40 to 50 percent) of the expenses and profits from the charcoal sold in Marabá. These contracted families, along with the families in which a worker received one minimum salary, lived in some

of the poorest households in Itupiranga. Thus, one could observe the most extreme and apparent conditions of economic disparity in logging, which was one of the newer extractive economic activities that arose in the late 1970s, locally.

The owning of a sawmill was very much a family-run business. The owners, bookkeepers and managers were all members of extended families. Usually, the managers were brothers, cousins or brothers-in-law of the owner, and the bookkeepers were wives, sisters-in-law or female cousins. The managers were paid a salary and received other shared family benefits. However, aside from receiving the familial benefits from the profits from the sawmill and cash from time to time, the female bookkeepers were paid only a minimal salary, if any. Thus, the highest paid employees and/or those individuals holding the more responsible positions in running a sawmill in Itupiranga were male family members.

In four of the sawmills, I talked to at least one of the owners. Each sawmill had at least two owners, and two sawmills had three and four owners, respectively. In each of these sawmills the owners were related by blood or by marriage. In the other sawmill I talked to the manager, the brother-in-law of an absentee owner who lived in another town in southern Pará. All of the owners I talked to formally had started up their sawmills during the 1980s: 1982, 1984, 1986, 1987 and 1988, respectively. The first sawmill in Itupiranga began operations in 1976, and the

original owner still ran it. Three of the five owners bought their sawmills from former owners. The other two owners started small sawmills and added to their business as they began realizing a profit.

All of the owners of the 14 sawmills in the municipality of Itupiranga were from southern Brazil except one, who was from the Northeast. Of the five sawmill owners I interviewed in town in September 1990, three were from Paran, one was from Rio Grande do Sul, and one from Piau. Several of the owners said that they had come to the Amazon to seek their fortunes in ranching, but later realized that logging provided a better means of making a profit. For example, one sawmill owner had come to Itupiranga where he bought 800 *alqueires* of land, but sold it after three years after he realized that logging was more profitable than ranching.

None of the sawmill owners I talked to planned to remain indefinitely in Itupiranga. Most of the individuals or families who owned the local sawmills had left southern Brazil because they had been part of the underemployed lower-middle class without a certain niche. Several families hoped to make enough money to invest in a business back in southern Brazil. However, despite the profitable nature of logging in the Amazon region, their dreams of going home to southern Brazil were tenuous because of rampant inflation and the fact that conducting their

business in the Amazon was expensive, primarily due to inadequate infrastructure.

All of the sawmill owners had other businesses or had family members who had businesses in other towns and states that were related to their local sawmill operation. One sawmill owner co-owned a family business in Rio Grande do Sul that specialized in lumber, tile and making windows and doors for houses. Another local sawmill owner's mother lived in Recife where she was the middleperson who sold a lot of their lumber for retail. One sawmill owner had a large ranch in Marabá, where he stayed while his son ran the sawmill in Itupiranga. The father also ran the office in Marabá that conducted the principal business for the sawmill in Itupiranga, where it was more difficult to negotiate contracts because the town only had one telephone (until August 1990 when two more telephones were added at the local telephone station). Another sawmill owner was allowed to install a telephone in his home as an experiment by the phone company. The family whose main office was located in Marabá also owned another sawmill. Another sawmill, which made siding, interiors and doors, sold these more finished products locally, and had a family owned business in Terezinha, Piauí, where they retailed them, also. The manager of another sawmill had a brother who also owned a sawmill in São João do Araguaia, where the family had a large cattle ranch in addition to their lumber operations. Thus, the local sawmill owners had business ties with family

members living in other parts of Pará and, in some cases, other states in Brazil, which enabled them to diversify their operations. These business links with extended family members living in other places enabled them to more easily market their product, accumulate wealth by other means, and provided a more secure base so that they were not entirely dependent upon the local sawmill in Itupiranga.

Further, there was much cooperation among local sawmill owners, although ostensibly they were competing against each other for timber and markets. Sawmill owners often helped each other in business transactions by lending support in the form of equipment, transportation and telephone access. Moreover, local owners socialized together frequently. They would gather together after a hard day at work, drinking beer in one of the local restaurant/bars and visit in each others' homes on weekends. At community dances and other events they often congregated together and socialized more among themselves than with other people in Itupiranga. Hence, in addition to the links with extended family members in other places, this type of support among local sawmill owners further enabled them to maintain their operations.

The impetus for the competing sawmill owners to cooperate with each other as much as they did may have been because they felt at odds with other people in Itupiranga for a number of reasons. For one thing, they were wealthier than almost anyone else in Itupiranga. The few families of sawmill owners and wealthy ranchers constituted the most

elite social class in Itupiranga. By local standards the sawmill-owning families were among the wealthiest households in town. They and one or two very wealthy ranchers represented such a small segment of the population that no one from that strata was represented in the random sample survey that I conducted in 1990. One reason that wealthier people tended to socialize with each other was from a fear that if they became too close with poorer people, they would be asked for handouts. As it was, at least one sawmill-owning family had people knock on their fence from time to time asking for food or money.

Secondly, there was a significant cultural gap between the southern Brazilian sawmill owners and local Itupirangans as well as a majority of the migrants. The sawmill-owning families were much whiter than most of the people living in Itupiranga. Despite the denials that Brazilians were racist, one woman who was visiting her son, who was a sawmill owner, looked around the room at a dance and exclaimed rather loudly that people sure were ugly here in the Amazon. She told me not to judge all of Brazil by Amazonian standards, but that people were much prettier (whiter) in other parts of Brazil. Further, the sawmill owners explicitly stated that they felt locals, as well as all people from Pará, were lazy and not as intelligent as other people from Brazil. They explained their rationale for this assessment by noting that locals had not taken advantage of the vast natural resources at their disposal

for all of the years they had been in Itupiranga. It was only when people from other parts of Brazil came to the Amazon that these resources were extracted and put to use for the benefit of all of Brazil. Moreover, the sawmill owners noted how even poor people from the Northeast were smarter and more hardworking than locals, because, for example, agricultural production had improved since the migrants had arrived in the Amazon.

Third, sawmill owners perceived that locals did not like them, principally because of their wealth, and also because they were utilizing the natural resources in a manner in which locals disapproved. One cousin of a sawmill owner who managed the business said that he knew that everyone in town hated them. He told how some local men had tried to pick a fight with him at a dance when he first arrived in Itupiranga in early 1989. After that he began to carry a gun because, as he put it, if a man revealed he was weak, he would be killed.

The sawmill owners were defensive with me from the start because I was an American, hence, probably an "ecologista" (ecologist) who complained about how ranching and logging were destroying the Amazon. As I got to know several of the families, and they became more confident that I would be open minded, they opened up to me and shared their perspectives about their contribution to Amazon development. One brother of a sawmill owner explained to me that they were helping to develop the region because they

were creating jobs that would help alleviate the poverty that was a profound problem there. Further, he argued that the extraction of timber was helping the Brazilian economy because the vast natural resources in the Amazon were finally being utilized in a way whereby the region was becoming productive. Many people, including the sawmill owners, were convinced that the resources in the Amazon were a key that would help to alleviate Brazil's economic problems.

Despite any perceived ill feelings, some sawmill owners or members of their families participated in local events, such as dances or outdoor concerts. Unmarried individuals dated local people or members of wealthier migrant families. Several sawmills sponsored some local events, especially fundraising entertainment/dances for the local school. Their sponsorship would be advertised by the announcer during the festivities. One sawmill owner explained that they participated in and sponsored some events as part of a public relations campaign to enhance their image in town.

Despite the problems of inflation, inadequate infrastructure, and homesickness, the owners of sawmills and other logging enterprises were earning a good living. However, was the assertion made by some sawmill owners valid that the sawmills were providing jobs that were helping to alleviate poverty, locally? Further, did these jobs provide an adequate living for the sawmill workers and their families? And finally, what about the future of Itupiranga,

when timber supplies run out and the sawmills move on? In order to provide a context to address these questions, the next sections will examine the operations of several sawmills in Itupiranga.

Operations

All of the sawmills in town were medium sized in that they had one band saw or ribbon saw, and a circular saw. Four of the sawmills specialized in sawing up lumber, and one of these used hydraulic technology. One sawmill, owned by two brothers, did finer work, in that they concentrated on making lumber for siding, interiors and doors. They had stopped logging several years before, stating that it had become less profitable as timber was logged out. It was more profitable to mount a sawmill and cut and finish lumber than to go out and obtain timber to sell.

Buying: Types of Arrangements for Obtaining Timber

The sawmills obtained their material in a number of ways. Several sawmills had trucks and crews that went out and cut down standing timber (a pé) themselves from municipal or state lands and from land owned by ranchers and small farmers. Only two of the five sawmills obtained their timber (80 percent each) in this manner any more because of the expense and also because the distance they had to go from town had increased in recent years. The average distance was 50 or 60 kilometers, with a minimum of 5 kilometers and a maximum of 100 kilometers. One of these sawmills bought 20 percent of its cut timber (em tora) from

middlemen at the door of the sawmill. The other sawmill bought 10 percent of its cut timber (*em tora*) from logger middlemen, and another 10 percent of its lumber (*serrada*) from middlemen at the door of the sawmill. Two other sawmills bought 100 percent of their material, timber, from middlemen, who had their own crews of loggers in the forest and transported the logs to the door of the sawmills. The largest sawmill in town, which had previously obtained its timber from middlemen and land sources using his own equipment, recently began underwater logging from the Tucuruí Reservoir. The owner was awarded one of the four contracts by ELETRONORTE to log the standing timber from the human-made lake. The year previously, many sawmills had been able to log timber from the reservoir, but in 1990 ELETRONORTE restricted access to only four sawmills, one of which was based in Itupiranga. This sawmill owner stated that he was extracting approximately 1,000 M³ from the reservoir and buying another 300 M³ of lumber at the door of the sawmill each month.

Sawmills and loggers obtained their timber by making various types of verbal and written contracts with landowners. Most of the contracts were verbal. However, the one sawmill which was logging from the reservoir had a written contract with ELETRONORTE beginning in 1990. Usually, the sawmills that bought timber from middlemen and loggers at their doors would buy logs from two or three regulars. These contracts could be written, also, but

mostly they were verbal. One sawmill had a debt/credit arrangement with a number of these middlemen/loggers. This same sawmill also obtained its own timber by going out with its own crew and felling trees in the forest from unclaimed land, small landowner/farms, and at least 20 large ranches. The owner also had a verbal contract with the largest rancher in the municipality. The sawmill owner obtained the timber for free because his crew cleared the land for pasture for the rancher. The larger ranchers would often make these types of contracts with loggers, because both parties benefited by the arrangement. The ranchers did not have to go to any expense to have their land cleared, and the loggers, who had the crews and equipment to extract timber as a precursor to land clearance, did not have to pay for the timber.

Loggers made other types of arrangements with small land holders. Usually the negotiations were verbal, and the outcome insecure for the landholder. Often the loggers would entice reluctant landholders to sell their trees by agreeing to make a road, and pay a certain price for each tree that they cut and took. Small land holders usually received only CNz\$ 100,00 or US\$6.06 (early 1990 prices; assuming in January US\$1.00 = CNz\$16,50) per tree no matter what the quality, and complained that the loggers left behind a mess (Latin American Economic Report, January 26, 1990). The roads that the loggers promised to create were not very good, and some of the landowner's land was

destroyed from the machinery and process the loggers used to take out timber.

Many land holders claimed that often the loggers would coerce them into selling their trees. Very often they had no control over which trees the loggers cut down, and sometimes the latter would cut down more trees than were originally agreed upon. There were many rumors around town, and I was told by more than a few colonists and other informants, that loggers would come in and cut down many trees on someone's property, and then not pay the owner. When the owner complained, he would end up dead, or no one in the appropriate government offices would listen and force the loggers to pay. Small landholders were afraid to allow loggers to cut down too many trees on their land. If the loggers were in too much debt to the small landholder, the latter might be killed so that the loggers would not have to pay them. One local sawmill, in particular, had a reputation for assassinating small landowners in disputes over prices and debts for timber.

Even then, the money small landholders received per tree was minimal (and less than loggers claimed that they paid small-farmer landowners). Most people sold trees because they needed the money for medicine because someone in their family was sick, or a group of neighbors and themselves wanted a road into their land, or simply because they were forced to sell their trees to demanding loggers. Having trees on one's land was like having standing capital

that people could use in emergencies, such as when family members were sick. People did not like to sell their valuable trees all at once, unless they needed to obtain the money necessary to start up their farms. When they did sell all of their trees, they realized they had no hedge against the future, when they might need some cash again. Some people explicitly maintained that they would not sell Brazil nut, for example, and other trees that produced valuable fruit and nuts. They realized that they could consume and sell the products that such trees provided. Other people said they would sell any type of tree in order to buy medicine, necessary farm equipment, and even luxury goods like sofas, televisions and radios.

There were certain prerequisites that the sawmills required before they made verbal contracts to log or buy timber. In general sawmill owners wanted guarantees about: type of species, quantity, quality and dimension of timber, time necessary to obtain it, and method and timing of payment. In the case of the written contract with ELETRONORTE, the sawmill had to pay ten percent of what it extracted to the power company.

The methods of payment varied depending upon the type of contract, with whom the contract was made (type of landowner, length of time the sawmill owner had been doing business with the middleman, type of arrangement the sawmill had with middleman, and formality of the arrangement, as in the case with the contract with ELETRONORTE). One sawmill

owner stated that he mostly paid people at the time he received the product. Another sawmill owner used a variety of methods. He would pay 30 percent at the initial agreement and the rest after the timber was cut. He would pay his own crew at the end of each week, like the rest of his employees. This same owner sometimes allowed the land owners to cut the trees and lent them the chainsaws to do the job. Mostly his own crew would go onto someone's land and do the cutting themselves.

Buying and Selling

As shown by Table 7-1, in June 1990 the price one sawmill paid per tree to land owners of the highest quality (mahogany) was Cr\$2.000,00 (US\$36.10); second highest quality was Cr\$1.000,00 (US\$18.05); and third highest was Cr\$500,000 (US\$9.03). If he bought logs from middlemen he would pay Cr\$8.000,00 (US\$144.40) for the highest quality, Cr\$ 3.500,00 (US\$63.18) for the second highest, and Cr\$ 1.300,00 (US\$23.47) for the third highest quality timber. If he bought sawn lumber he would pay Cr\$18.000,00 per M³ (US\$324.99), Cr\$12.000,00 per M³ (US\$216.61), and Cr\$4.000,00 per M³ (US\$72.20) from highest to lowest quality, respectively.

At the same time in June 1990, he could sell the highest quality of wood, which was usually mahogany, for Cr\$30.000,00 per M³ (US\$541.52). The destinations for this quality of lumber were São Paulo, Brasília and Belém, where it might be sold to other countries. The second highest

would sell for Cr\$18.000,00, per M³ (US\$324.99) and the third highest for Cr\$6.000,00 per M³ (US\$10830). This lumber also went to Brasília and São Paulo, Minas Gerais, Rio Grande do Sul, Piauí, Ceará, Pernambuco, Rio Grande do Norte and other destinations in southern Brazil, where it was used for construction. The one sawmill that produced doors and siding, sold some of its products for construction in Itupiranga. The exotic hardwoods, like mahogany, were exported out of the country, and local sawmills claimed that they no longer did much business in mahogany since it had been mostly logged out of the municipality. Furthermore, they sold it by the log, because of the rigorous specifications by external buyers who preferred to produce lumber in the countries of destination. Only two sawmills out of the five said that a small percentage of their production, five percent and 20 percent, respectively, went to the external market.

A few factors were mentioned that affected the sale of lumber on the internal market. Sawmill owners complained that the market was not stable because of inflation, high costs for transportation and the long distances the lumber had to be hauled, variable prices for lumber, high taxes, lack of timber, and high costs for holding stock. The sawmill owners perceived that it was even more difficult to sell lumber on the external market because of uneven exchange rates, marketing problems, complex bureaucracy for exportation, competition from other countries and the fact

that buyer countries were very particular about the quality of lumber and did not want any produced by Amazonian sawmills.

The situation became worse for local sawmills after Collor took over the presidency of Brazil in April 1990, and froze all bank accounts over about \$1000 in an effort to control the economy. Small and medium-sized businesses, like the sawmills in the Amazon, had tremendous difficulty in paying their employees and buying primary material to conduct their business on a daily basis. They also had trouble selling their stocks since their buyers had difficulty coming up with the cash to buy large quantities of lumber.

Profits

Despite the expenses of running a sawmill in Itupiranga, sawmill owners made lucrative profits. The following projections assume that the sawmill owner only produced medium grade wood. Using the data from one sawmill (A) from Table 7-1, Table 7-2 shows the calculations necessary to arrive at that sawmill owner's estimated costs for buying medium grade timber for one month. When we subtract that cost of US\$25,270.80 from the price for the amount of medium grade lumber he produced for that same year ($US\$324.99 \times 400 \text{ M}^3 = US\$129,996$), we obtain a rough estimate of the monthly earnings for his sawmill, which were US\$104,725.20. This figure multiplied by 12 (months) reveals an estimated annual gross earnings of

US\$1,256,702.40, minus costs for buying timber and not including expenses for labor, equipment, fuel and other maintenance costs.

Based upon an intensive study of the logging of mahogany (*Swietenia macrophylla*) in southern Pará in 1992, Verissimo et al. estimated that small sawmills with one band saw that produce mahogany average a profit margin of 27 percent after all expenses (unpublished). In the Itupiranga case, if we do not subtract the costs for buying timber and estimate that the sawmill owner's annual gross earnings were US\$1,559,952 (US\$129,996 x 12 months), we can estimate that his net profits were roughly US\$421,187.04 (US\$1,559,952 x .27) based upon Verissimo's et al. calculations for mahogany production. However, mahogany production is more lucrative than for other types of wood and thus, the profit margin for the sawmills in Itupiranga may well be somewhat less than 27 percent (Verissimo et al., unpublished). However, the profits are still significant, and, using these estimates, the sawmill owners earned more than anyone else in the community sample.

Another smaller sawmill (B) in Itupiranga, which only bought timber at the door and produced an estimated 100 M³ of lumber per month also made sizeable annual earnings. Table 7-3 shows a breakdown of how much the sawmill paid for *madeira tora*, its selling price and estimated volume of production for *madeira serrada* for 10 types of timber in the three grades. Table 7-4 takes that information and

calculates the total prices for each type of wood paid for *madeira tora* and total prices received for *madeira serrada* for one year and comes up with a rough estimate of how much Sawmill B made in gross earnings of US\$117,078.50 during the year preceding August 1990. This sawmill had fewer operating costs because it did not need trucks and logging equipment because it bought all of its timber at the door. Further, the equipment costs were lower than at other sawmills because the saws were operated using a type of hydraulic technology and had fewer workers. Thus, although there were some other expenses, Sawmill B's operating costs were less than those of Sawmill A.

Both sawmill owners made sizeable earnings. When we compare their earnings against those of their lowest paid workers who received one minimum wage per month we see a real economic disparity was between sawmill owners and workers. This economic disparity becomes apparent when we calculate that workers who received one minimum wage per month only earned US\$804.00 per year. An examination of operations of labor crews in the forest and at sawmills reveals wage disparities between management and workers, and reveals the huge gap in wealth and power between owners of the means of production and their workers.

Labor

Forest Crews

For the sawmills that sent their own crews into the forest to log, the operating costs were expensive. The

initial costs to buy machinery were prohibitive and it was costly to maintain. Normal logging operations required a bulldozer (frequently a DC4--2m wide with 40 cm wide track) to make roads and drag boles out of the forest, a skidder to load the boles onto a truck, at least one flat-bed truck to haul the logs, and chainsaws. The labor costs were high, also. One sawmill had a crew of six to seven men, and another 12 men who lived in the forest most of the time and logged six days a week (Table 7-5). The six-person crew included a person who drove the tractor, a driver of the truck, a chain saw operator, and manager of the team and at least one helper. The 12-person crew included a person who drove the tractor, his helper, a chainsaw operator and his helper, a truck driver and two helpers, two people who did hard manual labor, one person who scouted for trees, a cook and an administrator. As revealed by Table 7-5, the forest crews were composed of a number of positions reflecting the types of activities necessary to extract timber out of the forest. There was a hierarchy among the crew members, indicated by the different pay scale of each position. The top paying positions were managerial and mostly technical. However, the composition of positions differed slightly between the two sawmills. In the six-person crew, the manager was paid the most (10 minimum wages), whereas the administrator was paid second highest in the thirteen-person crew (4 minimum wages). Tractor drivers were paid the highest among the non-managerial crew members (5 minimum

wages), and the truck driver in the thirteen-crew team was paid as much as the tractor driver. The chainsaw operators received a middle salary and the manual labor the lowest (1 minimum wage).

The forest crews were expensive for the sawmills. In late June 1990, the sawmill owner (A) that had the six-person operation estimated that his weekly expenses for forest extraction were Cr\$50.000 (US\$902.53). He said that to transport the logs from the forest to his sawmill, he spent approximately Cr\$ 3.000 (US\$54.15), including 80 liters of diesel for each trip. The sawmill owner with the 13-person crew estimated that his weekly expenses for his forest crew were Cr\$350,000,00 (US\$6,317.69), including labor. He said that in mid-July 1990, he was spending Cr\$23.000,00 (US\$336.26) per trip to transport logs to his sawmill with two trucks. He estimated that he used one liter of diesel per every two kilometers his trucks travelled.

Charcoal Production

All of the sawmills produced charcoal from the wood remnants for pig iron production, a project initiated by the Companhia Vale do Rio Doce as part of the Greater Carajás Program (cf. Schaeff 1990). The normal arrangement was a verbal contract with five or six families who would produce the charcoal on the sawmill owner's land with his ovens. Both parties in the contract would evenly divide the expenses and the profits after the sale of the charcoal to a

main buyer in the nearby town of Marabá. In some cases other people would make charcoal on their farms and bring in bags to sell to local sawmills.

Sawmills

The five sawmills (interviewed) in town had an average of 27 employees, with one sawmill only having 16 employees, the lowest number, and another sawmill with 35 employees, the highest. All together, the five sawmills probably employed between 100 and 135 people. The other two sawmills probably employed between 25 and 50 more workers. Considering that the estimated urban population of Itupiranga was above 7,000 in 1990, the sawmills employed only a small percent of the adult male population in town. Only 19 individuals in 14 households were employed at sawmills in the community sample. Nine of these individuals were household heads. Thus, during 1990 employment at local sawmills involved only 9.3 percent of households in town. So although the owners argued that their businesses provided jobs that were necessary in a town of 60 percent or more under- or unemployment, they did not really even begin to alleviate the problem. Furthermore, most of the positions were menial, which meant that many sawmill workers only made one minimum wage per month. Despite the fact that at least one individual in those households was employed and bringing cash that was necessary to survive in the new type of economy, that wage was not enough to sustain a family or even one worker.

Most employees of the sawmills, except top management, were not family members of the owners. These employees worked a variety of jobs necessary to run a sawmill and were paid according to the status of their position. The workers were paid either every 15 days in some sawmills, or once a month in others. Table 7-6 reveals the types of positions and number of minimum wages workers in each type received among the sawmills, according to sawmill owners. There was a varying range of wages paid to employees in certain positions among the sawmills. The higher salaries paid in the position of manager correlated with closeness of kin. For example, the managers at two sawmills were paid seven and six salaries, respectively, most likely because they were younger brothers of the owners. At another mill, the owner's brother-in-law received a percentage of the profits. The brother-in-law of another sawmill owner only received four minimum wages.

Among the five sawmills there was a wide range in the amount of minimum salaries the owners paid their workers. Interviews with sawmill workers also revealed pay-scale discrepancies among sawmills. Table 7-7 shows the average salaries that sawmill workers in various positions among the five sawmills were paid in September 1990, according to the workers. The figures correspond approximately to the claims made by sawmill owners of how many salaries they paid their employees, although some workers reported making less than

one minimum salary per month. Legally, the sawmills were required to pay workers at least one minimum wage.

The data in both tables reveal a significant wage disparity between workers, especially managers, and other employees at sawmills. Workers who received only one minimum wage or less, would have had a difficult time making ends meet each month, much less support a family on a wage that did not even reproduce themselves. The 30-household survey included trained technical workers who were paid seven to ten salaries a month, and thus, had better homes and more valuable material possessions. Three of these households owned refrigerators, a sign of a higher standard of living. Thus, although there was some disparity between sawmill workers, none of them owned a car as did their employers, who were much better off. In fact, the sawmill owners were significantly wealthier than their workers as revealed by their annual earnings and estimated profits. The economic disparity between owners and workers was also reflected in quality of housing and type and number of material possessions. Sawmill owners lived in the nicest houses in Itupiranga, which had tile roofs, painted brick or cement walls and floors (some had expensive tile or linoleum floors), electricity, gas stoves and appliances including refrigerators, televisions, clocks, livingroom sofas and radios. Most sawmill owners owned one or more cars.

In contrast the 30 households in the snowball sample of sawmill workers reveals a more humble standard of living.

Table 7-8 reveals that most sawmill worker households had palm thatch roofs and dirt floors, which were indicative of poorer households in Itupiranga. The community survey, a random sample of 150 households, reveals that households with sawmill workers were significantly poorer than other households in Itupiranga as measured by 'house quality' ($p < .10$), 'goods' ($p < .05$), 'average diet' as measured by consumption of animal protein ($p < .05$) and 'average education' ($p < .05$) (Table 7-9; see Chapter 5 for an explanation of these measurements). These findings indicate that sawmill workers were among the poorest social groups in Itupiranga. Table 7-8 also reveals that sawmill workers and fishermen shared more similarities with each other than with the sawmill owners, who were clearly more wealthy than almost anyone else in Itupiranga.

Demographics of Sawmill Workers

Despite the meager income, drudgery of the hours and the work, and sometimes dangerous working conditions, most sawmill workers struggled to keep their jobs, because they needed the cash. Their wages contributed to the household income on a regular basis, and helped to support large families.

According to the snowball sample survey of 30 households of sawmill workers the average age of the sawmill workers in Itupiranga was 24.5 years. The youngest worker was 15 years old, and the oldest was 41 years. The average age of persons living in these households was approximately

18 years. Eighteen of those sawmills workers interviewed were heads of households. Thirteen others were sons of heads of households. Other categories included three friends, one brother and one brother-in-law to the head of household. The average number of producers per household was two, and the average number of consumers was four. The term "consumer" refers to those people who did not bring in an income to the household. The maximum number of producers was seven, and the minimum was one. The maximum number of consumers in one household was 12 and the minimum was zero, which meant that in least one household, everyone participated in some sort of productive activity that brought in an income.

Nine of these 30 sawmill workers households had land, with an average size holding of 9.9 *alqueires*. Six of these landowners had an active farm at the time of the interview. Thirteen other sawmill workers had access to familial land. However, only five of those 13 households with access to land actually received any produce of that land from their land-owning family members.

The average number of years sawmill workers had lived in Itupiranga was three years and nine months, with the longest period of residency 17 years and the least period one month. Of the 30 heads of households in the survey of sawmill workers, 15 were born in Maranhão, six in Goiás and nine were born in other northeastern states, including Alagoas, Ceará, Pernambuco, Piauí and Minas Gerais.

Significantly, none of these household heads were born in Pará. Only three of the younger sawmill workers who were not heads of households were born in Pará; one was born in Itupiranga, and two were born in São João do Araguaia, Pará.

The most common reason given by the sawmill workers for moving to Itupiranga was to improve their lives (16 responses). They often stated that where they had been before was "weak," which meant that there was not enough work to sustain their families. Two other common reasons for moving were that someone in their family lived in Itupiranga (seven responses) and they were looking for land (five responses). Only one respondent out of the 30 said that he had moved to Itupiranga to work in the sawmill where he presently worked.

The average time the workers had worked in those sawmills where they were presently employed was one year and one month, with the longest time of five years and the shortest one month. Twenty three sawmills workers had worked in at least one other sawmill in Itupiranga before for an average of almost one year, and three workers had worked in two sawmills. Eight persons had worked in sawmills in another town for an average of seven months. Four workers had worked in a sawmill in Marabá, one in Curionópolis, one in Altamira, one in Repartimento (in the municipality of Itupiranga, and one elsewhere in Pará. Only one sawmill worker had worked for their present owner at another place.

Sawmill workers felt lucky to have those jobs since they were paid regularly. Most workers did not have the skills necessary to obtain more lucrative jobs. The average education of the sawmill workers was fourth grade. The average education of everyone in these households was third grade. When asked how each worker chose the sawmill in which he worked, eight persons (among workers in the 30 households in the snowball sample survey) said that they had talked it over with a relative or friend. Six had talked with the owner or a member of his family. Seven workers mentioned that working in a sawmill was the only type of work they could find in Itupiranga. Three persons said that they had chosen to work in the sawmill because the owner paid better than others. One person had chosen to work in a sawmill because his other job, brick maker, had not provided a substantial living for his family. One other person chose the sawmill because when he went looking for the job there was a position open.

Twenty four of the respondents presently worked or had worked in at least one other profession besides that of sawmill worker. Nine had worked as landless agricultural workers, another nine had been small farmers on their own land, and one other worker had farmed on family owned land. Other professions included driver, builder, brick maker, mechanic, carpenter, cowboy, gold miner, shoe maker and manual labor positions as either day laborers or piece workers. When asked if they would prefer to work in another

profession, 16 sawmill workers stated that they liked their present occupation in a sawmill. Four desired land to farm, and one other wanted to farm on his own land as well as work at the sawmill because he wanted to earn cash. Other preferred occupations included accounting, office work, ranching, gold mining, and unspecified work in other types of firms.

Relationship Between Sawmill Owners and Workers

The relationship between sawmill workers and the owners had many aspects of patron-clientism, despite the fact that the workers were paid a wage. For example, in many cases, hiring was based upon who one knew. Sawmill workers sought out potential hard workers whom would not make trouble, and many workers were introduced to prospective employers by other sawmill workers. Further, sawmill owners sought to keep relations personalized in that they discouraged employees from obtaining work permits that would enable the latter to legally be paid minimum wages and receive social security and other benefits. In this manner owners could avoid the expenses of paying benefits, and in some cases, could underpay employees. However, their obligations, as good patrons, were then to take care of employees in emergencies and difficult times. Some sawmill owners were more highly thought of than others among workers in town because they were known to be more generous, charitable and fair, which were elements of a good patron. Workers only

seemed to feel exploited if a sawmill owner did not meet these obligations.

Many of the workers liked their employers and felt gratitude towards them for their jobs and other things they did for them from time to time as patrons. Sixteen workers obtained their jobs by talking directly to the owner. Eight workers stated that the sawmill owner had come looking for them, after hearing that they were qualified and needed the work. In a few cases, the workers already had positions in another local sawmill, and the owner came and offered them a better position or better pay. Three were introduced to the owners by a relative or friend who already worked there. When asked which job was the best in the sawmill, most workers mentioned the job they were performing at the moment. Six workers said that the way one obtained a certain position was to work for a time until they were good enough to have it. Five workers stated that a person needed to obtain a specific education, but most of the time this learning was done on the job (three responses). One mentioned that one only had to wait until there was a vacancy in a position, and then ask the owner if he could work in that position. If the owner liked him, he would usually get the job.

Some workers complained about the low wages and strenuous and dangerous working conditions. Several workers had been hurt on the job, and their employer had paid their medical bills. One young man had lost most of his arm in an

accident with a saw and his employer had rushed him to the hospital in Marabá. The employer had also given him several months salary as compensation, and the young man hoped to return to the sawmill when he healed and be given a job that he could do with one arm.

A major complaint by most sawmill workers was that they did not like the fact that they were laid off during a month or two of the rainy season. During the summer, some sawmills might become so busy that they would hire enough labor to work in double shifts, one at night, just to keep up with the demand of their buyers. Work slowed down for the forest crews and sawmills during the rainy season from December through February because it was difficult to obtain timber in the flooded forest. Sometimes it was also impossible to transport the lumber by truck on the Transamazon highway, from Itupiranga to Marabá because of the muddy roads and bad bridges. Some of the sawmills slowed down or ceased operation for a month or so during this time, especially if their stocks ran low. Many of the workers were temporarily laid off. Some of the sawmill owners would take a week or two off and go on vacation. Several employees would remain working during this period, cleaning the equipment and guarding the grounds of the sawmill. Some employees received paid holidays, according to the sawmill owners, and a few workers. Ten workers stated that the sawmill in which they worked closed down during the rainy season. Of these temporarily unemployed

workers, five were paid during the time the sawmill was not operating and another man performed odd jobs at the sawmill while most people there were laid off. Five men performed odd jobs such as harvesting rice, fixing bicycles, yardwork, and working for the municipal government. One man looked for work but did not find any. Many workers complained that they were left to fend for themselves during this period, and had to find other types of employment to bring in an income to sustain their families. Most of the former workers returned to work at the sawmills when they began operation once again after the height of the rainy season. However, during this rainy season many families had difficulty maintaining themselves, and often the sawmill workers who were the heads of household had to find other jobs to bring in an income. If they complained about this situation, they were not asked to come back to the sawmill. In fact, if sawmill workers complained about anything related to their positions, they were fired. Sawmill owners looked for workers who had "good attitudes," which meant that they were hard workers and did not make trouble.

Theoretically, those workers who had a work permit had to be hired back after the rainy season. They also had more leverage in negotiating with sawmill owners. Out of the 30 households in the snowball survey, only nine men had a work permit. The issue of whether or not one had a work permit was significant because those workers who did have one had to be paid fairly for their position level. Furthermore,

only workers with a worker's permit could receive benefits. Ten workers stated that they obtained benefits other than wages from the sawmill where they worked. Three workers had received medical assistance for on-the-job injuries, four lived in housing supplied by the sawmill owner, two were transported to and from their job site, and three other workers were not specific about the benefits they received.

It seemed that the sawmill owners made it difficult for workers to obtain work permits. Many workers complained that they had tried to obtain a work permit, but had not been successful because the sawmill owners placed obstacles in their way. The workers said that they had to apply through the sawmill owner for whom they worked, and then after he did some paperwork they had to go to Marabá and go through another bureaucratic procedure to obtain one. Not only did the sawmill owner stall about coming through with the paperwork, but he made it difficult for the worker to get a day off from work to go by bus to Marabá and obtain a work permit. The sawmill worker had additional difficulty because he had trouble coming up with the money for the busfare to Marabá.

Ex-sawmill workers were the most disgruntled group. Many workers had been worried that the rising costs of inflation were eating up their salaries. In 1989 the workers tried to organize at one sawmill where many workers made just above one minimum salary each month. The leader, a carpenter, was fired from his job when the sawmill owner

found out that he had talked to the President of the Workers' Union in Itupiranga (*Sindicato dos Trabalhadores Rurais de Itupiranga*). Other workers at that sawmill who protested about their salaries were fired or threatened with dismissal.

The sawmill owners controlled workers' salaries, the timeclock, the pace of work and whether or not people kept their jobs. The workers were completely dependent upon the whims of their employers. If they were "good" workers, who worked hard and kept their mouths shut, they could keep their jobs, unless the sawmill needed to downsize, an event that happened after Collor's economic plan in March caused economic hardship for local sawmill owners. "Troublesome" workers who did not work hard, missed days of work, or complained about the low salaries were fired. Some ex-workers were threatened in other ways, too, if they complained about the conditions of their work around town after their dismissal.

There was no autonomy for the working poor in Itupiranga. People needed cash in order to make a living. Unemployment and underemployment were serious problems, and the items necessary to live were difficult to come by. A majority of sawmill workers in Itupiranga worked in grueling jobs from six in the morning until six in the evening, five days a week and one-half day on Saturdays. Again, many were grateful to have these jobs because many people in

Itupiranga did not have employment that provided a regular paycheck.

Problems From Logging

According to Itupirangans, the sawmills had caused water pollution in nearby creeks that ran into the river, which destroyed their traditional places for bathing, doing laundry and obtaining drinking water. Further, the smoke from charcoal burning caused air pollution until local ordinances, enacted in 1990, forbade that activity close to town. Most important was that loggers from Itupiranga and Marabá had already logged out many Brazil nut trees, as discussed in Chapter 3. Thus, they had participated in the removal of a resource that had sustained the former local and regional economy. Because of this disappearance of extractive resources, people were forced to look for new economic activities to make a living. Increasingly, as argued in earlier chapters, people needed cash in order to maintain their families. Logging operations and sawmills provided a means for some people to earn cash, but this type of employment was inequitable and the working conditions were often arduous.

Further, the future for logging and the sawmills in Itupiranga remained uncertain. Although the distance loggers had to go from town had been increasing over the past number of years, the sawmill owners whom I interviewed felt that they would be able to remain there up to ten years longer. However, one sawmill owner who owned two sawmills

left Itupiranga the following year in 1991. When asked whether or not they were in favor of a reforestation program, sawmill owners said that part of their taxes already went to the government for planting trees. The problem was, they said, that the agency's officials were mostly corrupt and were pocketing the money intended for reforestation. Another problem was that the government was only planting trees near Belém, and did not seem to be inclined in the near future to plant trees in more remote areas of Pará. Sawmill owners emphatically favored the reforestation plans so that they could remain in the area indefinitely and not go to the expense of moving on into newer untouched areas. They lamented that no one was really implementing the government's reforestation project. Thus, former extractive resources had mostly disappeared, and present ones were not being restored. Logging did not appear to be a long-term, sustainable activity.

Conclusion

It was argued by sawmill owners in Itupiranga that logging was helping to develop the Amazon. They argued that their sawmills provided jobs, locally, and that timber extraction and the production of lumber meant growth for the Brazilian economy. Indeed the sawmills and logging operations in the forest did provide some jobs, however, they did not provide enough to significantly alleviate the high rate of unemployment. Further, a majority of jobs were low paying, and sawmill workers had to work long, arduous

hours at dangerous occupations for their low wages. Despite these conditions, most sawmill workers appeared to genuinely like their employers, and regarded them as patrons who offered employment and would take care of them for the duration of their employment. However, the scarcity of jobs in Itupiranga may also have been a factor in the passivity of sawmill workers under such exploitive conditions at the sawmills. Sawmill owners were making high profits from their business by paying low wages to their laborers. There was evidence that sawmill owners tried to avoid paying for other benefits, also, by thwarting workers' attempts to obtain work permits that required their employers to provide those benefits. To say that the economic disparity between sawmill owners and their workers was significant is an understatement.

The sawmill owners were the main beneficiaries of their businesses as measured by their annual earnings and estimated profits, at the expense of their workers as measured by their low wages. Furthermore, logging operations threatened the supply of natural resources in the region, a situation which would be detrimental for locals in the future. Already sawmills had caused water and air pollution problems. For another thing, loggers had extracted many Brazil nut trees in the area that had helped to sustained the former economy. Thirdly, their activities contributed to forest clearance. Scientists have found that selective logging in the Amazon may create undesirable

disturbances in a tropical rainforest, especially in the canopy (Uhl and Buschbacher 1985), and also encourages migration and farming once roads are built to take out the timber (Verissimo et al., no date). Broad expanses of rainforest that had once supplied locals with their living were now cleared by chainsaws for logging, and by burning for pasture and agricultural plots. The natural resources that had been easily found within the forest that once surrounded the town were gone, and people were more dependent than ever before on an external market for jobs for cash and consumer products.

Both Bunker's (1984 & 1985) and Wood's (1983) arguments about the precarious nature of Amazonian development have merit in the case of logging in Itupiranga as well as elsewhere in the Brazilian Amazon. Logging harvested vital resources that were not being renewed, nor could a reforestation program restore the former rainforest. This extraction process results in a loss of value to the region, as Bunker argues, if we assume that standing forests have an inherent value. Even if we use the standard definition of the labor theory of value, as does Wood, a few things were occurring which did not bode well for those who argued that logging was contributing to the development of the region.

First, logging had helped to deplete one resource--Brazil nuts--upon which locals had depended for part of their living for many years. They lost their self

sufficiency and autonomy because of the decline in Brazil nuts and loss of access to other forest resources. Second, value was accrued to the sawmills because they paid low prices to landowners (if they paid at all) for their timber, and underpaid their employees with low wages and few benefits so that most sawmill workers ended up paying for the costs of their own reproduction and social security and that of their families. One could argue that these conditions were helping to underwrite the capitalist enterprises in an extreme manner, and further, a type of primitive accumulation was occurring in the logging industry when landowners were not paid for their trees or were "removed" (assassinated) from their land in more violent business deals with loggers. Third, the loggers did contribute to the immediate economy of Itupiranga. However, when they left town, a most certain eventuality because their methods of resource extraction were necessarily finite in nature, the local economy would suffer. They would leave behind other businesses that had grown up, in part, because of the commerce and traffic that logging brought. Further, they would leave behind a legacy of spoiled waterways and denuded forest. Locals would have to find strategies to maintain themselves under those new circumstances.

Some sawmill owners said to me that we Americans should not complain about how Brazilians were using their natural resources and polluting their environment because they needed to do so in order to develop their country. After

all, they pointed out, Americans had done the same thing within their borders (and elsewhere) in order to develop their country. However, it must be emphasized again, that none of those sawmill owning families planned to stay in Itupiranga after they made enough profits to provide for themselves elsewhere. It would be up to the locals and other people too poor to leave to find a way to maintain themselves in an environment that was not as abundant nor provident as it had once been.

Table 7-1
 One Sawmill's (A) Buying and Selling Prices for the Three Qualities of Lumber per M³,
 June 1990

Quality	Price sawmill paid landowner per tree (em pé)		Price sawmill pays middleman per M ³ of timber (tora)**		Price sawmill pays other sawmill per M ³ of lumber (serrada)		Sawmill's Selling Price (serrada)	
	Cz\$	US\$	Cz\$	US\$	Cz\$	US\$	Cz\$	US\$
Highest	2,000	36.10	8,000	144.40	18,000	324.99	30,000	541.52
Medium	1,000	18.05	3,500	63.18	12,000	216.61	18,000	324.99
Lowest	500	9.03	1,300	23.47	4,000	72.20	5,000	108.30

Source: Interview by the author with a sawmill owner in Itupiranga, 1990.

Note: In June 1990, US\$1 = Cr\$55,4 (Latin American Economic Report, May 31, 1990).

** The sawmill would sell logs (tora) to buyers for these prices, also.

Table 7-2

Estimated Annual Production of *Madeira Serrada* at one Sawmill (A) for One Year 1989-1990 in Itupiranga, Pará, Brazil.

Source of madeira Percent		Volume ¹ serrada M ³	tora ² M ³	Price Owner Pays for Medium Grade madeira US\$	Owner's Costs for Buying madeira per month ³ US\$
<i>Em pé</i>	80	320	640	18.05	11,552.00
<i>Em tora</i>	10	40	80	63.18	5,054.40
<i>Serrada</i>	10	40	40	216.61	8,664.40
Total	100	400	760	----	25,270.80

Source: Interview by the author with a sawmill owner in Itupiranga, 1990.

Note: Since the interview took place in June, 1990, I am using the exchange rates from that month. In June 1990, US\$1 = Cr\$55,4 (Latin American Economic Report, May 31, 1990).

^aThe sawmill owner estimated that his monthly production of *madeira serrada* was 400 M³. The calculations above are based upon the assumption that he produced 400 M³ *madeira serrada* per month during the year August 1989 to August 1990.

^bApproximately 2M³ *madeira tora* (timber) becomes 1M³ *madeira serrada* (lumber) in the production process. 'Madeira' in Portuguese means 'wood,' 'timber,' or 'lumber' depending upon an accompanying word.

^cThe sawmill owner stated that he obtained 150 M³, 100 M³ and 200 M³ of high, medium and low quality *tora*, respectively for months November 1989, February 1990 and May 1990. However, to reduce the complexity of the problem, the calculations are based upon prices (see Table 7.1) for the medium grade wood for all 400M³ that the owner produces each month. Hence, the figures give a rough estimate of the potential profits that sawmill A made during the past year not including other expenses for labor, equipment, fuel and other maintenance costs.

Table 7-3

Types and Prices of Wood Within Each Quality Category in Mid-August at One Sawmill (B) in Itupiranga, Pará, Brazil, 1990

Type	Price sawmill pays middleman for M ³ of Timber (tora)**		Sawmill's Selling Price for M ³ Lumber (serrada)		Estimated Volume of Production per M ³ During Past Year	
	Cr\$	US\$	Cr\$	US\$	tora	serrada@
<u>Quality High</u>						
Mogno	10.000	137.74	35.000	482.09	----	
<u>Quality Medium</u>						
Ipé	5.000	68.87	18.000	247.93	800	400
Jatobá	4.000	55.10	16.000	220.39	400	200
Ageline	4.000	55.10	15.000	206.61	200	100
Camaru	4.500	61.98	14.000	192.84	200	100
Maracatiara	3.500	48.21	10.000	137.74	300	150
Tatajuba	3.500	48.21	12.000	165.29	300	150
Cedrana	3.500	48.21	8.000	110.19	200	100
<u>Quality Lowest</u>						
Melancia	1.500	20.66	7.000	96.42	300	150
Faveiro	1.500	20.66	7.000	96.42	300	150

Source: Interview by the author with a sawmill owner in Itupiranga, 1990.

Note: In August 1990, US\$1 = Cr\$72.6 (Latin American Economic Report, August 31, 1990).

** The sawmill would sell logs (tora) to buyers for these prices, also.

@ Approximately 2M³ madeira tora (timber) becomes 1M³ madeira serrada (lumber) in the production process. 'Madeira' in Portuguese means 'wood,' 'timber,' or 'lumber' depending upon an accompanying word.

Table 7-4

Estimated Total Prices for *Madeira Tora* and *Madeira Serrada*, and Potential Profit for One Year at One Sawmill (B) in Itupiranga, Pará, Brazil, 1990

Type	Total price paid for tora** x year US\$	Total price received for serrada x year US\$	Potential profit each type lumber x year US\$
<u>Quality Medium</u>			
Ipé	55,096.00 ¹	99,172.00 ²	44,076.00 ³
Jatobá	22,040.00	44,078.00	22,038.00
Ageline	11,020.00	20,661.00	9,641.00
Camaru	12,396.00	19,284.00	6,888.00
Maracatiara	14,463.00	20,661.00	6,198.00
Tatajuba	14,463.00	24,793.50	10,330.50
Cedrana	9,642.00	11,019.00	1,377.00
<u>Quality Lowest</u>			
Melancia	6,198.00	14,463.00	8,265.00
Faveiro	6,198.00	14,463.00	8,265.00
Total	151,516.00	268,594.50	117,078.50

Source: Interview by the author with a sawmill manager in Itupiranga, 1990.

Note: Since the interview took place in August, 1990, I am using that month's exchange rate. Conversion to dollars based upon exchange rate in August 1990, US\$1 = Cr\$72.6 (Latin American Economic Report, August 31, 1990).

** The sawmill would sell logs (*tora*) to buyers for these prices, also.

^aTotal price for *tora* equals price sawmill paid middleman per M³ of timber (*tora*) in mid-August 1990 multiplied by estimated volume of production during past year of *tora* M³ (see Table 7.3).

^bTotal price for *serrada* equals the sawmill's selling price per M³ of lumber (*serrada*) in mid-August 1990 multiplied by estimated volume of production during past year of *serrada* M³. (2M³ *madeira tora* becomes 1M³ *madeira serrada*.)

^cTotal potential profit for each type of lumber for one year is arrived at by subtracting the total price for *tora* from the total price for *serrada* for each type of wood. The estimated gross profit for one year at the sawmill is arrived at by either adding up total production of each type of wood or by subtracting the total price of *tora* from total price of *serrada*.

This figure does not include other expenses such labor, equipment, fuel and other maintenance costs.

The estimated gross profit seems accurate based upon the manager's estimate that the sawmill produced 100M³ *madeira serrada* per month during the past year; the average of the figures of *serrada* on Table 7.3 is 125M³ (total 1500 total production of *serrada* divided by 12 months).

Table 7-5
 Number of Minimum Wages Earned by Forest Crews of Two
 Sawmills in Itupiranga, Pará, 1990.

Position	# of persons in position	Average # of Minimum Wages/mo.	In July 1990 US\$*
<u>Six-crew team</u>			
Manager	1	10	670.00
Tractor driver	1	5	335.00
Truck driver	1	3	201.00
Chainsaw operator	1	2	134.00
Manual labor	2 or 3	1	67.00
<u>Thirteen-crew team</u>			
Administrator	1	4	268.00
Tractor driver	1	5	335.00
Tractor driver's helper	1	3	201.00
Truck driver	2	5	335.00
Truck driver's helper	2	3	201.00
Chainsaw operator	1	3	201.00
Chainsaw operator's helper	1	3	201.00
Tree scout	1	2	134.00
Manual labor	2	2	134.00
Cook	1	2	134.00

Source: Interviews by the author with sawmill owners in
 Itupiranga, 1990

*One minimum wage was approximately US\$67.00 (Latin American
 Economic Report, July 31, 1990).

Table 7-6
 Number of Minimum Wages for Positions in Five Sawmills in
 Itupiranga, Pará, 1990 (According to Sawmill Owners).

Position	Average Number of of Minimum Wages*	In September 1990 US\$
Gerente Manager	4 to 7	268.00 - 469.00
Laminador Rolls lumber	4 to 6	268.00 - 402.00
Serrador Uses saw	3 to 4	201.00 - 268.00
Circuleiro Uses round saw	1.5 to 4	100.50 - 268.00
Tratorista Operates tractor	4	268.00
Motorista Drives large-bed truck	2	134.00
Destocadeiro Uses machine to grub stubs from tree trunks	1.5 to 4	100.50 - 268.00
Contabilista Accountant (wife in one case)	1	67.00
Braçal Menial jobs	1.5 to 2	100.50 - 268.00
Miscellaneous (Mother-in-law in one case)	1	67.00

Source: Interviews by the author with sawmill owners in
 Itupiranga, 1990

*One minimum wage was approximately US\$67.00 (Latin American
 Economic Report, July 31, 1990).

Table 7-7

Average Sawmill Workers' Salaries per Position, among Sawmills in September 1990, Itupiranga, Pará (According to Sawmill Workers).

Position	Average Salary*	
	Cz\$	US\$
Laminador	35.000	335.57
Rolls lumber		
Estivador	16.000	153.40
Stevedore (loader)		
Circuleiro	10.000	95.88
Uses round saw		
Apontador	8.000	76.70
Marks lumber		
Pracheiro/Pegar as fitas	8.000	76.70
Glues ribbons around lumber stacks		
Motorista	8.000	76.70
Drives truck		
Faz todas atividades	8.000	76.70
Performs many activities		
Estopador	7.000	67.11
Calks with tow		
Empilhador	7.000	67.11
Stacks lumber		
Serrador	5.500	52.73
Uses saw		
Passar cabe	4.600	44.10
Makes broom sticks		

Source: Interviews by the author with sawmill workers in Itupiranga, 1990

*In September 1990, US\$1 = Cr\$104,30 (Latin American Economy and Business, November 1990).

Table 7-8

Household Type of Sawmill Workers and Fishers From
30-Household Surveys, Sawmill Workers and Fishers

Item Measured	Sawmill Workers	Fishers
Total Households	30	30
Households with Ownership of House	26	25
Type of Roof		
Palm thatch	16	9
Tile	9	16
Brasilit	0	1
Wood slates	5	2
Type of Floor		
Beaten earth	19	17
Cement	7	9
Wooden	3	1
Tile	1	0
Other	0	0
Type of Wall		
Wood	22	24
Cement (painted)	1	0
Brick	2	2
Palm thatch	4	1
Mud brick	1	1
Type of Lighting		
Electric	23	19
Kerosene lamp	5	8
Candle	2	0
Type of Cooking Appliance		
Gas stove	20	20
Charcoal	5	5
Wood burning oven	3	3
Single burner	2	0
Other Appliances		
Television	8	12
Refrigerator	3	5
Watch or clock	18	13
Livingroom sofa	0	6
Radio	11	9

Source: Original survey data

Table 7-9

Standard of Living Indicators for Households with Sawmill Workers versus the Rest of the Population in Itupiranga, Pará, Brazil, 1990

Households	(N)	Mean			
		House Quality	Material Possessions	Animal Protein (# days/week)	Average Education
Entire population	150	3.4667	3.1133	1.0060	5.3025
Sawmill workers	14	2.4286	1.6429	0.7571	4.0129
Rest of population	136	3.5735	3.2647	1.0319	5.4363
Sig. of difference		p<.10	p<.05	p<.05	p<.05

Source: Original survey data

CHAPTER 8
STRATEGIES FOR COPING WITH RAPID CHANGE AND FRONTIER LIFE:
THREE CASE STUDIES

Introduction

This chapter examines several different types of responses made by a few social groups affected by the development process that accelerated during the 1980s in Itupiranga and the Tucuruí region. It is important to examine the efforts by social groups to resist drastic changes in their lives. One of the difficult theoretical problems in anthropology and in the social sciences at large is to link up individual-level analysis and societal-level analysis into one coherent framework.

This dissertation has thus far emphasized the constraints and parameters under which people in Itupiranga lived during the dramatic changes that occurred. Yet, many studies indicate that people are not passive recipients of such changes (cf. Nader 1990; Guha 1989; and Schmink and Wood 1992). Rather they are active participants within local, regional, national and international political and economic structures. Individuals and social groups exist within an arena of structural constraints and opportunities. They are actors who manipulate, cooperate, resist and generally operate within a framework of social forces with

fluctuating constraints and opportunities at different historical moments. Their struggles may evolve from material deprivations, yet they also occur, in part, because of cognitive elements.

The first section of this chapter focuses on protest activities carried out by direct producers in the Tocantins/Tucuruí Reservoir region who were removed from their homes in the relocation process carried out by ELETRONORTE. The second section examines a local middle class movement in Itupiranga that arose in response to environmental, economic and social changes. The third section examines the ongoing struggles of the poorest segments of Itupirangan society as they attempted to maintain a living with dignity in sometimes dire financial and political circumstances.

The three case studies vary in the level of organized activity. However, despite the level of activity in the first movement, in none of the cases did the actors resort to violent activity to achieve their goals. Various authors have examined social movements and sometimes violent behavior on the frontier in Amazonia (Foweraker 1981; Glock and Brandon 1985; Schmink and Wood 1992, etc.). Many of these accounts focus on the circumstances that encourage organized resistance by less powerful groups--indigenous peoples, peasants, itinerant gold miners--against more powerful ones--ranchers, loggers, mining companies and state law officials. The Tucuruí movement is a good example of

organized resistance against a more powerful entity. The environmental movement in Itupiranga resembles a sort of revitalization movement, an effort to restore the past using new terminology and circumstances. The third case study is not a movement, per say, but rather the daily endurance and perhaps silent resistance of a majority of the population in Itupiranga, poor migrants. Very often less powerful peoples do not organize and carry out sustained resistance, despite daily oppression, overt repressive events and slow, tortuous starvation of their neighbors and families. The third section explores possible reasons for why people endure the treatment about which they complain but do not take action.

Political Expression Against the Tucuruí Dam

The protest movement examined in this section occurred in the early 1980s before and during the critical period of the filling of the Tucuruí Reservoir when direct producers were suffering from the curtailment of their former economic activities that had sustained their livelihood. They were also being forced to move from their homes to areas away from the river. In the new situation, they faced substantially different environments, in some cases, and a new economic system complete with new land tenure rules and different working relationships. Moreover, they had suffered unnecessarily because of the poorly planned resettlement process.

With nothing left to lose they mobilized to face ELETRONORTE, the power company. However, their demands

reflected the new situation. Their request for a 100-hectare plot of land assumes their acceptance of the new regime of private property. Hence, the terms of the debate were already ones set forth by ELETRONORTE, a state-owned company representing and implementing the policies of the federal government in the Araguaia/Tocantins Region of the Amazon. The debate centered around whether or not ELETRONORTE would justly indemnify the former direct producers. The structural changes brought about by the intrusion of a new economic system in the region were taken as given. The former lifestyle that the direct producers lost in this process was not addressed by any of the parties of the debate.

The Making of a Disgruntled Population

When ELETRONORTE went house-to-house in 1978 conducting a survey and informing the riverside dwellers that they would have to leave their homes (but would receive indemnification for their possessions), people were desolate (Hebette, et al. 1983). They would have to leave their agricultural plots, chickens, fruit orchards, Brazil nut trees, and the river. The functionaries of ELETRONORTE promised them many things. Each household would receive land, a title for this land, a house, water wells and provisions for one year. Each new town would receive a school, medical post, a church, and other cultural facilities. In the meantime people were prohibited to plant permanent crops and to make improvements on their land that

would increase indemnification payments. They were not allowed to plant manioc, rice and corn below the 150 meter line. Some people disobeyed the orders and planted manioc, but the plants were poisoned when discovered (Hebette et al. 1983).

In 1979 and 1980, ELETRONORTE began to remove people from the reservoir area and relocate them in the new towns. The power company transported them in trucks, depositing some people by the highways without shelter (Hebette et al. 1983). In certain areas of evacuation, the power company burned their houses and small store rooms to impede families from returning to their agricultural plots (Hebette et al. 1983; sources in Itupiranga 1986). To hasten relocation efforts and further discourage migration back to the riverside, many Brazil nut trees were destroyed by herbicides (Carlos Perez 1984, personal communication; sources in Itupiranga 1986).

In general, the indemnification was carried out sporadically and unevenly. The indemnification given for improvements on the land was inequitable among households. The Bishop of Cametá stated that some farmers received only Cr\$500 in indemnification, while others were forced by officials of ELETRONORTE to sign blank paper so the terms of payment could be decided later (*Bispos Apoiam os Desalojados pela Usina de Tucuruí* 9/9/82). Some people received titles for their land, while others received no land at all, or only small portions. Many who had possessed and had been

promised 100 hectares, received only 20 or 50 hectares in exchange. The new plot was often in dry places where agricultural conditions were bad (Hebette et al. 1983; Pinto 1982). Furthermore, the land people received was not surveyed and they did not receive title for it. In some instances, plots were located on the lands of large ranchers, causing conflicts between them and expropriated small farmers (Pinto 1982). To add to the suffering, many people had to make several trips to Tucuruí to negotiate for further items of promised payment. Furthermore, people had been left without any means of making a living since 1978 and 1979 (Hebette et al 1983; Pinto 1982).

The members of the traditional, local landed elite, who once controlled the rubber and Brazil nut trails, negotiated with ELETRONORTE independently from the others since the beginning. They never organized among themselves, nor did they participate in the political activities with other elites or the lower-class *expropriados* to negotiate for indemnification from ELETRONORTE. Some of these elites did attend a few meetings at the Prefeitura in the beginning when the power company was discussing the possibility that Itupiranga might be inundated. But mostly, they talked with officials from ELETRONORTE privately. Many of these traditional elites lost houses and land because of the dam, and received poor compensation for the properties they once had. They were continuing to negotiate with ELETRONORTE in 1986, but independently from the *Comissão Ministerial*, which

was appointed by the power company in 1985 to survey all of these who had not yet received indemnification and to continue negotiations.

Direct producers dealt with ELETRONORTE on a community level. On January 9, 1980, several groups in Itupiranga created and published a document entitled "ELETRONORTE" asking 1) "When are we going to be indemnified?; 2) What are we going to receive?; 3) Where will our lots be located?; 4) Who is not going to be indemnified?" (ARCA 82/83). In July 1980, *expropriados* of the Vila de Repartimento (Km 157 Transamazon Highway) sent a letter to ELETRONORTE, the governor of Pará and the mayor of Tucuruí. The letter demanded that the power company construct the new vila of Repartimento on Km 177 of the Transamazon Highway, and demarcate and assign the closest lots to the new town (ARCA 1982/83). More than a year later, on November 2, 1981, people in Itupiranga published yet another document, "*Documento dos Vazamentos de Itupiranga a ELETRONORTE*" (ARCA 1982/83). However, these documents were largely ignored by the power company despite the growing dissatisfaction in a number of communities over the indemnification procedures.

Organization and Initial Protest Activities

In November 1981 during the relocation process, the expropriated farmers decided to create an area-wide organizational effort to obtain indemnification and seek solutions to other concerns (Hebette et al. 1983). A group of expropriated farmers met in Repartimento and decided that

they would organize to demand their rights from the power company. They were extremely unhappy and offended by the injustices of the dispossession, indemnification, and relocation procedures, and by the way ELETRONORTE was ignoring their concerns about the process and the Tucuruí Hydroelectric Dam itself. The group was assisted in their efforts by the *Comunidades de Base* (Base communities set up in local areas by the Catholic Church to address social and religious matters). This link with the Church communities is probably why the organization of the disgruntled expropriated farmers was able to spread to the other affected communities. Each community had a local *Comunidade de Base*, a Catholic Church activist movement which, believing in the tenets of Liberation Theology, taught workers about their rights. From Repartimento, the organization expanded to Itupiranga, Jacundá, Breu Branco and Núcleo do Mojú (Hebette et al. 1983).

At this same time, ELETRONORTE, as a representative of the federal government, was under considerable pressure to ensure votes for the government party in the upcoming state elections. The opposition party, PMDB, was strong in Pará, and the government party desperately needed votes to carry the state in the governor's race, as well as other seats of state officials and municipal leaders. The power company and the government party attempted to co-opt farmers in the party's favor by awarding plots of land or demoralizing and

frightening the leaders of the organizers (Hebette et al. 1983).

However, persistent pressure from various groups and media attention regarding the inadequacies of the expropriation procedures forced the President of ELETRONORTE to assign an official to investigate all of the irregularities and social injustices to the people in the region (*Bispos Apoiam os Desalojados pela Usina de Tucuruí* 9/9/82). ELETRONORTE purportedly asked for a list of remaining problems and an honest assessment of the situation. Yet, the final report stated that the company had done a good job, and had treated the expropriated farmers well in terms of indemnification. It was concluded that no social injustice had been done.

In the face of this the *Comissão dos Expropriados* (Commission representing the expropriated rural workers) realized that it must survey every one of the approximately 4,000 expropriated families in the region and establish a record of their holdings, the promises made, and indemnification owed and outstanding to each deserving individual. The *expropriados* sent memoranda to ELETRONORTE outlining their complaints and demands, but received no response. The demands were also published on the radio, in newspapers and on television (ARCA 1982/83).

On June 12, 1982, approximately 400 expropriated individuals met in Itupiranga and resolved not to accept transfers until their documented demands were attended to.

Many demands were specific according to location, but in general the *expropriados* in the region asked for: 100 hectares of titled land for each household or male of at least 18 years of age; a part of this land cleared for planting; assistance for first planting; roads between the lots for easy access and transportation of produce; a well-built house; drinkable water and a well for irrigation on their land; and assistance in the move. For the new towns they demanded schools, medical posts, churches and other cultural buildings, as promised by ELETRONORTE. Other demands were directed to specific areas, including Itupiranga. For example, the people were concerned about where Itupirangans would move in case the reservoir engulfed the town.

Thousands of families continued to suffer problems related to inadequate expropriation, indemnification, and relocation procedures so on August 12, 1982, in a general assembly in Repartimento, the representatives of the *expropriados* produced another document detailing their complaints and requests and sent it to the *Serviço Patrimônio e Indenizações* (SPI) office of ELETRONORTE in Tucuruí.

By this time, the *expropriados* were assisted by other groups including the *Comissão Pastoral de Terra* (CPT), the *Sindicato dos Trabalhadores Rurais de Tucuruí*, the *Movimento em Defesa da Vida*, *Confederação dos Trabalhadores da Agricultura* (CONTAG), the Diocese de Cametá, and politicians

of the political party PMDB in Pará. In addition, the mayor of Itupiranga and other concerned individuals participated in the efforts to gain the ear of officials from ELETRONORTE and the state government. These included a lawyer who had helped in the struggle for justice at the Sobrinho dam site on the São Francisco River in Bahia (Hebette 1983). Thus, the *expropriados* had the strength and outside help necessary to maintain their protest activities against the power company.

Between September 1982 and November 1984, there were several encampments held by the *expropriados* and aided by political and religious entities to protest ELETRONORTE's policies and implementation of the resettlement process (Biery-Hamilton 1987). The *expropriados* decided that they would have to take more direct action against ELETRONORTE in order to satisfy their demands, since the power company seemed to be dragging its feet. When they received no reply from ELETRONORTE about their demands, the *expropriados* decided to camp in protest in front of the SPI office in Tucuruí on September 8, 1982. Close to 400 persons joined the encampment, which lasted for four days, to force company officials to negotiate for a more just indemnification. They were joined by several institutions: CPT, CONTAG, and the Diocese of Cametá. In addition, they received a supporting telegram from the Bishops of CNBB -- Regional Norte II, Belém. The Bishops approved the peoples' decision to initiate a suit against ELETRONORTE in the event that the

problems continued without a solution. The farmers elected a commission of individuals whose main objective would be to negotiate with ELETRONORTE. They compiled a document listing their rights to mobilize and the responsibilities of ELETRONORTE, claiming "land for land, house for house, just indemnification and recovery of the damages" (Hebette et al. 1983; ARCA 82/83). The request of "land for land, house for house" remained a central theme of the movement throughout the 1980s.

The second and third encampments occurred because the *expropriados'* situation continued to be difficult in many areas of the region and because of the lack of response to their demands by ELETRONORTE. As time went by and the situation changed, the protestors stepped up their demands. Poor soil and water conditions on new rural lots, and the reduction from 100 hectares to 50 hectares of land for each family made the *expropriados* think that ELETRONORTE had broken its promises. Furthermore, police intervention in the protest marches, threats of violence and propaganda against the *expropriados* only increased their resolve to continue their efforts.

During the second encampment an impasse was reached because officials from ELETRONORTE wanted the protestors to return to their respective locations where they would negotiate the problems that were specific to each area later. However, the protestors continued their encampment until ELETRONORTE agreed to resolve the issues of the

expropriados as a group, which included people from Repartimento, Itupiranga, Cajazeiras, Novo Repartimento, Tauriy, Breu Branco, Mojú Arraia (Nova Jacundá), Jacundá, Remansão and other vicinities in the Tocantins/Tucuruí region. During these battles, the *expropriados* won many of their demands by gaining state-wide and national attention for their protest activities because the media coverage seemed to embarrass ELETRONORTE.

The third encampment occurred because ELETRONORTE did not follow through on the promises made during the April 20, 1983 meeting in Brasília (*Lavradores Ocupam Terminal e Subprefeitura Repartimento 9/11/84*). There was a large police presence at this two-month long encampment where hundreds of *expropriados* marched from Novo Repartimento to Tucuruí. The concerns behind this encampment had expanded to include two new major issues: the environment and the former lands of the Parakanã Indians and some colonists who were relocated to that same land.

Region-Wide Discussion of Environmental Concerns

As the time drew nearer to when ELETRONORTE would close the floodlocks to the reservoir and it would begin filling, activities by the *expropriados* of the region increased. They realized that the event was indeed going to occur and they became afraid. On June 23, 1984, a group of more than 1,500 persons met in Cametá at the request of the *Movimento de Defesa da Vida* and commissions of the *Defesa Civil* of various municipalities in the region. This meeting was

called to request that the *Procuradoria Geral do Estado* prevent the closure of the dam by legal means, until the vegetation in the total reservoir area was removed (*Mais de 1,500 Pessoas no Ato Público Contra a Barragem* (6/26/84). The reservoir would cover dense tropical forest containing an estimated 2.8 million trees belonging to at least 170 named species (Goodland 1982). The area to be inundated had been only partially cleared by CAPEMI (*Caixa de Pecúlio dos Militares*), a government company that was awarded clearing contracts in 1981. Due to a major scandal and financial problems, the company had scarcely begun the job of clearing when it had to abandon the work and declare bankruptcy. Since then, no efforts had been made to clear the remaining vegetation, which included most of the area in the reservoir. The *expropriados*, and many groups who supported them, including scientists and journalists in Belém, were concerned about the environmental repercussions from filling the lake without removing the vegetation.

Scientists worried that the decaying vegetation biomass would create eutrophic conditions and Ph levels too low for most fish survival. People were worried about the future fish populations. They had heard that several years after the filling of the Sabrinho Reservoir on the São Francisco River in Bahia there had been major fish kills. They were also worried about whether the agROTOXIN defoliants that CAPEMI had clandestinely used to kill the vegetation in the

areas they cleared (Pinto 5/10/83), would poison the water and pose a threat to the human and animal populations.

Some people had died of probable poisoning shortly after the Brazil nut trees were injected with herbicides. A young man of one family from Jacundá died on February 20, 1983, three days after he drank water in the forest near some poisoned Brazil nut trees. He experienced severe abdominal cramps before his death. His family, who now lived in Itupiranga, attributed their brother's death and the deaths of several other people they knew to the poisoning of the trees. Officials in Belém and Itupiranga gave reports of other similar deaths shortly after the herbicides were used during the early 1983 period.

Other concerns by the growing coalition of scientists, *expropriados*, journalists and some elements of the Catholic Church included the penetration of saline water from the ocean into freshwater supplies, damages to subsistence food crops, the poisonous gases liberated by the submerged foliage and decomposing mud, and impossible riverine travel below the dam towards Cametá during the dry season (*Mais de 1,500 Pessoas no Ato Público Contra a Barragem 6/26/84*).

The Problem Between the Parakanã Indians and Relocated Colonists

The Parakanã Indians had observed that their old reservation land, which ELETRONORTE had expropriated because the area was anticipated to be submerged, was indeed not in the reservoir, but had been parcelled out to white colonists. Although the Indians had been given new land, in

a negotiated settlement between FUNAI, ELETRONORTE and GETAT, they wanted their old traditional land, the Gleba Parakanã, back because it was better than the new land they had been given. Their former reservation also contained mahogany and minerals (*Parakanãs Reivindicam Velha Aldeia* 10/21/84). An important factor about this land was that it also would be adjacent to the Tucuruí Lake after the reservoir was filled. The area in question was recognized as an indigenous reserve in July 1971 by decree 68.913. The area was demarcated in 1975 and included 189,681 hectares (*Colonos Não Desejam Conflito com Índios Parakanã em Tucuruí* 10/21/84). With the filling of the lake from the Tucuruí Hydroelectric Project, approximately 70 Indians who had inhabited the margins of the Tucuruí River were transferred to the Marudjevara reserve, close to the Cajazeirinha River. This area was still just an "area eleita" (area set aside), not yet a reserve. The Parakanã Indians were unhappy with the new inferior land they had been given and felt insecure about the tenuous land arrangement in which their legal standing was not guaranteed.

In an effort to obtain their land back, a group of 32 armed Parakanã Indians visited each one of the 706 farmers families who had already settled in the Gleba Parakanã, and threatened retaliation if they did not leave (*Parakanãs Querem Expulsar Colonos* 10/17/84). Many of these people had been on their resettled land for almost two years, and had planted their crops five months before. Because of these

visits, the colonists were no longer interested in remaining on these Indian lands because of the threats upon their lives and the fact that they had not received definite titles, which would give them permanent rights to the land. They suspected that they never would receive titles because the law did not permit the issuance of titles for indigenous land, although it was not yet a reservation. Yet, the farmers felt that they had made improvements upon the land by planting and building their homes and did not want to leave until they were compensated for the crops, buildings and fruit orchards they would lose. They also wanted a definite new site to which they could transfer. A majority of these colonists recognized the rights of the Indians to their old reservation lands, and did not want to enter into a conflict with them. However, they could not immediately abandon their new homes because they had nowhere to go, and no rights to any further reparation unless ELETRONORTE agreed to a new plan to locate them somewhere else (*Colonos Não Desejam Conflito com Índios Parakanã, em Tucuruí* 10/21/84).

The Indians also did not want to fight, recognizing that their problems lay with ELETRONORTE and GETAT, and not with the colonists. They felt cheated by the power company and stated that they would allow the white farmers to remain on traditional reservation land only until November 10, 1984. If the colonists were not gone by that time, the

Indians would begin to use violence (*Parakanãs Querem Expulsar Colonos* 10/17/84).

On October 22, 1984, a group of *expropriados* went to Belém to discuss with the governor the situation about the Parakanã as well as their own demands. They wanted a clear position from him about whether they would have to leave Parakanã land, and where they would be resettled. The *expropriados* asked for police protection from possible attack by the Indians until they could leave. They also accused GETAT of encouraging some farmers to attack the Indians, which made their relationship with the Indians precarious. One representative of the *expropriados* told the governor that, "The technicians [of GETAT] said to the people that we are many more numerous and we must deal with the Indians with the bullet" (*Expropriados Voltam em Busca de Solução* 10/23/84). During this meeting with the governor, the *expropriados* also demanded reparation for the improvements they had made on this land in Gleba Parakanã when they planted five months before. Further, the governor was reminded that his promise to obtain aid from FINSOCIAL was a year old (April 1983), and nothing had so far been resolved.

Restitution

Finally, in October 1984, the movement by the *expropriados* began paying off. They considered that a meeting in Brasília was success because the minister of Mines and Energy had made an appointment with Brazilian

President Figueiredo to liberate monies for some of their demands. It was expected that the President would sign a decree to dispossess the Gleba Parakanã from the Parakanã (*Expropriados Temen Ação dos Parakanã Pedem Socorro* 10/27/84). The farmers who had been allotted plots there would be allowed to stay, and the Parakanã Indians would have to be content with the new lands they had been assigned by ELETRONORTE and GETAT.

Although good tidings were beginning to arrive from Brasília, the *expropriados* and their supporters were not completely satisfied with the unfinished business. On October 30 and 31, a general meeting in Tucuruí was held to discuss all of the problems. The *expropriados*, Parakanã Indians, other concerned riverine persons, the federal deputy, the bishop and the representatives of the Organization of Lawyers of Brazil (OAB), CONTAG, representatives of CPT, the *Sindicato dos Trabalhadores Rurais*, and the *Comissão dos Colonos* met with ELETRONORTE and BASEVI to discuss the settlement of indemnification. The following day, representatives of FUNAI, CPT, CIMI (*Conselho Indigenista Missionário*), Indians, colonists, ELETRONORTE, and GETAT began working on the problem of the Gleba Parakanã land. During this meeting, the Bishops restated their support for the continuing protest movement by the *expropriados* until they received assistance. The political party PMDB declared that the struggle had already been victorious because the *expropriados* had gained many

things. However, they noted that the work was not yet finished (*Expropriados de Tucuruí Vão Acampar em Brasília* 11/1/84).

The outstanding demands included (1) 100-hectare plots with a house, water well, and cleared area equivalent to one *alqueire* (4.84 hectares); (2) definitive titles for urban and rural lots; (3) electric energy and water for the new urban areas constructed by ELETRONORTE; (4) immediate removal of the 706 families of Gleba Parakanã. Furthermore, the power company would have to supply transportation, supplies, shelter and medical attention during the removal; (5) indemnification for the improvements the colonists had made on their lots in Gleba Parakanã; (6) resettlement of these 706 families along the northwestern margins of BR-422. This motion would require the removal of large ranchers who had settled in the area where several urban and rural resettlement sites had originally been planned. Frustrated with the slow renegotiation process, the *expropriados* announced that they would take their demands to Brasília where they intended to camp in front of the Federal Senate (*Expropriados de Tucuruí Vão Acampar Agora em Brasília* 11/1/84).

However, the encampment in Brasília did not take place, even though a majority of the *expropriados* voted to procure a way to transport everyone. Instead they remained in Tucuruí, where at least 1,100 protestors were participating

in the third encampment (*Expropriados de Tucuruí Vão Acampar Agora em Brasília 11/1/84*).

Yet, their persistence in the middle of the Amazon, far away from where the major decisions were made, paid off. Their successes can be attributed to the political struggle that was occurring, nationally, in which the opposition parties and even a number of PDS leaders were able to mobilize popular support by demanding direct elections for president against the wishes of the military regime (Diniz 1986). In response, the federal government was forced to make more populist concessions.

ELETRONORTE, a state-owned company, therefore had to attend to local popular demands in Tucuruí. On November 21, 1984, the President of ELETRONORTE with the representatives of the *Comissão dos Expropriados* announced in Tucuruí the liberation of Cr\$3 billion by the National Planning Secretariat for the clearing of new lots, money for first planting, construction of rural houses, and opening of access roads between lots. Also that day, President Figueiredo planned to sign a decree of redefinition of the indigenous area Gleba Parakanã, before leaving for Tucuruí to inaugurate the Tucuruí Hydroelectric Project. The floodgates to the dam had been closed on September 6, 1984, to start the filling of the reservoir (*Bilhões para os Expropriados 11/21/84; Amanhã a Inaugurações da UHE Tucuruí 11/21/84*).

On December 1, 1984, ELETRONORTE began making payments of Cr\$1 million to each of the 1,400 to 1,700 *expropriados* who had received rural lots in the glebas Parakanã, Mojú, Baiana, Santa Rosa, and Grotão de Ricardo e Cametauzinho (*ELETRONORTE Comunica que Está Pagando Expropriados 12/1/84*); *Expropriados Serão Indenizados esta Semana 12/4/84*). The power company gave priority to those *expropriados* who had been camping in Tucuruí, obliged by the campers' precarious lack of accommodations and food, and poor hygiene suffered during the encampment (*ELETRONORTE Comunica que Está Pagando Expropriados 12/1/84*). In addition, ELETRONORTE made arrangements to construct 500 houses on the rural lots for relocated families (*ELETRONORTE Comunica que Está Pagando Expropriados 12/1/84*). The encampment had lasted for two months, but a politician of PMDB declared that a major portion of the *expropriados'* demands had been resolved.

Restitution, Yet....

Despite the many gains the *expropriados* had made, they had not achieved all of their expectations, and many new problems arose along with the rising waters of the Tucuruí Reservoir. Hundreds of people were left unsheltered and stranded by the rising waters, and had to be rescued (*ELETRONORTE Explica a Situação das Famílias na Área de Tucuruí 2/15/85*; *Lago da Barragem de Tucuruí Deixa Colonos Desabrigados 3/16/85*; officials in Itupiranga). Many of the resettled rural lots near Novo Repartimento had been

submerged by the rising waters beyond the limits anticipated by ELETRONORTE. Even some urban areas were inundated, leaving people homeless. People reported an increase of insects, especially mosquitos and biting flies. The insect problem became so difficult for humans and animals living near the dam that by 1990 many families there were requesting that ELETRONORTE find new lands for them away from the area.

The Struggle Continues

In addition to these new problems some of the old problems remained and many peoples' struggles for desired resettlement awards continued throughout the 1980s and into 1990. One concession that the *expropriados* won was recognition from the power company that their situations should be dealt with seriously. Former constraints against popular appeals loosened under the new civilian federal government that came to power in 1985, making state organizations somewhat more responsible for their actions. In this case, ELETRONORTE created a *Comissão Ministerial* on May 19, 1985 to address what was lacking yet in the indemnification process. The power company appointed leaders of each municipality to represent the *expropriados* in their respective districts.

This *Comissão Ministerial* provided a formal negotiating structure between the ELETRONORTE and the *expropriados*. However, the *Comissão Ministerial* created a situation in which the negotiation process was more firmly under

ELETRONORTE's control vis-a-vis the embarrassing encampments. As a result, despite the fact that the new *Comissão Ministerial* recognized the rights of the *expropriados* to bring their cases before the power company, many people continued to wait for years for their promised indemnification, after numerous meetings with power company representatives. For example, one leader of this *Comissão Ministerial* told me that he expected negotiations to terminate by the end of 1986, and that shortly thereafter everyone would receive their promised awards. However, the negotiations over indemnification awards still had not been terminated by the last trimester of 1990. For example, officials of ELETRONORTE and the *Sindicato dos Trabalhadores de Itupiranga* both hoped that the negotiations for the *vazanteiros* would be completed by October 1, 1991, but the meeting in Itupiranga did not resolve all of the issues nor everyone's individual cases.

One problem was the complexity of the indemnification process. One company official complained that most of the *expropriados* sold the land that ELETRONORTE had awarded them, and then put themselves back in the process to receive more indemnification. Many recent migrants to the region also felt that they were entitled to receive indemnification from ELETRONORTE if the land that they had been given by GETAT or INCRA was faulty for some reason.

For example, one group of people living near Lago Preto, suffered flooding on their *terra firme* lands in 1989

which killed their annual and perennial crops, and destroyed their homes. They came into town as a group and were living in a municipal building, temporarily, while they brought their case before the mayor, municipal council and power company officials. They wanted new land from ELETRONORTE because they reasoned that this flooding had occurred because of the higher water levels resulting from the dam. ELETRONORTE was unwilling to consider their cases, and the people were enticed and/or coerced into going back to their land by Lago Preto when the flooding had gone down. Some families refused, but since they were living on the sufferance of municipal coffers for their housing and food, they eventually were forced to go back to their ruined roças and start new crops. As an enticement, they were given food supplies for 30 days and seeds to plant more crops. But they were worried that their roças would be flooded again during the next rainy season. Thus, they won a small concession, although an inadequate one since it was not enough to sustain them for as long as it took until they could harvest these new crops. Furthermore, they did not receive what they actually requested--land in another area which was not susceptible to flooding.

Another problem that made the award process more complex was that more than 10 years had passed since the initial surveys, and many family heads had died or left, and the entitlement of their wives and children came into question. Many female household heads were lost or never

counted in the initial and ongoing indemnification process. Moreover, many children had become adults in those 10 to 12 years, and required land for their own new households in a region where available land, especially near the river was virtually gone. Many male young adults especially, felt entitled to receive 50 hectares of land from ELETRONORTE. Another problem that eventually caused many headaches for ELETRONORTE was that many people had left their homes along the margins of the river in the late 1970s and early 1980s after power company officials had forbidden people to plant perennial crops in 1978 and 1979. Power company officials had promised small land holders that they would return and conduct another survey and begin the indemnification awards soon. However, they did not return, and after waiting at least two years in many cases, people left the margins of the river because they could no longer make a living without planting the necessary perennial crops such as manioc and bananas, which were integral to Amazonian diets. As a result, these people were not counted in the final survey, and thus, were not considered to be part of the process by ELETRONORTE, and therefore eligible for indemnification.

Political problems still existed for the *expropriados* and the new actors in this protracted resettlement situation. After the initially successful protests and the recognition the *expropriados* won by the creation of the *Comissão Ministerial*, ELETRONORTE firmly controlled the

situation, as mentioned before. Ironically, the *expropriados*' hard-won recognition came at their political cost, for the institutionalization of the indemnification process in the form of the *Comissão Ministerial* was a two-edged sword. Although the *expropriados* gained an instrument through which they could negotiate with ELETRONORTE, the impetus for any protest activity was virtually gone once the formal structure was in place. In all of the ongoing cases, individuals and groups no longer made any impact upon negotiation proceedings to their advantage, despite their protests. For example, the group from Lago Preto did not receive much local sympathy or support, nor was their case publicized. All efforts, including those by local political and *Comissão Ministerial* officials, were directed toward returning them to their lands. The structure and atmosphere for successful and sustained protest activity to address any grievances against ELETRONORTE had changed. Now the only way to obtain the attention of the power company was to go through the formal channels.

Furthermore, many of the former protest leaders were co-opted as representatives of the *Comissão Ministerial* who, on the one hand, would officially carry out the power company's resettlement objectives, and on the other hand, represent the people in need of indemnification when officials of ELETRONORTE visited each locality. As a result, power company officials adroitly defused any mobilization against them by appointing former leaders of

the protest activities as their local representatives. Moreover, this situation effectively screened the officials from attending to the individual cases themselves. When company officials came to town, several hundred people would gather in front of either the Sindicato building or other municipal offices waiting for any news regarding their cases. But company officials would only meet with their appointed representatives and not with all of these people, as they had in the past. Anybody who wanted to be included in the indemnification process or to check on the status of their award could only approach a local *Comissão Ministerial* representative, who had the power to decide who was eligible and who was not.

The potential for nepotism and corruption became an issue under these circumstances, and rumors abounded about how certain *Comissão Ministerial* officials required payment for their services, or would add anybody's name to the list to receive indemnification for a set price, whether or not that person was eligible to receive an award. The local representatives of the *Comissão Ministerial* were responsible for adding to the list the remaining *expropriados* who had not been properly awarded, discerning what was owed to those families, and for carrying out the paperwork on these cases. In effect, these representatives did the legwork of ELETRONORTE and often, as a result, became the targets of disgruntled individuals who felt they had not been dealt with fairly. Thus, the *Comissão Ministerial* was a means to

create even more distance between power company officials and local *expropiados*. It effectively placed local leaders in the middle, which insulated power company officials from the people who were most sorely afflicted by the Tucuruí resettlement program, and also reduced the company's workload. Furthermore, the people were cut off from seeking personal redress from ELETRONORTE officials and had to depend upon local representatives for any access at all. As a result, people who were eligible to receive awards were subject to local problems and, in some cases, may not have been represented fairly by their local representatives.

An Environmental Movement in Itupiranga

The Tucuruí Dam and other changes created an atmosphere in which some local people who had lived all of their lives in Itupiranga began to think about what these projects had done to their environment. Although these people were not relocated, nor had their families been primary producers, many of their former economic activities were no longer viable. Their futures were uncertain, because they could no longer make their living like their parents did in the past.

In 1986 and 1987, a small group of teenagers began to talk about how they had noticed that the local physical environment was becoming degraded, and that the people in Itupiranga no longer carried out many of the cultural activities that they had in the past. In 1988, they officially formed an environmental group called the "*Grupo Ecológico de Itupiranga*" (GEI) with the objectives of

promoting rational development, preserving the environment, and restoring the former economy and popular culture of Itupiranga, as well as of Amazonia, in general. At one time, there were 70 members of the group made up of mostly young people. In July 1989, the group split because of political infighting. The larger group was co-opted by the mayor for his political benefit and so that he could watch over its activities, which threatened local logging and ranching interests. A smaller group refused to work with the mayor.

In fact, this larger group disbanded literally overnight in mid-March, 1990 after a meeting in which local sawmill owners, police and politicians gathered to discuss the continuing illegal practice of logging Brazil nut trees. Someone who witnessed the meeting informed the environmental group that a sawmill owner stated that he would "take care" of any ecologists who got in his way. He was probably worried about the huge fine he would have to pay if the local environmental group informed the environmental protection agency of his illegal logging of Brazil nut trees. The word spread rapidly the next day, and parents of the young adult environmental group members encouraged their children to abandon their efforts. That environmental group, which had become linked with municipal politics more closely than GEI, never regrouped during the time I remained in Itupiranga.

The smaller GEI continued as a group, but not without fear for their lives. Several more active members stated that they had spent at least one of their vacations during 1988, when they were home in Itupiranga from school, inside their houses for fear that they might be assassinated after publicly carrying out GEI activities. There was one time when they did not walk around the streets, especially at night, fearing that they had been "marked" (*marcado*) for assassination by local loggers. That year they were unable to attend dances and other community parties when they were on vacation from school. Even in 1990, their parents constantly admonished them to be careful and to conduct their ecological activities in Belém and other places rather than at home, where there was more danger that some local ranchers, sawmill owners, police or politicians might take offense.

In July 1990 there were approximately 22 members in the smaller group, nine of whom were most active. The group consisted mostly of middle class young people--teenagers--who were born in the early 1970s at the dawn of all of the changes. There were at least two adults active in the group, who were parents of younger members, and influenced them greatly. The younger members of GEI listened avidly to the stories older people told about the past in Itupiranga. Many changes leading to the degradation of local resources occurred during the younger members' lifetimes, mostly during the past 10 years. Thus, the young people had directly observed this process during their childhood.

Their economic activities as adults would not be those that had been practiced by their parents.

The group's activities included neighborhood meetings to educate people, especially the migrant farmers, about the importance of more sustainable uses of the forest resources as well as educating themselves about the problems faced by a wider range of people in the region. They were active in educating young people in other places around Pará, and they tried to start other environmental groups with the help of a Brazilian non-governmental organization, *Sociedade de Preservação dos Recursos Naturais e Culturais da Amazônia* (SOPREN), based in Belém. In 1990, the leaders of the group also conducted their own research expeditions into the surrounding forest to educate themselves about the rainforest and the plight of small farmers who lived there. They began to realize that there was an important link between environmental degradation and the poverty they saw. Again with assistance from SOPREN, in 1992 (Boonstra, personal communication) the group started selling seedlings of fruit- and nut-bearing trees to farmers so that they could reforest their plots with plants that could help them sustain themselves as well as restore the environment. The group carried out many other activities, also, including sending officers on trips to national meetings about the environment in Brasília.

What was it that motivated these individuals to initiate and to carry out activities that were locally unpopular? These locals experienced the radical shifts in

economic activities and saw their community's cultural fabric unravel and become something different. Old and young people alike felt nostalgic about the past, the teenagers about the former smaller Itupiranga they experienced briefly as children and about which their parents recounted.

Unlike the *expropiado* movement, this group consisted of middle-class locals. Whereas the *expropiados* were responding to the abrupt shattering of their former livelihoods at the most basic level, the members of the environmental group of Itupiranga were reacting to dramatic changes to their physical and social environments, but the changes were not so immediately life threatening.

The *expropiados* had been the direct producers, the lowest social group in the former *aviamento* system. They were most threatened by the sweeping economic changes during the 1980s because they lost access to natural resources and were most dependent upon their social ties to patrons. As members of the lowest former social class they had no accumulated wealth which would help them find a foothold in new situation. Their movement was a desperate attempt to first, maintain the former system, and then, realizing the futility of that effort, to gain some benefits which would help them survive under the new circumstances.

In contrast to the *expropiados*, a majority of members of the environmental group were sons and daughters of traders, the local elites under the former system. Their families had found new businesses or means of employment

during the changes that occurred in Itupiranga, so their living circumstances were better than most peoples' in town. Further, some of the most active members of the group had a promising future within the new situation, because they had access to or could afford to obtain a higher education than sons and daughters of the former direct producers. Yet, these young people felt a sense of loss. They had experienced changes in their social and physical environments. Further, their families had lost their formerly high social status and prestige to wealthy newcomers. In actuality, their families were no longer community elites.

In this section I will focus on several motives behind the formation and continuation of the locally initiated environmental group. It is important to consider the motivations of the environmental group of Itupiranga because they, like other environmental activists in the Amazon, continued their activities despite threats to their lives from loggers and ranchers. In this dissertation I have examined the town's former extractive economy and social relations of production. In this section I will discuss how the environmental group's activities and goals were linked to the dramatic changes that took place in ten short years in Itupiranga. Members of the environmental group were attempting to preserve their familiar former way of life and cope with new environmental, economic and social landscapes.

During times of rapid social change people actively seek strategies that maintain or recreate predictable and

familiar social environments. Marris argues that this "conservative impulse appears more pervasive and profound than simple prejudice or class interest" (1974:6)

The environmental group of Itupiranga was a local response to the massive social and economic changes that took place in town and the surrounding environment. The formation of the environmental group was a result of both innovative and conservative influences, and was an indication of their growing awareness that conserving the environment and preserving social stability and a way of life go hand in hand. By conservative I mean the tendency of people to assimilate new realities of social change to their existing structures (Marris 1974). People avoid or attempt to reorganize parts of the changed situation that cannot be assimilated into their existing structures. They may innovate--make changes and do things in new ways-- despite the uncertainties, because of the dramatic changes occurring in their lives. But Marris suggests that these attempts may be innovation "by default," and that innovation may be, "paradoxically, an attempt to restore the continuity of expectations" (1974:104 & 105).

There were at least two manifest motivations for the formation of the environmental group. First, the changes in Itupiranga altered peoples' relationships to their environment and to each other. Second, the group members perceived that a return to the traditional relations of production was a preferable solution to the present situation, and was an important factor in maintaining a

sustainable environment. A latent motivation was an attempt to recapture the past, when these families had shared more wealth and prestige than at present.

Links With Other Environmental Organizations

GEI was well connected with other regional and national environmental groups. They were supported by the *Sociedade de Preservação dos Recursos Naturais e Culturas da Amazônia* (SOPREN) and *Comissão Executiva de Meio Ambiente da Universidade Federal do Pará* (CEMA/UFPa). They also had contacts with a few other environmental groups and government agencies such as *Grupo de Estudos e Defesa dos Ecossistemas do Baixo e Médio Amazonas* (GEDEBAM), *Museu Paraense Emílio Goeldi*, *Fundação Mata Amazônica* (FAMAZON), *Campanha Nacional em Defesa dos Povos e da Floresta Amazônica*, *Movimento de Defesa do Meio Ambiente* (DEMA), *Centro de Pesquisa do Tropicó Úmido* (CPATU/EMPRAPA), *Associação Brasileira de Exportadores de Borracha Natural* (ABBNB), *Secretaria de Estado de Saúde Pública-Departamento de Meio Ambiente* (SESPA/DEMA), and *Instituto de Desenvolvimento Social do Pará* (IDESP). Several members traveled to Brasília a few times to discuss the situation in Itupiranga with concerned environmental groups and governmental entities in the capital of Brazil.

GEI's Objectives and Goals

GEI initiated and carried out numerous projects in order to fulfill their goal of preserving their natural environment and cultural heritage. Their first published bulletin in November of 1989 listed eight intended projects

and numerous events in which the members of GEI participated. The projects were: 1) to preserve the Brazil nut trees by reactivating the Brazil nut trade and by replanting Brazil nut trees; 2) to preserve municipal islands that served as refuges for animals and primary forest. The intention was to preserve them for these natural resources in and of themselves as well as for scientific research; 3) to raise peoples' awareness about preserving the many lakes in the municipality of Itupiranga because they were homes and breeding grounds for many fish including *pirarucu*, *tracajá*, *ariranha*, and others; 4) to preserve the endangered *tracajá* by creating specific protected areas where they nested and lived. The main goal of the project was to create a law to this effect that would be adopted and enforced by Itupiranga, Marabá and other municipalities along the Tocantins; 5) to actively participate in the formation of a conservation mentality among people in Itupiranga so that they would preserve and restore the natural environment, and revive the cultural values of the traditional riverside dwellers; 6) to recuperate the history of the municipality, encourage Itupiranga's folklore and stimulate artesanal activities; 7) to carry out an environmental education program locally, in Belém, and in other municipalities in association with SOPREN and CEMA/UFFPA; and 8) to create and form alliances with other environmental groups in the region, nationally and internationally. Members of GEI visited other

municipalities in Pará, and encouraged young people in the main towns to get involved in forming local groups like GEI.

During 1989 and 1990, the group carried out activities related to their proposed projects. In Belém, they made visits to agencies such as IBAMA, IDESP, CEPASP, EMBRAPA/CPATU, the Museu Goeldi and others to educate themselves, to inform interested parties in those agencies about specific issues in Itupiranga, and to participate in activities designed to create awareness about environmental problems in the Amazon. Members of the group attended any conferences that were held in Belém about natural resources and the environment. They also spoke at youth-oriented activities to increase awareness among young people about environmental problems in the Amazon, and to encourage their participation in the environmental movement in Belém and Cametá. They planned to visit other municipalities with the financial assistance of SOPREN. At IDESP, they worked with one office, which was assigned the task of delineating biological research reserves in Pará, including Itupiranga. The biological reserve project was to be funded by an environmental group in Britain. With the help of technicians at IDESP, the group actively attended meetings of the State Legislative Assembly to urge the state deputies to approve a law that would create biological reserves in Itupiranga.

The possibility of biological reserves in Itupiranga stimulated the group to carry out research in the rural areas of the municipality. Group members made several trips

at different times throughout 1989 and 1990 to examine the status of the rainforest and certain lakes with regard to forest clearance, and also to interview rural small-farmers about their living conditions. For one thing, the group wanted to view the extent of forest clearance in various parts of the municipality, including the parts that were proposed for biological reserves. They conducted this tour, in part, to report back to their connections at IDESP whether these areas had been invaded by small-farmers, large ranchers or loggers.

On another trip they verified the existence of new forest clearance on a lake across the Tocantins River and close to town. They were outraged that someone was clearing land so near to a lake with abundant fish. Fish depend upon vegetation near lake beds for food and shelter, and forest clearance affects their feeding and breeding habits, and can diminish their populations (Goulding 1980). They knew that as soon as one person began to clear this land around the lake, others would soon follow. The group confronted the perpetrator who had cleared the land to make a *roça*, and also notified the *Colônia dos Pescadores* and various politicians about the incident. They considered taking the issue to IBAMA in Marabá, but decided to wait to see if social pressure would force the perpetrator to stop his plans to continue making a *roça* there, since he was "a son of Itupiranga." The group assumed that as an Itupirangan native, the perpetrator would care more about the local environment than newcomers. Hopefully, once he was informed

about what his activities might do to the fish population in the lake, he would cease his land clearing activities there. When the group and other members of the community approached him with these arguments, he said that he would not proceed with his plans to plant a roça near the lake.

In 1990 the leaders of the group also conducted their own research expeditions into the surrounding forest to educate themselves about the forest and the plight of small farmers who lived there. They began to realize that there was an important link between environmental degradation and the poverty they saw.

The group became sensitized to the plight of small farmers, and the difficulties they had in making their living out in the forest, away from any infrastructural amenities, such as roads for transportation, health posts, schools and markets. The members of the group who carried out research during July 1990 returned to town deeply saddened by the extreme conditions of poverty under which many rural people lived. Their impressions were based upon observation and a survey questionnaire which they conducted with approximately 10 families in the forest. After they carried out this research, the group began brainstorming about how to integrate their environmental goals with social goals of alleviating the misery under which many people lived in Itupiranga. It became increasingly clear to group members that unless certain social issues were addressed, people would continue to practice farming techniques that were harmful to the physical environment. This subject was

a major concern to GEI members, and their education efforts were partly directed towards teaching migrants the extractive and farming techniques that had worked for locals for so long, as well as those agricultural methods advocated by SOPREN.

In Itupiranga town, members handed out fliers to educate people about the plight of endangered species like the *tracajá*, for example, and disseminated fliers about other environmental problems in the area and about the culture and history of the municipality. They initiated many activities to educate different groups in the community about environmental awareness. Several members spoke to the classes in the local schools. Furthermore, many opportunities arose to speak at public engagements where politicians and other local leaders held forums regarding various issues. At some of these events in Itupiranga and Marabá, GEI cooperated with the local environmental group in Marabá, GEMA (*Grupo Ecológico de Marabá*) in speaking about environmental concerns in southern Pará, such as the devastation of Brazil nut trees. At these events, the group often set up a booth displaying literature about the environmental problems in the Amazon and what people could do to solve these problems. The displays included artifacts from Itupiranga's cultural past, such as baskets and other tools involved in Brazil nut extraction. GEI worked with political leaders in Itupiranga to try to include clauses concerning the preservation of the environment into the municipal agenda.

Another avenue that GEI pursued was to hold public meetings in the various neighborhoods in Itupiranga at churches or homes of neighborhood members. These meetings were particularly directed towards small farmers, primarily poor migrants who had moved to Itupiranga from other states. Many participants did not own land, but considered themselves farmers, and were most likely involved in some arrangement by which they continued to conduct farming activities in Itupiranga, whether it was sharecropping or working for wages. The group gave speeches about environmental problems in the Amazon and in southern Pará, passed out environmental literature, and distributed seeds which people could plant in their back yards and on their roças. SOPREN supplied these seeds as part of an effort to encourage rural peoples to practice reforestation and also to assist in their subsistence, since many small farmers were so poor. The aim was to get people to plant "madeira do lei" (hardwoods), such as mahogany and pau 'd arco, as well as fruit and nut-bearing trees on their lands.

One Educational Meeting on the Back Streets of Itupiranga

One meeting took place on May 1, 1990. I was invited to come along and document and photograph the process. We met in front of the *Prefeitura* (administrative building which houses the offices of the mayor and the chambers of the *vereadores*, or town council members, at four o'clock in the afternoon. The group broke up into two teams in order to cover more ground. They had prearranged two meetings, one in a house and the other in a small church on the back

streets of Itupiranga where newer and mostly poorer people lived. I went with the group who met in the house. When we arrived, the owner of the house greeted us, and stated that she had informed her neighbors about the meeting. We waited inside the house in the shade for half an hour. As people slowly began to arrive and fill up the small front room, we set up a table outside the door in front of the house from which two members of GEI would make their speeches. Our movement to outside the house attracted more people, especially men. The initial people to arrive had all been women, and one woman commented that it was difficult to get men to attend meetings. Finally, when approximately 30 adults had arrived, the president of GEI introduced himself and the other GEI members present, and began to present his ideas about environmental conservation. At this meeting, the president and one other GEI member did most of the talking. The other GEI members were too shy, and declined to talk in front of the audience. However, when the meeting was over they talked with members of the audience on an individual basis. Throughout the meeting between 28 and 32 people were in attendance, with people leaving, returning, and new ones arriving.

The two members of GEI who did talk presented their points in a dynamic and understandable fashion, and rapidly gained a positive rapport with their audience. João¹, the

¹ "João is not his real name. In order to protect the identity of my informants, I have chosen not to use their given names.

president of GEI, who talked first, was a 19-year-old high school student who studied in Belém. He spoke charismatically, clearly, and with the feeling of one who passionately believes in a cause. His presentation focused on the theme of conservation. The other member who spoke, Maria, the mother of another GEI member, had lived in Itupiranga most of her life. She expanded upon João's points by adding personal stories and observations about significant aspects of Itupiranga's history. The two speakers captivated the audience. Combined, the two speakers made an eloquent presentation that linked environmental and human conservation. They argued that by preserving the environment, people were defending human life. Common ground was made by stressing that both GEI and small farmers valued the land.

One main point João made was that conservation depended upon the people, not the government. He encouraged people to plant fruit-bearing trees, such as banana, mango, Brazil nut and citrus, in their backyards and on their *roças* for the future. "If we do not take care of our environment today," Maria interjected with a rhetorical question to everyone, "what will our children have?" She illustrated this point by recounting all of the resources that people in Itupiranga had in the past--fruit, Brazil nuts, diamonds--and how much of those were now lost. She said that the land that used to be rich in resources was being destroyed, and that now everyone in Itupiranga was poorer because of this process. João pressed upon the people that this

"development" that was going on locally and in Southern Pará was not beneficial to people living there. He used the Tucuruí Hydroelectric Dam as an example. The dam, he said, did not just bring benefits, but also brought vast environmental and cultural destruction. However, he urged, the people in the region could help to reverse this process by replanting what had been lost. One man from the audience commented that if they could destroy Brazil nut trees, surely they could plant them. Other members of the audience murmured their assent to this remark. The only problem for many of the participants was that they did not have rural lots upon which to carry out this activity.

In response to this point, one woman said that she was proud that she had planted lots of fruit trees in her backyard and saved a lot of money because she did not have to buy fruit from the market. João complimented her for this effort, and again encouraged people to plant fruit trees in their backyards, especially if they did not have rural plots for *roças*, which was true of a majority of people at this meeting. He told the group that one of GEI's objectives was to distribute seeds for planting various food-growing trees and plants and to help people plant them in their backyards in town. At other meetings they had distributed seeds, given to them by SOPREN, to people living on rural plots.

A second point that was enthusiastically received by the audience was the importance of agriculture, and the importance of the *lavrador* (farmer) in the conservation

process as well as to society as a whole. Agriculture was an essential occupation, João said, and the *lavrador* a essential part of society. This point touched a nerve of some people and elicited a moving comment by one man in the audience. He said that this meeting was the first time that he had ever heard it said that the *lavrador* was important. Small farmers had always been the most devalued (*desvalorizada*) members of society, he said, and agriculture the most devalued and "forgotten" type of work in Brazil. He compared the small farmers' plight with that of ranchers (*fazendeiros*). The "*fazendeiro dá valor com o pastura*" (gives value to the pasture) and so his land and the prices he receives for what he produces are more than what the small farmer receives for his product. In contrast, he said, *lavradores* earn very little for what they produce and can barely make ends meet, which is why the *lavrador* is not appreciated. The members of GEI agreed with these comments, and stressed the need for people to work and struggle together to obtain their common objective of conserving the land for the future. "*A comunidade unida sabe lutar*" (The community that is united knows how to struggle), João said.

I suggested to João that he ask the people present what they needed in order to help conserve the environment. One man replied that the most important thing they needed was land, because most of them did not have any. Furthermore, they needed to be secure that the land was theirs and could not be taken away from them. Another man commented that he needed money because he was losing his ability to work

(*força*) on his land, and did not have the means to survive other than by his labor, especially when he or someone in his family was sick. He had not earned money that would provide a nestegg from his land. He noted that he had a lot of trees on his land, and had not sold any yet. However, he was thinking of selling some trees in order to have some savings. His comment illustrated how poverty could lead to adverse environmental activities, such as logging.

A Conflict Between Environmental and Social Goals

The value that the members of GEI attributed to the *lavrador* was a key factor in helping them to establish rapport between GEI, which was a middle class movement, and the *lavradores*, who were poor migrants from the lower class. But good rapport and common values were not enough to carry out the extensive conservation goals that GEI proposed.

GEI needed to address the issues that confronted these small farmers if the group wanted to accomplish its goals of environmental conservation in Itupiranga. Many of the farmers did not have access to any land or hold titles to land they had, and, furthermore, had minimal conditions for farming. Education and material aid would not elicit the response that GEI desired, without major changes in the structural circumstances under which these people lived. GEI's and the *lavradores'* interests connected at the point of land conservation in order to aid both groups' present circumstances as well as their future well being. However, without land security, and moreover, if agriculture alone could not sustain small-farmer families in times of sickness

as well as health, the objectives of both groups would not be realized. At a minimum, the farmers needed access to credit, education, medical assistance, and better transportation.

The group recognized the social problems that faced many people living in Itupiranga, especially after conducting their own research in rural areas where they observed people living in stark poverty. They struggled with the seemingly contradictory issues of poverty (*questão social*) and conservation (*questão do meio ambiente*), and how to integrate them so that the problems issuing from both could be resolved. They did not desire to make the region into a preserve, they said, because then Amazonia would not be able to develop. Instead, they wanted to initiate measures that would not destroy the forest, including a return to extraction of renewable products. Furthermore, they wanted to provide assistance to farmers so that they would not need to clear virgin forest.

GEI was oriented towards a less immediate present than many farmers and landless families who faced the threat of starvation and illness on a daily basis. The group was composed largely of middle-class teenagers from traditional Itupirangan families. Compared to most people in contemporary Itupiranga, the middle-class group members enjoyed a higher standard of living. The members came from families who had the resources to survive on a daily basis, although some were wealthier than others. They were well fed. They had many sets of clothes for all occasions. They

were going to school and some of the members attended school in Belém. They were able to pay for medicine if they were sick. They had more connections with a wider variety of local people than had poorer migrant farmers to obtain necessary resources or aid in times of need. Furthermore, GEI members' had familial or other ties with people from their same social class who had more access to resources than the migrants.

The migrants had to depend upon patron-client relationships to obtain resources in order to improve their meager situations, and sometimes even to survive. Many of the newer migrants did not have vertical networks established, and depended upon family members or neighbors, who shared many of their same circumstances of minimal survival and poverty. Some migrants were fortunate enough to create vertical networks with wealthier members of the community. However, the small-farmer clients had to pay for any services or goods given to them by their patrons, and payment, whether in kind or in cash, usually involved high rates of interest, which increased relative to the greater social distance, length of acquaintance and affectionate distance between patrons and clients.

Since GEI members did not have to worry about their immediate daily survival as did the poorer migrant farmers, they could afford to focus on the future. It follows that the interests of the GEI members and those of poor migrant farmers were fundamentally at odds, even though both groups valued the same thing--conserving their land for the future.

For example, many poor migrant families were forced to sell timber to obtain cash during emergencies or to buy enough supplies for first planting. The environmental group was opposed to logging, especially of Brazil nut and other fruit-bearing trees. The question that remained was how to resolve the problem of helping the migrant farmers to practice conservation techniques and to get them involved in restoration projects on their land in the face of all of the constraints upon them.

One Solution: Create Better Markets

One of GEI's dreams was to create better markets that would enable poor farmers to sell their produce at fair prices. The group sought to solve a few major problems facing farmers. First the group would buy produce from anyone, thus enlarging the market, which was often saturated, due to, for example, the abundance of bananas. Secondly, the group would solve the transportation problem for small farmers by going to the farmers directly and buying their produce. Farmers had to pay enormous rates to transport their produce to market, whether in Itupiranga or Marabá, which cut into their earnings. Boats did come to farmers who lived near the river and bought produce directly from the farmers. However, the prices paid to the farmers were ridiculously low relative to the prices for which those buyers sold the produce at their market destinations in Itupiranga and Marabá. Farmers also received low prices for the produce they brought to Itupiranga town to sell. They

could earn more in Marabá, but that involved traveling a greater distance and many farmers could not afford to make the trip. In the proposed scheme, the group would pay the farmers prices that everyone would consider fair, and then truck the produce to Belém, where GEI members perceived that there were shortages of many types of fruit and other products. According to their plans, the money made from this venture would enable GEI members to pay themselves or hire people to carry out the activities required in this scheme, and also to provide a pool so that GEI could supply seeds, credit and other aid (medical and educational, for example) to farmers so that they could subsist more comfortably and with more security.

This enhanced security would enable small farmers 1) to practice agricultural methods that were consistent with conservation ideals, 2) to prevent the circumstances which require farmers to cut down trees on their land, and 3) to restore the land by replanting trees, especially Brazil nut trees that would restore a former major economic base for the municipality. The last activity would help GEI realize one of its ultimate ambitions, which was to recreate the viability of a Brazil nut trade in Itupiranga, which would provide employment and at the same time make virgin forest and secondary restored forest more valuable. If people believed that standing forests were more valuable than, for example, pasture and lumber, they would discontinue the rapid deforestation that was taking place in Itupiranga. Thus, GEI members reasoned, the remaining virgin forest

tracts would be preserved and the social problem also would be adequately addressed.

The pitfalls in this scheme included the enormous costs that the group would have to make even to initiate it, especially to buy a boat and a truck, and to pay for the labor. At the time, the younger members in the group were all in high school and had aspirations to attend college, which would preclude them from carrying out or even overseeing the project. Thus, the group would experience major economic and time constraints if they tried to initiate such a venture. Furthermore, they faced a whole set of economic, political and social constraints from local interests who might not appreciate the project if it cut into their economic domains. Moreover, it is questionable whether the group would make enough money from the marketing process in order to pay for the project itself and the aid they would give farmers, especially if they bought produce from farmers at prices that everyone considered fair.

The idea reflected the traditional patron-client model, with GEI as the benevolent patron of all the small farmers in the municipality. The members conceived of solutions to their problems based upon those arrangements with which they were familiar and which had worked in the past. Compared with the traditional economic system, GEI members harshly criticized some aspects of capitalist development based upon their observations of the two systems that had operated simultaneously within their lifetimes in Itupiranga. They were especially critical of the idea of "progress," which

was prevalent in capitalist ideology, since they observed that modernity and progress in southern Pará and Itupiranga had undermined former economic activities by destroying the physical environment upon which these activities depended. Furthermore, they noted that this progress had led directly to a loss of autonomy among many people in the region.

In contrast to the prevalent use of the term, the group defined "progress" as a process by which people were able to plant on their land and to derive their living by consuming what they planted and made with their own hands. "Progress," by this definition, led to autonomy. However, João and other members of the group had observed that progress in this sense was not occurring, and that, in fact, most people had already lost their autonomy because of the development of the region. They argued that traditional riverside residents of Itupiranga and the surrounding areas along the Tocantins River had lost their autonomy. Furthermore, most of the immigrants were extremely poor and the few wealthy ones were destroying the environment at the locals' expense.

The "progress" that was actually occurring, observed group members, was that the few rich people who had moved to the region were exploiting what Itupirangans considered to be their natural resources. Furthermore, these people profited from this exploitation, at the expense of locals because once the resources were gone, the exploiters would leave. The people who remained in Itupiranga would be left with few economic options in a denuded environment. Hence,

local Itupirangans would be poorer than they were before all of this progress and development.

Major Concerns of the Group

Loss of Resources and Economic Hardship. Many people who lived in Itupiranga for all or most of their lives lamented the loss of their former environment--the forest which grew up close to town in which they could hunt and gather fruit, Brazil nuts and Babassu palm nuts; the beaches in the middle of the river and which extended out from town further into the river as well as those beaches in the middle of the river in front of town; the waterfalls in the river; the mango trees and other flowering plants along the riverfront; the extensive tracts of Brazil nut trees on both sides of the river; diamond mines in the river; large *pirarucú* fish and smaller fish which flourished near the banks, including freshwater shrimp; ample land upon which to plant gardens; nearby creeks where people drew their water and in which they bathed and washed their clothes; and clean river water which they drank and which was aesthetically pleasing.

A major concern was that they were afraid for the town's future when critical resources were used up. For example, they were aware of the town's economic dependence upon logging. But logging as it was practiced, without reforestation, was profitable only in the short term; the activity led to the destruction of many prime species of plants and trees. Brazil nut trees, the staple upon which the old extractive economy had depended, had been almost

depleted by loggers. GEI members were afraid that once logging was no longer viable, when the trees were gone and the loggers and sawmills moved on, the economy of Itupiranga would suffer because many local businesses were dependent upon the traffic and commerce that logging brought to Itupiranga. On the other hand, group members were adamantly opposed to logging because loggers were eliminating and polluting valuable resources. They felt that these resources belonged to Itupirangans and that the loggers were profiting off of stolen resources.

Loss of Status, Ethnic Clashes and Moral Breakdown. Another major concern, although not articulated in a direct way, concerned their own place and that of their families' in Itupiranga society. The middle-class group members came mostly from formerly elite local families whose status had declined relative to other Itupirangan families and especially newcomers who had profited from the economic changes during the 1980s.

Though many people in Itupiranga held an idealized view of the past as a time of greater equality, the fact that the most active members of the group came from families formerly respected for being intellectual and refined indicated that they were once among the traditional local elite. Many of these families suffered losses in wealth and economic security relative to newcomers during the 1970s and 1980s. They also suffered losses in wealth and status relative to a few other Itupirangan families who had been formerly lower in status but who had allied themselves with powerful and

wealthy newcomers, including ranchers, sawmill owners and politicians. Those families who had cooperated with the newcomers profited from these alliances, which resulted in economic disparity among traditional Itupirangan families. Some members of the former traditional elite, including group member families, did not cooperate with the newcomers and suffered a commensurate decline in status.

Formerly, according to the perceptions of many individuals from Itupiranga, everyone in town was more or less as wealthy as their neighbors. However, this hindsight perception by contemporary middle-class families probably minimizes the gulfs and resulting conflicts that set them apart from poorer neighbors who were primary producers. The traditional *aviamento* system had two classes, but memories of historical problems between the two classes were probably softened by peoples' tendency to romanticize the past. Furthermore, the divisions between individuals of the two classes were probably not as apparent as now because (1) the people whose sons and daughters were now in GEI had been in the local upper class, and thus, were not as aware of class distinctions since they held the reins of power and prestige, formerly; and (2) patron-client class distinctions were often ameliorated by kinship, fictive kinship, and affectionate relationships, and other softening influences.

These contemporary middle-class families that had sons and daughters in GEI were the patrons to varying degrees in the past, and, thus, held positions within the traditional local upper class. For example, one GEI family held

extensive *castanhal* lands in Jacundá. The father of another family was an *aviador*, who traded animal pelts. The parents of another family worked in municipal jobs all of their lives, which were more prestigious than those types of employment involving primary production. In 1990, some members of this family still held municipal jobs, including a political position. However, during the late 1980s, the family that had the *castanhal* lands, lost them to ELETRONORTE in the expropriation process, and had branched out into other businesses. This family, who also had a son who was a member of GEI, had owned the extensive *castanhal* land in the past, and had enough resources to branch out into other economic activities, including a pharmacy which they had in 1986, and a bakery, which they had in 1989 and 1990. Although they had enough resources to branch out in other areas and were considered well off by current local standards, their wealth status had declined compared to the past.

The second family was Maria's, and her situation was more precarious than in the past. Maria, another older member of GEI, had been married twice and had always been a homemaker. Her first husband was a trader in animal skins and diamonds. He supplied food and other goods to hunters and *garimpeiros* in exchange for the pelts and diamonds, which he then sold to buyers who came to Itupiranga and Marabá. They hardly even knew what to do with money, she said. However, they did not need any money either, since they harvested most of their food and medicine from the

surrounding forest and waterways, and made anything else they needed from local products. For example, they grew cotton, which they spun to make into hammocks and clothing. Now she needed money to buy almost all of the things they used and ate, since many of those resources were too far away to obtain and because she did not have land.

Furthermore, standards had changed and only poor people lived more or less off of the land. For the past couple of years she had earned a minimum wage as a municipal worker, when the new mayor, a man from Itupiranga, gave her a job after he took office in 1988. She tried to buy land near town, but the land she was promised and paid for was given to a wealthier, more influential member of the community (who was not from Itupiranga), and the situation remained unresolved. She took care of her youngest son and a granddaughter. One teenage daughter lived with one of her older daughters in Marabá, and her third eldest child, a son and member of GEI, lived with one of Maria's sisters in Belém, where he went to school. Aid was also received from a wealthier sister in Itupiranga, whose husband was still alive. Maria perceived that her own situation was precarious, especially since her job was a political appointment. She lamented the loss of the variety of fruit and other foods in her diet, since she could not afford to buy items that formerly could be gathered for free from the surrounding forest. She had fruit trees in her backyard, but had problems keeping some of them alive, because her

backyard was small and shaded by the neighbors' bigger trees.

In another case, Geraldo, who was the other older active member in GEI, was a primary producer in the past. He had mined for diamonds in the dry season, farmed on a *roça* and *vazante*, and gathered Brazil nuts during the rainy season. He also hunted and fished. At the time of my research in 1990, he worked in Marabá for a government agency for minimum wage. He had to spend the week away from his family in Itupiranga, and also had to support his wife and several children (including grandchildren) on this salary, with some intermittent support from other family members. He felt very insecure about the future, especially since he was getting older and faced retirement. His household did not own land, nor did they have the means to purchase any. During the 1980s he lost his ability to make a living in this manner and had been forced to work for cash, which did not support his family as well as before, according to his perception. Other people who were primary producers at one time in Itupiranga, stated their employment and financial situations had become more uncertain in the past decade, also. As a result, some families lost status and economic security. Other families remained the same.

All of these families had lost status and were financially worse off than a few families from Itupiranga who managed to take advantage of the changing situations. The wealthier families benefited during the 1980s from land transactions and mining for gold at Serra Pelada. No one

from these wealthier Itupirangan families was involved in GEI, and in fact, they were rather hostile about the environmental group and its efforts. They called GEI's efforts to educate people and increase awareness about environmental issues "besteira" (stupidity). For their part, group members accused these families of conspiring with wealthy newcomers, whom they called "mafia." In their eyes, this "mafia" reaped their wealth off of everyone's backs and stole what had been everyone's resources. It was bad enough that outsiders were taking resources from Itupirangans, but when long-time locals helped them, or themselves stole former communal resources from fellow Itupirangans, it was a tragedy. Members of GEI said that several of these local families and some of the more wealthy and powerful newcomers made up a "quadrilha" ('gang of thieves') which was corrupt, carried out illegal activities to support their businesses and political ambitions, and violently suppressed any dissent. Group members said that the mafia controlled the local political machine and police force, which enabled them to steal resources as well as threaten or kill anyone who complained.

High levels of vicious gossip, resulting from envy and resentment, among longterm Itupiranga families indicated the struggle they had with increasing economic, political and status disparities among themselves. Although Itupirangans bonded together in times of crisis, and had familial ties, there was much strife between some families and/or individuals from those families. People who were kin would

often ignore each other on the street, at parties and other social events, when they were at odds. Friendships and alliances fluctuated constantly, and extended family members could be friends one day, and enemies the next. Many people expressed to me the superficial nature of "everyone" in Itupiranga, and that nobody could be trusted. Old conflicts were exacerbated as the balance of power changed in Itupiranga.

However, all families from Itupiranga felt resentful toward wealthy newcomers, especially rich ranchers and loggers. Individuals in the wealthier Itupirangan families dealt on a superficially friendly basis with these newcomers, primarily because they interacted with them at work, since most of these people held municipal jobs at the *Prefeitura*. They even had tenuous friendships, as observed by the seemingly friendly conversations at numerous social events, although they were quick to criticize the activities of newcomers behind their backs because the latter were profiting from the exploitation of Itupirangan natural resources. More than one individual from Itupiranga whom I thought was friends with many newcomers, expressed resentment to me about how these outsiders from southern Brazil were exploiting Itupiranga. Furthermore, many outsiders, while having joking, friendly, sexual, and even marital relationships with locals, made statements and sometimes acted in ways that showed they lacked respect for, and in some cases despised, people from Itupiranga and Pará.

Itupirangans were also aware of the outsiders' perceptions of people from Pará. Rich and poor outsiders alike viewed locals as lazy. A popular expression was that Paraenses sat around all day waiting for coconuts to drop on their heads. Newcomer politicians, ranchers and loggers explained that their activities were benefiting the region because locals never knew how to exploit the vast natural resources of the region. Numerous migrants, whether rich or poor, stated that the people from Pará did not know how or were too lazy to exploit their rich environment and resources. It took the knowhow and work ethic of migrants from other states to develop Itupiranga and the Amazon. They viewed the locals as inferior, intellectually and culturally. People from Pará had internalized this myth to some extent, as evidenced by a conversation with one former patron of a *castanhal* from Jacundá who admitted that he was lazy because he was from Pará, but not as lazy as the new migrant farmer poor who sold their land. Members of GEI fiercely resented this charge of laziness and that they were culturally inferior.

Since the newcomers controlled most the local agenda and were now the elites, they set much of the tone of what was socially appropriate and desirable. Group members perceived that another strong influence was national television, which became accessible after the closure of the dam in late 1984, when the town received electricity. They felt that television glorified the whiter and different culture of southern Brazil. They especially did not like

the influence on local children of the Xuxa, a daily three-hour children's program featuring a blond-blue eyed woman. Group members felt that local children were being negatively influenced by the materialism and cultural differences promoted by the show. They had observed that local children appeared to feel inferior to the whiter, wealthier children on the show and had begun to desire things and lifestyles not offered in Itupiranga.

Because of the resentment locals felt and the way they perceived that outsiders felt about them, Itupirangans suffered from a sense that they had lost status to wealthier outsiders. But the intrusions by southerners who were becoming wealthy from Amazonian resources, and the dominance of whiter, Brazilian culture on television, and in their school books negatively impressed locals and threatened their identity and sense of psychological security. One GEI member expressed his anger to me that Amazonian children had to learn to read from school books that had southern Brazilian themes with pictures of whiter people in them. He said that many local children now felt that they were too dark skinned and inferior to children shown on television, and the whiter children of wealthier migrants in Itupiranga.

Against this onslaught from culturally different southern Brazilians, locals defensively attempted to maintain any shreds of their dignity and Itupirangan identity. This was difficult, especially for younger men, because many of the younger local women were attracted to more wealthy newcomers. Some young people turned to alcohol

and drugs, as in many larger urban areas in Brazil and the rest of the world. The young people in the environmental group were concerned about what they considered to be the moral breakdown of their peers in Itupiranga, and the growing alcohol and drug problems there. They were also upset about the increasingly casual nature of relationships between young men and women, and the fact that so many people went from one sexual partner to another. In the old days, men and women would dance together and flirt, and perhaps skip off for a kiss in private, but only when they were engaged to be married. Furthermore, as they remembered it and according to their parents' account of romantic activity in the past, people waited until they were married before becoming sexual, especially the women. Now, it seemed to them, sexual activity was no longer so sacred, and was sought after by both young men and women. Furthermore, many young local women had sex with wealthy outsiders, like *fazendeiros* and loggers, for gifts and prestige, or in the hope of marriage. According to some young people, those individuals did not value sex in its proper perspective, and used it to escape, like they used alcohol and drugs.

The group longed for a return to the former status quo, with themselves in power of a community that would practice environmental conservation and retain the traditional values and practices in Itupiranga. The people in GEI dreamed about their futures in Itupiranga, as more powerful members of the community who would struggle to regain their heritage. Several of the more active members hoped to be

elected to mayor, vice mayor and council positions some day, and dreamed about how they would restore the natural environment in the municipality and cultural traditions of the community. They worried that the Municipality of Itupiranga would cease to have a viable economy as compared with Marabá and the rest of southern Pará. It appeared to them that there were few local young people who were prepared to face the reality of the future and what people must do in order to guarantee the survival of their precious heritage. One 13-year-old girl stated that she was saddened by the fact that, today, few young people felt that they were privileged to live in Itupiranga and did not dream about their futures here. They noted that already many younger citizens of Itupiranga had to move away from town to Marabá, Belém or other places even further away to make a living. This situation was responsible for breaking up families, which had formerly been able live and work together. Older members of the GEI especially mourned the loss of former resources, the cultural changes, and the splitting up of families. They had lived during times when resources were more abundant and considered themselves to have been better off before the changes took place. In 1989 and 1990, two of the older members lived on small monthly cash incomes and some support from older children and other relatives. They lived in households which included younger children who were dependent upon these meager cash resources.

Plans For the Future

The younger members of GEI did not aspire to carry out the activities of their parents because many of the former activities were no longer viable. Furthermore, the young people had been influenced by the perception that their opportunities for employment came from obtaining a good education. Many of the group's members wanted to obtain a college education in forestry, biology, medicine, and social science in order to have an impact upon the environmental and social problems about which they were so concerned. However, their ultimate goal was to receive this education and some experience, and then to return to Itupiranga to work on these problems at home, whether as employees of agencies, or in local political positions. While they hoped that in the present as GEI and in the future as politicians they could institute the ecological goals they so ardently desired, they were beset by doubts at times that they could make a difference. The destruction in the municipality and in southern Pará continued at a rapid pace, and their hopes to recapture their fading physical and social environments waxed and waned with the uncertainty. Hence, their future as individuals as well as of Itupiranga was unpredictable in a landscape of rapid changes.

It was this insecurity about their futures and the future of Itupiranga, that motivated their participation in GEI. Certain members expressed to me that one reason for their active involvement in the environmental movement was for the connections they were making with people who took an

interest in them as individuals and might help them obtain a college education so that they could carry out the group's goals. However, the primary factor was that they wanted to restore Itupiranga to an earlier idealized ecological and social state, in which they and their families had a secure and influential place. An unarticulated sense of loss, whether of economic security, status, and aesthetic pleasure, colored their conversations.

Thus, GEI members responded to conditions that had become increasingly unpredictable during the past decade. Their future employment was uncertain, whether as individuals or for other family members. They were confronted with making a living in a changing physical and social environment with narrowing options because of diminishing resources and because they had to compete with outsiders or Itupirangans who cooperated with outsiders. Furthermore, even though family ties remained strong, a new sense of individualism pervaded. These young people faced making a living more on an individual basis, especially since many had to leave Itupiranga and even Belém, where many extended family members lived, for employment. Some people expressed their resentment of the process by which persons became more individualistic. These individuals were perceived of as stingy, selfish, and ambitious because they gained wealth and position at others' expense. The threat that this individualism might occur created insecurities even within nuclear families, and certainly between extended family households. Insecurities also came from the

intrusion of outside values, especially because it was outsiders who were determining the major changes in Itupiranga. All of these situations threatened local peoples' identity. The group was struggling with all of these threats to their identity, status, and economic security. Their implicit goal was to regain their autonomy as they struggled to restore the environmental resources and social past of Itupiranga.

Potential success of GEI within an arena of economic, political and social constraints

The question is can GEI achieve its goals to restore the physical environment of Itupiranga and their cultural traditions and values, and achieve economic autonomy? They faced many obstacles from local, regional, national and international interests whose profit-oriented goals conflicted with the group's ecological goals.

Locally, ranchers, loggers and politicians who benefited from supporting these activities as well as the development trend had shown themselves to be hostile to the group's objectives. Thus, on the local level, GEI's activities were constrained because their ideas, goals, objectives and activities came into direct conflict with local interests.

However, the group was actively making connections with other environmental groups and organizations at the regional, national and international levels. Their efforts here were more hopeful, especially since international interests had applied pressure upon Brazil to change the

country's environmental policies. In 1988, a large section about environmental conservation was included in the new Brazilian Constitution. In 1990, the new President of Brazil, Fernando Collor de Melo, appointed a famous outspoken critic of Brazil's environmental program, Ecologist José Lutzemberger, as his new Environmental Secretary. Also, during 1990, IBAMA, the national environmental protection agency, cracked down on illegal logging activities, burning without a permit, fishing without a license and harmful fishing techniques. However, such measures designed to protect the environment were incremental and poorly funded in the face of the mammoth, well-funded development schemes that overwhelmingly altered certain areas of the Amazon, especially southern Pará. Furthermore, past projects like the Transamazon Highway and Colonization Scheme, Tucuruí Dam, and Carajás Mining Project were backed by national and international interests, which would reap vast profits at the expense of environmental protection or good environmental management practices. In other words, such large development projects were built primarily for profit, at the expense of altering the physical and cultural environments in the Amazon.

With their meager resources, and without coming up with alternatives to these profitable projects, GEI as well as other environmental groups could not stop the tide of development in the Amazon. This development altered the forest and waterways in Itupiranga, and resulted in land-tenure changes that totally reoriented the way people

perceived and used the land and its resources. One of the group's goals, as well as IBAMA's was forest replantation. However, thus far, this project had not been realized. The group could not hope to turn back the environmental and economic changes that had already taken place:

privatization of land; overpopulation in Itupiranga relative to diminishing resources; denuded forest cover from land clearing and logging; altered water resources resulting from the Tucuruí Dam; over fishing; water pollution from mining, industrial and urban sources; and a shift from *aviamento* relations of production to capitalist relations of production. Under the new capitalist regime, people no longer used or valued Itupiranga's and the Amazon's resources in the same way as in the past.

Furthermore, GEI and other environmental groups had to grapple with complex and extensive social problems, especially poverty, in conjunction with their environmental goals. One of the obstacles that faced GEI was that they must solve the immediate problems small farmers faced, so that they would be able to conserve their resources, and moreover, help GEI in its efforts to reforest the municipality.

Daily Class Resentments and Struggles

This section deals with poor peoples' perceptions of wealthier ones in Itupiranga, and explores the local manifestations of class consciousness. Why did people not resist, given their conditions of extreme poverty and oppression? As we have seen any resistance activity came

from people who were experiencing a radical shift in their life styles, specifically in their physical environment and social relations of production. One could posit that the poorer migrants did not organize as a group on a consistent basis to change the local conditions of their lives because they expected the same treatment as they received in their previous places of residence. It could be argued that since jobs were so difficult to find, people rarely complained to their patrons or employers about untenable working conditions and low wages. Further, the daily face-to-face contact between employers and employees that often resembled relationships between patrons and clients, may have softened the conflicts at the level of production. The relationships between employers and employees often went beyond purely a wage relationships. Like patrons, employers often aided their employees in other ways, especially in times of crisis. Yet, perhaps the most influential element that prevented less powerful social groups from overtly complaining about their oppression in a way that would benefit them was the threat of violence by more powerful social groups, who stood to lose if their authority was undermined.

A facade of cooperation operated on most days to make life in Itupiranga appear to function smoothly, and the town by the lovely Tocantins River appeared almost idyllic, at first. Gradually, however, one became aware of the deep rifts and resentment between locals and locals, locals and outsiders, and between wealthier and poorer social groups.

Smoldering Resentments

There was a sharp class distinction between the poor on the back streets and the rich "in the center" from the perspective of the poor. I heard numerous complaints about how the rich people exploited the poor people. The poor could do nothing about this situation except to complain. However, when one of their own started to obtain wealth in a manner his neighbors considered was unjust because it was "off their backs," gossip or *macumba* (a type of voodooism) were effective threats to ensure that the ambitious individual did not go too far.

A popular expression was "*Ele está enricando nas costas dos pobres*" (He is getting rich off the backs of the poor). Although it was seen as acceptable to work hard to get rich in contemporary Itupiranga during the late 1980s, there were still social norms about behavior in commerce. For example, one grocery store owner was thought to be contemptible by people of various social classes because he charged high prices, hence "he takes from others to get rich." In another case, an owner of a whore house was thought to be obtaining his wealth at other peoples' expense. Eventually, his disgruntled neighbors paid a specialist in witchcraft to put a spell on him. According to a key informant and comments by other people, the man developed severe abdominal cramps and died several days later.

There were different degrees of being "poor" in Itupiranga, and class resentment existed among people in a lower social group toward whomever they perceived was in a

upper social group. For example, one woman who referred to herself as being in the "*classe média*" was resentful because the rich in this town were only out to improve themselves, and were "*orgulhoso e ambicioso*" (proud and ambitious). As a result, they did not want to help the poor. "*Ele só quer para ele, não para os pobres*" (He only wants for himself, not for the poor). They made their living and increased their wealth off the backs of the poor. She said that a person of this sort does not pay attention to the poor. They walk right by poor people and do not talk to them because they think that they are "*mais alta e mais poderoso*" (higher and more powerful) than poor people. They would never talk to a "*simple*" (simple) person. For example, I paid my assistant CNz\$400 a month, which was what the local *Prefeitura* paid its employees at the time. One of my friends, who was of a higher class than my assistant, told me that I was paying her too much because she was not working hard enough to earn it. However, right around that same time she had complained that the same amount, which she earned as a nurse's assistant at the hospital, was not sufficient for municipal employees.

Promoting The Myth That Everyone Was Poor

Although everyone in Itupiranga claimed they were poor, people in the center of town, who tended to be wealthier, made little attempt to hide their wealth. This display was a new phenomenon that departed from former practices, just ten years earlier. By 1990 people wore jewelry, nice clothing and had expensive consumer items in their homes.

However, there was quite a bit of gossip and backbiting among members of the same and different social groups about how certain people were "ambicioso" (ambitious) . Ambitious in this sense was a negative quality in a person, because it implied a person was pretentious and willing to step on others in order to enrich himself or herself. It appeared to be more acceptable during the later 1980s for some people to be wealthier than others than during earlier times, from references people made about the past. For example, when a few locals made money from mining for gold at Serra Pelada in the early 1980s, they frittered their money away by buying drinks and material goods for all of their friends in town. There were several examples of men who had gone from rags to riches and back to rags in this manner. At that time the community was more coherent because there were fewer outsiders, and social pressures to share the wealth operated as levelling mechanisms more effectively than later, as Itupiranga changed. Once more outsiders both rich and poor arrived to town and the former economy was no longer viable, the economic disparity became more pronounced. Some locals became much wealthier than their traditional contemporaries, which continued to cause resentment and strife between themselves. One manifestation of this resentment was vicious gossip that took place behind peoples' backs, although people appeared to get along with each other on a daily basis and especially in times of crisis.

People on the main streets protested to me that they were poor, but their behavior was more ostentatious than those moderately wealthy people living on the back streets. Wealthier people living on the back streets, but who were less wealthy than those living in the Center, attempted to disguise their wealth from their neighbors. One day when I was interviewing a woman whose family owned a rice mill, I was privy to a rather heated conversation between herself and one of her neighbors that arose from my questions on the survey. I had asked whether or not she thought that living conditions were better now than in the past. She stated that she felt that "yes" people were better off now than in the past.

Her neighbor, age 57 and who had lived in Itupiranga since age five, cut in and vehemently argued the opposite. She explained that the people who did not have the means to make a living now were worse off than before; living conditions had only improved for people who were well off. She and her son were unemployed and could not find work. "Here it is hard," she said, for people who are poor, and "now there were a lot more poor people" than in the past.

Then the owner of the rice mill stepped in and claimed that life was difficult for them, also, and that they were not really wealthy. "*Aquí tem sofrimento*," she said, "we suffer a lot here, too." She explained that she and her family personally suffered because they had to move back and forth between Marabá and Itupiranga to conduct business, and the cost of transportation was high and that sometimes they

could not pay to transport their rice to market. She said that they also suffered because of the inadequate justice system.

At that point I sensed that the discussion became critical for those two neighbors, in that it was imperative for the wealthier woman to show both me and her neighbor that they were on the same side--struggling to make ends meet. The conversation was not really competitive about who was poorer, although it seemed to border on it at times. Rather the women were attempting to verbally downplay their obvious disparity in standard of living as we sat in front of the one woman's rice mill, in which many bags of rice were in evidence.

The poorer neighbor then complained that she had suffered more than anyone else there because of the high cost of living. People could no longer even hunt in the forest. "The poor don't have [anything]," she said, and indirectly criticized the rich for their part in the suffering of the poor by saying, emphatically, "*Capricho é vergonha*" (Extravagance is disgraceful.) However, she recanted a bit and said that besides that, life here was good.

The ricemill owner turned to her and asked, sympathetically, if anything was troubling her at home. Was it a fight with her family that was making her so upset, or perhaps some other problem? At that point, by attempting to attribute the other woman's emotional complaints to a personal issue, she turned the potentially conflictual

situation between them into a consensus whereby both women agreed that everyone had problems in Itupiranga. She also took charge of the conversation and became, subtly, the patroness, who, although she was a friend, was in a superior position to counsel her. Underneath, they both knew who was wealthier, and hence more powerful, and she was letting the poorer neighbor know that she had gone too far in front of a stranger. She also deflected the conversation away from the more dangerous underlying topic of class disparity, and the fact that, indeed, she was wealthier than her poorer neighbor. She emphasized again that her family suffered because "everything is in Marabá," and that they had to go there to buy anything, which was a great sacrifice.

The poorer neighbor took the cue and said that it would be wonderful if an industry was created in Itupiranga that would employ more people. She then blamed the government for their situation, "*Más o governo não quer,*" (But the government doesn't want [the industry]). Thus, she came to a consensus with the other woman, and the formerly heated debate became a more agreeable conversation. Any suggestion of blame that her wealthier neighbor might have for her poverty or that of others was now put on the government.

It appeared that everyone in all social groups claimed that they were poor, sawmill owners, ranchers, merchants and others alike. One poor woman said that the reason people pretended to be poor was that they did not want anyone to know what they had. Yet, she said, the richer people pass by the poor with their noses in the air and everyone who is

poor knows that they are really rich. It seemed that poorer members of Itupirangan society were invisible, socially, to richer members on the street. Individuals of the richer classes would look through poorer individuals, and not really see them, unless they interacted as patron and employee or negotiated business.

In another case, two ranchers told me, as we sat in an outdoor cafe drinking beer, that they were poor and that the life of a *fazendeiro* was a *luta* (struggle) . They explained that after they paid all their expenses, including labor, seeds and other things, they had very little money left. Furthermore, they had to pay these types of expenses all of the time, but only made money when they sold cattle, which was infrequent. They would slaughter cattle, locally, for meat, and would send live cattle to Belém, because it was more profitable. But, they insisted, even though they made a profit at that time, ranching was not a business in which one got rich.

One reason that anyone, especially wealthy people claimed to be poor, was because they were afraid that if they appeared to be rich, people would come to them and ask for money. Indeed, this situation happened quite frequently. I found myself also claiming poverty repeatedly when I perceived that people wanted something from me. For although I had more money than most people there, I knew my limitations as a graduate student on a tight budget and bills to pay in Brazil and at home. When I did want to help one family out after two of their children died, I was told

not to give them any money or food. It was explained to me that if I gave something to one family, other families would become angry if I did not give something to them, also. If anyone who was wealthier started to give out charity, they would soon be overwhelmed with requests, and would rapidly become unpopular if they did not comply to every one of them. For example, one important measure of the mayor's adequacy in office was his ability to give out money, goods or favors to everyone who made a request. A mayor rapidly became unpopular if he did not act as a patron in this manner.

Patron/client relationships still existed in contemporary Itupiranga. Poorer people would strive to establish vertical relationships with wealthier individuals in town. Recent migrants were the poorest social group, probably because they had not yet found a patron. The largest patron in town was the mayor. A major aspect of his job was to try to address the needs of numerous supplicants. A "good mayor" successfully managed to take care of enough people to maintain his popularity. A mayor rapidly lost the esteem of his constituency if he became known as corrupt, not sympathetic to the poor, or ineffectual. For example, the poor people living on the back streets complained when the mayor did not clean and repair the streets. This job fell into the domain of the *Prefeitura*. It was not seen by people as something that they could do for themselves if the neighborhood got together and collectively did the work.

Rather they waited for the "patron" to perform this service for them.

Evidence of Tension Between Social Groups

There was daily evidence of disparity between the social classes in Itupiranga. Both subtle and more obviously tense interactions indicated tension between the poor people, particularly migrants, and the middle and upper classes in Itupiranga.

Poor people who lived on the back streets of Itupiranga referred to the center of town as "o Centro" (the Center), where the rich lived. They complained that the mayor only fixed the streets and lights for "them in the Center" and did not pay attention to "us, the poor" in the outskirts of town. Many people I talked to had a few major complaints about their treatment by wealthier social groups. First, richer people had priority within the system because of their social status. Second, local merchants overcharged people, especially the poor. Third, politicians and bureaucrats sold or kept for themselves the food and other goods the state and federal government sent to be distributed to the needy. Fourth, local police committed undeserved violent acts mostly against poor individuals.

Treatment According to Social Status. Poor people related that they were treated with condescension or outright hostility depending upon the mood of the official in the post office or *Prefeitura*, teacher, nursing assistant in the hospital, pharmacist or store employee. Upper class individuals were attended to first in every place, and with

respect. For example, in the hospital, a wealthier person who came in would be seen by the doctor before anyone else who might have been waiting for hours. Further, that wealthier individual would receive free medication from the in-hospital pharmacy while the poor would have to take their prescriptions to a local pharmacy and buy medication. It was rumored that the local hospital received free medication from state of Pará that was to be distributed to people who could not afford to pay for medication. Yet, many poor people complained that they were given prescriptions to buy medication, knowing full well that they should receive it free. Poor women told about how badly they were treated by nursing assistants during childbirth. They said that the assistants neglected and often yelled at them during their hospital stay. Some of these women emphatically stated that they would have their next child at home under the direction of a midwife so that they would not be subject to the abuse by the nursing assistants at the hospital. In another case, an illiterate man was harassed by postal officials because he did not know how to write an address on an envelope. The official who was waiting on him treated him with contempt, impatience and spoke to him in an ill mannered tone of voice. While the man was deliberating the postal clerk ordered him to step aside and then smiling, the official very politely asked if he could be of any assistance to a wealthier customer.

Overcharging by Merchants. Poor people were routinely overcharged in business transactions or treated

differently than wealthier people. For example, the ticket takers at the bus station in Marabá overcharged a poor woman for two bus tickets, for herself and her small child. She was told that she had to pay for two adult tickets or would not be sold the tickets. Moreover, not only did local merchants overcharge for their products, said many poor people, but if a poor person bought something on layaway, they were treated differently than wealthier people. In one case, a young man from a migrant family who had lived in Itupiranga for five years bought some jeans and two shirts, which he put on layaway because he could not pay for them all at once. He came back to pay the rest of his balance one month later and was told that he must also pay for the increase of his merchandise caused by inflation. Although this young man was not from one of the poorest social groups, his family did not rate high enough to be treated like wealthier patrons who would have only had to pay off the remaining balance on their merchandise, and not the difference caused by inflation.

Charity. Upper class members had no idea of the lower-class' struggle to make ends meet although many people vocalized often about the plight of poor people. There was also latent hostility in many comments about all of the poor migrants who were arriving every day in Itupiranga. Wealthier Itupirangans perceived that the poor did not want to educate their children, and furthermore, were poor because they did not work hard enough and/or had too many children. Yet, as discussed in Chapter 7, poor people could

not afford to send their children to school. In another example, wealthier people mistrusted the poor in that they did not believe many people were as poor as they stated. After a shipment of clothing came in from the state, officials of the local *Prefeitura* went house to house to conduct a survey of exactly who was needy enough to be eligible to receive any. Wealthier people pointed to the fact that many people could not be as poor as they complained because "almost every house had a television." Furthermore, when charity was distributed from time to time, richer people said that the needy were ungrateful when they received it. At Christmas in 1989, the employees of the *Prefeitura* distributed toys to local "poor" children. Some of the distributors told me that the poor people acted like a mob by grabbing at the toys and then almost rioting when they realized that there were not enough presents to go around. Municipal employees were quite put out by the ingratitude shown by the poor toward their beneficence. The "needy" in this case told a quite different story about the incident. Poor people said that the distributors of the gifts were giving most of the presents to their own families and friends. Some people observed that in one case one of the municipal employees filled a car with some of the "best" gifts and drove off. One woman, sick at heart, dragged her crying children home before the Christmas presents were even all distributed so that they would not be more disappointed than they already were because they did not receive any presents.

In fact, charity from the federal or state governments appeared to end up quite often in the hands of people who did not need it. Several times during 1990, many observers complained that the rich often kept for themselves the food and clothing that the state of Pará sent to Itupiranga for the needy. Everyone knew when a new shipment of food and other supplies was sent to town, and each time people would observe that the local officials in charge of distribution would either keep some of the goods for themselves, or give some to family and friends, and/or sell goods to local merchants who would then sell them in their stores.

Violence. The poor people I talked to complained over and over again about how the rich people in the "Center" treated them unjustly. Some people went so far as to mention that someone should take action to remedy their problem. However, no one did, at least on a sustained basis. One woman recounted how she and others had organized a rebellion a few years in the past against the local merchants, but how it was rapidly quashed by the local police. She said that people lived in fear of retaliation by the police, and that was why they never organized enough to challenge the local authorities to address their problems. At least once a month some poor person in town was thrashed in public by the local police and then taken to jail, where it was rumored that more beatings took place. Usually these people were charged for theft, although they rarely went before a judge, especially before the beatings and a considerable term in the local jail. One more extreme

case took place near Christmas in 1989, when two teenage men were beaten to death in the local jail. One young man was under the age of 15 years. They had been accused of stealing.

What was it that prevented the poorer people living on the back streets of Itupiranga from taking action against people whom they perceived were cheating them? Certainly one reason was fear. A month after the beating deaths of the two men there was a meeting led by a local priest to discuss what should be done about the continued injustices against the poor. People showed up slowly, and the total amounted to only about 75 people. During the meeting some people admitted that their neighbors had been afraid to attend because they knew that the local police would know who was there. They were afraid that the police would track them down later when they were alone and harm them. Even middle-class locals did not protest the numerous grievances they had against the police and other persons in power because they were afraid of some sort of retaliation.

Lingering Signs of Patron-client Relations

Yet, there was also something else that made relationships run smoothly most of the time in an atmosphere of rapid change and ensuing conflict between individuals and social groups over resources. People in many societies, as in a patron-client situation, maintain face-to-face social relationships. In many instances in Itupiranga there were still patron-client type relationships, even between employers and employees. Bad feelings between people seemed

to be softened by daily contact between individuals from different and conflicting social groups. For example, several months after the beatings one woman told me that although she hated and mistrusted the police and the man who ordered the beatings of the two young men who died, in particular, she felt sorry for him because now he had to spend 15 years in the local jail after charges were successfully brought against him for the deaths. Although she said that she was happy the former police official had been put in jail at the local police station, and thus, justice was served, when she walked by the station she greeted him warmly as he sat in front in the sun.

Business deals and situations of conflict were approached in a lengthy, cautious and courteous manner if people wanted to maintain the relationship. It was only when people were not interested in maintaining a relationship with another party that they were abrupt, as when a potential assassin would tell someone to his face that he was "marked" (*marcado*). This term meant that the recipient of the threat was going to be killed at a later time by the one who verbalized it. Usually, the threatened person would lay low in his house or get out of town for a few years until the heat of the perpetrator's anger dissipated. This technique was also used to run people off their land. Another technique was threats of sorcery or *macumba*. My next door neighbors who were fishermen told me that they moved when a woman arrived on an island in the Tocantins downriver toward Tucuruí and ran a whole family

off, consisting of 20 to 30 people, by threatening them with witchcraft. The family left because they were afraid of her power, and also did not want "to fight."

Other people I talked to who had left their land when their residence was threatened, told me that they left because they did not like to "fight" (*brigar*). One long-term local woman was cheated out of her land by the local arm of the land agency, which was run by another local man. She was bitter about the fact that she had paid for a prime piece of land nearby town, only to have it sold to another party. When she questioned this transaction, she was told that she would receive another plot of land somewhere else. However, that land would be far from town, and she had no means of getting to it. I asked her why she did not raise a fuss about the illegal and unethical transaction, and she told me that she wanted to keep the peace. I sensed that locals dealt with conflict carefully, by negotiating indirectly and over long periods of time so as to keep up their personal relationships with relatives and friends. The person with whom she was in discord was a long-term citizen of Itupiranga, and although she raged behind his back, she maintained a facade of cooperation in her dealings with him. This careful concern with maintaining relationships, even in times of conflict, is also an indication of the continuing practice of an ideology surrounding patron/client relationships, where social links are an important means of survival.

Overall, most poor peoples' hostilities were directed against the local merchants who overcharged them and the local politicians and bureaucrats if the latter did not act as good patron, i.e. provide for everyone fairly. E. P. Thompson found similar views in England during the late 1700s that he attributed to the assumptions of an older moral economy (1966). Although there was strife against capitalist employers in Itupiranga, the discussions against employers were not as common as those against merchants, who were seen as gaining their profits at everyone else's expense, especially the poor. People seemed grateful to have a job, and beholden to their employer/patrons for providing them with one. The hostilities against local employers, especially sawmill owners, depended upon whether or not they were perceived as fair in terms of wages and benefits, and also if they were generous, in terms of whether or not they helped people who asked for assistance or employment. In other words, if employers acted like patrons, they were held in higher regard by the poor. The seeds for conflict existed between employees and employers, but most of the time they remained dormant despite conditions of extreme exploitation in the production process. For example, landowners would hire men who worked "diariamente" for (daily) wages that barely supported themselves much less reproduced their families. In the local sawmills, men worked long and strenuous hours under dangerous conditions for minimum wage.

What kept people from organizing or protesting against merchants or employers? Was it their sense of place as lower class individuals in a society where social status was reinforced by innumerable daily incidents? People seemed to readily accept their positions and rights within the historical framework of the relationship between patron and client in Brazil. As long as employers acted as patrons, and merchants did not overcharge customers, in other words, honored their moral obligations, people were relatively content.

For their part, the poor people I talked to wanted what they viewed as rightfully theirs--a plot of land and/or stable employment in town. They were obligated to work hard for their employers, and maintain an honest relationship with them. Most people just wanted a place in the system by which to make a living. One key informant aspired to be hired as a janitor at the local school or *Prefeitura*. I prodded her to expand her aspirations by encouraging her to go all of the way through school (she only had gone through three grades). She said that she only wanted a position so that she could support herself and her three children, and know that she had stability in the present and the future. She further wanted a salaried position because then she could obtain a *carteira*, which would enable her to start earning social security for old age. She wanted the security that a salaried job could give her in the face of high unemployment, especially for lower class people. She never questioned the structure of the social system itself.

She only got angry when she could not obtain a place within it.

The average poor person aspired to such a place within the system. They did not conceive of other alternatives external to the local system. Most lower class hostilities were directed against local rich people, mainly merchants, who directly exploited them, or politicians who did not give out favors and aid fairly. Yet, a majority of these people voted for Collor, believing that he would "take care of the poor people" of Brazil. In early 1990, many people had absolute faith that Collor would slash inflation and institute measures to help the poor because he said so on television. They believed that he would actually create policies that would hurt the rich to help the poor. Only members of the Sindicato dos Trabalhadores in Itupiranga talked in favor of Lula during the elections in late 1989.

Human contact appeared to be stronger than abstract ideals. The more distant and indirect sources of exploitation were less visible unless people were educated about the links from the national down to the local level. Abstract exploitation had little meaning for most people in the lower social groups. However, they did not need anyone to teach them about local exploitation because they experienced manifestations of it every day.

Conclusion

The case studies reveal that different social groups in Itupiranga had similar motives but used different strategies to deal with changing or unfortunate circumstances in their

lives. In the three cases, the groups were attempting to find security in unpredictable situations. The *expropriados*' and the environmental group's, efforts were conservative in the sense that they sought means to gain back their former lifeways, despite the fact that they used strategies that were new to them and utilized modern schemes. The poor in Itupiranga probably used strategies of resistance when they could, but rarely organized because being too verbal about their grievances meant facing the insecurities of violent retaliation. Thus, one could argue that their responses were conservative, too, in the sense that they sought strategies that would lead to more predictability in their daily lives. Yet, the strategies used by these three groups and outcomes of their efforts were different, because of their social class, the respective historical moments of their movements, or lack thereof, and the way they were affected by changing circumstances in Itupiranga.

The *expropriados* experienced dramatic changes in their environment, economic system, social relationships, and were relocated. Furthermore, they were fearful, did not like conditions at their new home sites, and experienced a protracted resettlement period.

The expropriation and indemnification process was poorly planned and executed (Mougeot 1986; Biery-Hamilton 1987), as discussed in Chapter 3. Although ELETRONORTE improved the expropriation, indemnification and resettlement procedures over time, the process never seemed to be carried

out with the needs of the *expropriados* in mind. The power company cut corners in dealing with the social elements of the scheme, in part, because national and international events reduced the power company's ability to make the indemnification payments. When the resettlement process was in full swing in 1982, budget cuts forced the state power company to decrease expenditures. At this time, all levels of government adopted measures to reduce public spending after international money-lending institutions discontinued loans to Brazil. ELETRONORTE, as a state company, suffered monetary cutbacks when the Brazilian government was forced to adopt austerity measures because of the national debt crisis.

The delays in delivering indemnification by the power company brought embarrassing publicity and an ongoing legal battle with representatives of the discontented expropriated groups. Most of all, however, the delays induced suffering for many of the *expropriados* who had to endure deteriorating living conditions at their original or new home sites. Throughout the region and over time, the people grew discontented because of perceived injustices, being left out of the decision making process, and the lengthy indemnification process which added to their suffering from having to relocate in the first place. As a result, they began to mistrust the intentions of ELETRONORTE. Gradually, their resentment developed into political expression. Initially, people dealt with ELETRONORTE on a community level. In 1980 and 1982 several groups in Itupiranga

created and published several documents asking specific questions about indemnification and resettlement for the *expropiados*. In general, and throughout the years of protest activity involving the Tucuruí resettlement scheme, the main issues of concern to the *expropiados* were: 1) who would be awarded indemnification and who would not be eligible; 2) when people would be awarded; 3) what would they receive in the new urban and rural areas where they would be relocated; 4) where their rural lots would be located; and 5) what infrastructural amenities in urban and rural areas remained to be built as promised by the power company but which were not completed within the proposed time frame. These initial attempts at addressing the peoples' questions and grievances were ignored by the power company. Later on in 1984, people began to ask the power company for information about the environmental impacts of the reservoir in addition to the other issues as their awareness about the repercussions of the project increased. These environmental concerns added fuel to an already burning fire of perceived social injustices that local riverine groups believed were perpetuated by ELETRONORTE.

Because the power company ignored basic issues concerning the very people who were most affected by the resettlement, those people began to search for any means to make themselves heard. Gradually, their actions were noticed by other groups and the media, which further sparked public proclamations and protests on the part of the *expropiados*. The protests involved three large encampments

in Tucuruí in September 1982, March through April 1983 and September through October 1984, as well as encampments and meetings in other locations. The three largest encampments involved hundreds of people who gathered in Tucuruí and camped in front of the ELETRONORTE offices until the publicity made the power company pay attention to the *desapropriados* (as the politicized *expropriados* sometimes called themselves). The protesters were aided in their efforts by such diverse groups as various entities of the Catholic Church, including the *Comunidades de Base* (Base Communities, local Church organizations), the *Comissão Pastoral de Terra* (CPT, Pastoral Land Commission) and the Diocese of Cametá; the *Sindicato dos Trabalhadores Rurais* (workers' union) in Tucuruí; the *Movimento em Defesa da Vida* (Movement in Defense of Life); *Confederação dos Trabalhadores da Agricultura* (CONTAG; Confederation of Agriculture Workers); and various proponents of the political party, PMDB, which opposed the military government.

Through this political activism, the *expropriados* were able to gain the attention of ELETRONORTE as well as the state and federal government as to their plight. Although a fairly small group in the larger Brazilian picture, the *expropriados* of the Tocantins River Basin not only had their concerns heard, but as a result of their persistence, obtained many of their demands. Whereas they had not been able to successfully negotiate terms at the community level, by grouping together on a regional basis and obtaining

political support in a favorable national political environment, the *expropriados* were able to seek the indemnification awards that had been promised to them.

Their case was substantially aided by the help of more powerful groups, including scientists, regional Catholic bishops, journalists, political party leaders and various unions and Church groups. As a result, the injustices, concerns and demands were well publicized among the *expropriados* themselves as well as to the Brazilian population at large. Their cause became one of the issues used by opposition political groups attempting to appeal to the populace in order to gain popular political support. In the process, the Tocantins riverine community became educated as to the environmental, economic and social consequences of the Tucuruí Hydroelectric Project. Furthermore, they learned the benefits of organizing and participating in a political struggle against a powerful entity. Because the *expropriados'* encampments were well publicized to the dismay of ELETRONORTE, the events were a major embarrassment to the power company. Although they tried, the officials of ELETRONORTE could not dissuade the efforts of the protestors by any means. In the end, the power company yielded to many of the demands because of the campers on their doorstep and the bad publicity they brought to ELETRONORTE and the Tucuruí Hydroelectric Project.

However, the successes of the *expropriados* must ultimately be seen in light of the larger national political context. As Brazil underwent a political opening, *abertura*,

opposition parties and groups were able to realize the fulfillment of some of their demands. The government regime, on the other hand, allowed some concessions to political movements in an effort to appear like a legitimate democratic government as well as to gain popular support in the upcoming 1984 presidential election. The government PDS party had lost control of the Federal Chamber in the 1982 elections, which brought about the necessity to negotiate (Diniz 1986). The federal government's role in leading the process of redemocratization was brought into question even by members of the PDS party, as support increased for direct elections. As the erosion of the regime accelerated in 1983, the federal government desperately tried to maintain its authority and legitimacy by responding in a more positive manner to the opposition. This political struggle is why the *expropriados* were able to gain access to the inner sanctum of the president of ELETRONORTE and federal leaders in Brasília during the second and third encampments. The *expropriados* had a large contingent of opposition political support behind them. In an effort to appear reasonable and conciliatory, the state power company, and local representative of the federal government, was forced to concede to the *expropriados'* demands. Although the new national agrarian reform legislation prevented ELETRONORTE from awarding each *expropriado* the promised 100 hectares (50 hectares was the maximum small-farmer landholding allowed under the 1985 Agrarian Reform), they received written promises to most of their other demands.

However, despite the gains they made in these specific battles, the *expropriados* lost the war because they could not force the power company to abandon the project itself. Nor did they control the content and terms of the debate that would have prevented permanent major alterations in their lifestyle. Too many other national priorities and considerations which included large sums of money were involved to halt the Tucuruí project. Thus, it was impossible for a relatively small group of people to force an end to this government-supported scheme that was the embarkment for other mammoth hydroelectric dams and mining projects in the Amazon region. But, as this case illustrates, for a short time the direct producers, who were the least powerful social group under the former economic system in the Tucuruí region, were able to obtain concrete concessions beneficial to themselves by a coordinated, well publicized struggle. They accomplished their goals with the assistance of more powerful social groups and, especially, because they took advantage of a political conjuncture at an auspicious moment in Brazilian history.

The Environmental Group Movement

The members of the environmental group of Itupiranga were attempting to straddle two worlds. Their older world included a smaller, more coherent community with an economy based upon extraction and patron client relations, and an environment that offered abundant resources. Their former economy was largely destroyed during the 1970s and 1980s because of policies and projects initiated by the Brazilian

government. The group's families lost economic security and status in the transition from a patron/client economic system to a more capitalist one, and because of the degradation and loss of access to former necessary resources. Although their efforts reflected modern trends to conserve the Amazon rainforest, the group's goals and objectives were oriented toward preserving their former way of life.

While the immediate activities of the group were essentially educational and mobilizing, both in Itupiranga and Belém, their long-term goal was a return to a form of the traditional extractive economy and the social relationships that were built upon it. Their plan was to establish themselves as benevolent middlemen who would buy produce from rural farmers at better prices than they received at the time, and truck the fruits and vegetables to Belém. The group thought that if the farmers were more secure economically, they would be less inclined to sell trees, especially Brazil nut trees, to loggers in times of family emergencies. The scheme included encouraging farmers to plant Brazil nut trees and revitalize the dying Brazil nut trade. They planned that they would supply the farmers with seeds for reforestation and agriculture, provide transportation, fair market prices for produce as well as technical, social and medical assistance. In essence, they would provide the farmers with many of their basic necessities and would buy what the farmers produced. In

return, the farmers would conserve and help revitalize the forest resources.

However, GEI's goals of conservation came into conflict with historical and contemporary economic, political and social realities that constrained farmers from making an adequate living so that they could practice measures that were more future oriented. It follows that these realities prevented farmers from conserving their present and future resources if they needed to use them for their immediate needs, even if it meant destroying their environment which, in turn, threatened their future economic base. The group itself was constrained by local economic and political interests.

The scheme, as conceptualized by group members, was really a close approximation of the former patron-client relationship that prevailed in Itupiranga. In this plan for the future, the group would be the benevolent patrons and the rural farmers would be the clients. The group members had conceived of what they thought was a new scheme. However, they had unwittingly come up with a solution that resembled the old patron-client relationship. For them, the only means to alleviate the present-day social and environmental problems was to revitalize the former social relations and restore the natural environment to its former state. In effect, their scheme was a conservative response to their rapidly changing social and physical environments. They were creating a scenario for the future that was akin to the old world they once knew just a few years before, by

attempting to fit parts of a radically new situation into a familiar existing structure. Their social status was diminished in the present and economic future uncertain. Not only would the scenario as they conceived it restore the former economy and physical environment, it would also restore their place in it as more powerful actors than they were at present.

Poor Migrants

Poor people in Itupiranga daily faced injustices, oppression, repression and increasing insecurity. That they mostly endured these indignities without organized resistance may be due to several factors. First, the retention of certain aspects of patron-clientism in Itupiranga, even in wage labor arrangements, may have softened strife at the level of production. The daily face-to-face contact and other reciprocal obligations between employers and employees or patrons and clients obscured the exploitation at that level.

Second, probably the threat of violence was the main factor that prevented people from addressing their grievances more often. Political violence was used by elites, locally and regionally, to discourage lower class objections to the changes and breakdowns in their former survival patterns, and served to maintain their abilities to accumulate wealth. Scott remarks that most of the time peasants (and other poorer social groups) cope peacefully, not merely because of consent or complicity, but more from remembered and/or anticipated repression (1985). Violence

breeds insecurity and unpredictability at the most basic level--life. In most cases, given a long history of exploitation as in Brazil, slow starvation was preferable to torture and murder. So although people wanted the right to survive in their perceived place within the social system, they often kept a "public" silence regarding unfair treatment directed against them.

Third, poor people knew their place within the structure of the evolving system. They were aware that there were injustices within the system, for example, when they had to work long hours for meager pay. However, they never questioned some peoples' rights to own the means of production and to appropriate the product and profits made from the labor of others.

Complaints arose when poor people perceived a breakdown in their relationships with more wealthy and powerful social groups. The lingering patron-clientism created an exchange of material and social obligations between social groups. Poor people still held certain expectations for patrons and employers, and merchants, and became disgruntled when individuals in these groups did not honor their obligations. For example, poor people perceived that merchants should charge fair prices for necessary items. Another perception was that everyone had basic rights of access to the means of production and to security and aid from a patron, aspects of the former *aviamento* system and a moral economy (cf. Scott 1985). Thus, although these lower social groups accepted the situation of wealthier groups holding power over them,

whether in the former patron-client regime or in the newer evolving capitalist one, they firmly believed in their right to make a decent and secure living. They felt that their patrons, whether individuals, political representatives, or a power company like ELETRONORTE, should deal fairly with them. Furthermore, they perceived that these more powerful groups were responsible for taking care of them during times of crisis, especially if they took away their means of making a living.

In an earlier section of this chapter we saw that a complete upheaval in the patron-client relationships as well as in peoples' ability to maintain a living, created enough insecurities in the lower social group, former direct producers, to initiate sustained political activity. When their rights were threatened during a radical transformation in their lives, they turned against a new patron, the power company in charge of building the dam and resettlement. The direct producers protested when they received what they viewed as unfair treatment by the power company, ELETRONORTE. They also felt that the company owed them something after taking away their livelihoods. Scott noted a similar underlying vision of justice among peasants, worldwide, that leads them at different historical moments to explode into protest activities of varying sorts when "the normal and largely covert forms of class struggle are failing or have reached a crisis point" (1985:37). However, in Itupiranga, there were few individuals or agencies to help the poor in their daily struggles, and those entities

that were there were largely ineffectual. Furthermore, unlike the *expropriados*, perhaps, many of the poor were migrants who were more used to the indignities of being poor and of losing access to the means of production through violence or coercion, having been removed from their land in other places before arriving in Itupiranga.

All of the cases reveal a tendency of a desire among the actors to retain aspects of the patron-client system. In Itupiranga, the *expropriados* and poor seemed to aspire to a place within the evolving system, especially since these were so few. Members of the GEI group conceived of a new system that resembled the former one, yet their place in it was as elites, which their families had once been.

CHAPTER 9 CONCLUSION

Introduction

This dissertation presented an examination and analysis of one small riverine town in the Brazilian Amazon which was impacted by rapid social change as a result of major environmental, economic, political, and social changes that began in 1970. However, the really dramatic changes occurred during ten years, from 1980 through 1990. In this period of time, the people in Itupiranga lived through a profoundly altering transition, and they would never be the same.

The changes occurred, initially, because of structural influences outside the community. International and national political economic events influenced Brazilian policy makers to undertake the development of the Amazon. The decisions to build the Transamazon Highway, to colonize certain areas for geopolitical and social reasons, and to undertake projects like the Tucuruí Hydroelectric Dam, and Greater Carajás Mining project to harness energy and natural resources for a struggling Brazilian economy would permanently change tropical ecosystems and the lifeways of thousands of Amazonian peoples. Itupiranga seems a mere microcosm in the whirlwind of such grand and sweeping

changes; however, I believe that the transition undergone by the people living there occurred in a similar manner elsewhere in the region. Thus, this study is important for several reasons. First, the ethnography attempted here contributes another study to the literature about the transition from one type of economic system toward capitalism. One of the fascinating reasons to study people undergoing a transition toward capitalism is that such an analysis offers a unique opportunity to examine a contrast between world views. The strategies people use to cope with the transformations in their environment, economic system, social relations of production, institutions and ideologies can reveal interesting differences between non-capitalist and capitalist societies, and shed light on the assumptions about reality made by both. Second, this study brings more evidence to a continuing debate as to whether or not such types of environmental and social changes constitute real development for the affected populations of large-scale projects.

I focused on the economic situation and strategies of people in Itupiranga in 1990 as compared with the community's past extractive activities, and in light of the changes wrought by the Transamazon Highway, colonization, changes in land tenure and land use, the Tucuruí Hydroelectric Dam, logging and commercial fishing. Economic activities changed almost completely in 10 years. The former strategies included rubber gathering and the

extraction of Brazil nuts and diamonds, as well as hunting, fishing and small-scale shifting cultivation and riverine horticulture. During the 1980s, the predominant primary activities became logging, agriculture, commercial fishing and cattle ranching. Other activities included government employment, building construction, brick making and marketing on a formal and informal basis. In the dissertation I emphasized the primary economic activities because of their direct relationship to the natural environment. During the 1980s peoples' strategies in Itupiranga were influenced by historical processes; the contemporary international, national, regional and local economic and political contexts; their socioeconomic position; limiting factors caused by previous and ongoing environmental changes; and environmental policies.

The Transition and Its Impacts

First, the changes caused an increase in population density, so that even as the town grew and there were more opportunities for employment, the economy was not sufficient to absorb or support the multitudes of people who were arriving. Second, the change in land tenure from usufruct rights to private property had a profound impact upon local people and their natural and social environments. Throughout the 1970s and 1980s in the region of Southern Pará land was divided into 100-hectare lots for small farmers, or larger pieces for ranchers, and allotted or sold as part of the colonization process. In the early 1980s two

areas where Brazil nut trees grew most densely were divided up as part of the Tucuruí Resettlement Scheme and also to sell to migrants. One area was Praia Alta, fifteen kilometers downriver from the town of Itupiranga, where former inhabitants of the village of Tauiry had hunted game and gathered Brazil nuts. Significantly for the residents of Itupiranga, the other area included the extensive communal lands across the river from town.

As a result the wide variety of strategies people (especially the landless) had for making a living from the forest narrowed considerably. Under the new regime people's access to resources was restricted and they could no longer range over wide areas to hunt or gather Brazil nuts, palmnuts, vegetables, and fruit for sale or consumption. If people were not landowners themselves they could obtain these resources only through purchase, unless they were given permission by a landowner to obtain forest products or plant a small plot. Even landowners were confined to their own lands to hunt game and gather resources. The inability of landowners to procure resources beyond the borders of 100-hectare and (after 1985) 50-hectare lots contributed to the dismantling of the economy of Brazil nut extraction. Many lots did not have enough Brazil nut trees to make it worthwhile to participate in the extraction of Brazil nuts. In tropical rainforests most species do not appear as dense concentrations as do species in more temperate environments (Richards 1973). The creation of a private property regime

in this tropical region was not conducive to the continuation of the former extractive economy now that people were limited by the boundaries of private lots.

The migrants cleared trees, including Brazil nut trees, in order to ranch and farm. The clearing involved burning the rainforest for pasture and agriculture, which killed many Brazil nut trees. Small farmers often sold trees from their lots to loggers to obtain enough money to start farming and also in times of family emergencies when they needed cash, since trees were standing capital. From 1980 to 1990 many Brazil nut trees were logged out by the sawmills and logger middlemen, although the extraction of this species was illegal. The Tucuruí Reservoir itself flooded vast areas of Brazil nut trees. During the 1980s, Brazil nut production dropped by 86 percent. Thus, the privatization of land caused the demise of extractive activities because the new activities entailed clearing trees, which were no longer valued for their extractive products. Further, people could not range widely over the environment for resources because they would be trespassing on other peoples' land.

The creation of the reservoir itself also devastated local peoples' capabilities to mine for diamonds in the river. Previously, many locals were employed during the dry summer months, from June through August, diving and gathering diamonds and crystals from the Tocantins River. The credit or money they obtained from this activity

complemented their income from Brazil nut extraction during the rainy season. After the flood-gates to the dam were closed in late 1984, small-scale diamond mining disappeared completely, since the 72 mines in the region from Marabá to Tucuruí were now too deep to reach with the simple technology people had used.

The Tucuruí Reservoir and the transition to private property system caused direct producers to lose access to resources and the social relationships necessary for their former means of making a living. Moreover, they had few options in the present situation to find new strategies that would maintain their former standard of living. Unlike the local traders (patrons) who had run the local businesses, the direct producers (clients) did not have enough accumulated wealth to take advantage of new business opportunities that arose because of the changing economy in Itupiranga. The direct producers had been entirely dependent upon the natural environment for their livelihoods and they were often in debt to local traders. As they lost access to necessary resources, their range of options changed from a wide variety of extractive activities to a more narrow choice of productive activities, that is, if they received land in the resettlement process or in a colonization program. Former direct producers and migrants who did not receive land were in an even more deprived situation.

Many people did not receive land, and if they did, they remained without title for years. For those who deserved land in the resettlement process, proving land ownership was difficult if not impossible since people did not have title under the old system. Their only means to prove a claim to land was if they had made "improvements" by clearing forest and building structures. This avenue of proving a claim to land was also difficult because the former productive land-use strategy in the *terra firme* was shifting cultivation, whereby people cleared very small areas of forest to farm and moved to new areas every few years, building only temporary structures in each location. Furthermore, their horticultural plots had been close to town so they had not needed to build houses near their gardens, since they could easily walk from town to their plots in a few minutes. As a result, people could not show that they had made any improvements on the land they had been using.

The increasing population density was exacerbated by land concentration in which larger landowners obtained more land by purchase or by coercion and violence, and then restricted access to it. For direct producers who had never needed to own land before this transition, the loss of access was especially critical. This combination of circumstances caused many people to face conditions of diminishing resources as well as diminishing access to resources throughout the 1980s.

Traditional locals complained that now people needed cash in order to live adequately, whereas in the past they were more self sufficient since they could gather, grow, or make most of what they needed. The development projects and policies and resulting changes in the physical and social environments constrained peoples' abilities to fulfill their basic needs in a self reliant manner. They were forced to compete with each other and with multitudes of migrants who flocked to the area for jobs, while unemployment was 50 percent or more. Now many young people had to leave town in order to find work, a source of great distress to younger and older locals alike.

During the 1980s, Itupiranga as well as the larger region of southern Pará had undergone a transition from extractive to productive and less-sustainable extractive economic activities. Diamond mining, Brazil nut extraction, horticulture and subsistence fishing had given way to ranching, more intensive agriculture, commercial fishing and logging. The Tucuruí Dam and a change in land tenure from usufruct rights to private property were key factors in the demise of the old *aviamento* system of credit between patrons and clients. Now labor arrangements were between employer and employees under the capitalist wage system, although some remnants of the old patron-client arrangements still operated.

Advantages and Disadvantages of the Changing Situation

Some people benefited from the changes. Local people who had accumulated wealth were able to take advantage of the new opportunities by investing in land and/or small businesses. Many of these people had been traders under the old *aviamento* system and had more resources at their disposal during the transition than the direct producers. Other people made money by mining for gold at nearby Serra Pelada in the early 1980s and then bought land. Still others obtained land by claiming it, and, because they cooperated with the newcomers who had taken control of local politics, were able to register rather large landholdings. Many of the wealthier newcomers, mostly from southern Brazil, were involved in cattle ranching, sawmills and small businesses. These newcomers enjoyed a much higher standard of living than anyone else in Itupiranga as measured by type of housing and number and kind of possessions. There were so few of these wealthiest individuals that they were not represented on the community survey. However, the survey indicated a middle social group who also enjoyed a higher standard of living than most of the population in Itupiranga, although they were not as wealthy and powerful as the upper group. Yet the survey found that those households which had at least one family member employed in a qualified urban job had a significantly better standard of living than the rest of the population.

As the town grew, the number of positions in state and municipal government increased. The best bureaucratic and political jobs went to individuals from the wealthier families and rising middle class in Itupiranga. The wealthy newcomers and long-term Itupirangans who had accumulated resources during the 1980s controlled local employment and public policies, thus, they could admit or deny access to newer avenues toward success--employment and education.

The advantages resulting from the region's development projects and policies only reached a small percentage of the population. Most people remained landless, underemployed, and unemployed. The more people lost access to resources, the more they needed money to survive. Although there were opportunities under the new economic regime for landless migrants, relocatees, and long-term residents, the employment situation was inadequate for the increasing population.

As the types of economic activities changed during the 1980s, people manipulated the patron-client system to obtain wage-labor employment. People who worked in sawmills and on farms and ranches, had patron-like relationships with the owners of the means of production, although they were paid in cash and could be fired for insubordination. Success in finding a job correlated with length of residence in Itupiranga. People who lived there longer had more horizontal and vertical connections which made finding employment and aid easier. Employers also looked for people

who were willing to work hard and did not complain, despite the fact that many of these jobs in agriculture, ranching and logging were low paying, difficult, dangerous, and caused separations and other hardships for families.

Most people preferred to work for themselves, although they would not receive a regular paycheck. Many lower-class locals turned to fishing as a profession if they could not obtain land. The developments in the region of southern Pará contributed to the commercialization of fishing. Thus, people could fish for consumption and sale, provided that they owned a canoe or boat, or made arrangements with someone who did. Other means of making cash in rural occupations included work as sharecroppers or day laborers on other peoples' lands. Often such menial work was difficult, low paying, seasonal, and undependable. If people had some education and were well connected, they could obtain regular wage labor employment in town. However, despite their connections with upper class patrons, lower class persons only received menial jobs like that of janitor. Even regular wage labor employment did not guarantee a rising standard of living for many people. I found that households whose members were rural workers, sawmill workers and/or unqualified urban wage laborers were significantly worse off than the rest of the population.

The changing circumstances in Itupiranga did not provide enough employment for this increasing need for cash. Because locals lost access to the resources they had

formerly enjoyed, many considered themselves to be poor. Indeed, many former direct producers were poor, although the poorest groups were recent migrants, including landless and some small-farmer, landed migrants. Many locals perceived that they were now worse off than before because they could no longer make an adequate living and no longer had as wide a variety of food to eat. They no longer had access to resources to extract food, medicinal plants, and materials to make household items and productive tools. Now they needed cash to buy the products they formerly obtained for free from the forest. Without access to land whereby they could acquire these resources and without stable employment, their security was precarious.

Coping Strategies

Different social groups utilized different strategies to cope with the newly perceived precariousness in their lives. During the early 1980s the former direct producers who had lived in the region and were forced to move by ELETRONORTE vigorously protested losing their former way of life. They were aided by more powerful groups in their efforts during a time of political opening in Brazil, which allowed them to gain some concessions from the power company and federal government.

Another movement evolved among the sons and daughters of former local traders (traditional local elites) who belonged to the contemporary middle class that evolved during the late 1980s. On a manifest level, this group

embraced the ideas, goals and objectives of modern environmental movements. Their insight into the links between environmental degradation and poverty was profoundly enhanced by the fact that their own families had experienced a loss of access to resources and declining economic security in recent history, during the 1980s. Their perception of resource use differed from that of newer migrants, wealthy and poor, whose economic activities contributed heavily to local environmental alteration and degradation. Their perceptions reflected former economic strategies that were more relatively sustainable than now. Yet, although the group's activities were compatible with modern ideas about conservation, their latent goals and objectives harkened toward recreating the town's former environment, economy and social structure.

A large proportion of Itupirangan society faced uncertainty and economic insecurity every day. Further, they encountered hostility, unfair practices and outright abuse. Although they grumbled among each other and to a sympathetic outsider, they rarely attempted to form any organized and sustained movement to address these aspects of their oppression. Fear was probably the primary reason for why the lower social group did not organize to address their grievances. Further, since unemployment was so high, people were lucky to have a job at all. They had to maintain good relationships with potential patrons in order to obtain or keep their jobs. People seemed satisfied with patrons whom

they considered to be "fair," who paid them decent wages, took care of them in times of crisis, and were nice to them within the bounds of patron/client etiquette.

Those profitable extractive activities that did offer employment, such as logging and fishing, as well as the productive activities of ranching and agriculture, had undesirable environmental and socioeconomic consequences. The new economic activities exploited natural resources in a manner oriented toward short-term profit, but were detrimental to long-term sustainability. The former extractive economy had sustained the local population and altered the natural environment very little, in part, because of the low ratio of human population density to resources. The newer activities were destroying more than just a few resources. They were eliminating a way of life and vast areas of the natural environment. The environmental and social impacts of these developments caused the demise of the former economy and much of the former social structure.

Further, the projects changed the nature of economic options in Itupiranga for all social groups in the present and in the future. The long-term economic viability of the community was in question, even for those people who benefited in the short run. At the time of my research some people worried about the town's future when critical resources were used up. For example, they were aware of the town's economic dependence upon logging. Although logging

as it was practiced, without reforestation, was profitable in the short term, the activity was contributing to the destruction of many prime species of plants and trees. They were afraid that once the trees were gone and the loggers and sawmills moved on, the economy of Itupiranga would suffer, as many local businesses were dependent upon the traffic and commerce that logging brought to Itupiranga. Commercial fishing also employed many people but this economic activity did not seem to be viable in the long run because the resource appeared to be in jeopardy. The local commercial production of fish in Itupiranga declined by 93 percent during the peak month of May between 1988 and 1991, whether from alterations in the ecosystem, changing in the marketing structure (Boonstra 1993) or from over fishing, or from a combination of all three reasons.

Furthermore, such changes were causing pollution problems that posed health hazards for local people. Sawmills polluted small streams that surrounded the town where people obtained their water to drink, wash their clothes, and bathe. Often the smoke from sawmills that also burned wood to make charcoal would cloak the town in the late afternoon and evening, before local politicians enacted a city ordinance in mid-1990 that prevented this type of burning too close to town. The skies were also choked with smoke during August, September and October when people burned newly fallen trees and other vegetation on their plots as they prepared to farm. Locals complained of more

frequent allergies and respiratory ailments because of the smoke. They also noted that the river, now polluted, was once so clear that they could go out in the middle to obtain their drinking water. Water pollution from mercury used for gold mining, industrial waste and raw sewage caused a major fish kill in 1988 in the Tocantins River between Marabá and Itupiranga, and threatened other aquatic resources.

Long-term residents of Itupiranga, and the relocatees from Jacundá and Tauiry, regardless of their social class, lamented the changes that had occurred. They bitterly observed major changes in their physical and social environments caused by the government's development projects and policies, while at the same time they were proud that the Transamazon Highway and Tucuruí Hydroelectric Dam had brought progress and modernity to their region. They blamed outsiders, both rich and poor, for their misfortunes. Among traditional locals, vicious gossip, alcoholism and drug abuse were contemporary problems as people attempted to cope with the social changes caused by rising and falling fortunes.

People complained that the municipality was already poor. Further, by 1990 it seemed the community faced declining resources because they were used in a non-renewable manner. Ironically, many peoples' livelihoods were dependent upon those very same resources. A common idea was that some sort of permanent industry should be created in Itupiranga. A factory or some other operation would supply jobs and would remain after those resources

which were fueling the current local economy were depleted. People noted, however, that all such industries went to places other than Itupiranga. "Itupiranga remains forgotten," many people said bitterly. Indeed the prospects for a reasonably secure and prosperous future seemed dim. The Transamazon Highway, the Tucuruí Hydroelectric Dam, colonization projects and the resultant influx of migrants, changes in land use and tenure, logging, and the commercialization of fishing all had a major impact on the environment as well as traditional life in Itupiranga. The long-term consequences of this development process will likely result in a perpetuation of the precarious circumstances imposed on the former direct producers and the poor, and also threaten the gains made by the people who benefited. In Itupiranga people lost access to the means of production because of population pressure, diminishing resources, a new land tenure regime and profoundly altered political and social relationships. As these processes occurred, people needed cash and wage labor jobs to make a living because they lost access to resources. Many people who found employment worked difficult and menial jobs for low wages that were not sufficient to provide what they considered to be a decent living. High infant mortality indices also indicate a low standard of living for many people in the municipality. By 1990 it appeared that most of the population in Itupiranga was not as affluent or secure as the ideals presented by advocates of this type of development would hope.

LIST OF REFERENCES

- Amanhã a Inauguração da UHE Tucuruí
1984 O Liberal. November 21, 1984. Belém, Pará,
Brasil.
- ARCA
1982/83 Dos Moradores da Area do Reservatório Barragem
de Tucuruí. No. 1. Região do Rio Tocantins, Pará,
Brasil: A Movimento dos Desapropriados pela
Eletronorte Barragem de Tucuruí.
- Barbira-Scazzocchio, Françoise
1980 From Native Forest to Private Property: The
Development of Amazonia for Whom? In F. Barbira-
Scazzocchio, ed., Land, People and Planning in
Contemporary Amazonia. Proceedings of the Conference
on the Development of Amazonia in Seven Countries.
Cambridge, 23-26, September 1979. Cambridge:
Cambridge University.
- Bardach, John
1972 Some Ecological Implications of Mekong River
Development Plans. In M. T. Farvar and John P. Milton,
eds., The Careless Technology. Garden City, New York:
The Natural History Press.
- Barkin, David
1988 Environmental Degradation and Productive
Transformation in Mexico: The Contradictions of Crisis
Management. Paper presented at the XIV Congress of the
Latin American Studies Association, March 17-19, 1988.
New Orleans, LA.
- Benería, Lourdes and Gita Sen
1981 Accumulation, Reproduction, and Women's Role in
Economic Development: Boserup Revisited. Signs-Journal
of Women in Culture and Society 7:2, Winter: 279-298.
- Biery-Hamilton, Gay M.
1987 Coping with Change: The Impact of the Tucuruí
Dam on an Amazonian Community. M.A. Thesis.
Gainesville, FL: University of Florida.
- Bilhoes para os Expropriados
1984 O Liberal. November 21, 1984. Belém, Pará,
Brasil.

- Binswanger, Hans P.
1989 Brazilian Policies that Encourage Deforestation in the Amazon. Environmental Dept. Working Paper no. 16. Washington, D.C.: The World Bank.
- Bispos Apoiam os Desalojados pela Usina de Tucuruí
1982 A Província do Pará. September 9, 1982. Belém, Pará, Brasil.
- Bispos Condenaram Fechamento da Barragem
1984 A Província do Pará. September 10, 1984. Belém, Pará, Brasil.
- Boonstra, Tara
1993 The Commercialization of a Tropical Reservoir Fishery in the Brazilian Amazon. M.A. Thesis, University of Florida, Gainesville, FL.
- Bottomore, Tom, ed.
1983 A Dictionary of Marxist Thought. Cambridge, MA: Harvard University Press.
- Bradby, Barbara
1980 The Destruction of the Natural Economy. In The Articulation of Modes of Production. Harold Wolpe, ed. London: Rutledge & Kegan Paul.
- Branford, Sue and Oriel Glock
1985 The Last Frontier: Fighting Over Land in the Amazon. London: Zed Books, Ltd.
- Brenner, Robert
1976 Agrarian Class Structure and Economic Development in Pre-Industrial Europe. Past and Present. (70)
- Bundy, Colin
1979 The Rise and Fall of the South African Peasantry. Berkeley: University of California Press.
- Bunker, Stephen
1984 Modes of Extraction, Unequal Exchange, and the Progressive Underdevelopment of an Extreme Periphery: The Brazilian Amazon, 1600-1980. American Journal of Sociology. 89(5):1017-64.

1985 Underdeveloping the Amazon. Champaign-Urbana: University of Illinois Press.
- Caboclo da Area do Lago Resiste: "Nem o Dilúvio Me Tira Daqui."
1984. O Liberal. September 17, 1984. Belém, Pará, Brasil.
- Cardoso, Fernando E. and G. Muller
1977 Amazonia: Expansão do Capitalismo. São Paulo: Editora Brasiliense

Cernea, Michael M.

1987 Social Issues in Involuntary Resettlement Processes: Policy Guidelines and Operational Procedures in World Bank-Financed Projects. World Bank Technical Paper No. 80. Washington, D.C.: The World Bank.

1988 Involuntary Resettlement in Development Projects: Policy Guidelines in World Bank-Financed Projects. World Bank Technical Paper No. 80. Washington, D.C.: The World Bank.

1990 Internal Refugees and Development-Caused Population Displacement. Development Discussion Paper No. 345. Harvard Institute for International Development, Harvard University.

Chaves, Antonio Braga e

1990 Do Lago Vermelho A Itupiranga: Uma História para as Crianças, 1892-1952. Itupiranga, Pará, Brazil: Prefeitura Municipal de Itupiranga.

Cleary, David

1990 Anatomy of the Amazon Gold Rush. Iowa City: University of Iowa Press.

Cohen, Mark

1977 The Food Crisis in Prehistory: Overpopulation and the Origins of Agriculture. New Haven, CT: Yale University Press.

Collins, Jane

1992 Marxism Confronts the Environment. In Understanding Economic Processes. Monographs in Economic Anthropology. No. 10. S. Ortiz and S. Lees, eds. Pp. 179-188. New York: University Press of America.

Colônia dos Pescadores de Itupiranga-244

1990 Arquivos. Município de Itupiranga, Pará, Brasil. Colonos Não Desejam Conflito com Índios Parakanã, em Tucuruí.

1984 O Liberal. October 21, 1984. Belém, Pará, Brasil.

Colonos Vão Acampar em Tucuruí

1984 A Província do Pará. September 13, 1984. Belém, Pará, Brasil.

Cook, Scott

1973 Production, Ecology, and Economic Anthropology: Notes Toward and Integrated Frame of Reference. Social Science Information. 12(1):25-52.

- Davis, Shelton H.
1977 Victims of the Miracle: Development and the
Indians of Brazil. London: Cambridge University
Press.
- Dean, Warren
1987 Brazil and the Struggle for Rubber: A Study in
Environmental History. New York: Cambridge University
Press.
- Debate Ecológico na "Semana da Castanha"
1986 Correio do Tocantins, 14, November 20.
November 20.
- Desmatamento Desordenado no Sul do Estado
1986 A Provincia do Pará. November 8, 1986.
- Diniz, Eli
1986 The Political Transition in Brazil: A
Reappraisal of the Dynamics of the Political Opening.
Studies in Comparative International Development 21(2),
Summer:63-73.
- Dobb, Maurice
1963 Studies in the Development of Capitalism. 2d ed.
New York: International Publishers.
- Eletronorte Comunica que Está Pagando Expropriados.
1984 O Liberal. December 1, 1984. Belém, Pará,
Brasil.
- Eletronorte Explica Situação das Famílias na Área de Tucuruí
1984 O Liberal. February 15, 1984. Belém, Pará,
Brasil.
- Eletronorte Resolve Situação de Colonos Acampados no SPI
1983 A Provincia do Pará. April 7, 1983. Belém,
Pará, Brasil.
- Em Oito Anos a Decadência dos Castanhais
1988 O Liberal. April 5.
- Emmi, Marília
1988 O Oligarquia do Tocantins e o Domínio dos
Castanhais. Belém, Pará: Coleção Igarapé.
- Expropriados Cobrarão Dívidas
1984 O Liberal. October 9, 1984. Belém, Pará,
Brasil.
- Expropriados da Eletronorte Pretendem Bloquear a Estrada
1984 O Liberal. September 12, 1984. Belém, Pará,
Brasil.

- Expropriados de Tucuruí Vão Acampar Agora em Brasília.
1984 A Província do Pará. November 1, 1984. Belém,
Pará, Brasil.
- Expropriados Denunciam Nova Ameaça dos Índios Parakanãs
1984 O Liberal. October 17, 1984. Belém, Pará,
Brasil.
- Expropriados Serão Indenizados esta Semana
1984. A Província do Pará. December 4, 1984. Belém,
Pará, Brasil.
- Expropriados Temem Ação dos Parakanã Pedem Socorro.
1984 A Província do Pará. October 27, 1984. Belém,
Pará, Brasil.
- Expropriados Voltam em Busca de Solução.
1984 A Província do Pará. October 23, 1984. Belém,
Pará, Brasil.
- Foweraker, Joe
1981 The Struggle for Land: A Political Economy of
the Pioneer Frontier in Brazil from 1930 to the Present
Day. Cambridge: Cambridge University Press.
- Frank, Andre Gunder
1966 The Development of Underdevelopment. Monthly
Review. 18(4):17-31.
- George, Carl. L.
1972 The Role of the Aswan Dam in Changing Fisheries
of the Southeastern Mediterranean. IN M. T. Farvar and
John P. Milton, eds., The Careless Technology. Garden
City, NY: The Natural History Press.
- Goodland, Robert
1982 Brazil's Environmental Progress in Amazonian
Development. From the Symposium: Change in the Amazon
Basin. Manchester: 44th International Congress of
Americanists. September 6-10, 1982.
- Goulding, Michael
1980 The Fishes and the Forest. Berkeley: California
University Press.
- Governo Promete Ajuda aos Expropriados de Novo Repartimento.
1984 A Província do Pará. September 18, 1984. Belém,
Pará, Brasil.
- Guha, Ramachandra
1989 The Unquiet Woods: Ecological Change and Peasant
Resistance in the Himalaya. Berkeley: University of
California Press.

Harding, D.

1966 Lake Kariba: The Hydrology and Development of Fisheries. IN R. H. Lowe-McConnell, ed., Man-made Lakes. London: Academic Press.

Harner, Michael

1970 Population Pressure and the Social Evolution of Agriculturalists. Southwestern Journal of Anthropology. 26:67-86.

1975 Scarcity, the Factors of Production, and Social Evolution. In Population, Ecology, and Social Evolution. Steven Polgar, ed. The Hague: Mouton.

Harris, Marvin

1968 The Rise of Anthropological Theory: A History of Theories of Culture. New York: Thomas Y. Crowell.

1974 Cows, Pigs, Wars and Witches: The Riddles of Culture. New York: Random House.

1979 Cultural Materialism: The Struggle for a Science of Culture. New York: Vintage Books.

Hay, James Diego

1988 The Remaking of the Proletariat: Social Change on the Amazon Frontier. The Latinamericanist. 23(2):2-7

Hebette, Jean, Aurilea Abelem, Mariceli Paraense, and Marília Emmi

1983 Área de Fronteira em Conflitos: O Leste do Medio Tocantins. Belém, Pará: Núcleo de Altos Estudos Amazônicos, Universidade do Pará.

Hecht, Suzanna

1984 Cattle Ranching in Amazonia: Political and Ecological Considerations. In Frontier and Expansion in Amazonia. Marianne Schmink and Charles H. Wood, eds. Gainesville, FL: University of Florida Press.

Hobsbawn, Eric

1959 Primitive Rebels: Studies in Archiac Forms of Social Movement in the 19th and 20th Centuries. Manchester: Manchester University Press.

IBGE (Instituto Brasileiro de Geografia e Estatística)

1970 Censo Demográfico, Pará. VIII Recenseamento Geral 1970, Série, Regional. Vol I. Tomo IV. Rio de Janeiro: IBGE

1979 Produção Extrativa Vegetal. Vols. 3,4, and 5. Rio de Janeiro: IBGE.

1981 Produção Extrativa Vegetal. Vol. 6 and 7. Rio de Janeiro: IBGE.

1982 Produção Extrativa Vegetal. Vol. 8. Rio de Janeiro: IBGE.

1982/83 Censo Demográfico: Dados Distritais. IX Recenseamento Geral do Brasil--1980. Vol. 1, Tomo 3, no. 4. Rio de Janeiro: IBGE.

1984 Produção Extrativa Vegetal. Vol. 9. Rio de Janeiro: IBGE.

1988 Produção Extrativa Vegetal. Vol. 10. Rio de Janeiro: IBGE.

1989 Produção Extrativa Vegetal. Vol. 11. Rio de Janeiro: IBGE.

IDESP (Instituto de Desenvolvimento Econômico e Social do Pará)

1978 Anuário Estatístico do Estado do Pará. Vol. 2.

1979 Anuário Estatístico do Estado do Pará. Vol. 3. Belém: IDESP.

1980 Anuário Estatístico do Estado do Pará. Vol. 4. Belém: IDESP.

1981 Anuário Estatístico do Estado do Pará. Vol. 5. Belém: IDESP.

1982/83 Anuário Estatístico do Estado do Pará. Vol. 6. Belém: IDESP.

1984 Anuário Estatístico do Estado do Pará. Vol. 7. Belém: IDESP.

1985 Anuário Estatístico do Estado do Pará. Vol. 8. Belém: IDESP.

1986/87 Anuário Estatístico do Estado do Pará. Vol. 9, Tomos 1 & 2. Belém: IDESP.

INCRA (Instituto Nacional de Colonização e Reforma Agrária)

1989 3ª Emissão Normal ITR - 1989. Relação para Prefeitura. Sistema Nacional de Cadastro Rural. Itupiranga/Marabá, Brasil: Ministério da Agricultura.

Já Está Vindo do Acre 80% da Castanha

1989 O Liberal. March 19.

- de Janvry, Alain
1981 The Agrarian Question and Reformism in Latin America. Baltimore and London: The Johns Hopkins University Press.
- Jipe Invadiu Tenda e Quase Há Incidentes
1984 O Liberal. September 18, 1984. Belém, Pará, Brasil.
- Katzman, Marvin T.
1977 Cities and Frontiers in Brazil: Regional Dimensions of Economic Development. Cambridge, MA: Harvard University Press.
- Laclau, Ernesto
1971 Feudalism and Capitalism in Latin America. New Left Review. May-June (67):19-38.
- Lagenest, H. D. Barruel de
1958 Marabá: Cidade do Diamante e da Castanha. São Paulo: Anhembi.
- Lago da Barragem de Tucuruí Deixa Colonos Desabrigados.
1985 O Liberal. March 16, 1985. Belém, Pará, Brasil.
- Lago Isola 400 Famílias
1984 A Provincia do Pará. September 21, 1984. Belém, Pará, Brasil.
- Latin American Economic Report
1990 July 31. London: Latin American Newsletters.
- Latin American Economy and Business
1990 August 31 and November 11. London: Latin American Newsletters.
- Latin American Economy and Business
1992 January.
- Lavradores Ocupam Terminal em Subprefeitura Repartimento.
1984 A Provincia do Pará. September 11, 1984. Belém, Pará, Brasil.
- Lawless, Robert
1977 Societal Ecology in Northern Luzon: Kalinga Agriculture, Organization, Population, and Change. Papers in Anthropology. 18(1) Norman, OK: University of Oklahoma.
- 1979 The Concept of Culture: An Introduction to the Social Sciences. Minneapolis: Burgess.

- Little, Lester K.
1978 Religious Poverty and the Profit Economy in Medieval Europe. Ithaca, NY: Cornell University Press.
- Lowe-McConnell, R. H.
1973 Reservoirs in Relation to Man-fisheries. IN W. C. Ackerman, G. White, E. Worthington, eds., Man-made Lakes: Their Problems and Environmental Effects. Washington, D. C: American Geographical Union.
- Luxemberg, Rosa
1968 (1913) The Accumulation of Capital. New York: Monthly Review Press.
- Magee, Pennie L.
1990 "The Water is Our Land": Peasants of the River Tocantins, Brazilian Amazonia. Ph.D. Dissertation, University of Florida, Gainesville, FL.
- Mahar, Dennis
1979 Frontier Development Policy in Brazil: A Study of Amazonia. New York: Praeger.
- Mais de 1.500 Pessoas no Ato Público Contra a Barragem.
1984 O Liberal. June 26, 1984. Belém, Pará, Brazil.
- Margolis, Maxine L.
1973 The Moving Frontier: Social and Economic Change in a Southern Brazilian Community. Gainesville, FL: University of Florida Press.

1979 Seduced and Abandoned: Agricultural Frontiers in Brazil and the United States. In Maxine L. Margolis and William E. Carter, eds. Brazil: Anthropological Perspectives, Essays in Honor of Charles Wagley. Pp. 160-179. New York: Columbia University Press.
- Marris, Peter
1975 Loss and Change. Garden City, NY: Anchor Press/Double Day.
- Martine, George
1980 Recent Colonization Experience in Brazil: Expectations Versus Reality. In Barbira-Scazzocchio, ed. Land, People and Planning in Contemporary Amazonia. Cambridge: Cambridge University Press.
- Martins, José de Souza
1975 Capitalismo e Tradicionalismo: Estudos Sobre as Contradições da Sociedade Agrária no Brasil. São Paulo: Pioneira.

1980 Expropriação e Violência: A Questão Política no Campo. Sao Paulo: Hucitec.

1984 The State and the Militarization of the Agrarian Question in Brazil. In Marianne Schmink and Charles H. Woods, eds. Frontier Expansion in Amazonia. Pp. 463-490. Gainesville, FL: University of Florida Press.

Meillassoux, Claude

1981 Maidens, Meal and Money: Capitalism and the Domestic Economy. New York: Cambridge University Press.

Mintz, Sidney

1985 Sweetness and Power: The Place of Sugar in Modern History. New York: Penguin.

Mitschein, Thomas A., Henrique R. Miranda e Mariceli C. Parese

1989 Urbanização Selvagem e Proletarização Passiva na Amazônia: O Caso de Belém. Belém: Graficentro/CEJUP

Moran, Emilio

1974 The Adaptive System of the Amazon Caboclo. In C. Wagley, ed., Man in the Amazon. Pp. 136-159. Gainesville, FL: University of Florida Press.

1975 Pioneer Farmers of the Transamazon Highway: Adaptation and Agricultural Production in the Lowland Tropics. Ph.D. Dissertation. Gainesville, FL: University of Florida.

1979 Criteria for Choosing Successful Homesteaders in Brazil. Research in Economic Anthropology 2:339-359.

1981 (Ed.) Developing the Amazon. Bloomington, IN: Indiana University Press.

1983 (Ed.) The Dilemma of Amazonian Development. Boulder, CO: Westview.

Mougeot, Luc J. A.

1986 River Impoundment Related Population Displacement in Brazilian Amazonia: The Tucuui Resettlement Program (TRP), 1976-'84. In J.M.G. Kleinpenning, ed., Competition for Rural and Urban Space in Latin America. Its Consequences for Low Income Groups. Amsterdam: Mijmegen.

Mougeot, Luc J. A. and Mark Barrow

no date Ecological and Social Impacts of Natural Resources Utilization in the Brazilian Amazon: The Araguaia-Tocantins River Basin. (Mimeo)

- Moura, Ignácio Batista de
1910 De Belém a São João do Araguaia: Vale do Rio Tocantins. Rio de Janeiro: H. Garnier.
- Nader, Laura
1990 Harmony Ideology: Justice and Control in a Zapotec Mountain Village. Stanford, CA: Stanford University Press.
- Orlove, Benjamin S.
1977 Integration through Production: The Use of Zonation in Espinar. American Ethnologist. 4(1):84-101.
- Parakanãs Querem Expulsar Colonos.
1984 O Liberal. October 17, 1984. Belém, Pará, Brasil.
- Parakanãs Reivindicam Velha Aldeia.
1984 O Liberal. October 21, 1984. Belém, Pará, Brasil.
- Parker, Eugene
1985 The Amazon Caboclo: An Introduction and Overview. In Eugene Parker, ed. The Amazon Caboclo: Historical and Contemporary Perspectives. Studies in Third World Societies, No. 32. Pp. xvii-li. Williamsburg, VA: Department of Anthropology, College of William and Mary.
- Paternostro, Julío
1945 Viagem ao Tocantins. São Paulo: Editora Nacional.
- 800 Pessoas Aguardam uma Decisão
1984 O Liberal. September 15, 1984. Belém, Pará, Brasil.
- Petrere, Miguel
1990 Riverine Populations of Amazonia and Social Changes. Populações Humanas, Rios e Mares da Amazônia, Programa de Pesquisa e Conservação de Áreas Úmidas, IV Encontro de Ciências Sociais e o Mar no Brasil, 6-9 de Junho de 1990, Belém. São Paulo: Coletânea de Trabalhos Apresentados.
- Piddock, Stuart
1968 The Potlatch System of the Southern Kwakiutl: A New Perspective. In Economic Anthropology. LeClair and Schneider, eds. New York: Holt, Rinehart and Winston.

Pinto, Lucio Flavio

1982 Novo Acampamento. Opinião. O Liberal, September 9, Belém, Pará, Brasil.

1983 A Madeira que Simiu. Opinião. O Liberal, May 10, Belém, Pará, Brasil.

PM Desloca Homens para Tentar Impedir o Bloqueio da Transam.

1984 A Provincia do Pará. Belém, Pará, Brasil.

Pompermayer, Malorí José

1979 The State and the Frontier in Brazil: A Case Study of the Amazon. Ph.D. Dissertation. Stanford University, Stanford, CA.

1984 Strategies of Private Capital in the Brazilian Amazon. In Frontier Expansion in Amazonia, Marianne Schmink and Charles H. Wood, eds., Pp. 419-438. Gainesville: University of Florida Press.

Portes, Alejandro

1985 Latin American Class Structures: Their Composition and Change During the Last Decades. Latin American Research Review, 20(3):7-39.

Protesto foi Adiado em Tucuruí.

1984 A Provincia do Pará. September 14, 1984. Belém, Pará, Brasil.

Rappaport, Roy

1967 Pigs for the Ancestors. New Haven: Yale University Press.

Reassentamento para Expropriados de Tucuruí

1984 O Liberal. October 27, 1984. Belém, Pará, Brasil.

Redford, Robert

1992 The Empty Forest. BioScience, 42(6):412-422.

Redclift, Michael

1987 Sustainable Development: Exploring the Contradictions. London and New York: Methuen.

Relatório Segundo

1983 Relatório do Segundo Acampamento dos Trabalhadores Rurais Expropriados pela Eletronorte, Tucuruí, Pará, de 9 a 24 de abril de 1983. Região de Rio Tocantins, Pará Brasil: Comissões de: Mojú, Jacundá, Breu Branco, Repartimento, Itupiranga, Cajazeiras, Tauiri, Remansão, Arraias; Sindição dos Trabalhadores Rurais de Arraias; and Delegacias Sindicais de Repartimento e Mojú.

Repetto, Robert

1988 The Forest for the Trees? Government Policies and the Misuse of Forest Resources. A World Resources Institute Report. New York: Cambridge University Press.

Richards, P. W.

1973 The Tropical Rain Forest. Scientific American 229 (6):58-67.

Roseberry, William

1976 Rent, Differentiation, and the Development of Capitalism among Peasants. American Anthropologist. 78:45-58.

Rostow, Walt

1960 The Stages of Economic Growth: A Non-Communist Manifesto. Cambridge, England: Cambridge University Press.

Sahlins, Marshall D. and Elman R. Service

1960 Evolution and Culture. Ann Arbor, MI: University of Michigan Press.

Santos, Roberto

1984 Law and Social Change: The Problem of Land in the Brazilian Amazon. In Frontier Expansion in Amazonia. Marianne Schmink and Charles H. Wood, eds. Gainesville, FL: University of Florida Press.

Sawyer, Donald R.

1979 Peasants and Capitalism on an Amazon Frontier. Ph.D. Dissertation. Harvard University.

1984 Frontier Expansion and Retraction in Brazil. In Marianne Schmink and Charles H. Wood, eds. Frontier Expansion in Amazonia. Pp. 180-203. Gainesville, FL: University of Florida Press.

Schaeff, Gary W.

1990 Igloos of Fire: Charcoal Production for Brazil's Programa Grande Carajás. Master's Thesis. University of Florida.

Schmink, Marianne

1981 A Case Study of the Closing Frontier in Brazil. Gainesville, FL: Amazon Research and Training Program, Center for Latin American Studies, University of Florida.

- Schmink, Marianne and Charles H. Wood
1987 The 'Political Ecology' of Amazonia. In *Lands at Risk in The Third World: Local Level Perspectives*. P.D. Little and M. M. Horowitz, eds. Pp. 38-57. Boulder, CO : Westview.
- 1992 *Contested Frontiers in Amazonia*. New York: Columbia University Press.
- Scott, James C.
1976 *The Moral Economy of the Peasant: Rebellion and Subsistence in South-east Asia*. New Haven: Yale University Press.
- 1985 *Weapons of the Weak: Everyday Forms of Peasant Resistance*. New Haven and London: Yale University Press.
- 1990 *Domination and the Arts of Resistance: Hidden Transcripts*. New Haven and London: Yale University Press.
- Secretaria da Fazenda
1990 *Relatório do Pará*. Belém, Pará.
- Sheridan, Thomas
1988 *Where the Dove Calls: The Political Ecology of a Peasant Corporate Community in Northwestern Mexico*. Tucson: The University of Arizona Press.
- Smith, Nigel
1978 *Agricultural Productivity Along Brazil's Transamazon Highway*. *Agro-Ecosystems* 4:415-432.
- 1981 *Colonization Lessons From a Tropical Forest*. *Science* 214(4522):755-760.
- 1982 *Rainforest Corridors: The Transamazon Colonization Scheme*. Berkeley: University of California Press.
- 1985 *The Impact of Cultural and Ecological Change on Amazonian Fisheries*. *Biological Conservation* 32: 355-373.
- Steward, Julian
1955 *Theory of Culture Change: The Methodology of Multilinear Evolution*. Urbana: University of Illinois Press.
- Steward, Julian and Robert F. Murphy, eds.
1977 *Evolution and Ecology: Essays on Social Transformation*. Urbana: University of Illinois Press.

- SUCAM (Superintendência de Campanhas Contra a Malária)
1986 Interview regarding population statistics of
the municipality of Itupiranga (urban and rural 1974-
1986). August 25, 1986. Belém, Pará, Brazil.
- Sweezy, Paul
1976 Essay reprinted in *The Transition from Feudalism
to Capitalism*. R. H. Hilton, ed. London: New Left;
New York: distr. Schocken.
- Taussig, Michael
1978 *Peasant Economies and the Development of
Capitalist Agriculture in the Cauca Valley, Colombia.
Latin American Perspectives*. Issue 18, Summer,
V(3):62-90.
- 1980 *The Devil and Commodity Fetishism in South
America*. Chapel Hill: University of North Carolina
Press.
- Thompson, E. P.
1963 *The Making of the English Working Class*. New
York: Vintage.
- Uhl, Christopher and Robert Buschbacher
1985 *A Disturbing Synergism Between Cattle Ranch
Burning Practices and Selective Tree Harvesting In the
Eastern Amazon*. *Biotropica* 17(4)(Dec.):265-268.
- United Nations Monthly Bulletin of Statistics
1990 May. New York: United Nations.
- Velho, Otávio Guilherme
1972 *Frentes de Expansão e Estrutura Agrária; Estudo
do Processo de Penetração Numa Área da Transamazônica*.
Rio de Janeiro. Zahar.
- Verissimo, Adalberto, Paulo Barreto, Ricardo Tarifa, e
Christopher Uhl
no date *Extraction of A High-Value Natural Resource
From Amazonia: The Case of Mahogany*. Unpublished
manuscript. Instituto do Homem e Meio Ambiente da
Amazônia (IMAZON) Belém, Pará.
- Wagley, Charles
1974 *Man in the Amazon*. Gainesville, FL: University
of Florida Press.
- 1976 *Amazon Town*. New York: Oxford University.
- Waldram, James
1983 *The Impact of Hydro-Electric Development Upon A
Northern Manitoba Native Community*. Ph.D.
Dissertation. Hartford, University of Connecticut.

Wallerstein, Immanuel

1974 The Modern World System. New York: Academic.

Weinstein, Barbara

1983 The Amazon Rubber Boom, 1850-1920. Stanford:
Stanford University Press.

White, Leslie

1949 The Science of Culture: A Study of Man and
Civilization. New York: Farrar, Straus and Cudahy.

1959 The Evolution of Culture. New York: McGraw-
Hill.

Wolf, Eric

1955 Types of Latin American Peasantry: A Preliminary
Discussion. American Anthropologist, LVII(3).

1957 Closed Corporate Peasant Communities in
Mesoamerica and Central Java. Southwestern Journal of
Anthropology, XIII(1).

1969 Peasant Wars of the Twentieth Century. New York:
Harper and Row.

1982 Europe and the People Without History. Berkeley:
University of California Press.

Wood, Charles H.

1983 Peasant and Capitalist Production in the
Brazilian Amazon: A Conceptual Framework for the Study
of Frontier Expansion. In The Dilemma of Amazonian
Development. Emilio Moran, ed. Boulder: Westview.

Wood, Charles H. and Marianne Schmink, eds.

1978 Blaming the Victim: Small Farmer Production in
the Amazon Colonization Project. Studies in Third
World Societies. Vol. 7. Pp. 77-93.

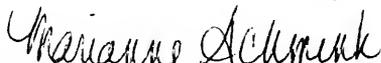
World Rivers Review

1991 No Stopping the Sting of Mosquitos at Tucuruí.
Volume 6, Number 4, July/August. San Francisco:
International Rivers Network, A Project of the Tides
Foundation.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



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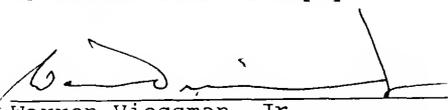
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