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# Piecing Together Social and Environmental Priorities in the Ongoing Process of Community Development In the MST Assentamento of Palmares II

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*SIT Study Abroad*

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**Independent Study Project**  
**Piecing Together Social and Environmental Priorities in the Ongoing**  
**Process of Community Development**  
**In the MST Assentamento of Palmares II**

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## TABLE OF CONTENTS

<b>List of Figures.....</b>	<b>3</b>
<b>Abstract.....</b>	<b>4</b>
<b>Resume.....</b>	<b>4</b>
<b>Part I- Introduction.....</b>	<b>5</b>
<b>Part II- Justification</b>	
Section 1- Theories .....	7
Section II- Justification of Methods.....	9
<b>Part III- Background Information</b>	
Section I- Historical Setting .....	10
Section II- Brief History of the MST.....	12
Section III- Current State of the Environment .....	13
<b>Part IV- Methods.....</b>	<b>16</b>
<b>Part V- Results and Discussion</b>	
Section 1- The Ongoing Process of Community Development:	
Resident Perception of Past Actions and Future Goals.....	17
Section II- Environmental Consciousness.....	28
Section III: Relationship between Environmental Consciousness and	
General Community Development Priorities.....	37
<b>Part VI: Analysis: Incorporating Environmental Management</b>	
<b>Into Community Development Plan.....</b>	<b>39</b>
<b>Part VII- Conclusion:</b>	
<b>Piecing Together Social and Environmental</b>	
<b>Priorities in the Ongoing Process of Community Development ...</b>	<b>41</b>
<b>References.....</b>	<b>42</b>
<b>Annex.....</b>	<b>43</b>
<b>Photo Gallery.....</b>	<b>45</b>

## List of Figures

Figure 1: Rates of Deforestation [www.mongabay.com](http://www.mongabay.com), December 8, 2006

Figure 2: [www.mongabay.com](http://www.mongabay.com) Causes of Deforestation in the Amazon

Figure 3: [http://209.15.138.224/brazil\\_maps/md\\_Para\\_brazil.htm](http://209.15.138.224/brazil_maps/md_Para_brazil.htm) Map of Para State

Figure 4 : [http://209.15.138.224/brazil\\_maps/md\\_Para\\_brazil.htm](http://209.15.138.224/brazil_maps/md_Para_brazil.htm) Satelite Map of Parauapebas

Figure 5- Painting of Palmares II, photo Clara Ward

Figure 6- Community and Resident Origin

Figure 7- Problems- Random Interviewees

Figure 8- Problems- Pre selected Interviewees

Figure 9: Comparison of Problems, Clara Ward

Figure 10: Condition of Environment, Clara Ward

Figure 11: Environmental Problems, Clara Ward

Figure 12: Relative Importance of Environmental Conservation, Clara Ward

Figure 13: Familiarity of Conservation Initiatives

Figure 14: Opinion of Current Conservation Initiatives, Clara Ward

Figure 15: Opinion of Responsibility for Future Environmental Conservation Initiatives, Clara Ward

Figure 16- Environment in Community Development, Clara Ward

## **ABSTRACT**

Over the last twelve years the Amazonian MST assentamento, Palmares II, in the Southeastern state of Para, has experienced many successes in terms of advances in education, health care services, community organization, and physical infrastructure in general. This progress in community development is often considered to support the theory of agrarian reform as an effective mechanism for achieving greater social equality and stability. Despite these relative successes, community development to date has not supported the concept of agrarian reform as a mechanism of environmental preservation and sustainable land use. This is due in part to the failure of the community to instill a strong sense of environmental consciousness and is demonstrated by environmental problems such as river pollution, poor community sanitation and unsustainable land use. This study shows that while some elements of environmental consciousness are present; such as awareness of specific problems, a sense of community responsibility for problem management, and the initial stages of action for environmental conservation and management, residents do not have an active awareness of the connection and interdependence of the natural environment and the community, in terms of health, economic, recreations, and general aesthetics. This disconnection is thus the main hindrance to overall environmental consciousness and conservation initiatives.

This study then examines community strengths, as well as residents' expressed problems and priorities for future development to identify possible routes through which the enhancement of environmental consciousness can be incorporated into the continued development of Palmares II. This mapping suggests that the enhancement of health-problem specific education programs, the professional training for community teachers and coordinators, and the organizing of key individuals would be valuable in developing a base from which to educate and raise awareness of the connection between the environment and the community of Palmares II.

## **RESUMO**

Nos doze anos passados, o assentamento Amazônia do MST, Palmares II, no estado do Para, tem experimentado muitas sucessões, em termos de educação, saúde,

organizações da comunidade, e infra-estrutura física em geral. Este progresso no desenvolvimento da comunidade esta considerada de dar apoio das teorias da reforma agrária como uma forma efetiva de realizando melhor igualdade e estabilidade social. Apesar destes sucessos, o desenvolvimento da comunidade ate agora não dava apoio o conceito da reforma agrária como uma forma de proteger do meio ambiente e uso da terra sustentável. Isso esta associado com o fracasso da comunidade para instigues uma senso forte de consciência ambientais e esta demonstrado entre problemas ambientais como poluição dos rios, saneamento pobre, e usos da terra insustentável. Isso estudo mostra que alguns elementos da consciência ambiental existem; por exemplo, conhecimento dos problemas especifica, um senso da responsabilidade da comunidade para gerência dos problemas, e um nivele inicio da ação para conserva e gerência. Ainda, os moradores não têm uns conhecimentos ativo da conexão e interdependência entre o meio ambiente e a comunidade, em termos de saúde, economia, recreação, e estético em geral.

Então, este estudo examina as forcas da comunidade, e também, os problemas e prioridades para o futuro do desenvolvimento, para identifica os possibilidades entre que de realce da consciência ambienta pode estar incorporado com a continuação do desenvolvimento da Palmares II. Isso cartografia sugere que o aumentado dos programas da educação da saúde, o treinamento profissional dos coordenadores (as) e professores (as), e a organização das individuais interessada sejam valiosos no desenvolvimento numa base para educar e aumente o conhecimento da conexão entre o meio ambiente e o comunidade da Palmares II.

## **Part I- INTRODUCTION**

Expropriated in 2004, the MST assentamento of Palmares II has spent the last 12 years settling and developing the region of land distributed to them through their fight for agrarian reform in the South of Para state, Brazil. 12 years after initial occupation, there exists multiple facets of social development within the community, including advancements in education, health care services, community organization, youth and gender issues, transportation, and physical infrastructure in general. These successes are seen by many in Palmares II to support and prove valid MST's ideal of agrarian reform as the "doorway" for greater social development.

Despite these successes, Palmares II is still in the early stages of the long process of community development and still has many of problems, and priorities. Looking to the condition of the environment specifically, Palmares II also has a range of problems stemming from limited environmental consciousness and the unsustainable land use this promotes. Nutrient depletion, erosion and deforestation are thus serious and growing problems, as are river pollution and the general degradation of overall ecosystem health. These environmental threats have direct implications for citizens of Palmares II, ranging from economics and health, to recreation and general aesthetics.

*Objective 1-*

This study is an attempt to better understand the level of environmental consciousness in Palmares II, by examining: awareness of environmental sciences and threats, awareness of connection to the environment, the sense of environmental stewardship and responsibility, as well as activism and level of involvement with conservation initiatives.

*Hypothesis 1-*

While environmental conservation is a primary concern on a global and international level, it is not a primary concern on a local level in agrarian reform settlements such as Palmares II. The questions of environmental sustainability are not priorities because of a lack of a clear connection between the environment and their quality of life.

*Objective 2-*

The study then assesses how a community based ecosystem management plan would need to be constructed so that it incorporates the specific environmental and social needs expressed by residents of Palmares II. In order to evaluate the existent community framework, this portion of the case study is focused on identifying strengths and hindrances of community development, identifying residents' stated problems and priorities.

*Hypothesis 1-*

The collective problems and priorities expressed by community residents will be based on the necessities of physical infrastructure and economic development, including advancements in health care services, education, commercial centers, and transportation.

Environmental concerns will not be a prevalent because of the early state of development of Palmares II.

This clear mapping will then be utilized to take advantage of existent community strengths, as well as identify areas of weakness where management efforts could possibly be focused. Emphasis is placed on issues that the community sees as important, as well as management approaches they deem feasible and effective. The end goal of this study is to provide recommendations for a management plan that enhances environmental consciousness and the sustainability of land use practices in Palmares II by empowering citizens to take ownership, responsibility, and pride in their community and surrounding ecosystem.

## **Part II- Justification**

### **Section 1- Theories**

#### *The Balance of “The Tragedy of the Commons” and Community Based Resource Management*

The collective environmental concerns of over population, pollution, resource depletion, and global warming have led to world wide recognition of the need for more dynamic and integrative conservation efforts. Previously common methods of top down management, where local people were usually considered obstacles in the way of environmental conservation, often focused on prohibition of resource use, coupled with strict enforcement, usually involving the creation of restrictive reserves. This strategy stemmed largely from theories such as Hardin’s “Tragedy of the Commons”, describing the propensity for individuals to expand personal gains for communal sacrifices:

“The tragedy of the commons develops in this way. Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy.” (Hardin, 1968)

This theory is thus based on the idea that if left to their own governance, communities would consume available resources to the point of depletion, inflicting their own demise.



The failure of the management strategy promoted by this theory to effect real environmental conservation is often associated with the inability to maintain enforcement without the support of the general public. This has led to the realization “that people are very much part of the conservation equation” and that effective management must incorporate the needs of local people and support them in “taking active roles in conservation planning and initiatives.” (Frazier, 1999) The basis for community based conservation is that when citizens can clearly visualize the connection between environmental management and their overall quality of life they will be more inclined to invest effort and resources in ecosystem protection because they see it as an extension of their community as opposed to a commodity for their personal consumption and benefit (Nichols et al, 2000 Sultana, P. and P. Thomson. 2003)

### ***Common Themes Between Community Based Resource Management and Agrarian Reform***

Many of the core themes of community based ecosystem management are also interwoven in the philosophies supporting agrarian reform. The government agency for agrarian reform in Brazil, INCRA, outlines their mission as “promoting a more equitable distribution of land, supporting the principles of social justice, and augmenting rural sustainable development and production.” Proposing that “what they are seeking is the actual development of the country and the implementation of a new model of assentamento, based on economic viability and environmental sustainability” (www.incra.com.br) The fundamental component of empowering individuals to enhance their social and economic condition while preserving the natural environment is thus a shared theme between CBC and agrarian reform. This unifying thread sheds light on the potential for agrarian reform assentamentos to serve as vessels for social change towards greater environmental consciousness.

### ***Palmares II as a Case Study for the Integration of Community Based Resource Management and Agrarian Reform***

A closer look at the actual history of agrarian reform, however, demonstrates the very clear separation between the potential for sustainable land use and environmental conservation, and the reality of limited environmental consciousness and resource exploitation. Agrarian reform has especially been criticized in the Amazon for

augmenting environmental problems such as deforestation, fires and river pollution. This is demonstrated by such statements as: “a significant amount of deforestation is caused by the subsistence activities of poor farmers who are encouraged to settle on forest lands by government land policies” ([www.mongabay.com/brazil.html](http://www.mongabay.com/brazil.html)). The question of environmental sustainability through agrarian reform is thus very complicated; as land use practices and conservation initiatives are dependent on a wide variety of factors, including environmental consciousness and awareness of alternative practices, as well as the actual feasibility given availability of technical and financial resources. These factors are heavily influenced by the actions of government, communities, local industries, NGOs, and other stakeholders alike. Given the complexity of interdependencies that often fog the arena of what is truly taking place in terms of the relationship between agrarian reform and environmental consciousness, this study is an attempt to analyze the actual feasibility of community based resource management in one of the older agrarian reform assentamentos in the Amazon, Palmares II.

## **Section II- Justification of Methods**

### ***The Importance of Understanding Community- Specific Strengths, Problems and Priorities***

Research on past initiatives for community based natural resource management has shown that in order to be effective for lasting conservation goals, management techniques and strategies need to be adapted to cater to an individual community’s social and physical dynamics, or their individual strengths, problems and priorities. This understanding of the specific community characteristics is important in that differences in community equity, empowerment, conflict resolution abilities, and level of knowledge and awareness have shown to play a large role in determine resident’s initial and enduring participation and support of management programs (Agrawal, 2000). Other studies have recognized such aspects as higher education, liberal political ideology, younger age and urban residence to be positively correlated with a conservation- oriented environmental attitude. (Wall, 1995) More specifically to agricultural issues, social factors such as origin, age, gender, education, awareness of environmental problems, and organizational participation have shown to be significant indicators of farmers’ likelihood

of adopting conservation practices. (Clearfield, 1986) Many research now proposes that instead of making universal claims, “community-based conservation initiatives must be founded on images of community that recognize their internal differences and processes, their relations with external actors, and the institutions that affect both” (Agrawla, 2000). Analysis of the social dynamics is thus important in that instead of making blanket assessments based on the “false assumption that communities can be classified as small homogenous social units with shared experiences, values and goals” it promotes identification of sub groups within the community, their individual connection to resource use and their possible motivations for participating in CBC. This then allows resource manager to more effectively create “mutuality between those who want biological resources to be managed on a sustained basis and those who must rely on these same biological resources for the bulk of their livelihood” (Nichols et al, 2000).

In order to prevent making such blanket assessments about the residents of Palmares II, this study includes an overview of the specific characteristics of social and physical dynamics that make up the community of Palmares II.

### **Part III- Background Information**

#### ***Section I- Historical Setting***

In discussing environmental issues and community based resource management in the Amazon, it is important to place keep in perspective the history of the Brazilian Amazon in terms of land distribution and use over time, as well as the influence this history has had on community development in settlements such as Palmares II.

#### **Military Rule and Amazonian Occupation**

Over the last four decades the state of Para, in Northeast Brazil, has experienced rapid and extensive alterations in land distribution and use, as well as population dynamics and civil structures. The history of land use is directly associated with the 21 years of military rule, from 1964- 1985, during which time the development of large industrial and agricultural businesses were considered effective ways of augmenting the national economy and relieving foreign debt (Chapter of Deputies’ Human Rights Commission, 2001). Created in 1966, the Superintendency for the Development of the Amazon (SUDAM) was associated with much of the recent environmental exploitation through

promoting Amazonian development by large industry and private businesses (Chapter of Deputies' Human Rights Commission, 2001). SUDAM provided financial incentives, in terms of tax breaks of up to 50%, to large scale commercial agriculture, cattle raising, and extractive activities such as mining industries. Strawn with political corruption, SUDAM approved 594 projects, mostly for cattle ranching, between 1966 and 1977; disregarding the environmental impacts and unsustainable practices of burning the rain forest for uses such as pasturelands (Chapter of Deputies' Human Rights Commission, 2001).

### *Agrarian Reform; Chasing the Green Frontier*

This opening up of the Amazon to large industry and intensive land use has also resulted in an influx of rural populations who came to the region looking for land and economic opportunities. Between 1960- 1979 Para state grew 41.7%, and continued to increase by 59.6% between 1970-80; this is in comparison to the 33.1% and 22.8% increases in all of Brazil, respectively (Adriance, 1995). Large agriculture and mining projects were estimated to create more than 680,000 jobs, and were thus supported by SUDAM as effective methods of absorbing this population influx. In reality, few jobs were created and the problems of rural families out of work with no land only escalated the already convoluted social scene (Adriance, 1995).

As a solution to the growing social and economic problems in the Northeast during this period, the Medici administration proposed “giving land without people to people without land” (Adriance, 1995). This sparked the creation of the National Institute for Colonization and Agrarian Reform (INCRA), in July of 1970, with the “primary mission of the realization of agrarian reform, maintaining national rural real estates and administrating public lands” ([www.incra.com.br](http://www.incra.com.br), December 2006) INCRA is thus responsible for redistributing illegally or inadequately managed land to rural workers who can occupy and demonstrate productive use for a year and a day. When these new settlers arrived in the Amazon they were for the most part unfamiliar with the soil and northern conditions. Many were encouraged by the government to proceed as they would with the soils they know, and thus experienced considerable difficulty maintaining fertility and production due to such problems as soil erosion and crop pest outbreaks. With poorly developed roads, many farmers also had difficulty transporting goods to market or finding competitive niches in which to sell products. These hindrances to

development were magnified by the wavering, and often times lack of financial and technical support provided by INCRA; a legacy from the long history of regional corruption and violence. This often resulted in the poor utilization of distribute land, with many of the initial settlers selling plots to large farmers as they were forced to move on in search of either new land to develop or jobs with one of the many large industrial projects. Agrarian reform in the Amazon has thus been criticized for augmenting the already rapid rate of deforestation, as many individuals initially sell lumber to clear plots, then sell the entire plot to large farmers when their land is either exhausted or they can not get by given the difficult circumstances (Wright and Wolford, 2003).

In addition to these difficulties, the history of Amazonian agrarian reform was also very heavily influenced by the tensions that grew as landless people began to organize and occupy land. (Wright and Wolford, 2003). These tensions, and the violence that they propagated, persisted throughout the last 30 years and are still very relevant to the area today. For example, in the late 1970s, 30,000 families per year were evicted from land occupations, and between the years 1971 and 2001 the violence between rural workers and land owners resulted in the murders of 706 workers in Para, with 534 in the south and southeastern parts alone (Chapter of Deputies' Human Rights Commission, 2001). For all of these murders only two were ever brought to trial, and none of the individuals responsible were ever held accountable. Thus, judicial impunity is considered one of the more serious challenges for agrarian reform in the South of Para; allowing wealthy land owners to create their own laws and infiltrate various components of the social structure (Adriance, 1995).

## ***Section II- Brief History of the MST***

### ***MST in Brazil***

The Landless Peoples' Movement, or Movimento dos Trabalhadores Rurais Sem-Terra (MST) is one of the oldest and largest movements for agrarian reform in Brazil. MST's philosophy of agrarian reform is more appropriately a philosophy of social reform; utilizing land as a base from which to develop social greater stability through education, health care, gender and youth issues, economic advancement, etc. MST first organized and occupied land in 1978 in Rio Grande do Sul, with the first national organizing meeting in 1984 (Wright and Wolford, 2003). The movement now has

settlements in 23 of Brazil's 26 states and includes 350,000 families, who have received land through their relentless organizing and activism. The success of MST in receiving land settlements is often attributed to their persistence in occupying land and their intense and unwavering pressure for INCRA to follow through on promises of land reform. MST has also remained unaffiliated with any political party and does not have individual leaders, but many elected representatives- which is considered to strengthen the organization by defending against large land owners breaking the system through assassination of key leaders or infiltration of leadership (Wright and Wolford, 2003)..

### *MST in the Amazon*

In the early days of MST land occupations and negotiations in the Southern part of the country, the government's response was to urge landless workers to immigrate to the Amazon, where they claimed there to be ample land for development. While MST's official position was, and still is, that agrarian reform should occur at home, many individuals were drawn to the Amazon in search of jobs in the vast new mining and agricultural projects and land opportunities on the quickly receding frontier (Wright and Wolford, 2003). It was after these 30 or so years of individuals' failed attempts that the MST assentamentos really took root and developed in Para state during the early 1990s. The last 15 years have continued to test the integrity of MST and agrarian reform, as the same setbacks of government inadequacies and insufficient support for production still exist to this day. Despite various organizational difficulties, continual political activism and concerted effort through MST's production cooperatives and community associations have served as effective mechanisms to combat the many challenges to long term development (Wright and Wolford, 2003).

### ***Section III- Current State of the Environment***

#### Deforestation and Fires-

Deforestation of both primary and secondary growth rainforest in the Amazon is one of the most prevalent national and global concerns. The forest and their various ecosystems provide global systems with innumerable natural services, most notably CO2 sequestration, global temperature regulation, water cycling and providing habitat for a wealth of flora and fauna biodiversity. (UNFCCC Website, 2006) Deforestation rates

peaked in the year 1995, to 29,059 square kilometers (11,219 square miles) and after years of fluctuations, have declined by 50% since the year 2004, as demonstrated in the graph below ([www.mongabay.com](http://www.mongabay.com)).

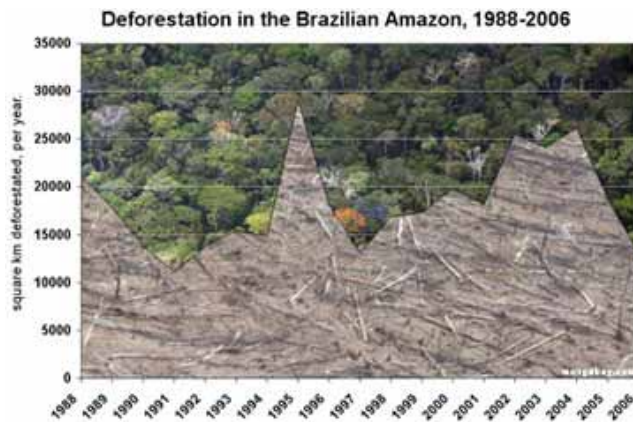


Figure 1: Deforestation in the Brazilian Amazon [www.mongabay.com](http://www.mongabay.com), December 8, 2006

One of the main sources of deforestation is the removal of forest and other vegetation for slash and burn agriculture, a common practice of small scale agriculturist. Between 2000 and 2005, 33% of recorded deforestation was associated with this sort of small scale, subsistence agriculture, as demonstrated by the graph below. While current law states that 20% of total property can be cleared for use, IBAMA's enforcement of this legislation is minimal due to limited staff and resources and the large area the ten Parauapebas officers are charged with for surveillance (Interview, Leo Bento, IBAMA, November 30, 2006). In 1995, forty-eight percent of forest loss was in areas under 125 acres (50 hectares) in size, and is often correlated with the influx of loggers and peasants after the expropriation of land to 150,000 families through agrarian reform ([www.mongabay.com](http://www.mongabay.com)).

Composition of land in Palmares II was initially 59.23% primary forest, 36.98% pasture, and 3.03% secondary forest; and as of 2005 is as follows: 26.79% forest, 44.84% pasture, 18.37% secondary forest, 1.70% perennial and semi-perennial, and 6.97% Rocas (COOMARSP, 2006).

A recent community study found that of community members interviewed, 55% had interest in preserving existent forest on their plots. Out of this 55%, 7% were interested in reforestation projects for their land, while 48% were interested in preservation of what was still remaining. (COOMASP, 2006)

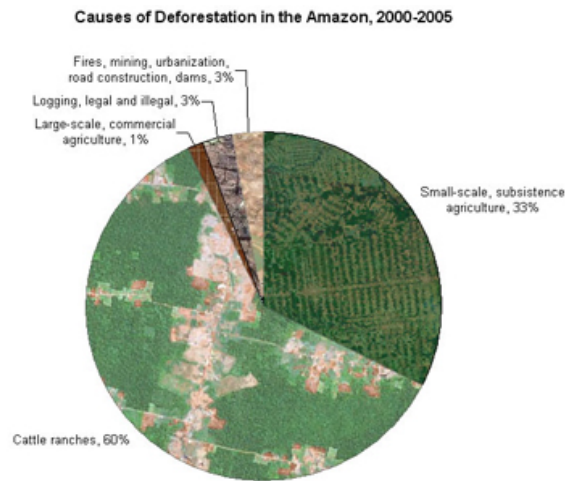


Figure 2: Causes of Deforestation in the Amazon, 2000-2005 [www.mongabay.com](http://www.mongabay.com)

Fires associated with deforestation and slash and burn agriculture are another serious problem for the entire region of the South of Para, due to the negative environmental impacts through releasing CO<sub>2</sub> and reducing air quality. While IBAMA has a fire orientation program for groups of 20 residents at a time, there are still problems of improperly planned and managed fires. Poor management augments problems by increasing forest fragmentation, spreading to unintended areas, or by not taking into account the geography of the landscape, such as on river banks or hill slopes (Queimada Controlada Pamphlet, IBAMA, 2001, COOMARSP, 2006).

### River Pollution

The assentamento of Palmares II is surrounded by the three rivers of Rio Parauapebas, Rio Novo, and Rio Carotinho, which also provide the region with lakes, permanent igarapes, and springs of fresh water for use in agricultural irrigation and human needs (COOMARSP, 2006). Palmares II is 20 km downstream of the city of Parauapebas, and is thus highly effected by sources of pollution such as unmanaged storm water runoff from impervious surfaces, inadequate sewage treatment facilities, as well as the placement of the city dump along the river bank between Parauapebas and Palmares II (Interview, Leo Bento, IBAMA, November 30, 2006). Practices within the community also contribute to river pollution; with specific sources including the removal of vegetation on river banks and igarapes, direct disposal of trash and dead animals, the utilization of river banks for livestock, the lack of gutters washing all waste water and



runoff into the streams and rivers, as well as pesticides and fertilizers runoff (COOMARSP, 2006).

### Trash and Debris

For the last two years Palmares II has had community trash collection three times a week, which transports collected waste to the municipality's dump (COOMARSP, Interview, November 29, 2006) Despite these efforts there still exists a large problem of debris and litter scattered throughout the community, with an overall low level of community sanitation concern for the disposal of animal parts, human wastes, and organic waste (Interview, IBAMA, November 30, 2006) .

## **Part IV- Methods**

*Map of Para State, Northeast Brazil  
Municipality*

*Satellite Map of Parauapebas*



**Figure 3:** Map of Para State, Northeastern Brazil [http://209.15.138.224/brazil\\_maps/md\\_Para\\_brazil.htm](http://209.15.138.224/brazil_maps/md_Para_brazil.htm)

**Figure 4 :** Satellite Map of Parauapebas Municipality [http://209.15.138.224/brazil\\_maps/md\\_Para\\_brazil.htm](http://209.15.138.224/brazil_maps/md_Para_brazil.htm)

### *Location of Study Site*

The assentamento of Palmares II is located in the Southeastern municipality of Parauapebas, in the Northeast state of Para, Brazil. Palmares II is 320 km from the state capital of Belem and 20 km from Parauapebas, the closest city. The geographic coordinates of Palmares II are: North: 05°46' south, 49°48'38'' wGr; South: 05°58'35'' south, 49°53'01'' wGr; East: 05°53'26'' south, 49°47'30'' wGr; West: 05°55'50 south, 49°53' wGr. (Coomarsp, 2006)

### *Data Collection*

#### *Primary Information*

Semi- structures interviews were conducted with thirty- six (36) residents between the dates of November 22 and December 2, 2006. Two community leaders, one of the MST directors and one of the community coordinators, assisted in the selection of eighteen (18) interviewees who were either actively involved with community concerns, or had special interest in a specific area (referred to as “pre - selected”). The other eighteen (18) interviews were chosen at random, based on location in the vila, proximity of places of interest such as the stream and plaza ground, and general availability (referred to as “random”). Interview length ranged from 30 minutes to two hours.

Informal conversations during the two week study period also provided a source of primary data collection. A camera was also utilized to provide visual support for the primary and secondary information presented.

### ***Secondary***

A combination of electronic articles, journals, community documentation, and books were used to provide support and develop the context of the primary information presented.

### ***Purpose and Uses of Study***

This study is intended to be translated into Portuguese and returned to the community of Palmares II to provide possible recommendations in the future development of community based resource management.

## **PART V- Results and Discussion**

### **Section 1- The Ongoing Process of Community Development: Resident Perception of Past Actions and Future Goals**

#### ***Background on History and Development in Palmares II***



Figure 5- Painting of Palmares II, photo Clara Ward

The 15, 848,922 hectares of land on the Rio Branco Ranch near Parauapebas, in Southern Para, was officially expropriated as the MST assentamento of Palmares II on March 11, 1996. Land occupation began two years prior, on June 26, 1994, with 583 families relentlessly organizing and pressuring government officials to follow through on their promises of agrarian reform. Land was initially divided into plots of 25 to 27 hectares per family, with a population growth over the last twelve years to now contain approximately 6,000 residents (Approximate number presented by COOMARSP, 2005= 4,400; though Interviewees provided a larger number). Community growth was a result of both family members and friends following original settlement, and the development of nearby cities, such as Parauapebas, with the continued expansion of large industrial projects at CVRD (Compania Vale do Rio Doce). Of the current residents in Palmares II, 69% arrived with the initial occupation and remained on the same land, 10% arrived with the initial occupation and traded land, 12% bought land, and 2% have since moved to Palmares II without buying land. (COOMARSP, 2005)

Housing – The large majority of houses in the community vila are constructed from brick and wood, with cement floors. Approximately 70% have had running water, first

implemented 5 years ago, and all houses have had electricity since 1999 (Interview, November 25, 2006).

Houses on the lots are constructed either from thatch and mud with dirt floors or thatch and wood with cement floors. Almost all use wood stoves, wells for water, and only a small portion have electricity.

School- The school building is one of the main community structures, with programs of “Alfabetizacao” for the entire community, starting with infantile education at 3- 7 years, and continuing on through high school for adolescents and adults alike. The school has grown from 700 to 1520 students, with a total of 18 teachers in elementary and middle levels, 17 higher level professors, and 11 administrators and directors. The growth in student body is largely due to the lack of schools in nearby assentamentos, with many students traveling in a school bus over an hour each way from the communities of Rio Branco, Brazil Novo, and O Liberdade I. The school itself is equipped with 16 class rooms, a computer lab with 20 computers, a cafeteria, a refectory, a secretary office, 8 bathrooms, a library, a teachers’ room, as well as a garden and recreation area.

Health Post- The health post was created in 1999 and currently has 8 employees, including one doctor, one nurse, one malaria specialist, and five health agents. There are also four general health and one dengue educators that travel house to house sharing information and advice on relevant health concerns. The post operates Monday through Friday and services approximately 146 patients a week. As with the school, the health post also receives many patients from nearby assentamentos, none of which have operating health facilities. The post is made up of one large waiting room, one large room for consultations, and a large walk in cabinet for medical supplies. There is also a government health van that visits the post two times a week, and a traveling doctor that comes three times a week. While the health post does have the capacity to treat many community illnesses, many residents find that they need to go to Parauapebas for further health care, occasionally requiring an ambulance, which costs 50R.

Sanitation One of the largest sanitation concerns is water treatment and availability, due to irregularities in water pumping and filtering. The health post recommends chloride treatment and heating, which few residents are in the habit of doing. The other main sanitation concern is the sewage and drainage system (COOMARSP, 2005). All of the

household wastewater and runoff is piped to the non- paved streets, where it forms streams down nearly every street forming pools of stagnant water. Many residents also have outhouses where human waste is collected directly in the ground without treatment.

Community Associations The Association of Production and Commercialization of Rural Workers in Palmares II (APROCPAR) was created in March of 1996 to represent the residents and organize for financial agents, and public or private institutions.

Commercial Centers- Palmares II has small general stores, meat markets, hair cutters, two small pharmacies and a few restaurants. There are no supermarkets or department stores.

Transportation COOPALMS is the transportation association, which runs 4 large school buses, one privately owned micro - school bus, and two shuttle vans for transportation to Parauapebas. In addition to these community vehicles, private vans also run between Palmares II and Parauapebas approximately every hour, charging 3 R a person. There used to be a regular bus, though it currently only runs on days of high demand, such as election days.

Leisure - Soccer is a very popular leisure activity, with one large field next to the entrance into Palmares and a smaller dirt field in the middle of the vila. A plot next to the school building remains undeveloped, waiting for the construction of a community plaza. As of now this plot has a volley ball quart and nothing else. Other places of leisure include the swimming hole/ bar on the outskirts of the vila, river bank access points, and bars

### ***Interview Structure-***

1. Personal information : origin; how long they had been living in community; who they lived with; what they did before and current occupation; why they chose to be involved with MST; level of education.

This section of the interview was designed to aid in making correlations between personal profile information and trends in opinions regarding the following sections of the interview. “Origin” was also gathered to judge the accuracy with which my small sample (36) represented the composition of the entire community.

2. Community strengths; what they value about living in Palmares II.

This section of identifying what individuals value in the community may be significant in determining the direction of future development efforts.

3. Community Unification- roles and responsibility of organizations; involvement in community concerns; opinion of change over the last 12

3. Problems, Priorities and Recommendations for Change: what are the problems, who is impacted, who is concerned, what is being done, what should be done to mitigate the problems, who should be involved. What is the opinion of further community development, what aspects do residents want?

This section was constructed to allow interviewees to discuss their priorities for future development.

**Results**

**1. Personal Information**

Of the 36 interviewees, 20 were originally from Maranhao; 11 were from other regions of Para; 2 were from Goias, 1 was from Piaui, 1 from Ceara, and one was from Bahia. This is closely representative of the community in whole, as demonstrated by the chart below.

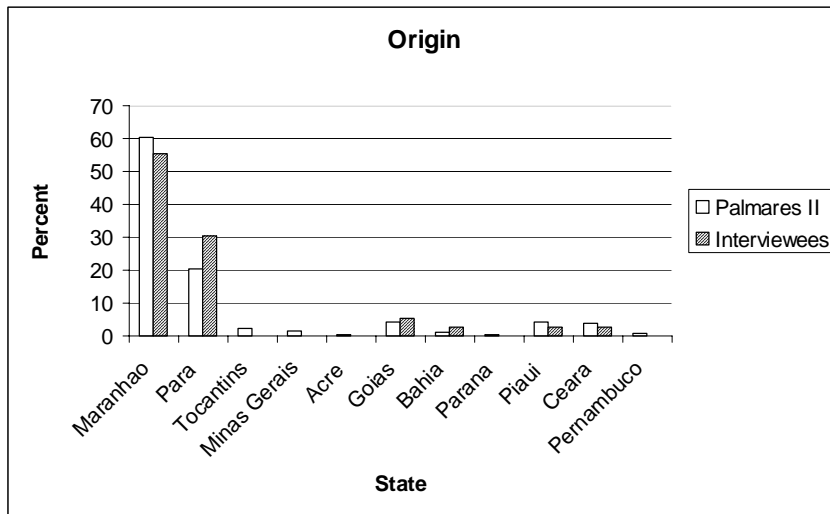


Figure 6- Community and Resident Origin

The majority of interviewees became involved with MST after they left their hometown, mostly in Maranhao and other Northeastern states, due to escalating social, economic, and environmental challenges. Most moved to the rapidly expanding cities of Maraba, Curinopolis, and Parauebas, as they had heard of job opportunities in the

mining industries and on the agricultural fields of large landowners. One interviewee explained that 80% of the settlers in Palmares II had originally come to the region 15 to 20 years ago to work as garimpeiros, mining for gold. When nothing panned out in the mines, they went back to agriculture, hoping to strike it rich off of the land.

When asked how it was that they chose to become involved with MST, many interviewees gave the impression that the choice was a fairly simple one, as almost all were poor and struggling for food, shelter and basic necessities and they all saw the MST as one of the few opportunities to make a life for themselves and their families.

## **2. Community Strengths**

A sense of resident camaraderie and unification were stated in almost every interview as the most important strengths in Palmares II. Many emphasized that “after twelve years, everyone knows everyone and thinks of the community as a large family” (Interview, November 25, 2006). Interviewees described how they cherished the open atmosphere, with people flowing in and out of homes, and many emphasized the importance of communal responsibility for neighborhood children.

The church was mentioned in nine (9) interviews as an important attribute, which many people explained as part of the foundation of the community. Interviews with coordinators at the Catholic and Evangelical Church explained how the church and MST worked as partners in organizing efforts and enforcing movement ideologies and community concerns. Youth concerns were also mentioned as one of the more relevant strengths of the Evangelic church; as they focus on motivating youths to value their culture and contribute to the community, as well as denounce things such as violence, drug use, and prostitution.

The importance of the school was also emphasized in eight (8) interviews. Many explained how the lack of an official communal space made the school a common “hang out”, as well as a fundamental cultural asset; through regular classes, after school programs and special events. Project “Resgatando a Cultura Popular” (Preserving Popular Culture) is one such program, which provides an outlet for students through dance (carimbo, hip-hop, and capoeira), music, theater, art, etc.

The other trends of community strengths include: the calm and tranquility, soccer and the natural environment.



### **3. Community Unification**

Almost all of the interviewees described how the process of the occupation and settlement has been valuable to community development in that “after becoming an assentamento there remained a strong energy and force of people fighting for their rights” (Interview, November 23, 2006). One woman explained how she was “proud of the courage of the people throughout all of the hardships and fighting” (Interview, November 22, 2006). Many accredited the current state of development to this unification and collective sense of fighting for social justice; demonstrated through such statements as “everything that exists in the community is there because the people wanted it and fought for it. Palmares II is in a good position because everything that the people wanted they now have or are developing- like the school, the health post and ambulance, youth programs, stores, transportation systems, all of it” ( Interview, November 27, 2006). Another interviewee explained how the community’s history has had “lasting social impacts on the mentality of organizing and fighting for social rights”. He too was proud of the progress the community has made, in terms of education and health facilities, and said that the organizations are powerful in achieving goals. (Interview, November 24, 2006)

Many interviewees also expressed concern for the degradation of community connectivity and unification over time. After receiving land many residents reverted to being much more individualist and thus less invested in community organizing and activism. Those non- involved with community organizations claim that “they” (the MST and community leaders) don’t do enough; while those that have remained involved feel a lack of support from the greater community. One community leader explained how “there are many people who care (about community issues) but don’t do anything. After the initial occupation– many people were happy just to have land and became only concerned with credit. Now, they still want more social conquests, but think that it is the homework of others” (Interview, November 28, 2006). This dynamic between general residents and community leaders was well supported by interview discussions, as many of the randomly selected individuals said they stopped being very active in the association after they started working on the land. Most of them then said that the association was insufficient in taking care of community needs and that it was not doing

enough to stimulate continued development, resulting in the current community stagnation. Community leaders, on the other hand, explained how efforts would never be sufficient for all of the development needs, and that it was all part of an ongoing process, and the continuation of fighting was the essence of true agrarian reform. (Interview, November 28, 2006)

Support for this dynamic is demonstrated by: (Out of a total of thirty six (36) interviewed):

- Six (6) said that the association was sufficiently providing for community needs,
- Fourteen (14) said that the association has helped a lot in community development,
- Thirteen (13) said that the association needs more resident involvement,
- Twenty (20) said that the association needs to do more for the community, and
- Twenty- seven (27) said that the government needs to provide more support for development of Palmares II.

These numbers represent information volunteered by the interviewees when asked about their opinion of the MST and what they felt should be done concerning community problems; numbers may be different had these specific questions been asked to every individual.

Another important component of community organization regarding the dynamic between the association and the general residents is the influx of new residents in the community who are not connected to the MST and do not have previous experience in an agrarian reform assentamento. One long term resident explained this difference as “those residents who moved to Palmares II after the occupation don’t understand the fight for land and don’t get involved or care about community concerns because they don’t have the same connection to the place and the people” (Interview, November 23, 2006). This was not, however, a universally supported claim, and many interviewees, general residents and leaders alike, explained how it was important to keep open to new community members, as “many times newcomers bring new life to community activities and organizations and are more involved in programs than those who have lived in the community since the initiation” (Interview, November 24, 2006) This is also supported by a partial interview, not included in the full thirty- six, with a man who was just

moving to Palmares II because he enjoyed the people and the sense of community and though it a good location for opening a pharmacy (Interview, November 27, 2006).

#### 4. **Problems, Priorities, and Recommendations for Change**

The chart below outlines the community problems, and their respective priorities, identified by interviewees. While most interviewees went through a laundry list of community development needs throughout the course of the entire interview, this chart represents the priorities discussed when asked directly about the problems within the community.

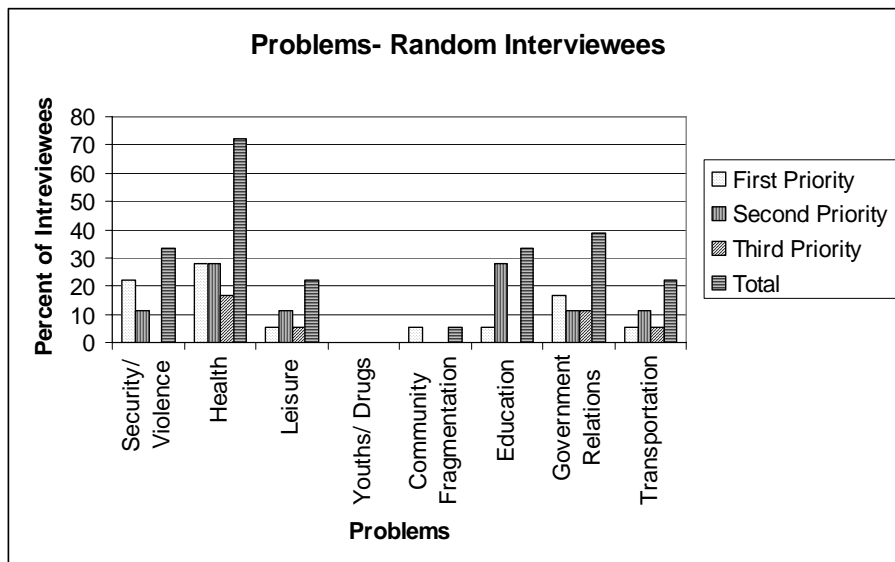


Figure 7- Problems- Random Interviewees

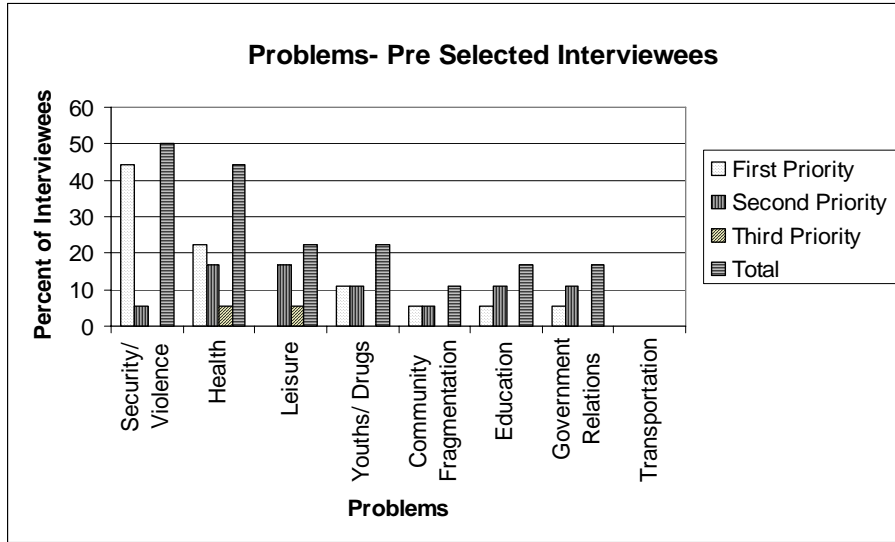


Figure 8- Problems- Pre selected Interviewees

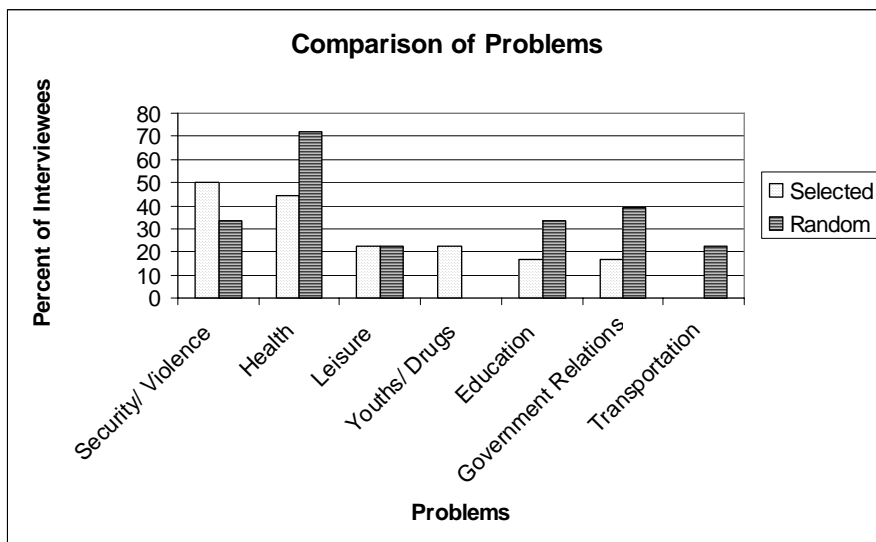


Figure 9: Comparison of Problems, Clara Ward

Health and sanitation was identified by a total of twenty – one interviewees as one of the most prevalent problems in the community, mentioned as first, second and third priorities 9, 8, and 4 times. Many individuals explained that the health post was inadequate in servicing community needs due to insufficient medical supplies and qualified health providers. One mother of seven described how many times they would have to wait all day and still never see the nurse due to the amount of patients (Interview, December 1, 2006). Many residents go to Parauapebas for medical treatment, which is seen as more of an inconvenience than a real hindrance to proper care.

Three interviews with health care workers (one general technician, one malaria specialist, and one dengue specialist), supported the sentiment that health care services were insufficient for community needs. One general technician explained how Palmares II was “not quite ready for their own hospital, and that their real priorities are the government van increasing visits to 4 times a week and more education programs for both general public and for heal care training. The community also needs government assistance with organization, which is difficult because the municipal itself is lacking structure and is stressed for people and resources” (November 23, 2006). Other health post needs identified include an increase from eight to ten employees, expansion of physical building space, and enhanced ambulance availability. Also recommended was the expansion of education programs, which have proven very effective in harnessing specific health problems. The dengue worker, for example, after visiting 125 households per week for the last 20 months has seen a decline in the number of cases from two to three a day to now once a week due to heightened resident awareness of prevention tactics. (Interview, December 1, 2006)

Frequently mentioned sanitation problems include resident hygiene, poorly designed sewage and drainage systems, water treatment, and improper trash disposal. As of now, there is no plan for sewage treatment or drainage management, as it is one of the more expensive elements of civil engineering. Past actions for improvements in sanitation have been focused on education; through the school, the health post, and the church; and recommendations were for the continuation and expansion of such programs.

Security issues were identified by a total of fifteen interviewees, with 12, 3, and 0 ranking first, second, and third priorities, respectively, with a difference between selected and random interviewees of 8:4, regarding the number of individuals who ranked security as their first priority problem. Theft, violence, drug use, and prostitution were all described as rising social problems that were said to originate from both within the community itself and from outsiders coming in. Most associated these concerns with population growth and the increase in outsiders in the community, many blaming the community association of MST for not being more organized and not implementing a police force. There was a wide mix of opinions on what should be done to prevent these problems from escalating, as many residents expected continued expansion of the

community, with disorganized population growth and thus increased social problems. Seven of the total interviewees said that they did not want continued community development because of these social problems, and some even believed that the community should be closed to non-family members moving into Palmares II. While some said they did not know what to do about these problems, and felt that they were inevitable given the disorganization of MST; others, usually more involved with the movement, explained that it was a slow and difficult process, but they were working hard and were optimistic for the future organization and security of the community. There was also a trend for individuals concerned about community unification and change over time to be more concerned about future development bringing more security issues and social problems.

Education: As one of the primary elements of social reform through MST's ideology, education is simultaneously seen as both a main strength, when compared to other assentamentos, and one of the main problems, or development priorities- when compared to its potential. Lack of space, material, and teachers were mentioned by many interviewees as issues that should be addressed by the municipality, through intensified pressuring from the association and the community representative. More specifically, residents want enhanced infantile education, more division between age brackets, and a lesser ratio of students to teachers. One interviewee explained how, for him, "it wasn't so much that the school needed more teachers, but better qualified and educated professionals". He explained how students should have available to them more opportunities for continued and specialized professional education, especially regarding agriculture (Interview, November 29, 2006).

Youths and Adolescents: Many residents expressed concern for the youths in the community regarding everything from issues like drug use, violence, prostitution and teenage pregnancy; to not being involved with community heritage or "culturally rich" past times; to not having sufficient incentives or opportunities to live and work in Palmares II after finishing school. The organization "Filhos da Terra" was described as a well intentioned effort at involving adolescents in environmental concerns, through tree planting and agroecology education seminars, that just never really took hold and remains relatively small. Interviewees explained that in addition to the advancement outlined in

the education section, they would also like to see more variation and availability of programs so as to appeal to a greater section of youths. Recommendation for different programs include: dance, music, arts, women's groups with cooking and crafts, gardening, and raising animals. Formation of such programs would need to start with identification of interested and capable coordinators, as well as funding for the long term duration of the program (Interview, November 25, 2006). This "long term funding" element has proven to be very important in previous initiatives, as highly supported projects have come to a dead stop after a set time period of outside funding has been met (Interview, November 27, 2006).

Leisure: Many interviewees expressed interest in the creation of a communal ground with infrastructure for recreation and leisure; emphasizing the need to follow through on the community plaza. Desired construction includes a green space, a play ground and sports fields, benches and picnic tables, lights, and a gazebo. Many explained how there is nowhere to take children on the weekends and there is very little for them in the community, in terms of clean and safe areas to play. One community leader emphasized the importance of the plaza because of the current, and very popular alternative; bars, which are in every section of the community including directly in front of the school entrance. Other interviews expressed that recreation and leisure facilities many also provide more stimulating alternatives to the current pastime of watching hours of television and playing video games. Almost all interviewees held the municipality responsible for failing to implement the plaza and suggested that the community representative focus on pressuring the mayor. One woman who lived next to the reserved space said that many people are interested, some have tried, though after twelve years nothing has happened because there aren't enough financial resources.

Transportation; in terms of availability, costs, and condition of access roads were mentioned by four randomly selected interviewees as key priorities, and was also casually mentioned by many individuals throughout the course of the interview. The main concerns were the paving of the main access road, a frequently running onibus between Palmares II and Parauapebas, greater frequency of buses between the vila and the lotes, and more affordable ambulance service to the hospital.

Government Relations: Aside from the twenty- seven interviewees who said that the government needs to provide more support for development of Palmares II, three (3) selected and seven (7) random interviewees focused on poor government relations and support, in and of itself, as one of the largest problems hindering development of almost all priority needs. A trend existed for the selected interviewees to discuss the role of government in assisting with problem management, though almost all also provided other possible solutions that could originate from within the community. The trend for randomly selected interviews was to either blame government for all problems directly, or to mention a problem and then say that the government was entirely responsible, often blaming the association for not doing enough to influence policies. One interviewee explained how all of the problems in Palmares II are because of government corruption and developed nations like the US not giving them enough financial support; blaming their littered streets on internationalization (Interview, November 2006).

## **Section II- Environmental Consciousness**

### ***Background on Projects and Programs Intended to Enhance Environmental Consciousness-***

The school itself does not have a specific group focused on environmental issues, nor does it have a professor or coordinator working specifically with environmental concerns. There do exist a variety of programs such as “Resgatando A Cultura Popular”, which often include elements somewhat connected to raising environmental consciousness; for example, the presentation of crafts made from natural and recycled material (Resgatando a Cultura Popular Pamphlet, 2006)

“Terra Vida” is a community cultural group of forty individuals who partake in activities such as presentations on the development of Palmares II. The group focuses on educating both youths and adults about alternative land uses and the value of environmentally conservative practices. The group is currently going through difficulties and was described by many as being very small and not very powerful or influential on a large number of residents. (Interview November 24, 2006)

“Projeto Replandando A Vida” is a program sponsored by AESCA (Associação Estadual de Cooperação Agrícola, or State Association of Cooperative Agriculture), a division of INCRA, designed for “environmental education for a new generation of practices in the human- nature relations in the Assentamento of Palmares” (Projeto Replandando A Vida, 2003). This project involves a year long assessment study of the social and economic implications of current land use, with an end goal of creating an



environmental management plan that fits within the constructs of current community dynamics. Their stated mission is to “stimulate agricultural, communal, cultural, economic, and social development; promote the exchange of experiences of agricultural development, stimulating the development of alternative technologies in rural communities; support the MST in Para state; realize courses of formation in more diverse areas, giving a greater reference to the practices and initiatives of agro-ecologists; enhance education of youths and adults, capacitating technical, political and environmental; stimulate more forms of cooperatives; the construction of alternative practices based of agro- ecology, intended for sustainable development for community families; appraise feasible alternatives of agro- ecology practices for the families” (Translated from “Projeto Replantando A Vida”, 2003) Palmares II is currently waiting for the initial assessment stage to be complete, after which they will receive documentation outlining a comprehensive plan for future community development. This period of analysis is expected to take a year to a year and a half, with no other programs expected to be implemented during this time.

During the year of assessment, small programs were initiated in the community by AESCA workers from outside cities. A woman’s group was constructed by the joint work of three workers from Maraba and fifteen community residents. Forty women were involved with an “office of alternative foods”, where they took part in activities like planting gardens and learning how to make yogurt, preserves, crafts, and other domestic goods. When the year of outside assistance was concluded the program came to a complete stop, as the 100,000 R of funding was only for that first year and the program did not have the resources to continue. (Interview, November 27, 2006) Another component of “Projeto Replantando A Vida” was planting trees in an area near the school which have since burned down (Interview, November 25, 2006).

### ***Interview Structure***

After discussing community development patterns and priorities, the same thirty- six individuals were also interviewed regarding environmental consciousness, in terms of:

1. Awareness of Problems- What is the condition of the environment, what are the problems

2. Awareness of Role within Ecosystem- and what is the importance of the environment; what priority does conservation have in the scope of all community concerns; what is the connection between environmental conservation and other social problems?

3. Sense of Responsibility for Environmental Conservation- Actual involvement in environment conservation initiatives opinion of what should be done; who should be involved

### **Results**

1. Awareness of Problems- In describing the condition of the environment in and around Palmares II, 70% of the interviewees responded that the condition was very poor, 22% had no concern, and 8% did not understand, as demonstrated by the chart below.

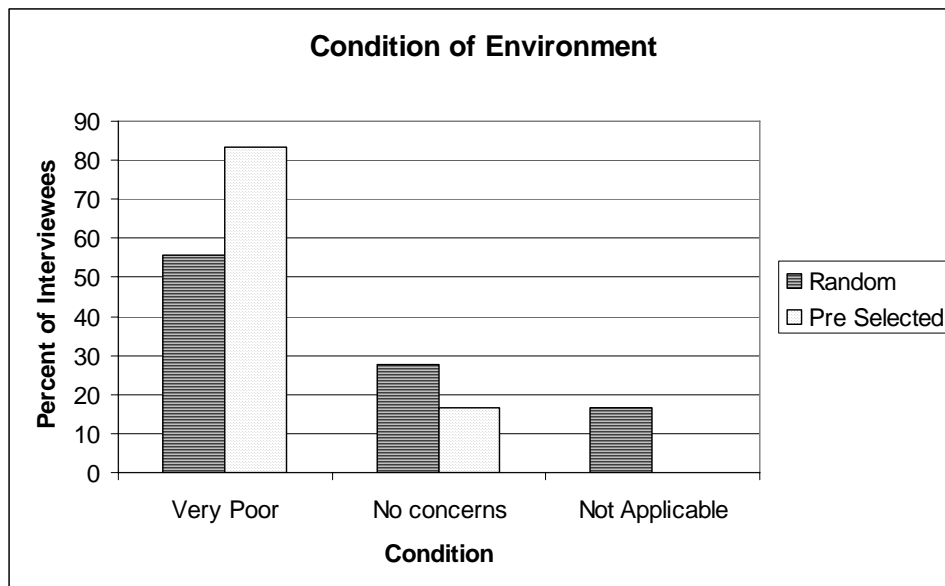


Figure 10: Condition of Environment, Clara Ward

Of the twenty-five interviewees who said the environment was very poor, almost all very emphatically described the severity of ecosystem degradation, listing a range of convoluted problems. As demonstrated in the chart below, many of the eight interviewees who were not concerned with the condition of the environment still knew about and listed problems within the community, they just didn't see them significant enough to really impact overall ecosystem health. The three non-applicable interviewees could also be classified as not being concerned, as they would only talk about aspects that directly benefited or limited them. For example, one older couple described how the environment was getting better because of the construction of more bridges making their

fields more accessible (Interview, December 2, 2006). Another woman explained the condition in terms of land rights, explaining that the condition was bad because her sister had seven children and no land (Interview, November 27, 2006).

The specific problems mentioned are outlined in the chart below:

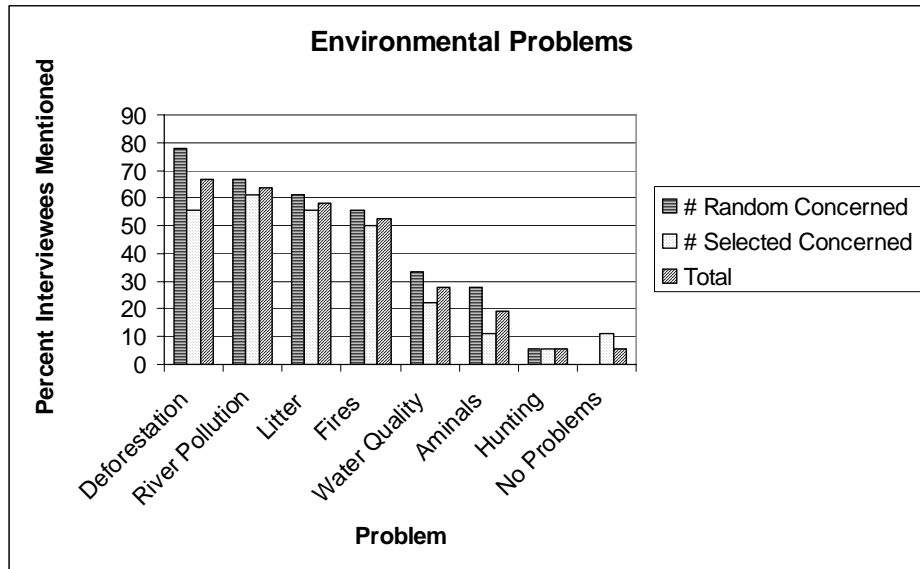


Figure II: Environmental Problems, Clara Ward

Many of the specific problems were associated with lack of resident education and awareness regarding environmental sciences, problems, and alternative land use possibilities. This was correlated with the lack of a structured administration to provide information and incentives to residents, which was considered a responsibility of the government and the association alike. Education was highlighted by four (4) random and eleven (11) selected interviews as the base problem from which originated the more specific problems.

Deforestation was the most frequently mentioned environmental concern, often listed together with slash and burn agricultural practices and poorly controlled fires. They described this as a problem both within the community and the region as a whole, describing how it is deeply embedded in the culture, with individuals viewing the forest as an obstacle to overcome through clearing to allow for agriculture. Many expressed concern that land owners often removed more forest than necessary, did not cater to the physical characteristics of their land (such as leaving hillsides and river banks), did not

take advantage of forest extractive resources, and were careless when burning. A total of seven (7) interviewees expressed concern for the animal abundance and diversity that was jeopardized by deforestation, also highlighting hunting as a threat.

River pollution was an equally significant concern for interviewees, many of who explained that “water is life, the rivers are everything”, emphasizing the necessity of clean water for drinking, bathing, agriculture, health in general. (Interview, November 25, 2006). Sources of pollution identified from within the community include: people using the river directly as a dump for trash, dead animal disposal, keeping livestock on the river banks, uncontrolled dogs roaming the community, and uncontrolled storm and waste water runoff flowing into streams and rivers. Few identified the problems originating from the greater region and the city of Parauapebas.

Litter was also a frequently mentioned problem acknowledged in combination with poor drainage and animals in the streets. It was listed more for the health concerns than actual environmental implication, though the majority of interviewees who mentioned trash as a health concern also mentioned it as an environmental concern (eleven out of eleven selected, and six out of ten random).

#### Awareness of Community’s Role within Ecosystem

After discussing the condition of the environment and the problems they deemed important, interviewees were asked to rank the importance of environmental conservation both in and of itself and in comparison to the totality of problems and priorities within the community. All interviewees, including those that did not list any environmental problems and said they were not concerned about the current condition, unanimously stated that environmental conservation was extremely important. The majority were quick to list ecosystem services such as water purification, maintaining rain cycles, helping in agricultural production, and providing areas for leisure and recreation. A handful even talked about CO<sub>2</sub> sequestration and the importance of global temperature regulation and maintaining biodiversity (Interviews, November 24, 25 and 27 2006). This level of importance, however, was not maintained when environmental issues were placed in context of all social concerns, as represented by the chart below:

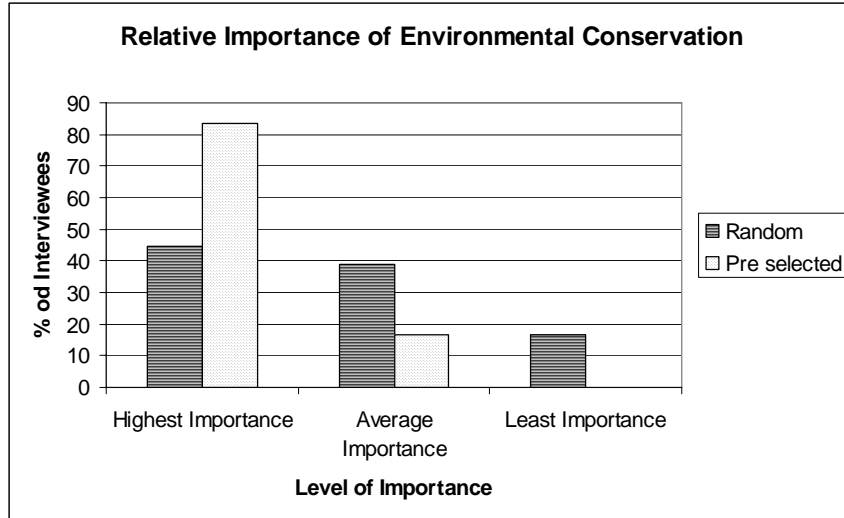


Figure 12: Relative Importance of Environmental Conservation, Clara Ward

While 83% of the selected interviewees considered environmental conservation to be of highest importance, only 44% of random interviewees maintained highest priority ranking, with 38% ranking it of average important and 16% ranking low relative importance.

**Sense of Responsibility for Environmental Conservation**

*Familiarity with Conservation Initiatives:*

The chart below demonstrated the number of individuals who were familiar with efforts or organized projects for environmental conservation.

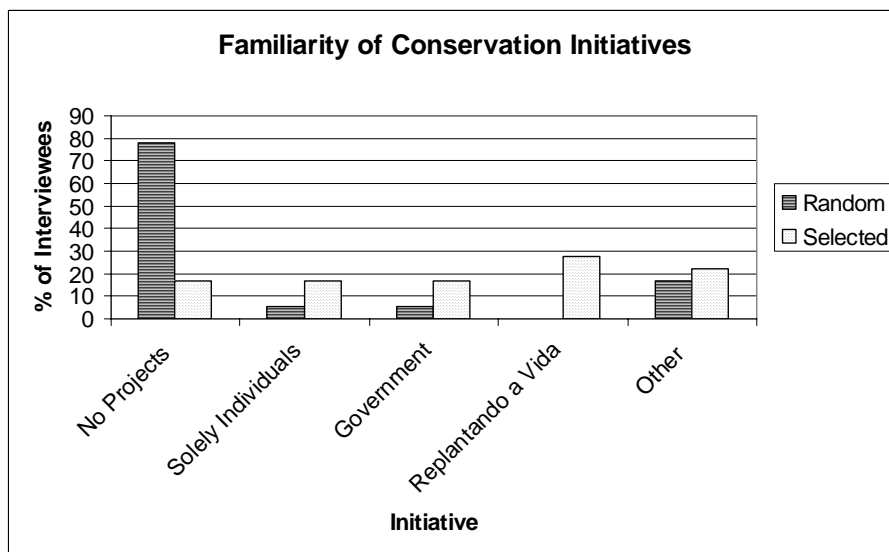


Figure 13: Familiarity of Conservation Initiatives

While 17 were quick to explain that there was absolutely nothing, others described a mix of failed or poorly supported community and government programs. One man explained that he knew of “no initiatives that came from the heart” (Interview, December 2, 2006)

Four interviewees explained how the only honest conservation efforts were from individuals within the community who have taken the initiative to create reserves and areas of reforestation on their privately owned land. Government programs were described as very weak and mostly all talk, no action; though still propaganda none the less. The “other” category includes projects such as CEBRAL’s program for agro-ecology orientation with farmers, Companhia Vale do Rio Doce’s reforestation project, and various reforestation programs that were not defined and unassociated with a specific group or organization.

Despite two of the randomly selected interviewees wearing “Replantando a Vida” tee-shirts, none of them had heard of the project. The five selected interviewees who had heard of it were all very active community leaders and administrators for the school. Even among these five individuals there seemed to exist a confusion regarding the process of; assessment, wait for analysis, and then implementation. Only one community leader was able to explain that they were still waiting, while everyone else explained how the project had fallen through and was never completed. One woman who was very active in the coordination of the woman program said that she is now very hesitant to invest any more effort in that type of project because of the difficulties and frustration she experienced with no end result. (Interview, November 27, 2006)

#### Level of Activism and Actual Efforts-

The level of actual involvement was difficult to gauge as there were essentially no organized units in which residents could be involved if they so chose. The majority of those concerned stated that they would like to be involved with conservation initiatives if a group existed. One interviewee explained how “even when people are concerned and would like to have an organization in which to participate, they don’t have the personal initiative to create that organization and are waiting for someone else to construct it for them” (Interview, November 23, 2006)

One woman had played a key role in organizing “Terra Vida”, and many of the teachers had been involved with cultural programs that also had an environmental component, the large majority had not been involved with any form of environmental conservation project or program. The lack of an organized group, however, did not mean that there was no outlet for actions supporting environmental conservation. While interviewees were not asked many questions regarding their individual land use practices, everyone interviewed either had their own land or had family with land, and many had personal experiences to share regarding environmentally conservative choices they had made. Many interviewees voluntarily drew maps of their plots, showing where they had left sections of forest, created reserves, protected river banks, etc. One of the selected interviewees who was especially knowledgeable about natural sciences had invested 73,000 R of his own money in a reforestation project on his private land and after three years currently has twenty one acres of mono culture forested “teca”, as well as 2,700 brazil nut saplings. A tour of his plot also showed where he had built a culvert to revitalize a stream to its previous condition before being barricaded after road construction (Interview, December 3, 2006).

*Opinion of Current Conservation Initiatives and Future Plan of Action:*

The majority of interviewees expressed that current efforts were not sufficient, emphasizing the need for greater community organization and education to enhance overall environmental consciousness. While many interviewees also listed street and river clean ups and reforestation projects, the focus was mostly on education and enhancing awareness of problems and their implication in the community. For this education and organizing for environmental protection, interviewees held responsible a combination of government, MST, and the residents themselves; as demonstrated in the charts below:

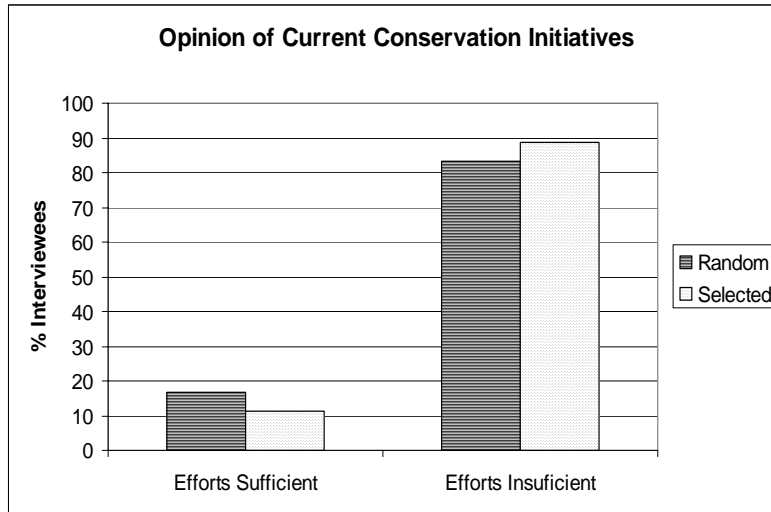


Figure 14: Opinion of Current Conservation Initiatives, Clara Ward

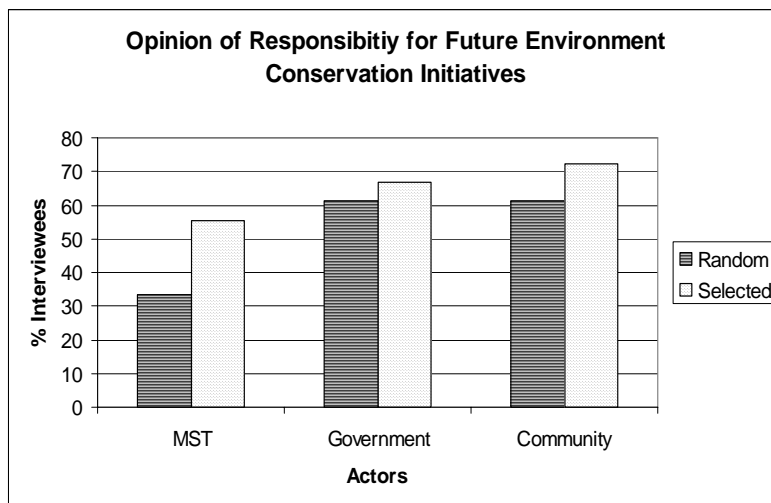


Figure 15: Opinion of Responsibility for Future Environmental Conservation Initiatives, Clara Ward

Both random and selected interviewees emphasized the interdependence and necessity of integrated efforts between government, the MST, and the community residents. While interviewees explained a variety of sequences for the creation of an organization, the enhancement of environmental consciousness, and real conservation actions; most recognized government support for trained professionals and financial incentives as an important foundation, to be enforced by a small group of interested individuals, who would then work together to motivate greater social change.



Other recommendations were based around the expansion of current programs within the church and cultural groups to focus on raising awareness of the connection between the environment and the community. One very enthusiastic interviewee also suggested that efforts start with a community blockade preventing lumber trucks from passing (Interview, November 22, 2006).

*Strength of Unification aiding in Environmental Conservation*

A total of 13 interviewees, both random and pre-selected, voluntarily explained that despite the sense of apathy that is expressed by a large section of residents, they are still optimistic for future environmental conservation. This optimism is a legacy of past conquests in community development, with interviewees describing how the community has already proven ability of the community to unify and organize, fight for what they consider their rights, and succeed in accomplishing their goals (Interviews November 23, 24 28). While the most obvious demonstration of this capacity is the initial occupation and expropriation of land, many interviewees also cited smaller examples of community conquests. One man explained how there used to be a large problem with cutting down all of the acai palms, which stopped after the community took notice and invested effort in preventing further deforestation. He said he is “confident in the future conservation of the environment because the community is capable of achieving what they set their mind to” (Interview, November 24, 2006). The question for these interviewees is thus not the capacity for conservation, but creating the motivation; which is all part of the ongoing process of community development (Interview, November 28, 2006).

**Section III: *Relationship between Environmental Consciousness and General Community Development Priorities***

The structure of interviewing, with the section on environmental consciousness coming after the discussion of general community development, provided an interesting representation of residents’ true priorities and level of environmental consciousness.

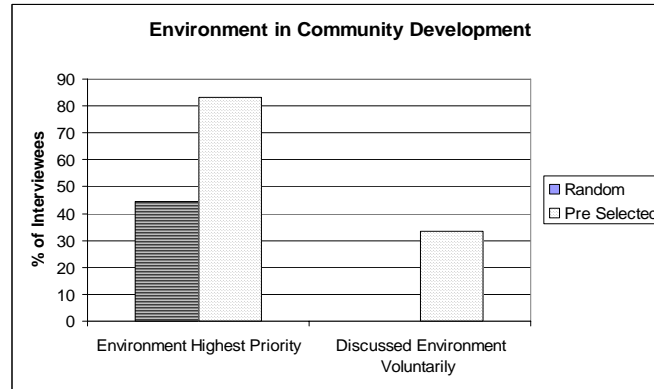


Figure 16- Environment in Community Development, Clara Ward

Despite the eight (8) randomly selected interviewees who ranked environmental conservation as one of their highest priorities, none (0) of them mentioned any environmental issues during their explanations of community problems and development priorities. Of the fifteen (15) pre-selected interviews, a total of six (6) voluntarily discussed environmental concerns. This difference demonstrates how even though interviewees were aware of both environmental problems, and their connection to the state of the ecosystem, they only expressed true concern when prompted and were not actively conscious to the environmental problems around them or to the implications these problems had for the community in general. This is also supported by the majority of interviewees voluntarily explaining that residents don't respect for or care about the environment, (stated by twelve individuals in each group, (24) in total) One randomly selected interviewee explained that "most people understand and know that what they are doing is bad for the environment, but they just don't care" (Interview, November 28, 2006). This disconnection between awareness and concern is likely associated with the limited sources of environmental education, with the school as the only structured unit that invests continual effort in raising awareness. Students, both youths and adults alike, understand the threats and the importance of the environment because they are exposed to what many referred to as "environmental propaganda". However, the current environmental education curriculum fails to instill a lasting sense of stewardship due in large part to the lack of professionals working directly with environmental sciences as well as insufficient teaching staff and material available. This was further supported by an informal conversation was on of the lower level school professors; who explained that he, like the majority of the community, didn't care about the environment.

This lack of acknowledgment of environmental problems during the section on community development also suggests that even if residents do in fact consider environmental conservation a priority, they may not necessarily classify the natural environment as an element of the community, seeing it instead as a separate entity not connected to the overall condition and development needs of Palmares II. This is supported by a trend for the 83% of pre-selected and 44% of random interviewees who ranked environmental conservation as their highest priority to stress the interconnection of environmental conservation and sanitation and health, saying that, for them, “there is no separation between the two” (Interview, November 23). On the other hand, those 17% of pre selected and 38% of random who ranked conservation as average, and the 16% of random who ranked it of least importance were often more concerned with the problems of security, transportation, enhancing physical development of the community, and other aspects of health care, like improving medical supplies and infrastructure. This suggests that overall environmental consciousness is enhanced by awareness of the direct health impacts of environmental problems of poor sanitation.

## **Part VI: Analysis: Incorporating Environmental Management into Community Development Plan**

### ***Building a Foundation for Enhanced Environmental Consciousness***

Given the large number of community priorities, the high cost of fulfilling these priorities, and the limited funding available for developmental projects; recommendations are based on maximizing the community services provided to simultaneously achieve both social and environmental objectives.

#### ***Expansion of Health Care Education Programs***

Education programs designed for isolated health problems, such as the dengue program, have proven effective in reducing target problems through enhancing awareness of causes and preventative tactics. Many of the health concerns in Palmares II are strongly correlated with community hygiene and sanitation, which was also shown to be the strongest cause of concern for environmental conservation. This suggests that investment in the expansion of the variety of programs and number of workers would be an effective means of simultaneously reducing sanitation problems and improving community health.

### ***Professional Training Programs***

Professional training for teachers would be valuable in reducing dependency on outside funding and technical support. A group within the community itself that could direct and facilitate orientations on environmental issues would allow for the distribution of more information and would likely be better received and internalized by residents, as they already have strong communal relations. This training should be available for teachers within the school, as well as educators within the community who focus on all residents.

### ***Collaboration of Interested Individuals***

Though by no means a majority, there exists within the community a select group of individuals who are not only concerned but also motivated to effect real change for environmental conservation. Initial priorities of this small group would be based around pressuring the municipality and MST for support for the implementation of necessary environmental conservation programs. Instead of focusing on aspects that would benefit the environment directly, efforts should focus on programs for raising general community awareness, to first build a base that would be receptive to conservation initiatives; for example, instead of striving for financial support for alternative farming practices, which would likely be insufficient for long term conservation goals, efforts should be devoted to things like the previously listed professional training and health education programs. The collaboration of these individuals in the form of a structured group would also be beneficial in forming a base from which to attract and organize a larger section of the community)

### ***Possibilities for Community- Based Conservation Efforts***

There are a variety of smaller programs that are available for community members that do not require much funding or outside assistance: including

1. The organization of community cleanups for the rivers and streets in general
2. Community art / craft groups posting signs to raise awareness of environmental problems, with slogans such as “this stream is in your care” and “this is your drinking water”, as has been used in part of the US; also community murals with paintings of environmental issues

3. The community theater group performing a play about the need for environmental conservation
4. Community compost projects
5. Small scale reforestation projects open to the community in general
6. School field trips to areas such as individuals' private reserves to connect what student learn to personal experiences; also field trips to places just as Carajas mining project to demonstrate what is taking place around them; ideally contributing to a strengthen sense of citizenship.
7. Inviting guest specialists to talk to small student groups about area problems and their impact on Palmares II.

### **Part VII- Conclusion: Piecing Together Social and Environmental Priorities in the Ongoing Process of Community Development**

Agrarian reform communities such as Palmares II are often criticized for their environmental practices, as well as their lack of adequate sanitation systems, health care, education facilities, and minimally constructed commercial infrastructure; in fact, it seems that the only thing they do not lack is critics. While there is a solid foundation from which this criticism is based, there has also been a significant deal of success that is often under appreciated, such as the school and health post, electricity and running water, the creation of cultural groups and youth programs. When taken into consideration the desperate condition that the individuals in Palmares II started out twelve years ago, the current state of community development does seem to demonstrate true progress towards the enhancement of social equality and stability.

These successes, it is important to emphasize, were achieved despite an army of obstacles, with powerful land owners, government agencies, and endless corruption designed to ensure the failure of agrarian reform. It was only through the strength and passionate commitment of thousands of landless workers that assentamentos such as

Palmares II have been able to withstand such a wide range of challenges, and succeed in the development of real communities.

It is thus that the same ability and strength in organizing and fighting for all of the development successes they have experienced could very feasibly serve again to motivate a social change for environmental conservation. While previous progress may very well be paused for the moment, there are many within the community who are concerned about both environmental and social needs, waiting for the next stage of what they see as the ongoing battle for the social rights of justice and equality.

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## Annex

Figure 6- Origin

Origin	Total	Percent	Origin	Total	Percent
Maranhao	244	60.54591	Maranhao	20	55.55556
Para	82	20.34739	Para	11	30.55556
Tocantins	9	2.233251	Goias	2	5.555556
Minas Gerais	6	1.488834	Piaui	1	2.777778
Acre	1	0.248139	Bahia	1	2.777778
Goias	17	4.218362	Ceara	1	2.777778
Bahia	5	1.240695			
Parana	2	0.496278			
Piaui	17	4.218362			
Pernambuco	3	0.744417			
Ceara	17	4.218362			

Figure 7- Problems- Random Interviewees

Figure 8- Problems- Pre selected Interviewees

### Selected Interviewees

Problem	First Priorities	Second Priorities	Third Priorities	Total
Security/ Violence	8	1	0	9
Health/ Sanitation	4	3	1	8
Leisure	0	3	1	4
Youths	2	2	0	4
Education	1	2	0	3
Government Relations	1	2	0	3
Transportation	0	0	0	0

### Random Interviewees

Problem	First Priorities	Second Priorities	Third Priorities	Total
Security/ Violence	4	2	0	6
Health/ Sanitation	5	5	3	13
Leisure	1	2	1	4
Youths	0	0	0	0
Education	1	5	0	6
Government Relations	3	2	2	7
Transportation	1	2	1	4

Figure 9: Comparison of Problems, Clara Ward

Security/    Health    Leisure    Youths/    Education    Government    Transportation



	Violence		Drugs		Relations		
Selected	50	44.44444	22.22222	22.22222	16.66667	16.66667	0
Random	33.33333	72.22222	22.22222	0	33.33333	38.88889	22.22222

Figure 10: Condition of Environment, Clara Ward

Interviewees	Very Poor	No concerns	Not Applicable
Random	10	5	3
Selected	15	3	0

Figure 11: Environmental Problems, Clara Ward

Problem	# Random Concerned	# Selected Concerned	Total
Deforestation	14	10	24
River Pollution	12	11	23
Litter	11	10	21
Fires	10	9	19
Water Quality	6	4	10
Animals	5	2	7
Threats to Wild Animals	3	4	7
No Problems	0	2	2

Figure 12: Relative Importance of Environmental Conservation, Clara Ward

Interviewees	Highest Importance	Average Importance	Least Importance
Random	8	7	3
Selected	15	3	0

Figure 13: Familiarity of Conservation Initiatives

Figure 14: Opinion of Current Conservation Initiatives, Clara Ward

Figure 15: Opinion of Responsibility for Future Environmental Conservation Initiatives, Clara Ward

Interviewees	No Projects	Solely Individuals	Government	Replantando a Vida	Other
Random	14	1	1	0	3
Selected	3	3	3	5	4

Interviewees	Efforts Sufficient	Efforts Insufficient	MST	Government	Community
Random	3	15	6	11	11
Selected	2	16	10	12	13

Figure 16- Environment in Community Development, Clara Ward

Environment Discussed

	Highest Priority	Environment Voluntarily
Random Pre Selected	44.44444	0
	83.33333	33.33333