

## G-b. LOCALE CASE STUDIES: Santarém, Brazil

### INTRODUCTION

#### Santarém – General Background

Amazonia Legal is the largest region in Brazil, encompassing 61% of the nation's territory. However, it has the second smallest population, only 7.46% of the total, giving it the lowest population density in the country (4 inhabitants per km<sup>2</sup>).

The city of Santarém is located in Western Pará State, in the Lower Amazonas region, along the right side of Tapajós River and close to the water meeting with Amazonas River. It is a medium-sized city which has around 262 000 habitants, with the urban population accounting 186,297 and the rural population with 76,241 that includes the Santarém municipality and neighboring Belterra municipality combined. The city has 24,422 km, with 77 km of urban perimeter and 24,345.5 Km of rural perimeter. (IBGE, 2006; Santarém Municipality Website, 2007)

The border of the municipality on north is with Obidos, Alenquer, Monte Alegre and Curea, on south with Ruropolis, Aveiro, Placas and Belterra, on west with Juruti and est with Prainha and Uruara.

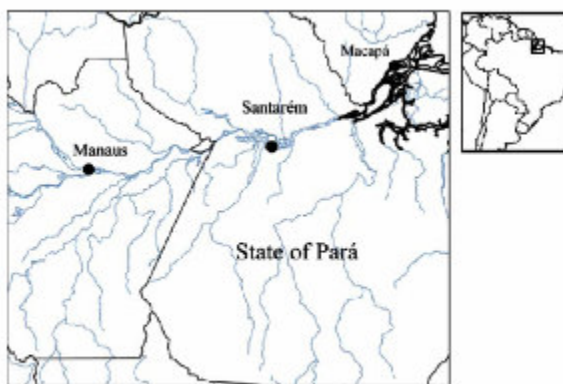


Figure 1. Map of the study area, Santarém, Pará, Brazil.



**Image 1:** Santarém localization, PA, Brazil (left); The urban and rural zone of Santarém, and the frontier (right)

The city is located in three river basins, the Tapajós, Arapiuns and Amazonas. The Arapiuns River Basin corresponds 28% of the municipality and it is a tributary of the Amazon River, which by the way, corresponds 20% in the territory of the municipality. The Tapajós River is the main water course for the city, coming from the south, making the city located in his right. (Santarém Municipality Website, 2007).

A large space of the city is occupied with native vegetation, 18,334 km<sup>2</sup>, which represents 69% of the municipality. There are three main groups of vegetation: Tropical Rainforest, Amazonian Savana and flooded lands (Várzea). The Tropical Rainforest is in the greater part of the city perimeter, 63,3%, and the Amazonian Savana just occupies 1,18% of the territory. The flood area (Várzea) occurs in the extreme north of the municipality, and part of the year this land is flooded by the Amazon River. This last type of vegetation represents 4,29% of the municipality area and it is a important region for the city, since have good capacity for plantation. (Albemaz et al., 1991)

At the present time, the economic activities are based on agriculture (cassava, rice, beans, corn, soybean, citrus, banana, pineapple, etc), with family producers and large production (especially soybean), extractivist activities (timber, rubber, fruits, Brazilian nuts, copaiba and andiroba oil), fishing, tourism and



some industrial activities. Small-scale agricultural production in the Santarém region is the main form of income and food for the majority of Santarém's rural residents. *Colonos*, the producers of small-scale agriculture, have lived in the Santarém and Belterra municipalities for 25-30 years since the federal colonization project. (Plan of Regional Sustainable Development of BR163 Area, 2004; Management Plan of the National Forest of Tapajós (FLONA), 2005; Cohenca, 2005)

### Economic History of Santarém

The Amazon regions have passed different economic cycles, which has enormous importance and reflex in the lifestyle and behavior of the local inhabitants of the Santarém regions, especially in their production patterns and eating habits.

The economic history of Santarém has begun with the activities of the local habitants of the region, Indian called *tupaius*, which used to practice the subsistence agriculture. The main products are: cotton, cará, sweet potato, crajirú, urucum, cunambi, timbó, hearts of palm (*euterpe oleracea*) and corn (*zea mays*) and cassava (*manioc*). The fishing and hunting are also including in the local economy in this period.

With the Portuguese arrival in the eighteenth century, a new scene starts to develop in the region. The military expeditions bring a different culture. The first economic cycle the Europeans initiated was the "Amazon Medicine Cycle" (Drogas do Sertão), where they searched with Indian's help for products such as cacao (*theobroma cacao*), cravo, salsaparrilha, baunilha, turtle eggs, pepper, bálsamo de copaíba, puxuri, anil, guaraná. The Indian knowledge was essential, since they were an excellent hunters and collectors, in addition to the knowledge they had about their own forestry. The Catholic missionaries (with the Jesuit priests' leadership) developed an important role in this process, since the Indians used the priest's housing for storage and shipping to Europe when possible.

Cacao, the main medicinal source in this cycle, was the basis of Santarém's economy for many years, when this became the main product for exportation in the 1734 and started the second economic cycle, the "Cacao Cycle". Since then, a new model of production was developed, where the fruit started being collected in the natural trees in the forestry.

The nineteenth century economy is characterized by the agriculture development and the business growth, with Brazilian Nuts as the main product, along with salsaparrilha, cassava flour, dried fish, cumaru, cocoa, rubber and cotton. The cotton was sold to England, Portugal and Germany. Cumaru was used in the medicinal and cosmetics industry. But the main product, with better acceptance in the world in the nineteenth century, was rubber.

The rubber extractivist business was concentrated in Santarém and Alter do Chão region, the Alto Tapajós region. This period was marked with an accelerated growth and urbanization of the city, with the regional economy growing, defining the third cycle – the "Rubber Cycle". This phase is characterized with the large-scale migration of laborers from the northwest region of Brazil, which created a new demographic profile of the region which remains until now (Leroy, 1991). This activity was fostered by the development of the automobile sector. In 1927, the government yielded 1,200 hectare for the Ford Motor company, initializing the development of two important cities for the region, Fordlandia and Belterra.

The production and export domination of these products extended until the first decade of the twentieth century when Asian rubber production – Malaysia, specifically – started to grow in business, becoming a important competition with the Brazilian rubber in American and European market. This impact caused economic and social crises in the region, which reflected strongly on business, agriculture, labor, and transportation service, and carries its effect until today.

In the twentieth century, Santarém has passed for different economics cycles. In the second half of the 1930's and in the beginning of the 1940's, the *juta* culture, used to confection sac to products packing,



started the fourth cycle, the “Juta Cycle”. This period established small factories and business related to it in the city.

In the 1940’s there was a noticeable increase in the log exportation as well as rice and cotton exportation. The rubber also returned as a viable economic option, since the Second World War there was an increase the demand for the product. But this scene was maintained only until the end of the War. In the 1950’s and 1960’s, the Pau-rosa (*Aniba rosaeodora*) exploration, a local species used in Chanel perfume, has boosted the business activity and given the support for new small factories.

In the 1970’s the fifth cycle begins, the “Pepper Cycle” (*piper nigrum*), developed by the Japanese colonizers. The Pará State was considered the biggest pepper producer of the country at that time. This period was shortly followed by the sixth cycle, the “Investment Cycle”, with a financial support from the Federal Government, which made possible the construction of important roads (BR 163 and the Trans-amazonica), airports, urban pavement, sewage and water pipes, and improving the overall infrastructure and the transportation service.

The seventh cycle is the “Gold Cycle”, with happened in the 1980’s – it has brought an intense change in the socioeconomic landscape of the region. This activity increased the demand for the Santarém services, to supply all the new migrants who had come to work for the mines. This period was also characterized by a fast growth of the population in the urban area and the development of business, services, factories and farming activities. The decline of the cycle provoked a deep crisis in the local economy in the following years. A new Paradigm started to be discussed and this economic model, which is dependent on the raw material exportation with low capacity of adding value, was condemned by the new policy.

Today, Santarém economy is focus on the service industry and business sector, such as eco-tourism, wood exploration, furniture factory, latex processing, rice and nuts productions, and so on. Of them, the majority of the income comes from farming, with the PIB (National Outcome) in the municipality of 30.4% in 2003. This consists of the production of rice, corn and bean, and the export products (soybean, sorghum and millet).

It is necessary to mention, in addition, that during all these cycles four activities always have been present: fishing, logging, cattle-ranching and family production.

(Santarém Municipality Website, 2007; Leroy 1991)

### Santarém Services

The North region of Brazil, principally the Amazon, presents the worst level of services of sanitation and infrastructure in the country, where only 2.4% of the houses have a sewer service and 13% access to water treatment. The infrastructure of Santarém is precarious for many neighborhoods, especially on the peripheral, outskirts of the city. Roughly 50% of the city’s residents has water treatment access and only 8% sewer service.

The Pará Sanitation Company informed the public that it serves 165,724 people with water and has 28,042 tubing working in the city, for water and sewer. A Federal Program (Program of Development Acceleration) is intending to give a support of \$77 million Real (about US\$35 million) to invest in the basic sanitation and infrastructure, mainly in the poor neighborhoods. The Government of Pará State will invest \$25 million Real in addition. (Federal Government Website (PAC), 2007; Santarém Municipality Website, 2007)



Image 2 - Common house in the region



The majority of the residents which lives in the peripheries have to deal with lack of sewage, stench, garbage on the streets, poor conditions of the streets, bad electricity service and the flooding situation during the rain season.



Image 3 - Open air tubulation (left); sewage tabulation loading (right)

Other Federal Program, *Light for All*, is investing to extend the electricity service to the remotest areas of the city. The program with electric concessionaires' partnership and Pará State Government will invest to guarantee the access of electricity for everybody by 2008. Today in Brazil, 12 millions do not have electricity; and in Pará State, Celpa Company, responsible for the electricity service, will provide 2,930 houses with this program (Celpa Website, 2007; Report of Environmental Report, 2005)

The Health Municipal Program carries 2 important activities: Family Health Program (Bolsa Familia) and Rural Health Attention. The first one has 27 teams, with different specialization, attending 12 neighborhoods in the city and 7 communities in the rural area (Cipoal, Mojuí dos Campos, São Braz, Tabocal, Mararu, Alter do Chão and Jacumin), reaching 30% of the population. The other program attends the remote riverside communities, which have more difficulty of access and transportation. The city has 71 public health posts, of which 4 are from Pará State and 67 are from the Municipality. In addition, there are 25 private posts (Santarém Municipality Website, 2007; Municipality Statistics, 2007).

The city has 31 pre-schools, 338 primary schools, 137 middle schools and 6 universities (three of them public). (Municipality Statistics, 2007)

## Population Profile

### Distribution

The municipal territory of Santarém, in the heart of Amazonia, has three large areas: the first one is Plateaus Santareno, which is made up of highland, hard plateaus. The second is the fertile valley, where the land floods half the year during the rain season; and the third the riverbank area, in which are located the ribeirinhos, or river-dwelling communities (Sa et al., .2005)

1. **Riverside** (*ribeirinha*) communities – along Tapajós, Amazonas and Arapiuns Rivers. Highly isolated and mostly subsistent. The family farm, where all the family members work in the field, is the main characteristics in these communities. While their production is mostly for their own consumption, they sometimes sell the excess production, or exchange the products among the residents of their community. The production is diverse, with annual and permanent fields (*roçados*), extractivist activity, fishing and hunting. Cassava and its derivatives are the main product . (Sa et al., 2005; Management Plan of the National Forest of Tapajós (FLONA), 2005; Cohenca, 2005)
2. **Floodland** (*varzea*) communities – this area floods half the year during the rain season, and therefore only harvests one half of the year. The other half, people make a living mostly by fishing. The majority of these residents have the fishing as the most important income generation and most of them are



member of Z-20 association, a fishermen's co-op. (Z-20, 2007; Sa et al., 2005)

3. **Plateau** (*planalto*) communities – this area is located in the Cuiaba-Santarém (BR 163) axle, with a strong presence of small producers maranhenses (from Maranhao State), gauchos (from Rio Grande do Sul State) and pernabucanos (from Pernambuco State), that arrived since 1960 attracted by the easy access for land and seduced for better life conditions. Medium and large crop producers live here and soy producers migrate here as well, buying the land off the small local crop producers. The small- and medium-size producers practice the family production, but the main vegetables production that supplies the city and the markets come from this region. Producers harvest year-round with alternate crop system, and therefore more active commercial activities in the city. They are also more active with the association participation (Laurance et al., 2004, Cohenca, 2005)

## Demographics

### Urban and Rural Population Since 1950's

Year	Urban	%	Rural	%	Total
1950	14.061	23,34	46.168	76,66	60.229
1960	24.498	26,59	67.646	73,41	<b>92.144</b>
<b>1970</b>	51.123	<b>37,81</b>	84.092	62,19	<b>135.215</b>
<b>1980</b>	111.023	<b>57,76</b>	81.180	42,24	192.203
1985	136.447	60	90.965	40,00	227.412
1991	169.665	64	95.440	36,00	265.105
1996	168.050	69,25	74.705	30,75	242.775
2000	186.297	70,96	76.240	29,04	262.538

Source: IBGE

### Urban and Rural Population Since 1980's

#### 3.1.2 População Segundo Situação da Unidade Domiciliar 1980/91/96-07

Years	Urban	Rural
1980	111.657	80.293
1991	180.018	85.044
1996	166.023	76.732
1997 <sup>(1)</sup>	165.773	76.617
1998 <sup>(1)</sup>	165.562	76.519
1999 <sup>(1)</sup>	165.350	76.421
2000 <sup>(2)</sup>	186.297	76.241
2001 <sup>(1)</sup>	188.038	76.954
2002 <sup>(1)</sup>	189.031	77.360
2003 <sup>(1)</sup>	190.301	77.879
2004 <sup>(1)</sup>	193.179	79.058
2005 <sup>(1)</sup>	194.439	79.573
2006	195.902	80.172
2007 <sup>(1)</sup>	197.353	80.765

Fonte: IBGE

Elaboração E Cálculo: SEPOF/DIEPI/GEDE

(1) População Estimada. (2) No Censo 2000 o IBGE seguiu critérios próprios para definir área urbana e rural.

Source: IBGE

## Gender Distribution

## 3.1.3 População por Sexo 1980/91/96-07

Years	Male	Female
1980	96.667	95.283
1991	132.367	132.695
1996	120.767	121.988
1997 <sup>(1)</sup>	120.585	121.805
1998 <sup>(1)</sup>	120.432	121.649
1999 <sup>(1)</sup>	120.277	121.494
2000	130.402	132.136
2001 <sup>(1)</sup>	131.621	133.371
2002 <sup>(1)</sup>	132.316	134.075
2003 <sup>(1)</sup>	133.204	134.976
2004 <sup>(1)</sup>	135.219	137.018
2005 <sup>(1)</sup>	136.101	137.911
2006	137.125	138.949
2007 <sup>(1)</sup>	138.141	139.977

Fonte: IBGE  
 Elaboração E Cálculo: SEPOF/DIEPI/GEDE  
 (1) População Estimada.

Source: IBGE

## Education

Year of study	1991		2000	
	Population	%	Population	%
Less than 1	30.424	19,3	17.570	8,9
1 to 3	57.933	31,07	45.813	23,21
4 to 7	64.133	34,39	69.967	35,45
8 to 10	20.171	10,82	33.471	16,96
11 to 15	12.319	6,61	25.393	12,87
More than 15	1.244	0,67	3.532	1,79
Undetermined	262	0,14	1.603	0,81

Source: Municipality Statistics, 2007

## Ethnic

	1991		2000	
	Population	%	Population	%
White	56.271	21,23	68.477	26,08
Black	5.378	2,03	9.286	3,54
Asian	347	0,13	256	0,1
Mix	202.206	76,29	181.396	69,09
Indigenous	388	0,15	1.325	0,5
Undetermined	-		1.799	0,69

Source: Municipality Statistics, 2007

## Religion

	1991		2000	
	Population	%	Population	%
Catholic	233.164	87,97	202.670	77,2
Protestant	25.745	9,71	45.392	17,29
Spiritic	0	0	255	0,1
None	3.081	1,16	7.889	3



Source: Municipality Statistics, 2007

**Services Access & Consumers Goods**

	1991 Population	%	2001 Population	%
Garbage collector service	10 790	22,12	28 077	52,64
Electricity	33 330	68,33	43 316	81,64
Phone	5 206	10,67	10 513	19,71
Microwaves	-	-	1 774	3,33
Refrigerator	27 479	56,33	35 090	65,79
Radio	35 634	73,05	42 126	78,98
Television	27 634	73,05	40 047	75,08
Computer	-	-	1 966	3,69
Car	3 615	7,41	7 376	13,83

Source: Municipality Statistics, 2007

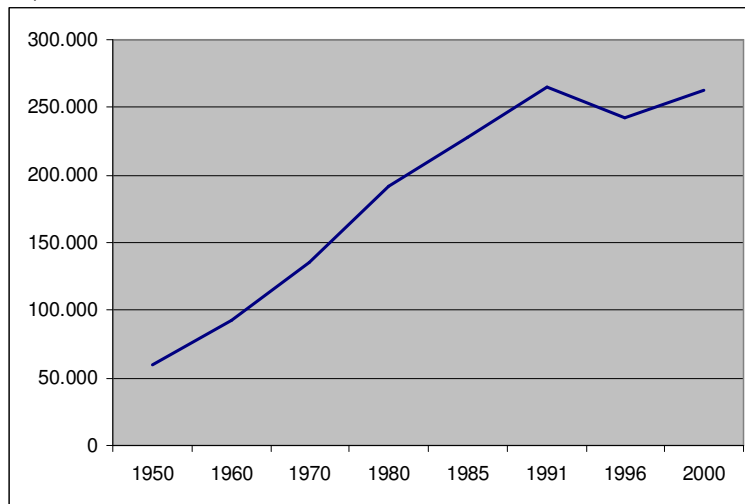
**Income in 2001 in minimum salary valuing R\$151,00**

Minimum salary	%
Less than 1	35,62
1-2	25,17
2-3	7,67
3-5	7,54
5-10	5,35
10-20	2,02
More than 20	0,97
Without any	15,65

Source: Municipality Statistics, 2007

**Use and occupation of soil and population dynamic during the last decades**

In Santarém, since 1960 with the construction of the BR230 (trans-Amazon highway), BR 163 and the beginning of the reform projects, it is possible to observe the increase on the population rate. With the plan of continuing the pavement work of the BR163, there is an even more significant increase expected (Sa et al, 2005).



Graph 1- Population growing with the BR163 construction

During the 1960s through 1980s the Brazilian government initiated the agrarian reform projects throughout the country that brought thousands of poor families to the Amazon. The first small farmer



settlements were established in the Santarém municipality during these decades. The colonization process was overseen by the National Institute of Colonization and Agrarian Reform (INCRA), which orchestrated recruitment, the application process, transportation to settlement areas, and land tenure and supplied household goods and construction materials (Moran, 1976).

In 1973, the construction of a new highway, the BR163, running from Santarém to Cuiaba, Mato Grosso, has serviced for the INCRA settlements (SEMAB, 2000). Paving highways offer the ambition for the colonization in the areas next to the road, increasing the impact on deforestation and urbanization in the surrounding area (Plan of Regional Sustainable Development of BR163 Area, 2004).

Paving leads the fast expansion of “endogenous” side roads, and the extension of logging and deforestation to a considerably greater distances (Image 3). It stimulates the claiming of these areas by “grileiros,” or land thieves who illegally appropriate lands and subsequently obtain legal titles, often based on corruption and falsified documents. Clear cutting is the most effective means of maintaining control of these land claims on the ground and justifying documentation for “legalizing” or “regularizing” claims in government land agencies such as INCRA and ITERPA (Land Institute of Pará). With the current status, the grileiros benefit for many reasons: (a) the forest devastation control is not efficient enough yet; (b) poor documentation process, with low fiscal action and easy falsification; (c) lack of fiscal action in the register office; (d) lowered price of the land and elevated income return in the activities on the land; (e) political interest (Plan of Regional Sustainable Development of BR163 Area, 2004; Sa et al., 2005).



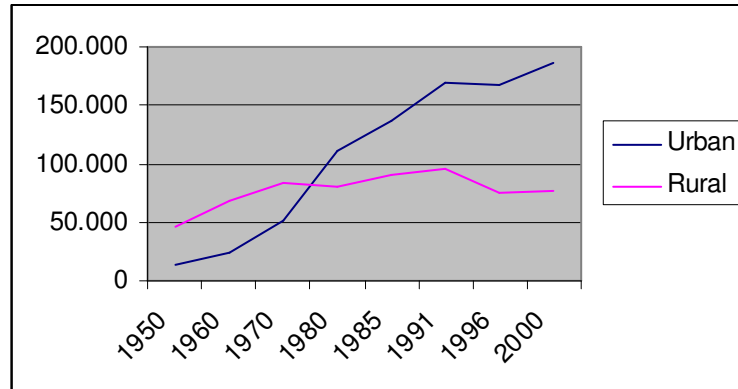
**Image 3** – The “endogenous” side roads created with Transamazonica built. Image from Google Earth, 2007.

The roads have made the access easier to the region, given better possibility for communication between different areas, increasing the demographical flux and the products circulation. The profile of Santarém has changed, as mentioned earlier, due to the highway construction. (Sa et al., 2005)

The changes in the dynamic of migration and the territorial occupation have modified the process of communities' formation and development. After the road construction, the communities' development started to focus their choices in regions closer to the road. Therefore, a new scene begun, where the plateau communities now have their family farms as a main economic activity and agribusiness, and in the ribeirinhas communities have horticultural extractivist vegetation mainly for their own consumption (Sa et al., 2005).

Santarém's *colonos* represent both official and unofficial settlements. As recent migrants to a new environment, *colonos* relied on government institutions for agricultural knowledge and tools, based on the Green Revolution agricultural model, such as technology packages of hybrid seeds and synthetic fertilizer, the process of shifting agriculture, cutting and burning the forest. (Moran, 1976; Schmink & Wood, 1992).

Since 1997, there has been an apparently flux of migration from rural to urban because of the work opportunities for soybean processing for exportation. The villages in the plateaus are suffering intense social and physic changes, which are caused by this new migration phenomenon that has been incentivized by the extensive monoculture of soybean in the region (see the topic “Soybean Context”).



Graph 2- Rural and urban population during the last decades. Source: IBGE

This economic growth does not improve the socio-economic status of the local population, since the producers from family farms have been losing their field for the large production system. The large-scale producers buy the land with a low price, to invest in cattle ranch and soybean production. On the other hand, the small-scale producers sell their land with the illusion that living in the big city would offer them a better life with more employment opportunities and better living conditions. However, in reality, this only stimulates the urban periphery development, and unemployment, misery of life and violence increase in the cities. (Sa et al., 2005)

High urbanization rates of various measures in the Brazilian Amazon are provoking many of the same problems that affect the three-quarters of the Brazilian population living in cities. Migrants have poor access to government facilities and to state resources and services: limited piped water, sewage treatment, electricity, garbage disposal, education, and medical assistance. Spontaneous invasions of migrants to the urban periphery are a reaction to a shortage of housing. High unemployment and work in the informal sector appear in response to the lack of job opportunities.

Some neighborhoods have concentrated enclaves of migrants from specific areas, which still conserve their cultures and habits from their original rural place. Some continue practicing the horticultural activities, building relatively strong bonds among the neighborhood dwellers (Sa et al., 2005).

In the Amazon cities the exchange and linkage between the rural and urban area are active and intense. The level of involvement between family members who live in the cities with those residing in the rural areas still very strong. Those who remain in the field contribute directly for the maintenance of those other relatives who have migrated to the city. On the other hand, those who live in the city often send the rural family members goods like clothes, household appliances, and so on.



**Image 4-** Use and occupation of the soil in Santarém municipality: land settlement by INCRA (pink) and protect area by the government (green). Image: PSA, 2007

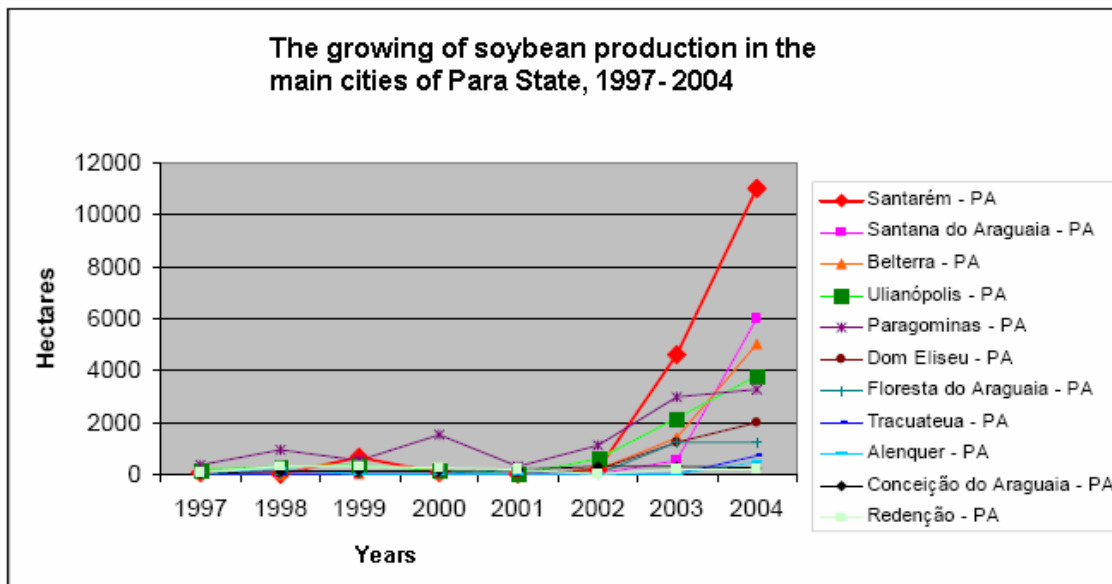
### Soybean Context

The rate of the soybean production in Brazil, especially in the last few years, has been increasing extremely fast. In 1996 the production was at 21.6 million tons, and in 2004 this rate increased to 49.5 million tons, making the country the second largest producer after the United States (IBGE).

Santarém and Belterra, located in the Lower Amazon, are the micro-region with relatively higher production, representing 64,5% and 29,4% respectively of the total area planted with soybeans in the Lower Amazon (Carvalho & Tura, 2005; Venturieri et al., 2007).

Santarém is the main region in the Amazon of the soybean production, as it is possible to observe in the Image 4 above. There are reasons for such fact:

- Proper soil chemistry with high phosphorus concentration (Carvalho, 1999);
- Adequate infrastructure for the production and exportation, for example the BR163 Pavement Project and the waterway Tales-Pires Tapajós (Rodrigues, 2004);
- Building of the port for export in 2003, by Cargill, with the purpose of meeting the need of not only the local production but especially the north of the Mato Grosso State production (Bickel & Dros, 2003);
- Land tenure in the region, making the land price very accessible, cheaper than in the southwest of the Brazil (Bickel, 2004)



Source: Instituto Brasileiro de Geografia e Estatística (IBGE), Produção Agrícola Municipal, 2005.

Graph 3- The growing of soybean production in the main cities of Pará State,, during 1997 to 2004. IBGE, 2005

Besides all the positive factors that incentivize the soybean production expansion, there is also the political situation. Soybean production in Pará State has the support of the government, with technology, financing and infrastructure. The Pará State government and some Federal Institutions, such as the Brazilian Institution of Farming Research (EMBRAPA / Amazonia Oriental) which supply the technological basis for the research and the Amazon Bank, give the financial support to the soybean producers. (Carvalho & Tura, 2005).

The government claims that the soybean monoculture expansion will be carried out in forest-converted fields, but this is not quite true. In the West of the State (Santarém region) the expansion has occurred in family farms land and forestry areas. In summary, the effects of such agro-industrialization in Santarém can be explained in two dimensions: social and environmental.

Social effects of agro- industrialization in Santarém seem to include:

- Political and social marginalization, e.g. no services and insecure income and employment
- Increased urbanization
- Food insecurity
- Agro-biodiversity depletion
- Environmental health problems, e.g. agricultural toxin poisoning
- Land ownership concentration

Environmental Effects of agro-industrialization in Santarém include:

- Secondary forest deforestation
- Primary forest deforestation
- Increased fire and drought threat
- Biodiversity depletion
- Water contamination
- Decreased flora and fauna; diminished habitat and ecological corridors



The monoculture trend increases unemployment, since the agro-industrialization use less human labor. In addition, the incentive of the land tenure problem, with the *grileiros* activities and selling of inappropriate lands, increases violence, the disestablishment of the communities and the land concentration (Carvalho, 1999; Carvalho & Tura, 2005; Steward, 2007). A more serious problem, however, is the expulsion of the laborers from the rural areas, causing the urbanization in the city and the uncontrolled growth of the peripheral neighborhoods.

## Santarém Neighborhoods

### Aldeia Quarter

This area is located the Mercado 2000 and Tablado Market. This neighborhood until 1986 used to be an isolated place, with some families living in precarious conditions. After this date, the municipality starts the market project, dislodging the families. With the market, people stopped to sell their products in the streets, becoming more organized city. Nowadays this neighborhood is near of downtown and it is close to a lot of facilities services and business, like banks, post office, meddle supermarkets and groceries, registry office, stores, lottery house (important to receive credit from the government), bars, restaurants, gas station and church. This localization in the city is benefit by bus service, with numerous buses to different destines. It is located in the north of the city, next to the Tapajós River and the Tapajós Avenue, one of the most important avenues in the city.

### Cohab Quarter

This neighborhood was built with the Federal Government support, whit the purpose to be a housing set. With the support of the Caixa Economica, the program has the purpose to attend the families with less than 5 minimum salaries. Nowadays it is still possible to see the models houses in the local. It used to be a isolated neighborhood, but after this faster growing in the city, this neighborhood have expanded and others neighborhoods have appears, connecting all with the city center. It is consider a good place to live, no violent. This neighborhood is less urbanized than Aldeia, with a lot unpaved streets, which some of them in very bad conditions. The downtown is relatively far from the downtown and is doesn't have easy access and facilities with the bus service. But, the biggest supermarket of the city is located in this neighborhood. There aren't many services as in the Aldeia, but it is possible to use cash machine available in the supermarket, to find groceries and bars.

### Periphery of Santarém

*Nova Republica, Vitoria Regia, Novo Ipanema* are neighborhoods of the Santarém periphery that the research team has visited. They are new neighborhoods, between 4 to 6 years old, with a huge lack of basic infrastructure such as electricity, pavement and public transportation system which has just begun operating since this June. The community is extremely poor, and is violent. The electricity, especially, poses a significant safety issues, since the local residents pirate electricity by illegally wiring off the existing electricity poles. The local residents here do not own the land; rather, they "grab" the land in the area which is mostly owned by the municipality (some privately owned). 80% of the current residents are from the rural areas, some of whom came by their own will (*colonos*), some of whom used to be miners who are now working for the farmers. But the majority came because the pressure in the rural area created by the soybean producers. There is one municipal school and one police station for the six neighboring communities. The main economic activity of the area is oven-coal production. It is common to witness child labor in this kind of work in Brazil, but in this case they claim that this does not happen here.

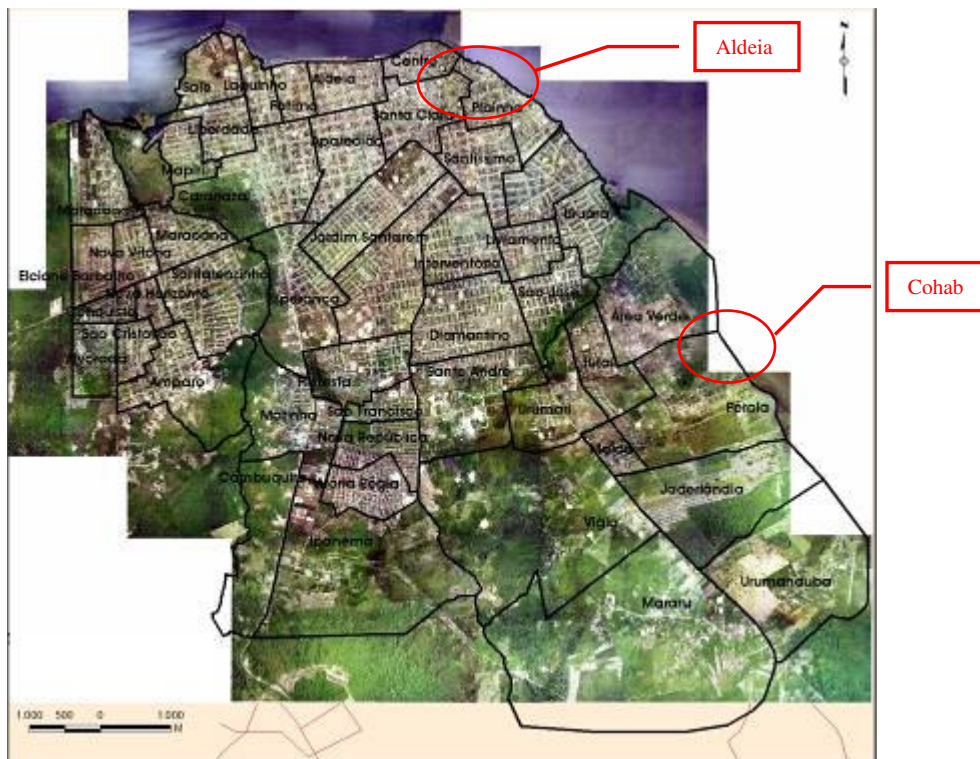


Image 5 The Market Neighborhoods in Santarém city

**Markets of Interest**

**Mercado 2000**

The largest market in the city, it is located in *Aldeia* quarter, and is open all week. The market starts at 3-4 am, has the maximum flux at 7-8 am, and starts folding by noon or so. The busiest markets days are the Saturdays and Tuesdays, and the market has 600+ stalls. The market sells a huge variety of products – vegetables, fruits, dairy products, meat, fish, clothing items, miscellaneous houseware, medicinal herbs and plants, and snack bars. The APRUSAN manages the fruits and vegetable sections of the market, where its office is located. The member producers sell fruits, vegetables, dairy products, plants and cassava derivatives (tucupi, beiju, tapioca, farinha, macaxeira, etc). Products are categorized into different sections with different stall designs, and the stalls stay permanently at the market space. There is no organization of the producers selling locations in the market – they just arrive on a first-come-first-serve basis and choose any stalls that they want, within the section their products belong. They always help each other in the effort of fitting all the producers, by sharing the same stall and making sure that all the producers will have some space in the market. The municipality is in charge of managing the vendor stalls not run by APRUSAN, such as the fish, meat, clothing and medicinal herbs and plants, and the snacks bars. The vendors in the fish area are not fishermen themselves – they usually buy the fish in the *Tablado* Market across the street or directly with local fishermen.

**Tablado Market**

This market located by the water, right in front of *Mercado 2000*, across the main street (Avenida Tapajós) that separates the *Mercado 2000* from the market. The main product is fish, and it is run by the Z-20, the fishermen’s association. But it is possible to find vegetables, cassava products and some beans, which are mostly products that complement the fish cooking and eating. The market is significantly smaller than *Mercado 2000* – perhaps 50 stalls – and is next to the river to facilitate the unloading of fish from the boats to the stalls. The market is open all week, but the fish is available only at the boat arrival time: in



the morning, from 4 to 6 am, and in the end of the afternoon, from 4 to 6 pm. The prices are usually cheaper than *Mercado 2000*, but with less foot traffic of consumers. It is also less sanitary and structured than the *Mercado 2000* fish section.

### **Cohab Market**

This market is located in the Cohab quarter and happens every Saturday. Despite such infrequency, the stalls are permanently located. The producers start to arrive extremely early in the morning, around 2 am, and the fair starts to close around 11:30 am. The place has space for 200 producers and APRUSAN is also responsible of managing this market. The layout of this market is similar to the other two mentioned, with very narrow space between the stalls. The vendors seem to be much closer to one another, even though they sell the same products as “competitors”. They sell different types of fruits and vegetables, especially vegetables and cassava derivatives, and a smaller section fish. There is one snack tent, which is run by FAMCOS (Federação das Associações dos Moradores e Organizações Comunitárias, or Federation of Residents Associations and Community Organizations).

### **Important Organizations**

**APRUSAN** – Associação dos Produtores Rurais de Santarém (Rural Producers Association of Santarém)

The APRUSAN, *Associação dos Produtores Rurais de Santarém* (or Rural Producers Association of Santarém), is the main entity focused on promotion of family production. With the mission of organizing the rural workers, this association was founded in 1983. The main idea was foster, improve and increase the production and, as a consequence, make viable the products commercialization. The commercialization is the biggest challenge for the producers and APRUSAN. Because of the lack of the federal government support and *EMATER-PA*, the state government entity who used to manage the markets in the municipality, APRUSAN was borne as an independent association, whose membership grew from 45 producers to 1,250 producers. APRUSAN works with 92 communities in the Santarém municipality. All of APRUSAN-associated production represents 80% of all agriculture production of the region.

These producers are all from small family farms, and sell at four fairs and markets in the city: *Mercado 2000* (large daily market – the green vegetables and fruits sections), *Santarenzinho*, *Cohab* and *Aeroporto Velho* (Old Airport). There are some APRUSAN members who sell in others markets run by the municipality, such as *Mercado Modelo* and *Tablado* Market, which are not producers-only markets. They usually live in the *Varzea* (floodland) region, where during the rain (the “flood”) season they fish and during the non-rain season they plant and sell vegetables (corn, bean, watermelon, etc) in addition to fishing. These producers are thus also members of Z-20 (fishermen’s association), and are able to sell their fish (especially during the rain season when they do not produce) in others markets.

To be a member of APRUSAN the producers must 1) have their own production, 2) have lived at least two years in the community and 3) be a small family producer. The APRUSAN accepts members who apply with his residential and production information – once he becomes a member he will only be allowed to sell the products he registers, in the fairs/markets. The producers can also register 2 or 3 family members, or “dependents”, who would then be allowed to substitute the producers themselves for selling activities at the fair. They are allowed to sell at all of the fairs/markets managed by APRUSAN. The monthly membership fee is 3 Reais (US\$ 1.50) per member (and his household – dependents are not obligated to pay the fee) and 1 Real (US\$ 0.50) per tent per fair. Members and their dependents receive ID cards that they must display at each fair.

Each community (of the 92 that APRUSAN works with) has one representative who is nominated and elected by the members of APRUSAN in the respective community. This elected representative responsible for being the intermediary between the producers and APRUSAN and to be the fiscal agent for the members in his/her community. S/he is also in charge of processing the membership requests and applications. There is monthly meetings of all the representatives of APRUSAN with the organization.



At the fairs/markets, there are always one or two fiscal agents from APRUSAN to receive fees, monitor the producers, their products and any complaints from the shoppers. If there is any problem at the fair, these fiscal agents communicate directly with the representatives, not with the producers.

Lucenilda Pereira dos Santos, the Vice President of APRUSAN, says that one of the APRUSAN's goals is to promote local production as well as to preserve the local culture of the neighboring communities' local economic activities. Small-sized fairs support the local business by having the local small groceries, butcher, etc, purchase at the market – they are important resources for the community.

She also says that APRUSAN has a constant flow of producers trying to become members, but that the organization does not have the capacity to handle all the requests. The total production level of the APRUSAN members is large, enough to supply the entire city. She thinks that APRUSAN should run more fairs in the city to allow all production by the members to sell. She also mentioned about the soybeans producers who try to sell their alternate crops (such as tomatoes, cucumber and corn) at the markets, but their requests are always denied by APRUSAN.

*Interview with Lucenilda Pereira dos Santos – Vice President of APRUSAN*

#### **Z-20 – Colonia dos Pescadores (Regional Fishermen's Union)**

This association of the fishermen has more than 8,000 members, who comprise 38% of the entire fishermen population in the region – there are 21,000 fishermen in the region. The members come from 86 communities, in addition to those who live in the city. The entire region within which Z-20 works is divided into 9 regions, which is constituted with more than one community. Each region has its own administrative council, or sometimes more than one, depending on the size of the membership – there are 26 councils in total. Each community has one representative, called the Base *Núcleos* Coordinator. The *Núcleos* coordinators have monthly meetings and the councils every two months. All fish by the members are sold at the *Tablado* Market or directly to the small groceries. The Z-20 runs the *Tablado* Market, with at least two administrators per fair, to organize and monitor the market.

The biggest challenge for the member fishermen is the large commercial fishing boats (called *geleiras*), equipped with the structure necessary for large-scale fishing, storage and transportation. Small-scale fishermen lack the ice machines to keep the fish frozen and fresh. In addition, they are experiencing less and less catch because of unsustainable fishing of the commercial boats. In the riverside communities, the local residents complain of the difficulty in finding fish in the river. The commercial fishing companies sell at different markets – *Mercado Modelo*. They catch fish in larger quantities and the quality is claimed to be lower than those caught by small-scale fishermen.

The fish section in the *Mercado 2000* is not a source of competition for the member fishermen, in spite of being right in front of *Tablado* Market. Rather, it serves as a guaranteed purchase for the members, since the majority of the fish vendors at the *Mercado 2000* buy their fish from the member fishermen at the *Tablado* Market. The prices are lower at the *Tablado* Market, but it does not seem to bother the members or the Z-20.

The Z-20 works in partnership with APRUSAN, the Rural Labor Union of Santarém (STR), and the Santarém Municipality. The government is the most difficult partner, and the Z-20 is trying to receive more government assistance that is largely absent. Alberto José dos Santos Costa, a co-director of the Social Relation department, says that they are hoping for new public policy to help improve the fishing system, especially regarding the issues with fishermen's distance from the markets. For example, there are many fishermen living in communities that are 12 hours away by boat, and this becomes a major problem since they need to have a bigger production to make their the transportation cost to the city worthwhile.



*Interview with Alberto José dos Santos Costa and Sandra Cristina Dias da Silva – Social Relation Directors from Z-20*

**STR Santarém** – Sindicato dos Trabalhadores Rurais de Santarém (Rural Labor Union of Santarém)

This organization has five Directors working under the Executive Director. It is headquartered in Santarém and has 400 local Councils (*delegacia regional*) in the region, with one representative for each community. There are 20,000 members from more than 800 communities. The majority of the communities are from the plateau (*planalto*) area. The organization works in partnerships with many organizations, including:

- **FETAGRI** – Federação dos Trabalhadores na Agricultura, or Federation of Labor Unions of the State of Pará
- **CUT** – Central Única dos Trabalhadores, or National confederation of all workers unions, closely linked to the Brazilian Workers Party (PT)
- **CONTAG** – Confederação Nacional dos Trabalhadores na Agricultura, or National Confederation of Agricultural Workers. Part of CUT
- **CNS** – Conselho Nacional dos Seringueiros, or National Council of Rubbertappers
- **GTA** – Grupo de Trabalho Amazonico, or Amazon Working Group, network of NGOs and grassroots organizations
- **FAOR** – Fórum da Amazônia Oriental (with local entities)
- **PSA** – Projeto Saúde e Alegria, or Health and Happiness Project
- **Tapajoara** – Organização das Associações da RESEX Tapajós-Arapiuns, or Organization of associations in RESEX
- **FEAGLI** – Federação do Assentamento Agroextrativista do Lago Grande, or Federation of Agro – extractives Settlement of Lago Grande
- **GDA** – Grupo de Defesa da Amazônia, or Amazon Defense Group

STR Santarém works with PSA in the river communities, in projects like participatory mapping, youth capacity building, water system building, etc. The union has a strong position in the political scene in the region, being a good voice within the Health Consul of the municipality for the approval of PSA's Abaré project.

Together with FETAGRI they could claim with more force for their rights in the government. One of their fights is to eliminate the middlemen structure. The majority of the producers sells their products through the middlemen because they lack infrastructure or government support, such as the transportation cost. To Maria Ivete Bastos dos Santos, the best option to solve this problem is to create more fairs for the producers to sell directly and to improve storage depot and hygiene system.

The entity works together with the APRUSAN; in fact, most of the local councils are made up of the APRUSAN members, like the president Valmir from APRUSAN. Maria says that in the floodland (*Varzea*), the men fish and the women work in the field, so from this region the members of STR are usually women.

Maria says that the one of the biggest problem nowadays in the region is the PRONAF application process and its lack of efficacy. PRONAF (Programa Nacional de Fortalecimento da Agricultura Familiar, or National Program of Family Farm Empowerment) is the Family Farm Secretary's program within the Ministry of Agrarian Development. The program is suppose to give rural credits to the producers to foster the family income increase, to create new rural labor opportunities and to motivate the food production. There are two main obstacles for the program – one is the difficulty with the bank application process, whose financial approval is based on the basic infrastructure status of the community. The other is the insufficient and inefficient technical assistance provided by EMATER-PA (Empresa de Assistência Técnica e Extensão Rural do Pará, or Technical Assistance Corporation and Rural Extension of the State of Pará), CEPLAC (Federal Executive Commission of Cocoa Plantation Planning) and FUNDAC (Fundo



de Desenvolvimento de Ação Comunitária, or Community Action Development Fund), with inadequate investment to create projects. They also get criticism that once the projects are created, they tend to be run with the “Green Revolution ideology”, where they adopt industrialization methodology without regards to the local agro-ecology. The Union estimates 18,000 families in Santarém region and in the last year only 2,000 credit units were financed.

PRONAF – The project goal is create sustainable development for family producers and their families, targeting the increase and diversity of the production. The Ministry of Agrarian Development is hoping to achieve increase in income and labor opportunities beyond the welfare state. PRONAF promotes public policy negotiation, financing of basic infrastructure and public services in the municipality. The family farm production financial, through the rural credits, and the producers capacity are built. There are 15 different financial credit groups that PRONAF designated for the enrollees, which depend on the family annual income level, the land size and the number of employment for the land.

*Interview with Maria Ivete Bastos dos Santos – Executive Director of STR Santarém.*

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## LIST OF ACRONYMS & ORGANIZATIONS' NAMES

**PSA:** Projeto Saúde e Alegria  
**RESEX:** Reserva Extrativista Tapajós Arapiuns  
**FLONA:** Floresta Nacional do Tapajós (Tapajós National Forest)  
**CLIS:** Conselho Local Integrado de Saúde (Community Local Health Council)  
**ACS:** Agente comunitário de Saúde (Community Health Agent)  
**IBAMA:** Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Federal Institute for the Environment & Renewable Resources, [www.ibama.gov.br](http://www.ibama.gov.br))  
**IPAM:** Instituto de Pesquisa Ambiental da Amazônia (Environment Research Institute of the Amazon, [www.ipam.org.br](http://www.ipam.org.br))  
**APRUSAN:** Associação dos Produtores Rurais de Santarém (Rural Producers Association of Santarém)  
**APRUSPEBRAS:** Associação dos Produtores Rurais de Pedra Branca, Solimões, Anumãs e Santiago/PA  
**STR Santarém:** Sindicato dos Trabalhadores Rurais de Santarém (Rural Labor Union of Santarém)  
**STR Belterra:** Sindicato dos Trabalhadores Rurais de Santarém (Rural Labor Union of Belterra)  
**Tapajoara:** Organização das Associações da RESEX Tapajós-Arapiuns (Organization of associations in RESEX)  
**FAMCOS:** Federação das Associações dos Moradores e Organizações Comunitárias (Federation of Residents Associations and Community Organizations)  
**INCRA:** Instituto Nacional de Colonização e Reforma Agrária (National Institute of Agrarian Reform and Colonization)  
**APRUSAN:** Associação dos Produtores Rurais de Santarém (Rural Producers Association of Santarém)  
**APRUSPEBRAS:** Associação dos Produtores Rurais de Pedra Branca, Solimões, Anumãs e Santiago/PA  
**PRONAF:** Programa Nacional de Fortalecimento da Agricultura Familiar (National Program of Family Farm Empowerment)  
**CEPLAC:** Comissão Executiva de Planejamento da Lavoura Cacauzeira (Federal Executive Commission of Cocoa Plantation Planning)  
**FEAGLI:** Federação do Assentamento Agroextrativista do Lago Grande (Federation of Agro –extractives Settlement of Lago Grande)  
**FUNDAC:** Fundo de Desenvolvimento de Ação Comunitária (Community Action Development Fund)  
**EMATER-PA:** Empresa de Assistência Técnica e Extensão Rural do Pará (Technical Assistance Agency and Rural Extension of the State of Pará)  
**EMBRAPA:** Empresa Brasileira de Pesquisa Agropecuária (Brazil Agricultural Research Agency)  
**STR Santarém:** Sindicato dos Trabalhadores Rurais de Santarém (Rural Labor Union of Santarém)  
**STR Belterra:** Sindicato dos Trabalhadores Rurais de Santarém (Rural Labor Union of Belterra)  
**Prefeitura Municipal de Belterra** (Belterra Municipality / Mayor's Office)  
**Prefeitura Municipal de Santarém** (Santarém Municipality / Mayor's Office)  
**Z-20:** Colônia dos Pescadores (Regional Fishermen's Union)  
**CNS:** Conselho Nacional dos Seringueiros (National Rubber Tappers Council)  
**FETAGRI** – Federação dos Trabalhadores na Agricultura, or Federation of Labor Unions of the State of Pará  
**CUT** – Central Única dos Trabalhadores, or National confederation of all workers unions, closely linked to the Brazilian Workers Party (PT)  
**CONTAG** – Confederação Nacional dos Trabalhadores na Agricultura, or National Confederation of Agricultural Workers. Part of CUT  
**GTA** – Grupo de Trabalho Amazonico, or Amazon Working Group, network of NGOs and grassroots organizations  
**FAOR** – Fórum da Amazônia Oriental (with local entities)  
**GDA** – Grupo de Defesa da Amazônia, or Amazon Defense Group



## APPENDIX

### AMAZON SITE VISITS SUMMARY

Over the past two weeks, the research team has been traveling with the *Projeto Saúde e Alegria* team, around the Amazon region of Brazil within the state of *Pará*. The team spent four and a half days on the *Tapajós* River by PSA's "Health Boat", observing its health work and other activities with the rural riverside communities, and then two days in and around the city of *Santarém* and met with the local site committee members consisting of labor unions and co-ops, municipality leadership, and producers associations. The senior fellow remains at the local site until the end of the month, to work with the PSA team to integrate with the US team's work and to organize the local field research plan. This memo reflects a high-level summary of the activities of and findings from the trip. Please refer to the consolidated meeting notes documents on Basecamp (*Notes Abaré Final.doc* and *Notes Santarém Final.doc*) for more details of the trip.

### WEEK 1 – AMAZON SITE VISITS

From 15 July through 19 July, the team was on *Abaré*, a fully-equipped floating health unit operated by PSA. *Abaré* delivers direct medical services to over 100 isolated river communities (out of 143 in the entire Amazon region) year-round, visiting each community every 40 days or so. *Abaré* is operated and managed by PSA staff comprised of a doctor, a dentist, other health workers and the boat crew. PSA collaborates with the community health workers – doctors, dentists, nurses and medical technicians – from three municipalities throughout which the *Tapajós* River region spreads, as well as with the regional federations of community organizations and regional labor unions, making up to about 30 individuals on the boat on average. Its service aims to focus on preventive health care and education, though a lot of work include pre-natal care, family planning, diabetes and hypertension treatment, oral health, children health, vaccination, accidents treatment (cuts, falls, snakes, sting rays) and minor surgery.

The team made site visits to six communities during the boat trip, whose sizes range from 10 to 115 families, to see the traditional crop system, furniture-making operation, community health council system, and the federal housing project. The team has also conducted a series of interviews with the *Abaré* boat crew, PSA staff, health workers, and some of the community residents, while Brian McCormick, our creative consultant, captured footages of our trip.

PSA is delivering a much needed health service that would otherwise be non-existent to these isolated communities where the distance to hospitals and other health care is very far (hours and sometimes days), transportation means limited (by boat only) with exorbitant costs. PSA fills in a huge gap between the community's lack of health access and the limitation of the municipal governments by reaching out to the communities where they are. PSA also connects the communities to the government via its community organizing staff – the "trust-building" agents. The difference that PSA has been making for these communities, not only in their health status but also in their trust in the government, has been phenomenal, immediately since the beginning of the *Abaré* operation 10 months ago.

The *Abaré* work of PSA is being funded by an international organization Terre Des Hommes's Netherlands office ([www.terredeshommes.org](http://www.terredeshommes.org)). It is PSA's plan to document its health intervention and education work, along with its health data system (GIS Med) and research, as a "pilot" model to be presented to the Brazilian federal government. PSA is currently discussing a number of sustainability potential and issues in continuing/expanding the *Abaré's* work, as well as to integrate the traditional culture of the communities into its work. Please refer to the APPENDIX I for the general facts on the *Tapajós* riverside communities.

### WEEK 2 – THE CITY AND NEIGHBORHOODS

The city of *Santarém* is located in Western *Pará* State, in the Lower Amazonas region, along the right side of *Tapajós* River and close to the water meeting with Amazonas River. It is a medium-sized city



which has about 300,000 habitants, with the urban population accounting for over 200,000 and the rural population of less than 100,000 that includes the Santarém municipality and neighboring Belterra municipality combined.

The economic activities are basic agriculture (cassava, rice, beans, corn, soybean, citrus, banana, pineapple, etc), with family producers and large production (especially soybean), extractivist activities (timber, rubber, fruits, Brazilian nuts, copaiba and andiroba oil), fishing, tourism and some industrial activities. Small-scale agricultural production in the Santarém region is the main form of income and food for the majority of Santarém's rural residents. *Colonos*, the producers of small-scale agriculture, have lived in the Santarém and Belterra municipalities for 25-30 years since the federal colonization project. They produce over 100 commercial and subsistence crops, trees, and extracts. Commercial produce is sold in local markets and a small quantity is sold in distant Amazonian cities. Limited transportation and other infrastructure, technical assistance, credit and land availability restrict agricultural production and profits. They also move into the poor periphery neighborhood after selling their land to soy producers for a pittance, and experience unemployment, poor living conditions and sociopolitical marginalization.

To summarize, social effects of agro-industrialization in Santarém seems to include:

- Political and social marginalization, e.g. no services and income insecurity and unemployment
- Increased urbanization, migration and lack of infrastructure
- Food insecurity
- Health depletion
- Agro-biodiversity depletion
- Land ownership concentration

## GENERAL RIVERSIDE COMMUNITY FACTS

### Communities Visited:

- **Samauma** has the traditional crop system where residents grow cassava (manioc) on hilly land. Met with village leader, learned of the village's regional rural labor union chapter, youth group chapter, general coordinating body, and chapter of Z-20, the regional fishermen's association.
- **Nuquinin** Visited a small furniture-making operation, run by a collective which shares its profits with the community. Its main link to urban resellers and marketers a large NGO called IPAM, Environment Research Institute of the Amazon. PSA collaborates with them to promote the work.
- **Rosário** Visited a non-operational lumber mill, discontinued years ago due to government intervention before it could begin business.
- **Boim** is the oldest and one of the largest communities in the region. Visited its school which hosts students from other (smaller) nearby communities. Also has one of the first water management systems.
- **São Tomé** Spoke with the community health agent, who, among other duties, coordinates *Abaré's* visits and arranges dental and medical appointments for the residents.
- **Jauarituba** is one of the first and few recent beneficiaries of the federal housing program that is building each family a house with basic appliances and furnishing. An exemplary community organizing case with a strong association and leadership, despite its small size (35 families)

**Organizing History** Though the river communities (*comunidades ribeirinhas*), are over 300 years old, they have only started inter-community organizing in 1974, when the Federal Government passed a series of land laws that sparked an environmental defense movement. Recognizing their mutual interests, roughly 50 communities along the Tapajós River organized themselves and won the right to exist permanently on the land. In the 1980s, the communities fought the exploitation of local workers and the land by large logging companies working in the region. In 1998, the federal government formally recognized the extractivist reserve (RESEX). There are now 3,500 families, 18,000 to 20,000 individuals, and 42 associations, 21 of which are inter-community, existing in RESEX.



**Culture** The language spoken in the Amazon is Portuguese. Though radio communication is advancing its way into the Amazon, people are mostly without communication means including telephone and TV. Electricity is not yet in all the communities. A great majority of the people are Catholic, and love soccer like the urban Brazil. Their culture is extremely communal, and, from an outside perspective, enlightened in terms of their views of the roles of women (traditional, but open to women taking leadership positions) and hierarchy (accept it where necessary, but emphasize democratic participation at all levels).

**Diet** The *ribeirinha* diet consists mostly of foods produced by the families that consume them. This includes fresh fish; chicken and eggs; some hunted animal when available; manioc, some vegetables like onions, pumpkins and peas; rice and beans; tropical fruits as well as typical Amazon fruits. They purchase cooking oil, rice, and other sundries from the general stores in the larger towns. They seem to lack green vegetables in general, and have high carbohydrates intake from sugar and cassava consumption, which affect the diabetes and hypertension levels.

**School** Children of ages of 5 to 10 typically go to school in their own villages. After that, they travel by boat, bike, or school boat to the larger villages like *Nova Vista* or *Boim*, where they go to high school. To pursue higher education they must leave their families and move to a larger city like *Belterra*, *Santarém*, *Manaus*, or *Belém*, but many either move back to their villages and start a family or move to *Santarém*, the region's largest city (and the third largest in the state), to work. Generally speaking, all the villages seem to have high basic literacy rates.

**Healthcare** Before the presence of *Abaré*, the communities lacked the access to healthcare almost entirely. The municipal hospitals, though free, are far and impossible to reach on cases of emergency. In addition, transportation cost to get to the hospital was unaffordable, and the wait is extremely long and people are often turned back home without receiving care. With *Abaré's* direct care, the region is experiencing amazing improvement of health at all levels. Preventive healthcare awareness on a basic level such as condom use and oral hygiene seems limited as of yet, since PSA has initiated the program very recently.

**Relation to Government** Though the *ribeirinha* communities do maintain multiple ties to their municipal and federal governments on paper, the presence of government protection and control. Since there is almost no cash economy in these mostly subsistent communities, the main source of most families' income is the monthly retirement pension received by elderly from the federal government. Many families also receive funds from the *Bolsa Família*, the federal cash transfer program given monthly for all children enrolled in school (please see Basecamp for more details on this program). There seems to be an issue of moral hazard caused by the government pension programs without any accompanying incentive structure to promote entrepreneurialism. Commercialization of fishing poses a great challenge to the communities with little to no government control.

**Community Mobilization** Farmers associations and fishermen's co-ops were created rather recently to register members and obtain the government pension money. The communities are in the process of struggling to build leadership and grow their capacity. We have witnessed, within some of the associations, a noted ability to innovate (the push to create a separate zone for *Tapajós* fishermen) and to fight for changes (the success of the campaign for housing), both of which attest to a high level of trust and strong leadership.