

## A COMPREHENSIVE OVERVIEW OF THE DOMESTIC ECONOMY IN MAMIRAUÁ AND AMANÃ IN 2010

### UM PANORAMA ABRANGENTE DA ECONOMIA DOMÉSTICA DE MAMIRAUÁ E AMANÃ EM 2010

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#### KEY WORDS:

Domestic economy;  
Amazon;  
Várzea.

#### ABSTRACT

The paper presents recent data on the domestic economy of Mamirauá and Amanã Reserves (2010). It focuses on the composition and distribution of incomes and expenses of households, considering three main regions: Amanã, lower and upper Mamirauá. Data is from a socioeconomic survey with a sample of 40% of all of the two reserve's households (n=920). For the whole area, average family income was R\$ 9.047 a year, or R\$ 754 per month. Average family annual expenses were R\$ 6.607. Social benefits have a very important impact on the composition of household incomes. It is the main source of income in all three regions studied which, nevertheless, show differences in the participation of the other main sources of income. Salaries and services are more important in the lower Mamirauá region; fishing in upper Mamirauá region, and agriculture at Amanã. Data also showed very low inequality levels among households in the sample. Regarding household goods, the study showed that material inequality has decreased, allowing families to fulfill consumption projects, previously inaccessible. The abundance of natural resources and its direct and exclusive access guaranteed by the reserves are crucial factors in the livelihood of these families. Combined with the traditional knowledge and practices, developed and reproduced socially, residents and users of Mamirauá and Amanã Reserves have a degree of economic autonomy not shared by residents of cities and regions outside the reserves.

#### PALAVRAS - CHAVE:

Economia doméstica;  
Amazônia;  
Várzea.

#### RESUMO

O trabalho apresenta dados recentes da economia doméstica das Reservas Mamirauá e Amanã (2010), enfocando a composição e a distribuição da renda e das despesas dos grupos domésticos, considerando as situações em três regiões: a reserva Amanã e as áreas de Baixo e de Cima da Reserva Mamirauá. Os dados resultam de um levantamento socioeconômico de caráter quantitativo em uma amostra de cerca de 40% dos domicílios das duas reservas (n=920). Para o agregado geral das 920 famílias, o rendimento médio domiciliar em 2010 foi R\$ 9.047, o equivalente a R\$ 754 mensais. A despesa média foi R\$ 6.607 ou R\$ 551 mensais. A renda média domiciliar *per capita* geral foi R\$ 148. Os benefícios sociais têm impacto muito importante na composição dos rendimentos. Atualmente é a fonte de ingresso mais significativa nas três regiões. Em relação a esse padrão geral, as três regiões apresentam diferenças em termos da participação majoritária de outras fontes: os salários e serviços predominam na área de baixo de Mamirauá, a pesca na área de cima de Mamirauá e a agricultura em Amanã. Os dados mostram também uma concentração de renda excepcionalmente baixa. A desigualdade material vem aos poucos diminuindo, permitindo que as famílias da Amazônia rural possam realizar projetos e desejos de consumo anteriormente inacessíveis. A abundância de recursos naturais e seu acesso direto e exclusivo garantido pelas reservas são fatores cruciais na vida dessas famílias. Isso, aliado aos conhecimentos e práticas tradicionais sobre o meio ambiente, desenvolvidos e reproduzidos socialmente, dão aos moradores e usuários das Reservas Mamirauá e Amanã um grau de autonomia econômica que os moradores das cidades e de regiões fora das reservas não têm.

## INTRODUCTION

The 111 protected areas of sustainable use in the state of Amazonas<sup>1</sup> seek to accomplish environmental conservation and regional development goals. Covering 23.080.980km<sup>2</sup> – or almost 15% of the state's area<sup>2</sup>, they develop sustainable use projects through partnerships involving local communities - whose livelihoods depend on the availability of natural resources, and public and private organizations - which also aim to ensure the sustainability of natural resources. In the middle Solimões region, one of the organizations that support local populations in the development of sustainable use of natural resources is the Mamirauá Institute for Sustainable Development (a social organization that is linked to the Ministry of Science, Technology and Innovation in Brazil). The organization has been in the region for twenty years, developing sustainable management systems that act at the economic, sociopolitical and environmental contexts: increasing local income, creating systems of social control that integrate access to resources and participation of the population, and higher levels of conservation of biodiversity (QUEIROZ, 2005). Among the first steps for the development of these projects is research on the local economy, in order to find out patterns of production and use of resources, and track changes introduced by sustainable projects. Since 1991, socio-economic surveys and demographic censuses have been

regularly carried out in the region of Amanã and Mamirauá Reserves. Demographic data produced by censuses allow us to know the socio-ecological diversity of settlements and domestic groups that compose them. Socioeconomic surveys describe and analyze the domestic economy: its patterns of production, organization of labor and degree of market integration (LIMA, 2006; MOURA, 2007; PERALTA et al., 2009; LIMA, 2010). These surveys have provided key information that guide the actions of Mamirauá Institute in the region and allow us to evaluate the results of this effort, from the observed changes in the local domestic economy since the creation of the reserves.

This article presents recent data on the domestic economy of Mamirauá and Amanã Reserves (2010), focusing on the composition and distribution of income and expenditure of domestic groups. Three regions are used here as spatial units of analysis: Amanã Reserve, upper and lower areas of Mamirauá Reserve<sup>3</sup>. This spatial division was selected because it allows analysis of different levels of institutional involvement in the three areas. In the lower part of Mamirauá and in Amanã the activity of Mamirauá Institute was greater. In the upper Mamirauá area, other institutions have carried sustainable management activities, such as the Fonte Boa Institute for sustainable development (a municipal organization), and Chico Mendes Institute (a federal organization created to manage protected areas).

The lower Mamirauá area was the focus of Mamirauá Institute's actions for the past 20 years. Amanã began five years later<sup>4</sup>, and only recently the Mamirauá Institute has started their research

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<sup>1</sup> There are 84 protected areas at federal and 27 at state levels. Source: Instituto Socioambiental/Programa Monitoramento de Áreas Protegidas - SisArp (Sistema de Áreas Protegidas) - 31/10/2013. Cartographic data on protected áreas produced by Instituto Socioambiental and base on federal units by Instituto Brasileiro de Geografia e Estatística (IBGE) - Ministério do Planejamento, Orçamento e Gestão (Scale 1:5.000.000). Available in: <<http://uc.socioambiental.org/amazônia-legal/extensão-das-ucs-por-estado>>

<sup>2</sup> Idem. (31/10/2013).

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<sup>3</sup> Previously called subsidiary and focal areas.

<sup>4</sup> For information on Mamirauá Institute's extension and research programs in the lower Mamirauá area and Amanã, see Moura, 2007 and Peralta, 2012.



whose residents settled after January 2010 were not considered in the sample. Socioeconomic information was collected from 927 households<sup>5</sup>, but seven of them were removed from this analysis because the information was incomplete. The sample represented 40% of all households of the two reserves.

The socioeconomic data allow mapping the economic reality of Mamirauá and Amanã Reserves. For most analyzes (descriptive and inferential statistics), we divided the total sample in the three areas of reference: the Amanã Reserve (n = 180), the lower Mamirauá area (n = 324) and upper Mamirauá area (n = 416). Localities that are both residents of Amanã and users of Mamirauá were considered as Mamirauá users.

The analytical cut of the dataset also aims to provide information for professionals and researchers of the biological and human sciences working in these areas who, for various reasons, need to access socioeconomic data on the communities where they develop technical, research and extension advice.

Households in the sample are distributed in eight municipalities of the Middle and Upper Solimões River region (Table 1). Some households declared themselves belonging to two municipalities concurrently.

### 3. Results and discussion

Although the socioeconomic survey represents only the monetary aspects of the domestic economy of residents and users of Mamirauá and Amanã reserves<sup>6</sup>, results indicate how local

Table 1 - Distribution of sampled households according to municipal reference.

Municipality	N households sampled
Alvarães	38
Coari	6
Fonte Boa	270
Fonte Boa e Japurá	35
Japurá	5
Japurá e Maraã	6
Jutaí	60
Maraã	290
Tonantins	6
Uarini	195
Uarini e Maraã	9
TOTAL	920

peasantry obtain monetary income, what is their purchasing power, and their capacity to accumulate household goods. Besides, the survey also shows their main source of income, what they produce and how products are marketed, how they spend their money, what they consume, their ability to purchase goods and their consumer preferences.

For the general aggregate of 920 households, the results show that households have on average 6 members, and are headed by adults aged 40 years old. The average household income in 2010 was R\$ 9.047, an equivalent to R\$ 754 monthly. The average expenditure was R\$ 6.607 or R\$ 551 monthly. Households spent on average R\$ 878 on household assets and work equipment. The average household income *per capita* was R\$ 148. In the Appendix we present the specific data from 205 communities visited, for the generic use of researchers and extension workers. Given the criteria chosen for sampling and variation in the size of the communities, there are cases in which the sample comprises of only one household, and

<sup>5</sup> Households are composed of family units, although not necessarily nuclear families. Only 2% of households sampled are inhabited by only one individual.

<sup>6</sup> For an ethnographic characterization of the domestic economy, see Lima Ayres, 1992 and Lima, 2006.

the information given is, thus, not an average.

Taking into account that 920 households were selected from a population of 2,300 households by simple random sampling and considering the results of the distribution of average *per capita* income, a random sample of 262 households would be sufficient to generate an accurate average *per capita* household income, assuming that there are no significant economic or demographic changes (L. Ayres pers. comm.).

### Composition of Domestic Income by Region

Table 2 presents data on the percentage contribution of each income source to total household income. We consider 10 major sources of income: fishing, farming, forest extraction (*açai fruit*, Brazil nuts, oils and honey), wooden artifacts and crafts, livestock, government benefits, wages and services, commerce<sup>7</sup> and hunting<sup>8</sup>.

The overall aggregate income of 920 households is composed as follows: the sum of sales of all domestic production contributes to 37% of total income, direct monetary income (wages, commerce and services) contributes to 19%, and social benefits (pensions and government transfers) contribute to 44%. Government sources provide the largest contributions in all three areas and are a homogenization factor among households, since they represent regular monthly earnings of similar value. These data are shown in Table 2.

In relation to this general pattern, the three regions differ in terms of the majority share of each source: wages and services are predominant in the lower Mamirauá area, fishing in the upper Mamirauá area and agriculture in Amanã.

Table 2 - Composition (%) of household income. In bold letters we indicate the main economic activity of each region.

Type of income source	Lower Mamirauá (n = 324)	Upper Mamirauá (n = 416)	Amanã (n = 180)	Total (n = 920)
Government Benefits	41,1	47,4	43,2	44,3
Fishing	20,3	<b>25,0</b>	13,0	<b>20,8</b>
Wages/ services	<b>21,7</b>	12,6	15,7	16,4
Agriculture	11,7	11,1	<b>18,6</b>	12,9
Commerce	3,1	1,5	3,1	2,4
Crafts	0,8	1,1	1,9	1,2
Livestock	0,8	0,3	3,0	1,1
Extractive production	0,5	0,9	1,2	0,8
Logging	0,04	0,03	0,21	0,09
Hunting	0,01	0,0	0,02	0,01

The two main income-generating activities for domestic groups are fishing and agriculture. Of the total sample, 69% of households sold fish and 32% sold manioc flour. Fishing is the productive activity that contributes most to the composition of the household budget in Mamirauá. In Amanã where most households are settled in *terra firme* forest, agriculture is the most important productive activity and the sale of flour is greater than in other areas - 45% of households sold manioc flour, whereas 57% sold fish. The sale of fish is most important in the upper Mamirauá area, where 79% of households sold fish in 2010.

In Amanã, the contribution of other productive activities to domestic income is higher than in the other two areas. Other sources of income are more expressive, such as livestock (3%) and crafts (2%). But in general, the contributions of some extractive activities such as hunting and logging, whose commercialization is prohibited by environmental regulations or subject to licensing, are probably underestimated in this sample survey.

<sup>7</sup> Commerce is related to local petty trade of manufactured products.

<sup>8</sup> The declared income associated to hunting activities was low and, after rounded, represented 0% of the total income accounted for.

### Average income and geographic area

Analyzing each group we found the highest average *per capita* monthly income of households in Amanã Reserve (R\$ 163;  $\pm 159$ ). However, a *Kruskal-Wallis* test has shown that the difference among the three areas is not statistically significant.

Table 3 - Annual and monthly income, *per capita* household income in the three areas and in the total sample.

Area	Household average annual income (R\$)	Household average <i>per capita</i> monthly income (R\$)	Household average <i>per capita</i> monthly income (without benefits)
Lower Mamirauá (n = 324)	8.738 ( $\pm 5900$ )	156 ( $\pm 145$ )	88 ( $\pm 113$ )
Upper Mamirauá (n = 416)	8.913 ( $\pm 7019$ )	135 ( $\pm 125$ )	70 ( $\pm 90$ )
Amanã (n = 180)	9.913 ( $\pm 7511$ )	163 ( $\pm 159$ )	90 ( $\pm 105$ )
Total sample (n = 920)	9.047 ( $\pm 6757$ )	148 ( $\pm 140$ )	80 ( $\pm 102$ )

The three areas differ with respect to the values of the average income *per activity*. Income derived from fishing is higher in the upper Mamirauá area than in Amanã; those from agriculture are higher in Amanã Reserve than in upper Mamirauá. Livestock generates more income in Amanã than in Mamirauá upper area and wages are higher in

lower Mamirauá than in the upper Mamirauá area (Table 4)

Local producers consider fishing and agriculture as their main source of income. In both areas of Mamirauá, most producers declare fishing as their main source of income, whereas at Amanã agriculture is considered as their main source. Despite contributing to about half of household income, benefits is not indicated by the majority of households as their main source of income, indicating the importance of productive activities for the formation of economic identity.

### Distribution of households by income groups

Although the majority (62%) of the households surveyed have *per capita* income below the value defined by the government as the poverty line in Brazil (R\$ 140 monthly), monthly household income in the reserves (R\$ 754) is greater than the overall income of rural population of some surrounding municipalities (Fonte Boa, Jutai and Maraã, see Table 5). And the median monthly *per capita* income (R\$ 106) is only lower than those of Tefé and Uarini.

Such comparisons with the national poverty line should be adjusted to the reality of peasant populations. In this context, monetary inflows represent only a variable fraction of the domestic regional economy, which also produces for the

Table 4 - Annual average household income *per activity* and region (in R\$). In bold letters we indicate the main source of income after benefits.

Area	Benefits	Fishing	Salaries/ services	Agriculture	Commerce	Crafts	Lives- stock	Extractive production	Timber	Hunting	Total
Lower Mamirauá	3.590	1.773	<b>1.892</b>	1.023	274	66	74	42	3	1	8.738
Upper Mamirauá	4.222	<b>2.231</b>	1.127	993	133	98	27	78	3	0	8.913
Amanã	4.282	1.286	1.561	<b>1.842</b>	307	190	<b>296</b>	121	26	2	9.913
Total	4.011	1.885	1.481	1.170	217	105	96	74	8	1	9.047

Table 5 - Median and average income of rural households by municipality in 2010. IBGE data.

	Tefé	Alvarães	Uarini	Fonte Boa	Jutai	Maraã
Rural household median monthly <i>per capita</i> income	R\$ 120	R\$ 86	R\$ 122	R\$ 28	R\$ 33	R\$ 17
Rural household average monthly income	R\$ 854	R\$ 828	R\$ 1.123	R\$ 732	R\$632	R\$ 688

Table 6 - GINI coefficient of average *per capita* household income.

	GINI index
Total sample	0,075
Without benefits	0,08
Lower Mamirauá	0,157
Amanã	0,115
Upper Mamirauá	0,061

families’ own consumption products such as manioc flour and fish (PERALTA et al., 2009; LIMA, 2010). In the Amazonian *riverine* economy, as in other rural regions of Brazil, the production for direct consumption of the family is the material foundation of much of the social and biological reproduction of the domestic group.

Another important factor that characterizes the domestic economy of the Reserves is the relative uniformity in the distribution of income among households. The data show a low degree of income concentration, with Gini coefficient of only 0,075 (Table 6). This relative homogeneity is not only the effect of social benefits, since the concentration of income without the benefit is similar (Gini 0,08), but the result of common structural factors. In this domestic economy, factors such as the exploration of natural resources, a restricted access to technologies and dependence on the labor force of the family, produce similar levels of income among households. The effects of demographic processes of family growth and dispersion also explain the lack of concentration of wealth, as discussed below.

Although the overall aggregate value of Gini coefficient represents this uniformity, Gini coefficient values by region show a small difference in income concentration, especially between the upper and lower Mamirauá areas (Table 6).

The highest Gini at lower Mamirauá may be related to the greater importance of wages and the provision of services in this region, which show higher frequencies of households in higher *per capita* income groups, as shown in Figure 2.

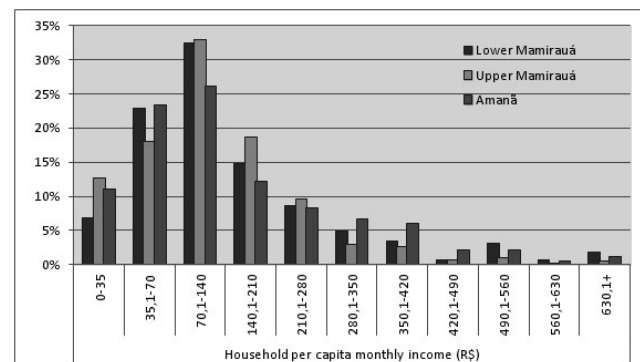


Figure 2 - Distribution of 920 households by income groups in Mamirauá and Amanã Reserves in 2010 (R\$).

## Demographics and income

A classic theme of peasant studies concerns the relationship between their economic activities and demographic characteristics of household groups (CHAYANOV, 1986). In general, the main determinants of economic behavior are associated with the consumption needs of the family and the availability of people able to work, whose amount

is connected to the household life cycle (FORTES, 1971), affecting the number and ages of family members.

The demographic characteristics of household groups in the overall sample show a common general pattern, in which the three areas show no significant variation around the average household size (6,33;  $\pm 3$ ) or age of head of household (44,3;  $\pm 15$ ).

These demographic variables - age of head and number of household members - showed some correlation with the annual household income. But this correlation, (measured by Spearman correlation coefficient) was stronger between the age of the head and household annual income (0,313;  $p=0,00$ ) than the latter and the number of household members (0,109;  $p=0,001$ ).

The greater influence of age on annual income is due to the presence of retirement benefits, since they are important sources of income, contributing to about 20% of the households income composition (see below). The age of the head also indicates the stage of the household life cycle in which the family finds itself<sup>9</sup>. Those families that have a greater number of productive members, in relation to the total number of consumers in the domestic group, have greater opportunity to expand production beyond basic consumption needs (CHAYANOV, 1986; SAHLINS, 1989). But unlike the rural peasantry with no influence of the market and no welfare assistance, where the family life cycle is accompanied by a cycle of rise, peak and decline of economic activity, in the domestic

groups studied, retirement benefits maintain the trend of rising income along the timeline.

Table 7 below shows the average household income by age range in the sample. Younger families whose heads are in the lower age groups (< 20 to 25 years), present average incomes 101% lower than the households whose heads are at retirement ages (55 for women and 60 men).

The demographic variables show a moderate association with expenses. A Spearman correlation coefficient for the association between the number of people in the household and total expenditure was of 0,244 ( $p=0,000$ ).

Table 7 - Average income and average number of household members by age.

Age group of head of household	N sampled (912)	Household average annual income (R\$)	Household average number of residents
< 20	18	5.603	4,17
21-25	64	5.901	4,78
26-30	108	7.063	5,22
31-35	145	7.832	6,1
36-40	105	8.421	7,24
41-45	100	8.962	7,75
46-50	77	10.437	7,16
51-55	67	9.485	6,67
56-60	73	10.738	6,59
61-65	50	11.891	6,02
66-70	43	12.802	6,93
71-75	32	12.552	5,19
76-80	18	10.957	5
81-85	6	10.678	4,17
86+	6	12.867	5,67

### Social Benefits

Among the social achievements established by the 1988 Federal Constitution is a welfare system that includes universal access to retirement, and

<sup>9</sup> A domestic group may be characterized in terms of the domestic cycle stage it finds itself: expansion, dispersion or fission, or replacement stages. (FORTES, 1971)



a system of non-contributory benefits, such as conditional cash transfers programs offered to families who are in vulnerable socioeconomic conditions. The vast majority of households in this study, amounting to 87%, received some type of social benefit. As seen, the sum of social benefits has considerable weight in the household economy and represents 44% of average household income (Table 2). The main social benefits received by households in our sample were rural retirement, *bolsa família*, *bolsa floresta*, and *seguro defeso*.

*Bolsa Família* is a federal program that provides an “emergency intervention, for a certain period of time, to support the survival of poor and extremely poor families, until they are able to provide for their needs on their own” (IPEA, 2010). In order to receive *bolsa família* families must meet certain terms of conditions related to school attendance and health care of its members.

*Bolsa Floresta* is a state mechanism for Reducing Emissions from Forest Deforestation and Degradation (REDD+). A program of financial compensation for the environmental services provided by residents of protected areas in the state of Amazonas (VIANA, 2008). The *Bolsa Floresta Familiar* is a monthly grant of R\$50, transferred to the mothers of families living in protected areas, and that make a commitment to zero deforestation (in primary forests). To join the program, recipients participate in a workshop, where topics such as sustainable development and climate change are reviewed (VIANA, 2012).

*Seguro Defeso* is a temporary financial assistance provided by the federal government to professional artisanal fishermen, who work in an individual or family economy regime, and who paralyze their activities during the months of the closed breeding season (MDS, 2013). Fishermen receive one

minimum salary for each month closed for fishing. In order to receive the benefit, fishermen must register with Fishermen’s Colonies, Associations and Unions. Only those fishermen who join these organizations, and not officially maintain employment are eligible to receive insurance.

The contribution of benefits to the composition of the household budget is similar in the three regions studied (between 41% and 47%). However, when the different types of benefits are disaggregated (Table 8), we observe that the contribution of *Seguro Defeso* for total household income was higher in upper Mamirauá area (11%). There are other differences, such as greater participation of retirement benefits in Amanã, but they are not statistically significant.

Table 8 - Percentage of different government benefits to the total household budget contribution according to region of the reserves.

	Lower Mamirauá (%) (n = 324)	Upper Mamirauá (%) (n = 416)	Amanã (%) (n = 180)	Total (%) (n = 920)
Retirement benefits	20,6	18,1	24,6	20,3
<i>Bolsa família</i>	9,6	11,8	8,4	10,3
<i>Bolsa floresta</i>	5,9	4,6	5,2	5,2
Pensions	1,2	0,8	1,4	1,1
Maternity salary	0,3	1,1	1	0,8
<i>Seguro Defeso</i>	3,5	<b>10,9</b>	2,6	6,6
Total Benefits	41,1	47,3	43,2	44,3

The proportion of households receiving benefits was similar in the three regions studied (85-90% of households received some benefit). One difference was seen in the frequency of households that receive *Seguro Defeso*, since 40% of households in the upper Mamirauá area received this type of benefit, against only 11% of households in Amanã

and lower Mamirauá area. This indicates a greater involvement of fishermen with their organizations and the fishing activity in the upper Mamirauá area, as only fishermen without employment can officially receive this type of social benefit.

### Expenditure and Consumption

In this domestic economy, production and consumption are mutually determinant operations and the household is the main center of decision-making. The value given both to work and to consumer goods is not absolute, but variable, and is related to a subjective assessment made by the domestic group. Production levels are usually associated with projects, desires, demands and needs of the group. One of the consequences of this context of economic decision is that the marginal productivity of labor is evaluated based not only on market prices, but mainly on the amount of work effort needed to carry out the consumption projects of the domestic group (CHAYANOV, 1986; ABRAMOVAY, 1998).

The values onthly *per capita* expenditure of the regions are very similar, close to R\$ 107 (Table 9). Although the focus of economic activity and the average income of each region is slightly different, as shown above, the costs show a pattern of common consumption. This pattern is composed by two main types of costs: fuel and *rancho* (regional term used for the set of high replacement goods, mainly food and hygiene items). Together, these two types of expenditures, considered as basic family needs, represent 75% of all household spending (Table 10). Household goods and work equipment, expenses that in this economic context may be considered “surplus” from the sale of production, represent only 13% of total spending. This positive balance is about 30% higher in Amanã, considering the average household investments in household property and equipment in that region (R\$ 449). Other expenditures reported by households are expenditures on health, construction, funerals, weddings, entertainment, and other minor expenses.

Table 9 - Average Household Expenditures by Region in 2010 (R\$).

Region	Household average annual expenses (R\$)	Household average per capita monthly expenses (R\$)	Annual <i>per capita</i> expenditures on <i>rancho</i> (R\$)	Annual <i>per capita</i> expenditures on fuel (R\$)	Annual <i>per capita</i> expenditures on goods (R\$)	Annual <i>per capita</i> expenditures on work gear (R\$)	Other expenses (R\$)	Annual <i>per capita</i> expenditures on LPG gas (R\$)
Lower Mamirauá	6.093 (± 3.556)	108,0	622,3	362,4	238,2	86,1	92,3	57,6
Upper Mamirauá	7.161 (± 4.415)	107,1	612,2	386,0	215,2	129,2	83,9	56,3
Amanã	6.252 (± 5.113)	103,1	569,3	266,6	405,9	42,7	92,8	90,3
Total sample	6.607 (± 4.312)	106,7	607,4	354,3	260,8	98,5	88,6	63,4

Table 10 - Distribution (%) of expenses incurred in relation to household annual expenditure in each region.

	Lower Mamirauá (%) (n = 324)	Upper Mamirauá (%) (n = 416)	Amanã (%) (n = 180)	Total sample (%) (n = 920)
Rancho	47,2	48,0	46,5	47,5
Fuel	28,3	29,5	20,3	27,4
Household goods	10,6	8,2	17,3	10,7
Other expenses	7,0	6,1	7,3	6,6
LPG gás	4,7	4,6	7,5	5,2
Work equipment	2,1	3,6	1,1	2,6

The only significant difference in costs is relative to expenditures on fuel and equipment in the upper area of Mamirauá, and expenditures on gas and purchase of goods in Amanã (table 10). The higher fuel costs in upper Mamirauá may be explained by the greater distance between localities and municipal urban centers. Higher spending on work equipment, in turn, is related to the predominance of fishing as main economic activity, and the higher incidence of households that receive *Seguro Defeso* benefits, which is commonly invested in equipment and fishing gear. The highest expenses in LPG gas in Amanã may be related to its more frequent use as fuel for *rabetas* (low power engines commonly used in regional canoes) in the area. Amanã also features as the region that spends more on household assets – they spend in average R\$ 180,00 more than in the other two areas. Therefore, in 2010 the Amanã region has had the highest “surpluses”.

The growth in cash inflows, especially with the extra contribution of social benefits, poses an important question: how does more market integration affect

the relative *autarcia* (or autonomy) (Wanderley, 1996) in the local domestic economy? To try and tackle this issue, we included a question on the survey regarding the degree of manioc flour purchase among households, in order to know the extent to which families remain self-sufficient in relation to their main source of carbohydrates. Overall, 48% of families did not buy flour in 2010, while 32% purchased their flour, and 20% bought only a complement to their supply.

Most families in Amanã have not bought flour (62%), while in the lower Mamirauá area only 35%. This may indicate a pattern of greater self-sufficiency among families in Amanã in relation to those of the lower Mamirauá area, which also shows more importance of wages and services in the composition of incomes, and lower contribution of the sale of production, compared to the other two areas. The monetization coming from wages is somewhat associated with a lower self-supply of flour, albeit weakly. Salaries are sources of income that require almost exclusive dedication to the activity. The provision of services, also usually demand temporary displacement of the individual from his place of residence. In both cases, the dedication to these activities affects the availability of time for cultivation of agriculture.

From the total sample, 330 or 36% of households reported having commercial relations with *patrons* in 2010. Patrons supplied mainly *rancho* and fuel. From those households who have worked with patrons, 82% purchased *rancho* and 57% fuel. Only 3% acquired goods and 5% acquired equipments. A peculiar economic practice in the region is the “supply of cash” by patrons, recorded in the customer “tab” with other debts. In 2010, at

least 7% of households reported having obtained money from a patron. The existence of a debt with a patron was reported by 17% of households.

### **Domestic assets**

A second home in the city is an important and strategic asset for families who reconcile urban and rural life (PINEDO-VASQUEZ et al., 2008). Out of 920 households from our sample, 18% own a second house in an urban centre. But due to local kinship networks, access to cities should not be restricted to this proportion, since more families may use these houses when necessary.

In regard to environmental conditions, 597 of households are located in floodplain areas, whereas 257 are in *terra firme* forest and 66 use both environments. Among those settled in floodplains, 20% own a second house in the city, whereas 12% of those in *terra firme* have a second home ( $\chi^2=7.851$ ;  $p=0,020$ ). A second home is important for those settled in floodplains because it allows families to temporarily inhabit urban areas during the flood season. In the Amanã region, where most households are in *terra firme* settlements, and there are very few major floods, ownership of a second home in the city is less frequent (11%).

Among the sampled households, 345 (38%) have *per capita* income above R\$ 140 - the official poverty line, and 27% of those above the poverty line own a second house in urban centers. Regarding those households that show incomes below the poverty line (575), 12% own a home in the city. This incidence, albeit relatively small, nevertheless shows that ownership of a second home in the city is not only related to affluence,

but also expresses the projects and livelihood strategies of households.

As discussed above, higher spending on household goods and work equipment is an indicator of relative affluence and financial stability in the region. Household goods and equipments are purchased both in cash and in credit, in equal proportion. In this study, 66% of households showed a “positive balance” in their budgets; purchased valuables and invested in equipment. Around half of the households acquired some household good (51%), and a third purchased work equipment (33%: 27% for fishing and 6% for agriculture). The three regions differ little from this pattern. The region in which a slightly larger proportion of households purchased equipment was the upper Mamirauá area (35%) and one with a slightly larger number of households that purchased goods was the lower Mamirauá area (56%). However, these percentage differences were not statistically significant when tested.

The dispersion of goods among households (Table 11) shows consumer preferences in the process of assets building (Douglas and Isherwood, 2004). More households own three types of goods: *rabeta* engine, stove, and television. Stoves, beds, cell phones and chainsaws are evenly distributed among the three regions. All other goods showed significant differences among regions, as shown below (table 11). In upper Mamirauá area, about 10 pp more households claim to own *rabeta* engines. A variable that showed association with the purchase of goods was *Seguro Defeso*, since 40% of households who receive this benefit claimed to have purchased equipment.

Table 11 - Distribution of goods and equipment among households in the three regions. The asterisk (\*) shows significant difference in distribution of goods among the regions.

	Lower Mamirauá (n = 324)	Upper Mamirauá (n = 416)	Amanã (n = 180)	Total sample (n = 920)
Low-power <i>rabeta</i> engine*	82,4	91,6	82,8	86,6
Stove	87,3	82,9	91,7	86,2
Television*	70,4	65,1	75,6	69
Bed	52,5	49,5	54,4	51,5
Generator*	18,5	29,6	28,9	25,5
Freezer/fridge*	24,1	12,3	46,1	23
Cell phone	16,4	21,2	12,8	17,8
Chainsaw	7,1	19,5	23,3	15,9
Washing machine*	7,1	9,1	6,1	7,8
Boat*	4,6	2,4	10,6	4,8

## CONCLUSIONS

This is the first work on the regional domestic economy that addresses the whole area of the Mamirauá and Amanã Reserves, allowing for the characterization of the economic profile of the three regions. Previous work was based on a sample of seven communities in the lower Mamirauá area (LIMA, 2006; PERALTA et al., 2009; LIMA, 2010). The scope of this research - covering 920 households, five municipalities, two reserves, 14.140 km<sup>2</sup> and three types of environments - represent an important contribution to the precarious knowledge on the rural reality of the Middle Solimões region. Considering that this survey tested the distribution of income in a comprehensive sample, one result of this effort was the opportunity to reassess the sample size for future research in 11% of the total households

of the three reserves, including the same socio and environmental features of this study. For comparative analyzes, it will be possible to adopt the indicators presented in this study as a baseline.

The study showed that families have a relatively low average income, with almost two-thirds of the sample showing monthly *per capita* income below the poverty line in Brazil - R\$140. Although this is the official monetary reference for classifying poor households, in rural areas especially in the Amazon, the concept of poverty must be translated to local reality. If we take out of the concept the idea of a self-perception, or even social recognition, and we use it only as a comparative measure, poverty is associated to the level of household's market integration. At the same time, more market integration implies a reduction production for self-supply (*autoconsumo*). The increased participation of local population in trade represents an entry into spheres of consumption previously inaccessible or difficult to access. The reduction in relative *autarky* (*aurtacia*) introduces a social paradox, which increases the relevance of the concept of poverty in its usual meaning. The growing dependence on the market, and the entry in national poverty statistics, is a paradoxical result of increased affluence derived from more market integration.

One factor that mitigates such a transformation in the economic culture is social benefits, which contribute to nearly half of household incomes. When added to another source of direct monetary income, wages and services, this figure reaches 60% of the household budget. The most important productive activities, fishing and agriculture are still recognized by the population as their main

economic identity, and are directly linked to the exploitation of natural resources in the reserves. But their present weight in the household budget is comparatively lower than before the implementation of conditional cash transfer policies.

The three areas studied are similar in terms of household incomes, but Amanã showed a slightly higher average income than the other areas. Although the composition of income has the participation of the same type of economic activities (fishing, agriculture and services and wages), there are differences in the order of importance of these activities, which implies that the three areas have different economic preferences. The lower Mamirauá area shows wages and services as more important, whereas in the upper Mamirauá area, fishing is the most important activity and in Amanã it is agriculture.

Among productive activities that generate income, the largest contribution comes from fishing, followed by agriculture. Families depend on fishing for their provision of protein, as well as for obtaining other consumer items. And the study shows that two-thirds of households sold fish in 2010.

Differences in income patterns in Mamirauá may not be explained by their environmental characteristics, since these are similar. Differences must therefore be attributed to other factors such as the greater number of households with members that are employed, a greater number of retirees, and the higher incidence of *Seguro Defeso*.

The data shows a concentration of income exceptionally low. With 62% of households below the poverty line and a GINI index of 0,075,

we can say that the population is equally poor. In upper Mamirauá area inequality is even lower. But the lower Mamirauá area shows slightly more unequal income distribution. As salaries and services are the most important sources of income in the region, we can infer that the presence or absence of wage labor is a factor that magnifies inequality in the area.

In demographic terms, the three areas show a common pattern. The age of the head of household is the most important demographic variable in determining household income. Households with younger heads have lower income and households with heads 55 years old and above have higher incomes. This is mainly due to the importance and influence of retirement benefits in the budget of households.

Social benefits have very important impact on the composition of income. It is currently the largest source of inflow in the three regions. Among the benefits, retirements followed by *Bolsa Família* contribute most to composition of household incomes. *Seguro Defeso* is particularly important for households in upper Mamirauá area, almost as important as *Bolsa Família*.

In this domestic economy, the main motivation for productive economic activities and economic projects of groups are the consumption desires of its members. Work relations are guided by a subjective assessment of their consumption needs. The results of the study showed a very close similarity in their patterns of consumption, especially in the purchases of *rancho* in the order of importance of different expenditure categories. Domestic life is very similar. Comparatively, we notice a difference only in expenditures on gas in Amanã, and the greater dependence in buying manioc flour in lower Mamirauá.

*Patrons*, who 50 years ago were the main agents of trading and exchange operations, and whose social function was broader than just the provision of goods - today have a lower participation in the economy. Debt, which was previously a central element of the social relationship with patrons, was reported by only 17% of households and does not have the same binding implications. The *aviamento* or debt-bondage system, the patrons, and the debt itself, do not constitute the strong and complex socioeconomic basis as in the past. Producers direct liaisons with the market are made possible by their greater interaction with cities, facilitated by the *rabeta* engine, nowadays a common and indispensable good.

One of the most important assets in the current context of rural Amazonia is the ownership of a second home in a city. But while in other regions this ownership may be very comprehensive (eg. 80% of households in the floodplains of Amapá, reported by Pinedo-Vasquez *et al.* 2008), only a fifth of the households in this study owns a second house in a city.

Although the list of assets owned by households is simple, compared to average urban standards, access to assets in this rural region has grown, as among the low-income population in Brazil as a whole. Material inequality has gradually decreased, allowing families of rural Amazonia to carry out consumption projects and desires, previously inaccessible. It is as if only now they were entering the lifestyle of modernity, which thus requires continuing socioeconomic studies to accompany these changes.

Abundance of natural resources (QUEIROZ, 2005) and its direct and their exclusive access guaranteed by the sustainable use reserves (SNUC, 2000) are crucial factors in the lives of these families. This, combined with the local traditional knowledge and practices developed and reproduced socially; provide residents and users of the Reserves and

Mamirauá Amanã with a degree of economic autonomy, that residents of cities and other rural regions outside the reserves do not have.

#### ACKNOWLEDGEMENTS

We are grateful to Mamirauá Institute for Sustainable Development and the Ministry of Science, Technology and Innovation for funding the research. We thank Alessandra Stremel, Ana Claudeise do Nascimento, João Valsecchi, Isabel Sousa and Barbara Richers, for their participation in the questionnaire design. We thank all members of the social research groups for their cooperation in this research. We thank Gleyson Lopes for building the database, Alan Colombelli for preparing the map, Oscarina Martins for helping in categorization of communities in the three regions. We also thank Helder Queiroz and Lucas Ayres for useful information regarding data analysis. We also thank the group responsible for data collection: Ademir Vilena, Adriana Arruda, Alessandra Stremel, Amos Lhips, Claudia Barbosa, Daniele Pereira, Dávila Correa, Douglas Campelo, Fabio Paz, Hilkie Silva, Jaqueline Gomes, José Carlos Campanha, Maria das Dores Gomes, Matheus Machado, Pedro Pontes, Rithere Carvalho, Sandro Regatieri, Sebastião Dias and Thabata Farias. And finally, a special thanks to all the families of the Mamirauá and Amanã Reserves who participated in this research.

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Appendix 1. Data on each locality studied, including household incomes and expenditures.

<i>Locality</i>	<i>Political Sector and region (Upper or lower Mamirauá and Amanã)</i>	<i>Number of households sampled</i>	<i>Average age of head of household</i>	<i>Household average annual income (R\$)</i>	<i>Household average per capita monthly income (R\$)</i>	<i>Household average annual expenses (R\$)</i>	<i>Household average per capita monthly expenses (R\$)</i>
Açaituba	Boa União (Lower Mamiraua area)	4	40	14378,5	243,3	9148,8	143,5
Acapuri de Baixo	Solimões de Cima II (Upper Mamiraua area)	8	38	11912,3	197,1	9850,4	171,1
Acapuri de Cima	Solimões de Cima II (Upper Mamiraua area)	7	42	9452,4	112,8	5675,7	75,3
Acapuri do Meio	Solimões de Cima II (Upper Mamiraua area)	5	42	10765,8	220,8	5667	101,8
Acari	Aranapu (Lower Mamiraua area)	5	49	10459,6	139,6	6797,4	88,1
Araçari	Solimões do Meio (Upper Mamiraua area)	1	61	19644	233,9	4956	59
Barreirinha de Baixo	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	51	4102	59,6	5883,6	79,7
Barreirinha de Cima	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	49	5626,2	77,3	5530,1	96,8
Barroso	Barroso (Lower Mamiraua area)	5	47	11851	218,2	4790,9	99,3
Batalha de Baixo	Guedes (Upper Mamiraua area)	8	38	6444,8	66,2	6512,2	71,4
Bate Papo	Aranapu (Lower Mamiraua area)	4	40	7882	179,6	4667,8	97
Bela Vista do Batalha	Solimões de Baixo (Upper Mamiraua area)	1	75	9600	160	6338	105,6
Belo Monte	Amanã (Amanã)	7	44	7575,3	95,8	6496,7	81
Betel (Rio Tambaqui)	Castanha (Amanã)	4	47	4135	56,3	5227,8	71,4

Boa Esperança	Amanã (Amanã)	16	39	8517,2	160	7386,9	156,4
Boa Esperança do Japurá	Tijuaca (Lower Mamiraua area)	4	33	5237	79,9	5522,3	79,7
Boa Fé do Joacaca	Joacaca (Upper Mamiraua area)	3	43	8164,7	103,3	5166	66
Boa Sorte	Guedes (Upper Mamiraua area)	2	63	10072	139,9	5546	77
Boa Vista	Barroso (Lower Mamiraua area)	3	40	10866,7	131,2	4945,3	55,9
Boa Vista do Calafate	Amanã (Amanã)	5	41	10990,4	122,9	5592,2	70,9
Boa Vista do Curimatá de Cima	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	39	7137,4	102,4	7298,2	102,9
Boa Vista do Pema	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	46	7018,4	102,4	6312	88,6
Boca Anarucu/Monte das Oliveiras	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	3	35	5480	119,7	2586,7	69
Boca do Auati Paraná	Região do Auati-Paraná Abaixo da Resex Auati-Paraná (Upper Mamiraua area)	2	37	12795,5	123,1	16124	163,6
Boca do Guariba	Panauá de Baixo (Lower Mamiraua area)	1	72	7440	34,4	10040,1	46,5
Boca do Guedes	Panauá de Baixo (Lower Mamiraua area)	4	31	4487,8	75,6	7493,7	128,6
Boca do Júlio	Solimões de Cima I (Upper Mamiraua area)	5	48	8305,6	156	8572,1	160,4
Boca do Mamirauá	Mamirauá (Lower Mamiraua area)	5	37	9020,6	158,6	4962,5	91
Boca do Prata	Panauá de Baixo (Lower Mamiraua area)	4	43	4106,8	49,1	8201,5	112,3
Boca do Tigre	Região do Auati-Paraná Abaixo da Resex Auati-Paraná (Upper Mamiraua area)	5	45	4719,6	70,8	4478	68,9
Boiador	Guedes (Upper Mamiraua area)	7	35	6591,6	123,1	8333,9	152,1

Boiaquara	Solimões do Meio (Upper Mamiraua area)	1	47	10354	95,9	4692	43,4
Bom Futuro	Solimões do Meio (Upper Mamiraua area)	1	53	38220	1592,5	22872	953
Bom Jesus (Guedes)	Guedes (Upper Mamiraua area)	1	63	10948	91,2	7425,4	61,9
Bom Jesus do Baré	Amanã (Amanã)	5	39	9114,8	96,1	6072,6	65,9
Bom Jesus do Lago Preto	Castanha (Amanã)	5	36	8176,3	142,8	5199,5	107,9
Bom Jesus do Paraná do Ferro II	Barroso (Lower Mamiraua area)	5	49	3894	66,6	3980	67,3
Bom Socorro	Amanã (Amanã)	3	50	13306	316,8	6374,4	140,1
Bom Sucesso	Barroso (Lower Mamiraua area)	5	58	10527,6	245,9	7325	139,6
Caburini	Mamirauá (Lower Mamiraua area)	5	50	5965,6	165,1	4649,5	111,4
Capote	Solimões de Cima I (Upper Mamiraua area)	4	44	5377,5	81,9	3936	71,2
Caridade	Liberdade (Lower Mamiraua area)	5	56	10741,6	241,5	9429,1	171
Castelo	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	6	48	7181,5	138,2	4453,7	74,1
Coadi	Liberdade (Lower Mamiraua area)	5	46	7522,4	74,3	5782,4	57,8
Comapara	Amanã (Amanã)	3	38	6857	63,8	4981	48,4
Copianã	Solimões de Baixo (Upper Mamiraua area)	3	37	10580,3	149,9	10085,3	150,4
Cordeiro	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	9	36	10802,6	146,5	9355,1	128,5
Costa da Ilha I	Solimões de Baixo (Upper Mamiraua area)	6	55	10995,8	165,3	6560,8	83,6

Costa da Ilha II	Solimões de Baixo (Upper Mamiraua area)	8	50	19330	222,4	7661,1	108,9
Costa do Jenipapo	Solimões de Cima II (Upper Mamiraua area)	5	48	7284	128,8	9988,6	134,4
Cruzeiro	Solimões de Cima I (Upper Mamiraua area)	6	39	17191,7	198,9	11871,2	136,3
Cuiabá	Solimões do Meio (Upper Mamiraua area)	2	52	3570	53,4	3317,1	51,3
Curimatá de Baixo	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	53	11450	208,5	13165,6	250
Curimatá de Cima	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	42	8115,2	122,5	6850,8	102,4
Curupira	Caruara (Upper Mamiraua area)	4	40	5838	80,1	4687	54,3
Deus é Pai	Liberdade (Lower Mamiraua area)	5	37	6967,4	150,4	6314,2	109,8
Deus é Pai (Guedes)	Guedes (Upper Mamiraua area)	5	45	14740,4	162,1	11821,6	135,3
Espírito Santo do Curupira	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mamiraua area)	4	37	7861	89,8	9928,6	108,5
Estirão do Itaúba	Região do Auati-Paraná Abaixo da Resex Auati-Paraná (Upper Mamiraua area)	4	37	4989,5	44,2	5850	59
Fazenda Nova	Solimões de Cima II (Upper Mamiraua area)	6	41	9025,3	148,8	5178,8	79,1
Floresta (Pinheiro de Cima)	Solimões de Cima III (Upper Mamiraua area)	5	37	6717,6	112,3	4539,2	67,6
Fonte de Luz	Ingá (Lower Mamiraua area)	5	38	9299,2	142	3716,3	60,9
Furo do Ingaioara	Panauá de Cima (Upper Mamiraua area)	4	37	10090,5	176,5	7448,5	126,8
Ilha da Boca do Mamuriá	Solimões de Cima I (Upper Mamiraua area)	1	54	7670	91,3	10772	128,2
Ingá	Ingá (Lower Mamiraua area)	7	46	17071,3	530,6	6674,1	213,2

Ingaioara	Panauá de Cima (Upper Mamiraua area)	5	40	6869,6	119,2	5926,8	101,5
Iracema	Coraci (Amanã)	3	49	15545,3	533,7	5220,3	159
Itaboca	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	6	56	11457,7	121,2	9929	102,6
Juruamã	Ingá (Lower Mamiraua area)	7	44	7736,7	157,6	7402,9	143,4
Jurupari	Mamirauá (Lower Mamiraua area)	6	42	6571,2	105,8	7576,8	94,3
Jutai Grande	Panauá de Baixo (Lower Mamiraua area)	2	41	5136	59,1	8765,5	111,6
Luis	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	42	10503,3	257,5	7336	194,5
Maguari	Aranapu (Lower Mamiraua area)	5	54	10865,2	262,6	5943,8	140
Manacabi	Jarauá (RDSA) (Lower Mamiraua area)	5	44	8406,2	79,9	6813,9	67
Maracajá	Região do Auati-Paraná Abaixo da Resex Auati-Paraná (Upper Mamiraua area)	1	50	1750	14,6	3960	33
Marirana	Horizonte (Lower Mamiraua area)	3	55	8960	347,5	3928	146,7
Matuzalém	Coraci (Amanã)	3	50	15021,3	309,8	7754,6	163,4
Miriti	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	6	48	5953,5	85,6	4620,7	76,9
Monte Ararate	Amanã (Amanã)	5	34	5642,6	91,7	6966,6	99,6
Monte Carlo	Guedes (Upper Mamiraua area)	1	75	9180	85	5486	50,8
Monte Cristo	Paraná do Maiana (Upper Mamiraua area)	5	39	6060,8	88,6	6125,6	89,1
Monte das Oliveiras	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	44	10257,2	106,3	8979,7	91,3

Monte Orebe	Solimões do Meio (Upper Mairaua area)	6	38	9776	135,5	5128,8	72,7
Monte Sião	Castanha (Amaná)	6	32	6981,7	70,1	3927,9	49,9
Moura	Solimões de Baixo (Upper Mairaua area)	5	31	5875,5	87,3	3020,9	44,9
Mulatinho	Solimões de Baixo (Upper Mairaua area)	1	57	7598	48,7	14252	91,4
Mulato	Solimões de Baixo (Upper Mairaua area)	3	56	5410	88,1	9222	172,6
Murinzal	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mairaua area)	9	50	8328,4	127,3	6497	95,6
Nossa Senhora da Saúde	Liberdade (Lower Mairaua area)	7	42	8052,5	232,5	4043,8	99
Nossa Senhora de Fátima do Coadi	Liberdade (Lower Mairaua area)	5	50	7951,8	136,9	4696,7	82,7
Nossa Senhora de Fátima do Tijuaca	Tijuaca (Lower Mairaua area)	4	43	9486,8	147	4772,6	89,1
Nova Betânia	Tijuaca (Lower Mairaua area)	5	40	7212,5	153,3	7351	143,3
Nova Canaã	Coraci (Amaná)	5	35	11918,6	166,7	4905,6	62,1
Nova Colômbia	Jarauá (Lower Mairaua area)	5	47	4476,8	58,6	3729,3	65,6
Nova Esperança do Auati Paraná de Baixo	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mairaua area)	3	54	11525,7	152,9	5619,4	73,7
Nova Esperança (Solimões)	Solimões de Baixo (Upper Mairaua area)	6	55	11788,5	149	4970,6	66,6
Nova Esperança do Amaná	Amaná (Amaná)	2	60	14900	160,4	10635,8	134,1
Nova Esperança do Chibeco	Solimões de Cima III (Upper Mairaua area)	2	36	7608	97,7	4122	48,5
Nova Esperança do Cruzeiro	Solimões de Cima I (Upper Mairaua area)	2	50	11512	181,8	5337	71,3

Nova Esperança do Jenipapo	Solimões de Cima II (Upper Mamiraua area)	5	39	9811,4	146	7750,1	113,9
Nova Esperança do Joacaca	Joacaca (Upper Mamiraua area)	3	63	9232	142,7	4783,4	65,5
Nova Esperança do Mamuriá	Solimões do Meio (Upper Mamiraua area)	4	29	2423	48,6	7993,5	266,6
Nova Jacitara	Caruara (Upper Mamiraua area)	3	42	9816,7	123,5	7254,7	86,7
Nova Jerusalém (Guedes)	Guedes (Upper Mamiraua area)	2	42	3951	32,9	9640	80,3
Nova Jerusalém do Amanã	Amanã (Amanã)	10	47	8509,6	95,7	5280,2	60,9
Nova Jerusalém do Aranapu	Aranapu (Lower Mamiraua area)	6	36	9058,3	206	9721,7	199,3
Nova Jerusalém do Maiana	Paraná do Maiana (Upper Mamiraua area)	4	57	9983,5	191,2	6529,8	112,5
Nova Macedônia	Mamirauá (Lower Mamiraua area)	5	45	9994,8	114,4	4587,6	58,3
Nova Olinda	São José (Amanã)	6	40	9339,7	91	4778,2	49,2
Nova Vida	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mamiraua area)	1	52	2410	25,1	5783,9	60,2
Novo Pirapucu	Jarauá (RDSA) (Lower Mamiraua area)	3	57	6393,3	145,3	3554,7	86,3
Novo São Raimundo	Mamirauá (Lower Mamiraua area)	4	59	6285	236,9	5876,5	200,1
Novo Tapiira	Mamirauá (Lower Mamiraua area)	5	43	3879,2	128,6	4100,2	108,8
Novo Viola	Barroso (Lower Mamiraua area)	3	50	8776,7	112,5	3682	43,3
Pacu	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mamiraua area)	4	40	4322,5	42,6	6410	82,7
Pãozal	Solimões do Meio (Upper Mamiraua area)	1	61	11450	238,5	9616	200,3

Paraíso (Guedes)	Guedes (Upper Mamiraua area)	1	40	4804	40	9396	78,3
Paraíso (Japurá)	Caruara (Upper Mamiraua area)	2	67	10330	195,8	7230	134,7
Pentecostal	Aranapu (Lower Mamiraua area)	4	42	6987,5	96,8	6827,5	81,7
Petrolina	Solimões de Cima III (Upper Mamiraua area)	1	77	18190	252,6	17764	246,7
Pinheiro de Baixo	Solimões de Cima III (Upper Mamiraua area)	3	59	8499,3	42,9	8108	46,1
Pirapitinga	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mamiraua area)	1	60	1500	17,9	2480	29,5
Ponta da Mangueira	Região do Auati-Paraná Abaixo da Resex Auati-Paraná (Upper Mamiraua area)	1	60	12540	80,4	24540	157,3
Ponto X	Aranapu (Lower Mamiraua area)	5	36	9309,6	155,2	9186,8	170,8
Porto Alegre	Caruara (Upper Mamiraua area)	9	42	9446,9	214	5481,8	110,9
Porto Alves (Japurá)	Caruara (Upper Mamiraua area)	4	37	5292	113,1	6747,5	143,1
Porto Braga	Horizonte (Lower Mamiraua area)	9	35	7586,4	133	4967,2	90,4
Porto Inhumana	Paraná do Maiana (Upper Mamiraua area)	3	41	8704,3	133,1	5595,3	87,5
Porto Pirum	Paraná do Maiana (Upper Mamiraua area)	5	53	8428,8	151,3	5059,4	93,1
Porto São Francisco	Solimões de Cima I (Upper Mamiraua area)	4	34	6828	230,8	4392,1	149,4
Promessa da Boca do Apara	Mamirauá (Lower Mamiraua area)	2	42	8230	95,3	5076	60,6
Punã	Liberdade (Lower Mamiraua area)	29	47	7696,7	146,8	4862	86,9
Quatipuru	Panauã de Cima (Upper Mamiraua area)	1	64	13364	185,6	7210	100,1



Remanso	Solimões de Baixo (Upper Mamiraua area)	6	48	9361	200	6442	93,9
Samaria	São José (Amanã)	5	46	5736	127,8	9623,5	253,1
Samaúma	Região do Mapixari (Upper Mamiraua area)	1	53	20100	152,3	5851,2	44,3
Santa Domicia	Liberdade (Lower Mamiraua area)	7	38	6547,1	94,6	4319,6	64,3
Santa Fé	Guedes (Upper Mamiraua area)	3	49	7964,3	55,7	11280,7	79,8
Santa Isabel	São José (Amanã)	2	50	16178	152,3	6397,6	62,1
Santa Luzia	Solimões de Cima III (Upper Mamiraua area)	4	46	9797,8	99,6	10083,7	103,9
Santa Luzia do Baré	Amanã (Amanã)	4	40	10642	240,2	6642,2	136,2
Santa Luzia do Horizonte	Horizonte (Lower Mamiraua area)	5	46	7642,2	269,6	8188,6	484,3
Santa Luzia do Juazinho	Amanã (Amanã)	7	46	8653,1	132,7	7320,3	114,2
Santa Maria do Água Branca	Panauá de Cima (Upper Mamiraua area)	6	42	8569,7	129,3	8186,8	120
Santa Maria do Cururu	Tijuaca (Lower Mamiraua area)	6	51	7293,3	121,6	5654,2	87,7
Santa Maria dos Piranhas	Castanha (Amanã)	4	25	9271	415,2	5435,5	221,9
Santa Tereza	Solimões de Cima I (Upper Mamiraua area)	3	53	7272,7	82,6	4653	57,6
Santo Estevão	Amanã (Amanã)	5	58	19007,7	361	14100,4	229,7
São Bento	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mamiraua area)	2	65	5770	78,4	7688	92
São Caetano	Liberdade (Lower Mamiraua area)	5	49	8423,2	105,9	4173,2	60,5

São Francisco do Acará	Amanã (Amanã)	4	52	7842	137,9	5849	90,5
São Francisco do Aiucá	Horizonte (Lower Mimiraua area)	11	42	9721	140,5	6860,3	113,4
São Francisco do Bóia	Aranapu (Lower Mimiraua area)	5	49	10394	140,3	9731,2	145,9
São Francisco do Buiçu	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mimiraua area)	5	44	2564,2	20,6	6062	44,9
São Francisco do Cubuá	São José (Amanã)	5	44	6926,8	125,8	4885,5	72,1
São Francisco do Cururu	Tijuaca (Lower Mimiraua area)	5	37	8035,4	117,2	6696	98
São Francisco do Paraíso (Tambaqui)	Castanha (Amanã)	3	57	7324	67,8	6290,5	58,2
São Francisco do Tucuxi	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mimiraua area)	2	67	9182	132,2	12232	138,9
São Francisco dos Piranhas	Guedes (Upper Mimiraua area)	4	38	7988	179	10403,8	182,6
São João (Horizonte)	Horizonte (Lower Mimiraua area)	6	36	8570,7	114,9	6480,8	84,2
São João do Ipecaçú	Coraci (Amanã)	10	47	14895,2	224,1	5046	72,3
São José (Maiana)	Paraná do Maiana (Upper Mimiraua area)	10	45	11350,7	184,7	7483,4	116,3
São José da Messejana	São José (Amanã)	5	53	5063	62,6	5275,5	61,7
São José do Amparo	Barroso (Lower Mimiraua area)	3	50	11747,3	109,3	7279,3	81,2

São José do Urini	Amanã (Amanã)	9	35	8436,6	95,5	5941,7	62
São Luís	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	5	50	6954,8	86,4	6894,9	87,9
São Luís do Pirarara	Mamirauá (Lower Mamiraua area)	5	37	5637	68,5	6324,4	76,3
São Miguel	Solimões de Cima III (Upper Mamiraua area)	4	41	4932	64,5	6730,2	78,8
São Paulo do Coraci	Coraci (Amanã)	5	48	13823,8	253,5	5947	104,4
São Pedro do Jacitara	Caruara (Upper Mamiraua area)	4	43	8855,5	131,3	5161,5	76,8
São Raimundo do Batalha	Solimões de Baixo (Upper Mamiraua area)	6	39	9180	157,3	5702,2	85,1
São Raimundo do Inambé	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	3	50	10509	145,3	7498,7	128,6
São Raimundo do Jarauá	Jarauá (Lower Mamiraua area)	10	41	12690,3	206,5	8136,9	152,8
São Raimundo do Panauã	Aranapu (Lower Mamiraua area)	5	45	9118,8	87,9	7396,8	68,9
São Sebastião (Liberdade)	Liberdade (Lower Mamiraua area)	8	41	8350,7	148,6	4254,3	68,6
São Sebastião do Batalha	Solimões de Baixo (Upper Mamiraua area)	1	44	8080	224,4	5196	144,3

São Sebastião do Cedro	Região do Auati-Paraná Acima da Resex Auati-Paraná (Upper Mamiraua area)	1	52	5100	141,7	4620	128,3
São Sebastião do Maiana	Paraná do Maiana (Upper Mamiraua area)	5	56	7183,8	94,7	4509,4	65,7
São Sebastião do Repartimento	São José (Amanã)	5	40	7824,2	92,2	6500,6	89,9
Síria	Solimões de Cima III (Upper Mamiraua area)	5	48	8006,4	124,5	9504,8	147,5
Sítio Boca do Taiassu	Amanã (Amanã)	1	44	5518	32,8	7056	42
Sítio Entrada do Piratáima	São José (Amanã)	1	34	3210	66,9	4560	95
Sítio Fortaleza São José	Liberdade (Lower Mamiraua area)	5	36	10448,8	95,5	5558,2	54
Sítio Monte Moriá	Amanã (Amanã)	1	45	5380	49,8	5244	48,6
Sítio Novo Amparo	São José (Amanã)	1	96	13564	188,4	7612	105,7
Sítio Porto Alves (Paraná do Aiupíá)	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	1	57	3040	63,3	6704	139,7
Sítio São José do Mamirauá	Mamirauá (Lower Mamiraua area)	5	43	12190,6	241,5	5301	117,5
Sítio Zé Gonçalves	Paraná do Maiana (Upper Mamiraua area)	1	62	2100	58,3	7090	196,9

Tabuleiro do Ferro	Barroso (Lower Mamiraua area)	4	48	10597	92,4	9962,7	90,4
Tacanal	Guedes (Upper Mamiraua area)	4	35	5773,5	91,2	5938	100,8
Terra Nova	Solimões do Meio (Upper Mamiraua area)	5	58	20986,4	246,9	8065,6	107
Triunfo	Solimões de Cima I (Upper Mamiraua area)	5	49	4964,8	49,1	6690,4	70,2
Ubim	Amanã (Amanã)	3	43	4647,7	53,6	5432,6	65,2
Várzea Alegre	São José (Amanã)	5	51	14361,8	232,9	5956,7	102,8
Vencedor	Região do Auati-Paraná Área da Resex Auati-Paraná (Upper Mamiraua area)	10	36	12208,9	190	7417,2	127,6
Vila Alencar	Mamirauá (Lower Mamiraua area)	8	45	10438,9	200,1	4622,9	80
Vila Alfaia	Guedes (Upper Mamiraua area)	2	51	7675,8	85,9	6343	59,7
Vila Betel	Tijuaca (Lower Mamiraua area)	2	57	28279	235,7	14319	119,3
Vila Nova do Amanã	Amanã (Amanã)	5	41	15904,8	211,6	5411,8	65,4
Vila Nova do Coraci	Coraci (Amanã)	6	41	12779,2	287,6	5553,8	153,6

Vila Nova do Putiri	Tijuaca (Lower Mamiraua area)	2	40	5670	46,9	4022	66,6
Viola do Panauã	Panauã de Baixo (Lower Mamiraua area)	3	41	10276,7	139	9329,4	112,2
Vista Alegre	Tijuaca (Lower Mamiraua area)	6	37	8937,3	131,6	4828	60,6
Volta da Mangueira	Região do Auati-Paraná Abaixo da Resex Auati-Paraná (Upper Mamiraua area)	1	40	3608	27,3	5400	40,9
Volta do Apara Grande	Panauã de Cima (Upper Mamiraua area)	3	34	9437,6	161,7	10691	195,6